

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**3N-67W-08 BERRY FARMS 8-8HZ PAD**

**BERRY FARMS 8-3HZ**

**Plan A**

**Plan: Permit Rev-2**

## **Standard Planning Report**

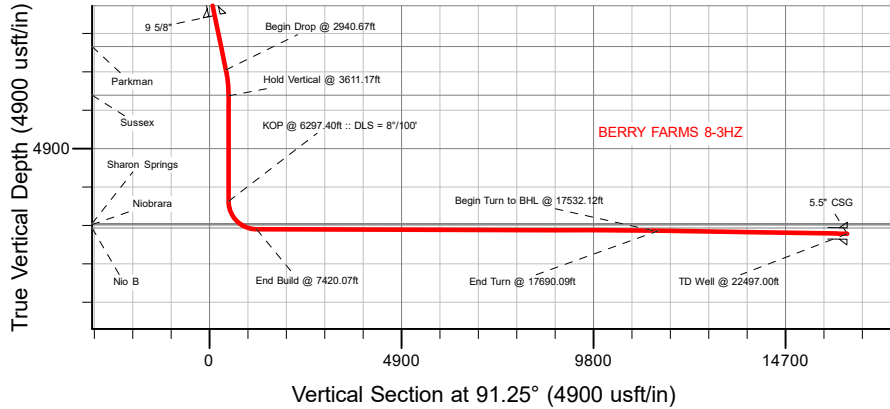
**17 November, 2021**

Project: WELD-NAD83-UTMFT13N  
Site: 3N-67W-08 BERRY FARMS 8-8HZ PAD  
Well: BERRY FARMS 8-3HZ  
Wellbore: Plan A  
Design: Permit Rev-2

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Name	Size
1500.00	1513.58	9 5/8"	9-5/8
7071.00	22497.00	5.5" CSG	5-1/2



SHL  
1423' FNL  
954' FEL

LP  
1150' FNL  
255' FWL

BHL  
1220' FNL  
256' FEL

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00	0.00	
1314.00	13.41	61.80	1305.86	49.21	91.78	1.50	61.80	90.69	
2940.67	13.41	61.80	2888.18	227.48	424.26	0.00	0.00	419.19	
3611.17	0.00	0.00	3552.57	264.39	493.09	2.00	180.00	487.21	
6297.40	0.00	0.00	6238.81	264.39	493.09	0.00	0.00	487.21	
7420.07	89.81	90.55	6955.00	257.48	1206.92	8.00	90.55	1201.02	
17532.12	89.81	90.55	6987.97	159.62	11318.45	0.00	0.00	11312.28	BERRY FARMS 8-3HZ_Deflection
17690.09	89.03	92.79	6989.56	155.01	11476.33	1.50	109.33	11470.22	
22497.00	89.03	92.79	7071.00	-79.00	16276.85	0.00	0.00	16274.70	BERRY FARMS 8-3HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
BERRY FARMS 8-3HZ_SHL	0.00	14615497.27	1666023.62	40.243721	-104.908236
BERRY FARMS 8-3HZ_LP	6955.00	14615756.00	1667230.27	40.244428	-104.903911
BERRY FARMS 8-3HZ_BHL	7071.00	14615435.11	1682300.54	40.243489	-104.849908

## WELL DETAILS: BERRY FARMS 8-3HZ

GL = 4817'

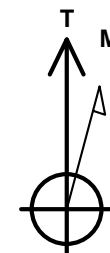
RKB = 17' @ 4834.00usft (RIG)

Plan: Permit Rev-2 (BERRY FARMS 8-3HZ/Plan A)

Date: 11/17/2021

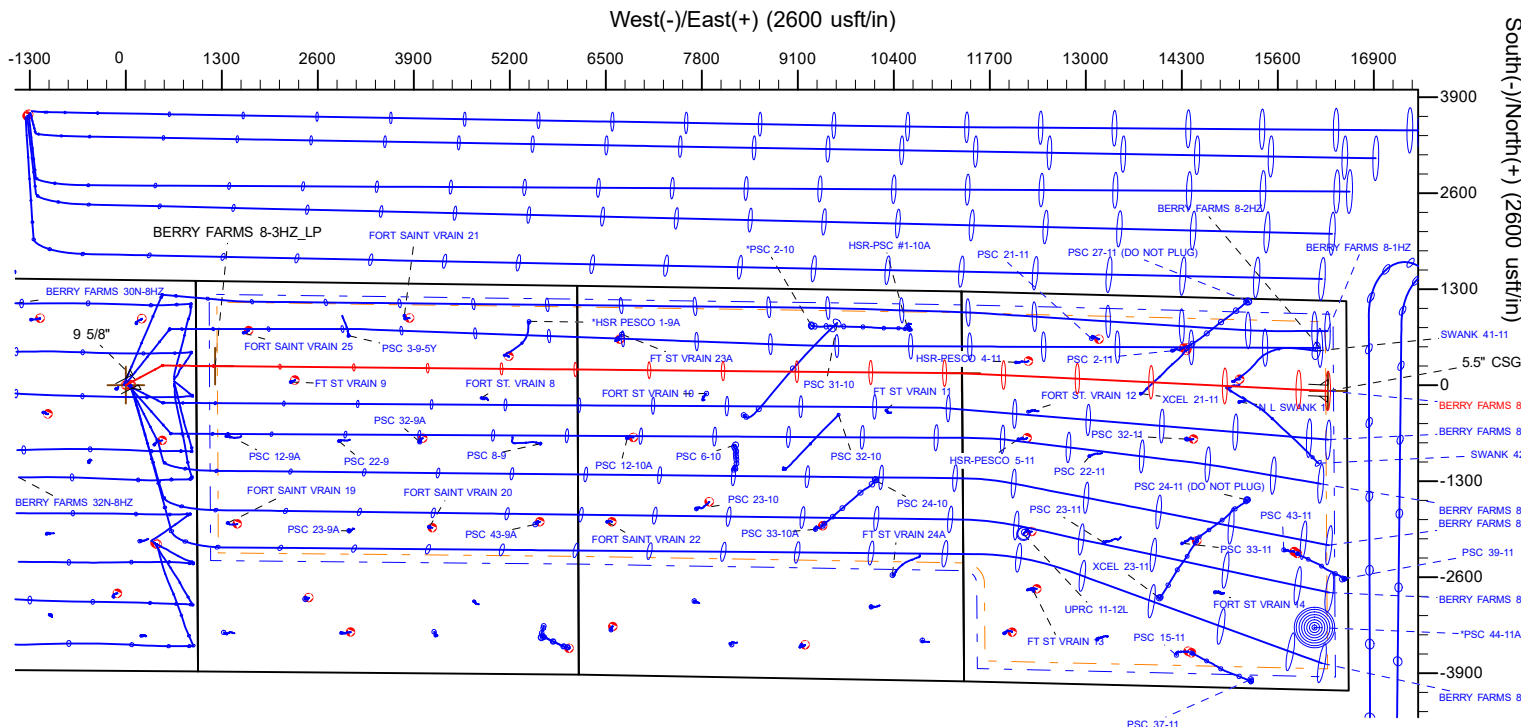
## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
694.00	694.24	Fox Hills
2292.00	2327.78	Parkman
3538.00	3596.59	Sussex
6810.00	6958.60	Sharon Springs
6837.00	7005.41	Niobrara
6922.00	7204.13	Nio B



Azimuths to True North  
Magnetic North: 7.87°

Magnetic Field  
Strength: 51819.3nT  
Dip Angle: 66.49°  
Date: 10/24/2021  
Model: IGRF2020



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		3N-67W-08 BERRY FARMS 8-8HZ PAD			
Site Position:		Northing:	14,615,497.59 usft	Latitude:	40.243722
From:	Lat/Long	Easting:	1,665,993.52 usft	Longitude:	-104.908344
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		BERRY FARMS 8-3HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,497.27 usft	Latitude:	40.243721
	+E/-W	0.00 usft	Easting:	1,666,023.62 usft	Longitude:	-104.908236
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,817.00 usft
Grid Convergence:		0.06 °				

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF202013	10/24/2021	7.87	66.49	51,819.34412820

<b>Design</b>	Permit Rev-2				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	91.25	

<b>Plan Survey Tool Program</b>	<b>Date</b>	11/16/2021			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	2,000.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	22,497.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,314.00	13.41	61.80	1,305.86	49.21	91.78	1.50	1.50	0.00	61.80	
2,940.67	13.41	61.80	2,888.18	227.48	424.26	0.00	0.00	0.00	0.00	
3,611.17	0.00	0.00	3,552.57	264.39	493.09	2.00	-2.00	0.00	180.00	
6,297.40	0.00	0.00	6,238.81	264.39	493.09	0.00	0.00	0.00	0.00	
7,420.07	89.81	90.55	6,955.00	257.48	1,206.92	8.00	8.00	8.07	90.55	
17,532.12	89.81	90.55	6,987.97	159.62	11,318.45	0.00	0.00	0.00	0.00	BERRY FARMS 8-3H
17,690.09	89.03	92.79	6,989.56	155.01	11,476.33	1.50	-0.50	1.42	109.33	
22,497.00	89.03	92.79	7,071.00	-79.00	16,276.85	0.00	0.00	0.00	0.00	BERRY FARMS 8-3H

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 420.00ft									
500.00	1.20	61.80	499.99	0.40	0.74	0.73	1.50	1.50	0.00
600.00	2.70	61.80	599.93	2.00	3.74	3.69	1.50	1.50	0.00
694.24	4.11	61.80	694.00	4.65	8.67	8.57	1.50	1.50	0.00
Fox Hills									
700.00	4.20	61.80	699.75	4.85	9.04	8.93	1.50	1.50	0.00
800.00	5.70	61.80	799.37	8.92	16.64	16.45	1.50	1.50	0.00
900.00	7.20	61.80	898.74	14.23	26.54	26.23	1.50	1.50	0.00
1,000.00	8.70	61.80	997.77	20.77	38.73	38.27	1.50	1.50	0.00
1,100.00	10.20	61.80	1,096.41	28.53	53.20	52.57	1.50	1.50	0.00
1,200.00	11.70	61.80	1,194.59	37.50	69.94	69.11	1.50	1.50	0.00
1,300.00	13.20	61.80	1,292.24	47.69	88.94	87.88	1.50	1.50	0.00
1,314.00	13.41	61.80	1,305.86	49.21	91.78	90.69	1.50	1.50	0.00
Hold Tangent @ 1314.00ft									
1,400.00	13.41	61.80	1,389.52	58.64	109.36	108.05	0.00	0.00	0.00
1,500.00	13.41	61.80	1,486.79	69.60	129.80	128.25	0.00	0.00	0.00
1,513.58	13.41	61.80	1,500.00	71.09	132.57	130.99	0.00	0.00	0.00
9 5/8"									
1,600.00	13.41	61.80	1,584.06	80.56	150.24	148.44	0.00	0.00	0.00
1,700.00	13.41	61.80	1,681.34	91.52	170.68	168.64	0.00	0.00	0.00
1,800.00	13.41	61.80	1,778.61	102.48	191.12	188.83	0.00	0.00	0.00
1,900.00	13.41	61.80	1,875.88	113.43	211.55	209.03	0.00	0.00	0.00
2,000.00	13.41	61.80	1,973.16	124.39	231.99	229.22	0.00	0.00	0.00
2,100.00	13.41	61.80	2,070.43	135.35	252.43	249.42	0.00	0.00	0.00
2,200.00	13.41	61.80	2,167.70	146.31	272.87	269.61	0.00	0.00	0.00
2,300.00	13.41	61.80	2,264.98	157.27	293.31	289.81	0.00	0.00	0.00
2,327.78	13.41	61.80	2,292.00	160.32	298.99	295.42	0.00	0.00	0.00
Parkman									
2,400.00	13.41	61.80	2,362.25	168.23	313.75	310.00	0.00	0.00	0.00
2,500.00	13.41	61.80	2,459.52	179.19	334.19	330.20	0.00	0.00	0.00
2,600.00	13.41	61.80	2,556.80	190.15	354.63	350.39	0.00	0.00	0.00
2,700.00	13.41	61.80	2,654.07	201.11	375.07	370.59	0.00	0.00	0.00
2,800.00	13.41	61.80	2,751.35	212.07	395.50	390.78	0.00	0.00	0.00
2,900.00	13.41	61.80	2,848.62	223.03	415.94	410.98	0.00	0.00	0.00
2,940.67	13.41	61.80	2,888.18	227.48	424.26	419.19	0.00	0.00	0.00
Begin Drop @ 2940.67ft									
3,000.00	12.22	61.80	2,946.03	233.70	435.86	430.65	2.00	-2.00	0.00
3,100.00	10.22	61.80	3,044.11	242.90	453.01	447.60	2.00	-2.00	0.00
3,200.00	8.22	61.80	3,142.82	250.47	467.13	461.56	2.00	-2.00	0.00
3,300.00	6.22	61.80	3,242.02	256.42	478.21	472.51	2.00	-2.00	0.00
3,400.00	4.22	61.80	3,341.60	260.72	486.24	480.43	2.00	-2.00	0.00
3,500.00	2.22	61.80	3,441.43	263.37	491.19	485.33	2.00	-2.00	0.00
3,596.59	0.29	61.80	3,538.00	264.38	493.06	487.17	2.00	-2.00	0.00
Sussex									
3,600.00	0.22	61.80	3,541.41	264.38	493.07	487.19	2.00	-2.00	0.00
3,611.17	0.00	0.00	3,552.57	264.39	493.09	487.21	2.00	-2.00	0.00
Hold Vertical @ 3611.17ft									

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,700.00	0.00	0.00	3,641.41	264.39	493.09	487.21	0.00	0.00	0.00
3,800.00	0.00	0.00	3,741.41	264.39	493.09	487.21	0.00	0.00	0.00
3,900.00	0.00	0.00	3,841.41	264.39	493.09	487.21	0.00	0.00	0.00
4,000.00	0.00	0.00	3,941.41	264.39	493.09	487.21	0.00	0.00	0.00
4,100.00	0.00	0.00	4,041.41	264.39	493.09	487.21	0.00	0.00	0.00
4,200.00	0.00	0.00	4,141.41	264.39	493.09	487.21	0.00	0.00	0.00
4,300.00	0.00	0.00	4,241.41	264.39	493.09	487.21	0.00	0.00	0.00
4,400.00	0.00	0.00	4,341.41	264.39	493.09	487.21	0.00	0.00	0.00
4,500.00	0.00	0.00	4,441.41	264.39	493.09	487.21	0.00	0.00	0.00
4,600.00	0.00	0.00	4,541.41	264.39	493.09	487.21	0.00	0.00	0.00
4,700.00	0.00	0.00	4,641.41	264.39	493.09	487.21	0.00	0.00	0.00
4,800.00	0.00	0.00	4,741.41	264.39	493.09	487.21	0.00	0.00	0.00
4,900.00	0.00	0.00	4,841.41	264.39	493.09	487.21	0.00	0.00	0.00
5,000.00	0.00	0.00	4,941.41	264.39	493.09	487.21	0.00	0.00	0.00
5,100.00	0.00	0.00	5,041.41	264.39	493.09	487.21	0.00	0.00	0.00
5,200.00	0.00	0.00	5,141.41	264.39	493.09	487.21	0.00	0.00	0.00
5,300.00	0.00	0.00	5,241.41	264.39	493.09	487.21	0.00	0.00	0.00
5,400.00	0.00	0.00	5,341.41	264.39	493.09	487.21	0.00	0.00	0.00
5,500.00	0.00	0.00	5,441.41	264.39	493.09	487.21	0.00	0.00	0.00
5,600.00	0.00	0.00	5,541.41	264.39	493.09	487.21	0.00	0.00	0.00
5,700.00	0.00	0.00	5,641.41	264.39	493.09	487.21	0.00	0.00	0.00
5,800.00	0.00	0.00	5,741.41	264.39	493.09	487.21	0.00	0.00	0.00
5,900.00	0.00	0.00	5,841.41	264.39	493.09	487.21	0.00	0.00	0.00
6,000.00	0.00	0.00	5,941.41	264.39	493.09	487.21	0.00	0.00	0.00
6,100.00	0.00	0.00	6,041.41	264.39	493.09	487.21	0.00	0.00	0.00
6,200.00	0.00	0.00	6,141.41	264.39	493.09	487.21	0.00	0.00	0.00
6,297.40	0.00	0.00	6,238.81	264.39	493.09	487.21	0.00	0.00	0.00
<b>KOP @ 6297.40ft :: DLS = 8°/100'</b>									
6,300.00	0.21	90.55	6,241.41	264.39	493.10	487.21	8.00	8.00	0.00
6,350.00	4.21	90.55	6,291.36	264.37	495.02	489.14	8.00	8.00	0.00
6,400.00	8.21	90.55	6,341.05	264.32	500.43	494.54	8.00	8.00	0.00
6,450.00	12.21	90.55	6,390.25	264.24	509.29	503.40	8.00	8.00	0.00
6,500.00	16.21	90.55	6,438.71	264.12	521.56	515.67	8.00	8.00	0.00
6,550.00	20.21	90.55	6,486.20	263.97	537.18	531.29	8.00	8.00	0.00
6,600.00	24.21	90.55	6,532.48	263.78	556.07	550.18	8.00	8.00	0.00
6,650.00	28.21	90.55	6,577.33	263.57	578.15	572.26	8.00	8.00	0.00
6,700.00	32.21	90.55	6,620.53	263.33	603.30	597.41	8.00	8.00	0.00
6,750.00	36.21	90.55	6,661.88	263.05	631.40	625.51	8.00	8.00	0.00
6,800.00	40.21	90.55	6,701.16	262.76	662.32	656.43	8.00	8.00	0.00
6,850.00	44.21	90.55	6,738.18	262.43	695.90	690.01	8.00	8.00	0.00
6,900.00	48.21	90.55	6,772.78	262.08	731.98	726.09	8.00	8.00	0.00
6,950.00	52.21	90.55	6,804.77	261.71	770.39	764.50	8.00	8.00	0.00
6,958.60	52.90	90.55	6,810.00	261.64	777.22	771.32	8.00	8.00	0.00
<b>Sharon Springs</b>									
7,000.00	56.21	90.55	6,834.01	261.32	810.94	805.05	8.00	8.00	0.00
7,005.41	56.64	90.55	6,837.00	261.27	815.45	809.55	8.00	8.00	0.00
<b>Niobrara</b>									
7,050.00	60.21	90.55	6,860.35	260.91	853.43	847.53	8.00	8.00	0.00
7,100.00	64.21	90.55	6,883.65	260.48	897.65	891.75	8.00	8.00	0.00
7,150.00	68.21	90.55	6,903.82	260.04	943.39	937.49	8.00	8.00	0.00
7,200.00	72.21	90.55	6,920.75	259.58	990.42	984.52	8.00	8.00	0.00
7,204.13	72.54	90.55	6,922.00	259.54	994.36	988.46	8.00	8.00	0.00
<b>Nio B</b>									
7,250.00	76.21	90.55	6,934.35	259.11	1,038.52	1,032.62	8.00	8.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,300.00	80.21	90.55	6,944.57	258.64	1,087.46	1,081.56	8.00	8.00	0.00
7,350.00	84.21	90.55	6,951.35	258.16	1,136.98	1,131.08	8.00	8.00	0.00
7,400.00	88.21	90.55	6,954.65	257.68	1,186.86	1,180.96	8.00	8.00	0.00
7,420.07	89.81	90.55	6,955.00	257.48	1,206.92	1,201.02	8.00	8.00	0.00
<b>End Build @ 7420.07ft</b>									
7,500.00	89.81	90.55	6,955.26	256.71	1,286.85	1,280.95	0.00	0.00	0.00
7,600.00	89.81	90.55	6,955.59	255.74	1,386.85	1,380.94	0.00	0.00	0.00
7,700.00	89.81	90.55	6,955.91	254.78	1,486.84	1,480.93	0.00	0.00	0.00
7,800.00	89.81	90.55	6,956.24	253.81	1,586.84	1,580.92	0.00	0.00	0.00
7,900.00	89.81	90.55	6,956.56	252.84	1,686.83	1,680.91	0.00	0.00	0.00
8,000.00	89.81	90.55	6,956.89	251.87	1,786.83	1,780.91	0.00	0.00	0.00
8,100.00	89.81	90.55	6,957.22	250.90	1,886.82	1,880.90	0.00	0.00	0.00
8,200.00	89.81	90.55	6,957.54	249.94	1,986.82	1,980.89	0.00	0.00	0.00
8,300.00	89.81	90.55	6,957.87	248.97	2,086.81	2,080.88	0.00	0.00	0.00
8,400.00	89.81	90.55	6,958.19	248.00	2,186.80	2,180.87	0.00	0.00	0.00
8,500.00	89.81	90.55	6,958.52	247.03	2,286.80	2,280.87	0.00	0.00	0.00
8,600.00	89.81	90.55	6,958.85	246.07	2,386.79	2,380.86	0.00	0.00	0.00
8,700.00	89.81	90.55	6,959.17	245.10	2,486.79	2,480.85	0.00	0.00	0.00
8,800.00	89.81	90.55	6,959.50	244.13	2,586.78	2,580.84	0.00	0.00	0.00
8,900.00	89.81	90.55	6,959.82	243.16	2,686.78	2,680.83	0.00	0.00	0.00
9,000.00	89.81	90.55	6,960.15	242.19	2,786.77	2,780.83	0.00	0.00	0.00
9,100.00	89.81	90.55	6,960.48	241.23	2,886.77	2,880.82	0.00	0.00	0.00
9,200.00	89.81	90.55	6,960.80	240.26	2,986.76	2,980.81	0.00	0.00	0.00
9,300.00	89.81	90.55	6,961.13	239.29	3,086.76	3,080.80	0.00	0.00	0.00
9,400.00	89.81	90.55	6,961.45	238.32	3,186.75	3,180.80	0.00	0.00	0.00
9,500.00	89.81	90.55	6,961.78	237.35	3,286.75	3,280.79	0.00	0.00	0.00
9,600.00	89.81	90.55	6,962.11	236.39	3,386.74	3,380.78	0.00	0.00	0.00
9,700.00	89.81	90.55	6,962.43	235.42	3,486.74	3,480.77	0.00	0.00	0.00
9,800.00	89.81	90.55	6,962.76	234.45	3,586.73	3,580.76	0.00	0.00	0.00
9,900.00	89.81	90.55	6,963.08	233.48	3,686.73	3,680.76	0.00	0.00	0.00
10,000.00	89.81	90.55	6,963.41	232.52	3,786.72	3,780.75	0.00	0.00	0.00
10,100.00	89.81	90.55	6,963.74	231.55	3,886.72	3,880.74	0.00	0.00	0.00
10,200.00	89.81	90.55	6,964.06	230.58	3,986.71	3,980.73	0.00	0.00	0.00
10,300.00	89.81	90.55	6,964.39	229.61	4,086.71	4,080.72	0.00	0.00	0.00
10,400.00	89.81	90.55	6,964.71	228.64	4,186.70	4,180.72	0.00	0.00	0.00
10,500.00	89.81	90.55	6,965.04	227.68	4,286.70	4,280.71	0.00	0.00	0.00
10,600.00	89.81	90.55	6,965.37	226.71	4,386.69	4,380.70	0.00	0.00	0.00
10,700.00	89.81	90.55	6,965.69	225.74	4,486.68	4,480.69	0.00	0.00	0.00
10,800.00	89.81	90.55	6,966.02	224.77	4,586.68	4,580.68	0.00	0.00	0.00
10,900.00	89.81	90.55	6,966.34	223.81	4,686.67	4,680.68	0.00	0.00	0.00
11,000.00	89.81	90.55	6,966.67	222.84	4,786.67	4,780.67	0.00	0.00	0.00
11,100.00	89.81	90.55	6,967.00	221.87	4,886.66	4,880.66	0.00	0.00	0.00
11,200.00	89.81	90.55	6,967.32	220.90	4,986.66	4,980.65	0.00	0.00	0.00
11,300.00	89.81	90.55	6,967.65	219.93	5,086.65	5,080.65	0.00	0.00	0.00
11,400.00	89.81	90.55	6,967.97	218.97	5,186.65	5,180.64	0.00	0.00	0.00
11,500.00	89.81	90.55	6,968.30	218.00	5,286.64	5,280.63	0.00	0.00	0.00
11,600.00	89.81	90.55	6,968.63	217.03	5,386.64	5,380.62	0.00	0.00	0.00
11,700.00	89.81	90.55	6,968.95	216.06	5,486.63	5,480.61	0.00	0.00	0.00
11,800.00	89.81	90.55	6,969.28	215.09	5,586.63	5,580.61	0.00	0.00	0.00
11,900.00	89.81	90.55	6,969.60	214.13	5,686.62	5,680.60	0.00	0.00	0.00
12,000.00	89.81	90.55	6,969.93	213.16	5,786.62	5,780.59	0.00	0.00	0.00
12,100.00	89.81	90.55	6,970.26	212.19	5,886.61	5,880.58	0.00	0.00	0.00
12,200.00	89.81	90.55	6,970.58	211.22	5,986.61	5,980.57	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,300.00	89.81	90.55	6,970.91	210.26	6,086.60	6,080.57	0.00	0.00	0.00	
12,400.00	89.81	90.55	6,971.23	209.29	6,186.60	6,180.56	0.00	0.00	0.00	
12,500.00	89.81	90.55	6,971.56	208.32	6,286.59	6,280.55	0.00	0.00	0.00	
12,600.00	89.81	90.55	6,971.89	207.35	6,386.59	6,380.54	0.00	0.00	0.00	
12,700.00	89.81	90.55	6,972.21	206.38	6,486.58	6,480.53	0.00	0.00	0.00	
12,800.00	89.81	90.55	6,972.54	205.42	6,586.58	6,580.53	0.00	0.00	0.00	
12,900.00	89.81	90.55	6,972.87	204.45	6,686.57	6,680.52	0.00	0.00	0.00	
13,000.00	89.81	90.55	6,973.19	203.48	6,786.56	6,780.51	0.00	0.00	0.00	
13,100.00	89.81	90.55	6,973.52	202.51	6,886.56	6,880.50	0.00	0.00	0.00	
13,200.00	89.81	90.55	6,973.84	201.55	6,986.55	6,980.50	0.00	0.00	0.00	
13,300.00	89.81	90.55	6,974.17	200.58	7,086.55	7,080.49	0.00	0.00	0.00	
13,400.00	89.81	90.55	6,974.50	199.61	7,186.54	7,180.48	0.00	0.00	0.00	
13,500.00	89.81	90.55	6,974.82	198.64	7,286.54	7,280.47	0.00	0.00	0.00	
13,600.00	89.81	90.55	6,975.15	197.67	7,386.53	7,380.46	0.00	0.00	0.00	
13,700.00	89.81	90.55	6,975.47	196.71	7,486.53	7,480.46	0.00	0.00	0.00	
13,800.00	89.81	90.55	6,975.80	195.74	7,586.52	7,580.45	0.00	0.00	0.00	
13,900.00	89.81	90.55	6,976.13	194.77	7,686.52	7,680.44	0.00	0.00	0.00	
14,000.00	89.81	90.55	6,976.45	193.80	7,786.51	7,780.43	0.00	0.00	0.00	
14,100.00	89.81	90.55	6,976.78	192.84	7,886.51	7,880.42	0.00	0.00	0.00	
14,200.00	89.81	90.55	6,977.10	191.87	7,986.50	7,980.42	0.00	0.00	0.00	
14,300.00	89.81	90.55	6,977.43	190.90	8,086.50	8,080.41	0.00	0.00	0.00	
14,400.00	89.81	90.55	6,977.76	189.93	8,186.49	8,180.40	0.00	0.00	0.00	
14,500.00	89.81	90.55	6,978.08	188.96	8,286.49	8,280.39	0.00	0.00	0.00	
14,600.00	89.81	90.55	6,978.41	188.00	8,386.48	8,380.38	0.00	0.00	0.00	
14,700.00	89.81	90.55	6,978.73	187.03	8,486.48	8,480.38	0.00	0.00	0.00	
14,800.00	89.81	90.55	6,979.06	186.06	8,586.47	8,580.37	0.00	0.00	0.00	
14,900.00	89.81	90.55	6,979.39	185.09	8,686.47	8,680.36	0.00	0.00	0.00	
15,000.00	89.81	90.55	6,979.71	184.12	8,786.46	8,780.35	0.00	0.00	0.00	
15,100.00	89.81	90.55	6,980.04	183.16	8,886.46	8,880.35	0.00	0.00	0.00	
15,200.00	89.81	90.55	6,980.36	182.19	8,986.45	8,980.34	0.00	0.00	0.00	
15,300.00	89.81	90.55	6,980.69	181.22	9,086.45	9,080.33	0.00	0.00	0.00	
15,400.00	89.81	90.55	6,981.02	180.25	9,186.44	9,180.32	0.00	0.00	0.00	
15,500.00	89.81	90.55	6,981.34	179.29	9,286.43	9,280.31	0.00	0.00	0.00	
15,600.00	89.81	90.55	6,981.67	178.32	9,386.43	9,380.31	0.00	0.00	0.00	
15,700.00	89.81	90.55	6,981.99	177.35	9,486.42	9,480.30	0.00	0.00	0.00	
15,800.00	89.81	90.55	6,982.32	176.38	9,586.42	9,580.29	0.00	0.00	0.00	
15,900.00	89.81	90.55	6,982.65	175.41	9,686.41	9,680.28	0.00	0.00	0.00	
16,000.00	89.81	90.55	6,982.97	174.45	9,786.41	9,780.27	0.00	0.00	0.00	
16,100.00	89.81	90.55	6,983.30	173.48	9,886.40	9,880.27	0.00	0.00	0.00	
16,200.00	89.81	90.55	6,983.62	172.51	9,986.40	9,980.26	0.00	0.00	0.00	
16,300.00	89.81	90.55	6,983.95	171.54	10,086.39	10,080.25	0.00	0.00	0.00	
16,400.00	89.81	90.55	6,984.28	170.58	10,186.39	10,180.24	0.00	0.00	0.00	
16,500.00	89.81	90.55	6,984.60	169.61	10,286.38	10,280.23	0.00	0.00	0.00	
16,600.00	89.81	90.55	6,984.93	168.64	10,386.38	10,380.23	0.00	0.00	0.00	
16,700.00	89.81	90.55	6,985.25	167.67	10,486.37	10,480.22	0.00	0.00	0.00	
16,800.00	89.81	90.55	6,985.58	166.70	10,586.37	10,580.21	0.00	0.00	0.00	
16,900.00	89.81	90.55	6,985.91	165.74	10,686.36	10,680.20	0.00	0.00	0.00	
17,000.00	89.81	90.55	6,986.23	164.77	10,786.36	10,780.20	0.00	0.00	0.00	
17,100.00	89.81	90.55	6,986.56	163.80	10,886.35	10,880.19	0.00	0.00	0.00	
17,200.00	89.81	90.55	6,986.88	162.83	10,986.35	10,980.18	0.00	0.00	0.00	
17,300.00	89.81	90.55	6,987.21	161.86	11,086.34	11,080.17	0.00	0.00	0.00	
17,400.00	89.81	90.55	6,987.54	160.90	11,186.34	11,180.16	0.00	0.00	0.00	
17,500.00	89.81	90.55	6,987.86	159.93	11,286.33	11,280.16	0.00	0.00	0.00	
17,532.12	89.81	90.55	6,987.97	159.62	11,318.45	11,312.28	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Begin Turn to BHL @ 17532.12ft</b>									
17,600.00	89.48	91.52	6,988.39	158.39	11,386.32	11,380.15	1.50	-0.50	1.42
17,690.09	89.03	92.79	6,989.56	155.01	11,476.33	11,470.22	1.50	-0.50	1.42
<b>End Turn @ 17690.09ft</b>									
17,700.00	89.03	92.79	6,989.73	154.53	11,486.23	11,480.12	0.00	0.00	0.00
17,800.00	89.03	92.79	6,991.43	149.66	11,586.10	11,580.07	0.00	0.00	0.00
17,900.00	89.03	92.79	6,993.12	144.79	11,685.96	11,680.02	0.00	0.00	0.00
18,000.00	89.03	92.79	6,994.81	139.92	11,785.83	11,779.97	0.00	0.00	0.00
18,100.00	89.03	92.79	6,996.51	135.05	11,885.70	11,879.92	0.00	0.00	0.00
18,200.00	89.03	92.79	6,998.20	130.18	11,985.56	11,979.87	0.00	0.00	0.00
18,300.00	89.03	92.79	6,999.90	125.32	12,085.43	12,079.82	0.00	0.00	0.00
18,400.00	89.03	92.79	7,001.59	120.45	12,185.30	12,179.77	0.00	0.00	0.00
18,500.00	89.03	92.79	7,003.28	115.58	12,285.17	12,279.72	0.00	0.00	0.00
18,600.00	89.03	92.79	7,004.98	110.71	12,385.03	12,379.67	0.00	0.00	0.00
18,700.00	89.03	92.79	7,006.67	105.84	12,484.90	12,479.62	0.00	0.00	0.00
18,800.00	89.03	92.79	7,008.37	100.98	12,584.77	12,579.57	0.00	0.00	0.00
18,900.00	89.03	92.79	7,010.06	96.11	12,684.63	12,679.52	0.00	0.00	0.00
19,000.00	89.03	92.79	7,011.76	91.24	12,784.50	12,779.47	0.00	0.00	0.00
19,100.00	89.03	92.79	7,013.45	86.37	12,884.37	12,879.42	0.00	0.00	0.00
19,200.00	89.03	92.79	7,015.14	81.50	12,984.23	12,979.37	0.00	0.00	0.00
19,300.00	89.03	92.79	7,016.84	76.64	13,084.10	13,079.32	0.00	0.00	0.00
19,400.00	89.03	92.79	7,018.53	71.77	13,183.97	13,179.27	0.00	0.00	0.00
19,500.00	89.03	92.79	7,020.23	66.90	13,283.84	13,279.22	0.00	0.00	0.00
19,600.00	89.03	92.79	7,021.92	62.03	13,383.70	13,379.17	0.00	0.00	0.00
19,700.00	89.03	92.79	7,023.61	57.16	13,483.57	13,479.11	0.00	0.00	0.00
19,800.00	89.03	92.79	7,025.31	52.29	13,583.44	13,579.06	0.00	0.00	0.00
19,900.00	89.03	92.79	7,027.00	47.43	13,683.30	13,679.01	0.00	0.00	0.00
20,000.00	89.03	92.79	7,028.70	42.56	13,783.17	13,778.96	0.00	0.00	0.00
20,100.00	89.03	92.79	7,030.39	37.69	13,883.04	13,878.91	0.00	0.00	0.00
20,200.00	89.03	92.79	7,032.09	32.82	13,982.91	13,978.86	0.00	0.00	0.00
20,300.00	89.03	92.79	7,033.78	27.95	14,082.77	14,078.81	0.00	0.00	0.00
20,400.00	89.03	92.79	7,035.47	23.09	14,182.64	14,178.76	0.00	0.00	0.00
20,500.00	89.03	92.79	7,037.17	18.22	14,282.51	14,278.71	0.00	0.00	0.00
20,600.00	89.03	92.79	7,038.86	13.35	14,382.37	14,378.66	0.00	0.00	0.00
20,700.00	89.03	92.79	7,040.56	8.48	14,482.24	14,478.61	0.00	0.00	0.00
20,800.00	89.03	92.79	7,042.25	3.61	14,582.11	14,578.56	0.00	0.00	0.00
20,900.00	89.03	92.79	7,043.94	-1.26	14,681.98	14,678.51	0.00	0.00	0.00
21,000.00	89.03	92.79	7,045.64	-6.12	14,781.84	14,778.46	0.00	0.00	0.00
21,100.00	89.03	92.79	7,047.33	-10.99	14,881.71	14,878.41	0.00	0.00	0.00
21,200.00	89.03	92.79	7,049.03	-15.86	14,981.58	14,978.36	0.00	0.00	0.00
21,300.00	89.03	92.79	7,050.72	-20.73	15,081.44	15,078.31	0.00	0.00	0.00
21,400.00	89.03	92.79	7,052.42	-25.60	15,181.31	15,178.26	0.00	0.00	0.00
21,500.00	89.03	92.79	7,054.11	-30.46	15,281.18	15,278.21	0.00	0.00	0.00
21,600.00	89.03	92.79	7,055.80	-35.33	15,381.04	15,378.16	0.00	0.00	0.00
21,700.00	89.03	92.79	7,057.50	-40.20	15,480.91	15,478.10	0.00	0.00	0.00
21,800.00	89.03	92.79	7,059.19	-45.07	15,580.78	15,578.05	0.00	0.00	0.00
21,900.00	89.03	92.79	7,060.89	-49.94	15,680.65	15,678.00	0.00	0.00	0.00
22,000.00	89.03	92.79	7,062.58	-54.81	15,780.51	15,777.95	0.00	0.00	0.00
22,100.00	89.03	92.79	7,064.27	-59.67	15,880.38	15,877.90	0.00	0.00	0.00
22,200.00	89.03	92.79	7,065.97	-64.54	15,980.25	15,977.85	0.00	0.00	0.00
22,300.00	89.03	92.79	7,067.66	-69.41	16,080.11	16,077.80	0.00	0.00	0.00
22,400.00	89.03	92.79	7,069.36	-74.28	16,179.98	16,177.75	0.00	0.00	0.00
22,497.00	89.03	92.79	7,071.00	-79.00	16,276.85	16,274.70	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY FARMS 8-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4834.00usft (RIG)
<b>Site:</b>	3N-67W-08 BERRY FARMS 8-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BERRY FARMS 8-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD Well @ 22497.00ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,513.58	1,500.00	9 5/8"	9-5/8	13-1/2	
22,497.00	7,071.00	5.5" CSG	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
694.24	694.00	Fox Hills				
2,327.78	2,292.00	Parkman				
3,596.59	3,538.00	Sussex				
6,958.60	6,810.00	Sharon Springs				
7,005.41	6,837.00	Niobrara				
7,204.13	6,922.00	Nio B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
420.00	420.00	0.00	0.00	Begin Nudge @ 420.00ft	
1,314.00	1,305.86	49.21	91.78	Hold Tangent @ 1314.00ft	
2,940.67	2,888.18	227.48	424.26	Begin Drop @ 2940.67ft	
3,611.17	3,552.57	264.39	493.09	Hold Vertical @ 3611.17ft	
6,297.40	6,238.81	264.39	493.09	KOP @ 6297.40ft :: DLS = 8°/100'	
7,420.07	6,955.00	257.48	1,206.92	End Build @ 7420.07ft	
17,532.12	6,987.97	159.62	11,318.45	Begin Turn to BHL @ 17532.12ft	
17,690.09	6,989.56	155.01	11,476.33	End Turn @ 17690.09ft	
22,497.00	7,071.00	-79.00	16,276.85	TD Well @ 22497.00ft	