

# **EXTRACTION OIL & GAS**

**Broomfield County**

**Sec 10-T1S-R68W**

**INTERCHANGE A S22-30-5N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**23 January, 2018**



Project: Broomfield County  
Site: Sec 10-T1S-R68W  
Well: INTERCHANGE A S22-30-5N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Broomfield 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: 8.24°  
Magnetic Field  
Strength: 52081.6snT  
Dip Angle: 66.47°  
Date: 1/9/2018  
Model: IGRF2015

WELL DETAILS: INTERCHANGE A S22-30-5N

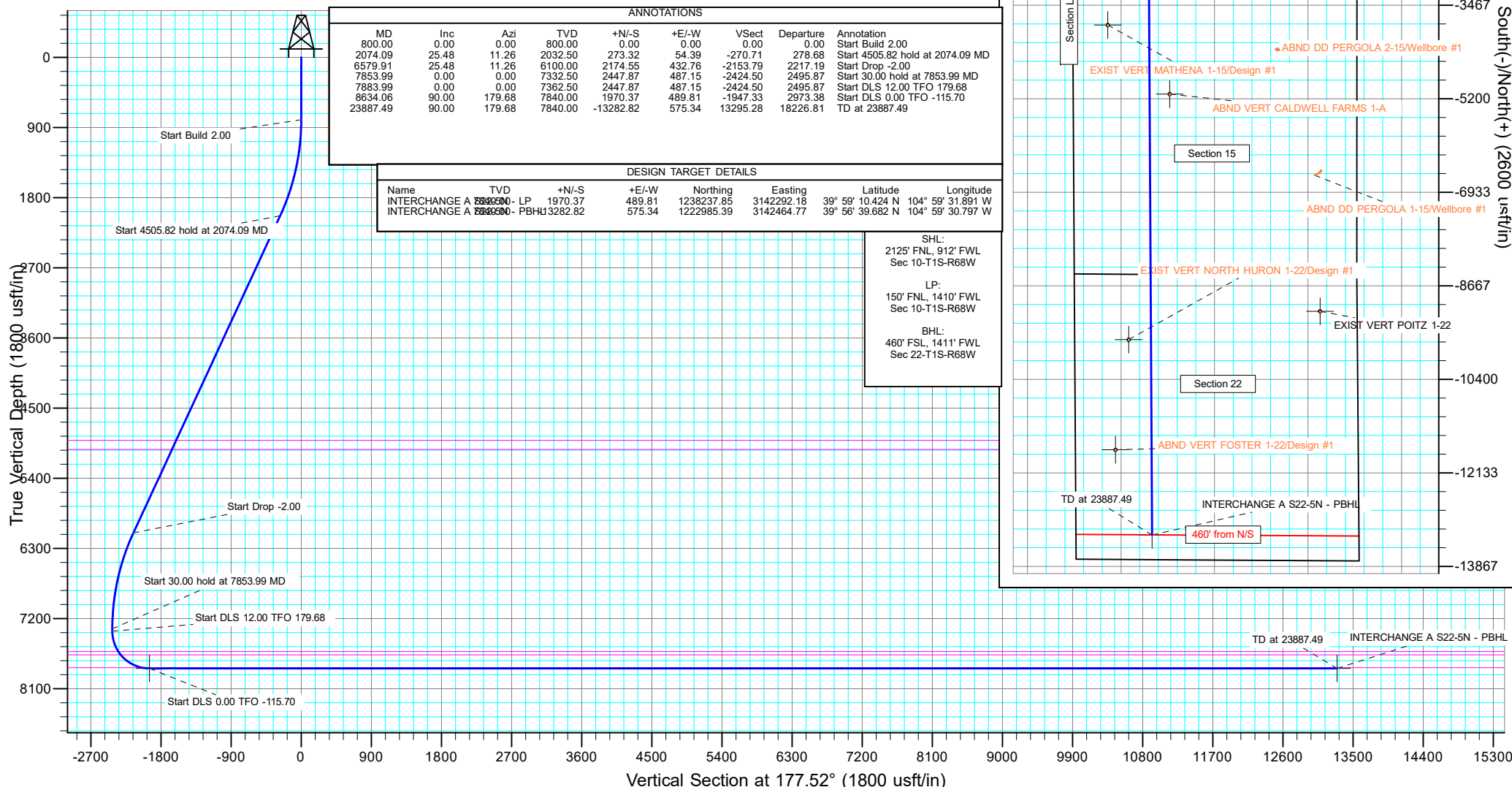
+N/-S	+E/-W	Northing	Easting	5236.00	Latitude	Longitude	Slot
0.00	0.00	1236264.72	3141813.63		39° 58' 50.952 N	104° 59' 38.184 W	

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	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
3	2074.09	25.48	11.26	2032.50	273.32	54.39	2.00	11.26	-270.71	
4	6579.91	25.48	11.26	6100.00	2174.55	432.76	0.00	0.00	-2153.79	
5	7853.99	0.00	0.00	7332.50	2447.87	487.15	2.00	180.00	-2424.50	
6	7883.99	0.00	0.00	7362.50	2447.87	487.15	0.00	0.00	-2424.50	
7	8634.06	90.00	179.68	7840.00	1970.37	489.81	12.00	179.68	-1947.33	INTERCHANGE A S22-5N - LP
8	23887.49	90.00	179.68	7840.00	-13282.82	575.34	0.00	-115.70	13295.28	INTERCHANGE A S22-5N - PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4915.00	5267.21	PARKMAN
5030.00	5394.60	SUSSEX
7624.00	8160.73	SHANNON
7664.00	8210.30	NIORARA
7830.00	8536.15	NIO B TARGET



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Broomfield County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 10-T1S-R68W			
Site Position:		Northing:	1,238,390.57 usft	Latitude:	39° 59' 12.013 N
From:	Lat/Long	Easting:	3,140,881.15 usft	Longitude:	104° 59' 50.008 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.32

Well	INTERCHANGE A S22-30-5N					
Well Position	+N/-S	-2,131.11 usft	Northing:	1,236,264.71 usft	Latitude:	39° 58' 50.952 N
	+E/-W	920.41 usft	Easting:	3,141,813.63 usft	Longitude:	104° 59' 38.184 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,236.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	1/9/2018	8.24	66.47	52,081.64290274

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	177.52

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/23/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	23,887.49	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,074.09	25.48	11.26	2,032.50	273.32	54.39	2.00	2.00	0.00	11.26	
6,579.91	25.48	11.26	6,100.00	2,174.55	432.76	0.00	0.00	0.00	0.00	
7,853.99	0.00	0.00	7,332.50	2,447.87	487.15	2.00	-2.00	0.00	180.00	
7,883.99	0.00	0.00	7,362.50	2,447.87	487.15	0.00	0.00	0.00	0.00	
8,634.06	90.00	179.68	7,840.00	1,970.37	489.81	12.00	12.00	23.96	179.68	INTERCHANGE A S2
23,887.49	90.00	179.68	7,840.00	-13,282.82	575.34	0.00	0.00	0.00	-115.70	INTERCHANGE A S2

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	2.00	11.26	899.98	1.71	0.34	-1.70	2.00	2.00	0.00
1,000.00	4.00	11.26	999.84	6.84	1.36	-6.78	2.00	2.00	0.00
1,100.00	6.00	11.26	1,099.45	15.39	3.06	-15.24	2.00	2.00	0.00
1,200.00	8.00	11.26	1,198.70	27.34	5.44	-27.08	2.00	2.00	0.00
1,300.00	10.00	11.26	1,297.47	42.69	8.49	-42.28	2.00	2.00	0.00
1,400.00	12.00	11.26	1,395.62	61.40	12.22	-60.81	2.00	2.00	0.00
1,500.00	14.00	11.26	1,493.06	83.46	16.61	-82.66	2.00	2.00	0.00
1,600.00	16.00	11.26	1,589.64	108.84	21.66	-107.80	2.00	2.00	0.00
1,700.00	18.00	11.26	1,685.27	137.52	27.37	-136.20	2.00	2.00	0.00
1,800.00	20.00	11.26	1,779.82	169.45	33.72	-167.83	2.00	2.00	0.00
1,900.00	22.00	11.26	1,873.17	204.59	40.72	-202.64	2.00	2.00	0.00
2,000.00	24.00	11.26	1,965.21	242.91	48.34	-240.59	2.00	2.00	0.00
2,074.09	25.48	11.26	2,032.50	273.32	54.39	-270.71	2.00	2.00	0.00
Start 4505.82 hold at 2074.09 MD									
2,100.00	25.48	11.26	2,055.89	284.25	56.57	-281.54	0.00	0.00	0.00
2,200.00	25.48	11.26	2,146.16	326.45	64.97	-323.33	0.00	0.00	0.00
2,300.00	25.48	11.26	2,236.44	368.64	73.36	-365.12	0.00	0.00	0.00
2,400.00	25.48	11.26	2,326.71	410.84	81.76	-406.92	0.00	0.00	0.00
2,500.00	25.48	11.26	2,416.98	453.03	90.16	-448.71	0.00	0.00	0.00
2,600.00	25.48	11.26	2,507.25	495.23	98.56	-490.50	0.00	0.00	0.00
2,700.00	25.48	11.26	2,597.52	537.42	106.95	-532.29	0.00	0.00	0.00
2,800.00	25.48	11.26	2,687.80	579.62	115.35	-574.08	0.00	0.00	0.00
2,900.00	25.48	11.26	2,778.07	621.81	123.75	-615.88	0.00	0.00	0.00
3,000.00	25.48	11.26	2,868.34	664.01	132.14	-657.67	0.00	0.00	0.00
3,100.00	25.48	11.26	2,958.61	706.20	140.54	-699.46	0.00	0.00	0.00
3,200.00	25.48	11.26	3,048.89	748.40	148.94	-741.25	0.00	0.00	0.00
3,300.00	25.48	11.26	3,139.16	790.59	157.34	-783.04	0.00	0.00	0.00
3,400.00	25.48	11.26	3,229.43	832.79	165.73	-824.84	0.00	0.00	0.00
3,500.00	25.48	11.26	3,319.70	874.98	174.13	-866.63	0.00	0.00	0.00
3,600.00	25.48	11.26	3,409.97	917.18	182.53	-908.42	0.00	0.00	0.00
3,700.00	25.48	11.26	3,500.25	959.37	190.92	-950.21	0.00	0.00	0.00
3,800.00	25.48	11.26	3,590.52	1,001.57	199.32	-992.01	0.00	0.00	0.00
3,900.00	25.48	11.26	3,680.79	1,043.76	207.72	-1,033.80	0.00	0.00	0.00
4,000.00	25.48	11.26	3,771.06	1,085.96	216.12	-1,075.59	0.00	0.00	0.00
4,100.00	25.48	11.26	3,861.34	1,128.15	224.51	-1,117.38	0.00	0.00	0.00
4,200.00	25.48	11.26	3,951.61	1,170.35	232.91	-1,159.17	0.00	0.00	0.00
4,300.00	25.48	11.26	4,041.88	1,212.54	241.31	-1,200.97	0.00	0.00	0.00
4,400.00	25.48	11.26	4,132.15	1,254.74	249.71	-1,242.76	0.00	0.00	0.00
4,500.00	25.48	11.26	4,222.42	1,296.93	258.10	-1,284.55	0.00	0.00	0.00
4,600.00	25.48	11.26	4,312.70	1,339.13	266.50	-1,326.34	0.00	0.00	0.00
4,700.00	25.48	11.26	4,402.97	1,381.32	274.90	-1,368.13	0.00	0.00	0.00
4,800.00	25.48	11.26	4,493.24	1,423.52	283.29	-1,409.93	0.00	0.00	0.00
4,900.00	25.48	11.26	4,583.51	1,465.71	291.69	-1,451.72	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)	
5,000.00	25.48	11.26	4,673.79	1,507.91	300.09	-1,493.51	0.00	0.00	0.00	
5,100.00	25.48	11.26	4,764.06	1,550.10	308.49	-1,535.30	0.00	0.00	0.00	
5,200.00	25.48	11.26	4,854.33	1,592.30	316.88	-1,577.09	0.00	0.00	0.00	
5,267.21	25.48	11.26	4,915.00	1,620.66	322.53	-1,605.18	0.00	0.00	0.00	
<b>PARKMAN</b>										
5,300.00	25.48	11.26	4,944.60	1,634.49	325.28	-1,618.89	0.00	0.00	0.00	
5,394.60	25.48	11.26	5,030.00	1,674.41	333.22	-1,658.42	0.00	0.00	0.00	
<b>SUSSEX</b>										
5,400.00	25.48	11.26	5,034.87	1,676.69	333.68	-1,660.68	0.00	0.00	0.00	
5,500.00	25.48	11.26	5,125.15	1,718.88	342.07	-1,702.47	0.00	0.00	0.00	
5,600.00	25.48	11.26	5,215.42	1,761.08	350.47	-1,744.26	0.00	0.00	0.00	
5,700.00	25.48	11.26	5,305.69	1,803.27	358.87	-1,786.05	0.00	0.00	0.00	
5,800.00	25.48	11.26	5,395.96	1,845.47	367.27	-1,827.85	0.00	0.00	0.00	
5,900.00	25.48	11.26	5,486.24	1,887.66	375.66	-1,869.64	0.00	0.00	0.00	
6,000.00	25.48	11.26	5,576.51	1,929.86	384.06	-1,911.43	0.00	0.00	0.00	
6,100.00	25.48	11.26	5,666.78	1,972.05	392.46	-1,953.22	0.00	0.00	0.00	
6,200.00	25.48	11.26	5,757.05	2,014.25	400.86	-1,995.01	0.00	0.00	0.00	
6,300.00	25.48	11.26	5,847.32	2,056.44	409.25	-2,036.81	0.00	0.00	0.00	
6,400.00	25.48	11.26	5,937.60	2,098.64	417.65	-2,078.60	0.00	0.00	0.00	
6,500.00	25.48	11.26	6,027.87	2,140.83	426.05	-2,120.39	0.00	0.00	0.00	
6,579.91	25.48	11.26	6,100.00	2,174.55	432.76	-2,153.79	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
6,600.00	25.08	11.26	6,118.17	2,182.97	434.43	-2,162.12	2.00	-2.00	0.00	
6,700.00	23.08	11.26	6,209.46	2,222.98	442.39	-2,201.75	2.00	-2.00	0.00	
6,800.00	21.08	11.26	6,302.13	2,259.85	449.73	-2,238.27	2.00	-2.00	0.00	
6,900.00	19.08	11.26	6,396.04	2,293.52	456.43	-2,271.62	2.00	-2.00	0.00	
7,000.00	17.08	11.26	6,491.10	2,323.95	462.49	-2,301.76	2.00	-2.00	0.00	
7,100.00	15.08	11.26	6,587.18	2,351.12	467.89	-2,328.67	2.00	-2.00	0.00	
7,200.00	13.08	11.26	6,684.17	2,374.97	472.64	-2,352.30	2.00	-2.00	0.00	
7,300.00	11.08	11.26	6,781.95	2,395.50	476.73	-2,372.62	2.00	-2.00	0.00	
7,400.00	9.08	11.26	6,880.41	2,412.66	480.14	-2,389.62	2.00	-2.00	0.00	
7,500.00	7.08	11.26	6,979.41	2,426.45	482.89	-2,403.28	2.00	-2.00	0.00	
7,600.00	5.08	11.26	7,078.84	2,436.83	484.95	-2,413.57	2.00	-2.00	0.00	
7,700.00	3.08	11.26	7,178.58	2,443.81	486.34	-2,420.48	2.00	-2.00	0.00	
7,800.00	1.08	11.26	7,278.51	2,447.37	487.05	-2,424.00	2.00	-2.00	0.00	
7,853.99	0.00	0.00	7,332.50	2,447.87	487.15	-2,424.50	2.00	-2.00	0.00	
<b>Start 30.00 hold at 7853.99 MD</b>										
7,883.99	0.00	0.00	7,362.50	2,447.87	487.15	-2,424.50	0.00	0.00	0.00	
<b>Start DLS 12.00 TFO 179.68</b>										
7,900.00	1.92	179.68	7,378.50	2,447.60	487.15	-2,424.23	12.00	12.00	0.00	
7,925.00	4.92	179.68	7,403.46	2,446.11	487.16	-2,422.74	12.00	12.00	0.00	
7,950.00	7.92	179.68	7,428.30	2,443.32	487.18	-2,419.94	12.00	12.00	0.00	
7,975.00	10.92	179.68	7,452.96	2,439.22	487.20	-2,415.86	12.00	12.00	0.00	
8,000.00	13.92	179.68	7,477.37	2,433.85	487.23	-2,410.48	12.00	12.00	0.00	
8,025.00	16.92	179.68	7,501.47	2,427.20	487.27	-2,403.84	12.00	12.00	0.00	
8,050.00	19.92	179.68	7,525.18	2,419.30	487.31	-2,395.95	12.00	12.00	0.00	
8,075.00	22.92	179.68	7,548.45	2,410.17	487.36	-2,386.83	12.00	12.00	0.00	
8,100.00	25.92	179.68	7,571.22	2,399.84	487.42	-2,376.50	12.00	12.00	0.00	
8,125.00	28.92	179.68	7,593.40	2,388.33	487.48	-2,365.00	12.00	12.00	0.00	
8,150.00	31.92	179.68	7,614.96	2,375.67	487.55	-2,352.35	12.00	12.00	0.00	
8,160.73	33.21	179.68	7,624.00	2,369.90	487.58	-2,346.58	12.00	12.00	0.00	
<b>SHANNON</b>										
8,175.00	34.92	179.68	7,635.82	2,361.91	487.63	-2,338.59	12.00	12.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)	
8,200.00	37.92	179.68	7,655.94	2,347.07	487.71	-2,323.76	12.00	12.00	0.00	
8,210.30	39.15	179.68	7,664.00	2,340.65	487.75	-2,317.35	12.00	12.00	0.00	
<b>NIOBRARA</b>										
8,225.00	40.92	179.68	7,675.25	2,331.19	487.80	-2,307.90	12.00	12.00	0.00	
8,250.00	43.92	179.68	7,693.71	2,314.33	487.89	-2,291.05	12.00	12.00	0.00	
8,275.00	46.92	179.68	7,711.25	2,296.53	487.99	-2,273.26	12.00	12.00	0.00	
8,300.00	49.92	179.68	7,727.84	2,277.83	488.10	-2,254.58	12.00	12.00	0.00	
8,325.00	52.92	179.68	7,743.43	2,258.29	488.21	-2,235.05	12.00	12.00	0.00	
8,350.00	55.92	179.68	7,757.98	2,237.96	488.32	-2,214.73	12.00	12.00	0.00	
8,375.00	58.92	179.68	7,771.44	2,216.90	488.44	-2,193.69	12.00	12.00	0.00	
8,400.00	61.92	179.68	7,783.78	2,195.16	488.56	-2,171.96	12.00	12.00	0.00	
8,425.00	64.92	179.68	7,794.97	2,172.81	488.68	-2,149.63	12.00	12.00	0.00	
8,450.00	67.92	179.68	7,804.97	2,149.90	488.81	-2,126.73	12.00	12.00	0.00	
8,475.00	70.92	179.68	7,813.76	2,126.50	488.94	-2,103.35	12.00	12.00	0.00	
8,500.00	73.92	179.68	7,821.31	2,102.67	489.07	-2,079.54	12.00	12.00	0.00	
8,525.00	76.92	179.68	7,827.60	2,078.48	489.21	-2,055.36	12.00	12.00	0.00	
8,536.15	78.25	179.68	7,830.00	2,067.59	489.27	-2,044.48	12.00	12.00	0.00	
<b>NIO B TARGET</b>										
8,550.00	79.92	179.68	7,832.62	2,053.99	489.34	-2,030.89	12.00	12.00	0.00	
8,575.00	82.91	179.68	7,836.35	2,029.27	489.48	-2,006.19	12.00	12.00	0.00	
8,600.00	85.91	179.68	7,838.79	2,004.40	489.62	-1,981.33	12.00	12.00	0.00	
8,625.00	88.91	179.68	7,839.91	1,979.42	489.76	-1,956.38	12.00	12.00	0.00	
8,634.06	90.00	179.68	7,840.00	1,970.37	489.81	-1,947.33	12.00	12.00	0.00	
<b>Start DLS 0.00 TFO -115.70</b>										
8,700.00	90.00	179.68	7,840.00	1,904.43	490.17	-1,881.43	0.00	0.00	0.00	
8,800.00	90.00	179.68	7,840.00	1,804.43	490.73	-1,781.50	0.00	0.00	0.00	
8,900.00	90.00	179.68	7,839.99	1,704.43	491.29	-1,681.57	0.00	0.00	0.00	
9,000.00	90.00	179.68	7,839.99	1,604.43	491.84	-1,581.64	0.00	0.00	0.00	
9,100.00	90.00	179.68	7,839.99	1,504.43	492.40	-1,481.71	0.00	0.00	0.00	
9,200.00	90.00	179.68	7,839.99	1,404.43	492.96	-1,381.79	0.00	0.00	0.00	
9,300.00	90.00	179.68	7,839.99	1,304.44	493.51	-1,281.86	0.00	0.00	0.00	
9,400.00	90.00	179.68	7,839.99	1,204.44	494.07	-1,181.93	0.00	0.00	0.00	
9,500.00	90.00	179.68	7,839.98	1,104.44	494.63	-1,082.00	0.00	0.00	0.00	
9,600.00	90.00	179.68	7,839.98	1,004.44	495.19	-982.07	0.00	0.00	0.00	
9,700.00	90.00	179.68	7,839.98	904.44	495.74	-882.14	0.00	0.00	0.00	
9,800.00	90.00	179.68	7,839.98	804.44	496.30	-782.21	0.00	0.00	0.00	
9,900.00	90.00	179.68	7,839.98	704.44	496.86	-682.28	0.00	0.00	0.00	
10,000.00	90.00	179.68	7,839.97	604.45	497.41	-582.35	0.00	0.00	0.00	
10,100.00	90.00	179.68	7,839.97	504.45	497.97	-482.43	0.00	0.00	0.00	
10,200.00	90.00	179.68	7,839.97	404.45	498.53	-382.50	0.00	0.00	0.00	
10,300.00	90.00	179.68	7,839.97	304.45	499.09	-282.57	0.00	0.00	0.00	
10,400.00	90.00	179.68	7,839.97	204.45	499.64	-182.64	0.00	0.00	0.00	
10,500.00	90.00	179.68	7,839.97	104.45	500.20	-82.71	0.00	0.00	0.00	
10,600.00	90.00	179.68	7,839.97	4.46	500.76	17.22	0.00	0.00	0.00	
10,700.00	90.00	179.68	7,839.96	-95.54	501.32	117.15	0.00	0.00	0.00	
10,800.00	90.00	179.68	7,839.96	-195.54	501.87	217.08	0.00	0.00	0.00	
10,900.00	90.00	179.68	7,839.96	-295.54	502.43	317.01	0.00	0.00	0.00	
11,000.00	90.00	179.68	7,839.96	-395.54	502.99	416.93	0.00	0.00	0.00	
11,100.00	90.00	179.68	7,839.96	-495.54	503.55	516.86	0.00	0.00	0.00	
11,200.00	90.00	179.68	7,839.96	-595.53	504.11	616.79	0.00	0.00	0.00	
11,300.00	90.00	179.68	7,839.96	-695.53	504.66	716.72	0.00	0.00	0.00	
11,400.00	90.00	179.68	7,839.95	-795.53	505.22	816.65	0.00	0.00	0.00	
11,500.00	90.00	179.68	7,839.95	-895.53	505.78	916.58	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)	
11,600.00	90.00	179.68	7,839.95	-995.53	506.34	1,016.51	0.00	0.00	0.00	
11,700.00	90.00	179.68	7,839.95	-1,095.53	506.90	1,116.44	0.00	0.00	0.00	
11,800.00	90.00	179.68	7,839.95	-1,195.53	507.45	1,216.37	0.00	0.00	0.00	
11,900.00	90.00	179.68	7,839.95	-1,295.52	508.01	1,316.29	0.00	0.00	0.00	
12,000.00	90.00	179.68	7,839.95	-1,395.52	508.57	1,416.22	0.00	0.00	0.00	
12,100.00	90.00	179.68	7,839.95	-1,495.52	509.13	1,516.15	0.00	0.00	0.00	
12,200.00	90.00	179.68	7,839.94	-1,595.52	509.69	1,616.08	0.00	0.00	0.00	
12,300.00	90.00	179.68	7,839.94	-1,695.52	510.25	1,716.01	0.00	0.00	0.00	
12,400.00	90.00	179.68	7,839.94	-1,795.52	510.80	1,815.94	0.00	0.00	0.00	
12,500.00	90.00	179.68	7,839.94	-1,895.51	511.36	1,915.87	0.00	0.00	0.00	
12,600.00	90.00	179.68	7,839.94	-1,995.51	511.92	2,015.80	0.00	0.00	0.00	
12,700.00	90.00	179.68	7,839.94	-2,095.51	512.48	2,115.73	0.00	0.00	0.00	
12,800.00	90.00	179.68	7,839.94	-2,195.51	513.04	2,215.65	0.00	0.00	0.00	
12,900.00	90.00	179.68	7,839.94	-2,295.51	513.60	2,315.58	0.00	0.00	0.00	
13,000.00	90.00	179.68	7,839.94	-2,395.51	514.16	2,415.51	0.00	0.00	0.00	
13,100.00	90.00	179.68	7,839.94	-2,495.51	514.72	2,515.44	0.00	0.00	0.00	
13,200.00	90.00	179.68	7,839.93	-2,595.50	515.28	2,615.37	0.00	0.00	0.00	
13,300.00	90.00	179.68	7,839.93	-2,695.50	515.83	2,715.30	0.00	0.00	0.00	
13,400.00	90.00	179.68	7,839.93	-2,795.50	516.39	2,815.23	0.00	0.00	0.00	
13,500.00	90.00	179.68	7,839.93	-2,895.50	516.95	2,915.16	0.00	0.00	0.00	
13,600.00	90.00	179.68	7,839.93	-2,995.50	517.51	3,015.09	0.00	0.00	0.00	
13,700.00	90.00	179.68	7,839.93	-3,095.50	518.07	3,115.02	0.00	0.00	0.00	
13,800.00	90.00	179.68	7,839.93	-3,195.49	518.63	3,214.94	0.00	0.00	0.00	
13,900.00	90.00	179.68	7,839.93	-3,295.49	519.19	3,314.87	0.00	0.00	0.00	
14,000.00	90.00	179.68	7,839.93	-3,395.49	519.75	3,414.80	0.00	0.00	0.00	
14,100.00	90.00	179.68	7,839.93	-3,495.49	520.31	3,514.73	0.00	0.00	0.00	
14,200.00	90.00	179.68	7,839.93	-3,595.49	520.87	3,614.66	0.00	0.00	0.00	
14,300.00	90.00	179.68	7,839.93	-3,695.49	521.43	3,714.59	0.00	0.00	0.00	
14,400.00	90.00	179.68	7,839.93	-3,795.49	521.99	3,814.52	0.00	0.00	0.00	
14,500.00	90.00	179.68	7,839.93	-3,895.48	522.55	3,914.45	0.00	0.00	0.00	
14,600.00	90.00	179.68	7,839.93	-3,995.48	523.11	4,014.38	0.00	0.00	0.00	
14,700.00	90.00	179.68	7,839.93	-4,095.48	523.67	4,114.31	0.00	0.00	0.00	
14,800.00	90.00	179.68	7,839.92	-4,195.48	524.23	4,214.23	0.00	0.00	0.00	
14,900.00	90.00	179.68	7,839.92	-4,295.48	524.79	4,314.16	0.00	0.00	0.00	
15,000.00	90.00	179.68	7,839.92	-4,395.48	525.35	4,414.09	0.00	0.00	0.00	
15,100.00	90.00	179.68	7,839.92	-4,495.47	525.91	4,514.02	0.00	0.00	0.00	
15,200.00	90.00	179.68	7,839.92	-4,595.47	526.47	4,613.95	0.00	0.00	0.00	
15,300.00	90.00	179.68	7,839.92	-4,695.47	527.03	4,713.88	0.00	0.00	0.00	
15,400.00	90.00	179.68	7,839.92	-4,795.47	527.59	4,813.81	0.00	0.00	0.00	
15,500.00	90.00	179.68	7,839.92	-4,895.47	528.15	4,913.74	0.00	0.00	0.00	
15,600.00	90.00	179.68	7,839.92	-4,995.47	528.71	5,013.67	0.00	0.00	0.00	
15,700.00	90.00	179.68	7,839.92	-5,095.46	529.27	5,113.60	0.00	0.00	0.00	
15,800.00	90.00	179.68	7,839.92	-5,195.46	529.83	5,213.52	0.00	0.00	0.00	
15,900.00	90.00	179.68	7,839.92	-5,295.46	530.39	5,313.45	0.00	0.00	0.00	
16,000.00	90.00	179.68	7,839.92	-5,395.46	530.95	5,413.38	0.00	0.00	0.00	
16,100.00	90.00	179.68	7,839.92	-5,495.46	531.51	5,513.31	0.00	0.00	0.00	
16,200.00	90.00	179.68	7,839.92	-5,595.46	532.07	5,613.24	0.00	0.00	0.00	
16,300.00	90.00	179.68	7,839.92	-5,695.46	532.63	5,713.17	0.00	0.00	0.00	
16,400.00	90.00	179.68	7,839.92	-5,795.45	533.19	5,813.10	0.00	0.00	0.00	
16,500.00	90.00	179.68	7,839.92	-5,895.45	533.75	5,913.03	0.00	0.00	0.00	
16,600.00	90.00	179.68	7,839.92	-5,995.45	534.32	6,012.96	0.00	0.00	0.00	
16,700.00	90.00	179.68	7,839.92	-6,095.45	534.88	6,112.89	0.00	0.00	0.00	
16,800.00	90.00	179.68	7,839.92	-6,195.45	535.44	6,212.81	0.00	0.00	0.00	
16,900.00	90.00	179.68	7,839.92	-6,295.45	536.00	6,312.74	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)	
17,000.00	90.00	179.68	7,839.92	-6,395.44	536.56	6,412.67	0.00	0.00	0.00	
17,100.00	90.00	179.68	7,839.92	-6,495.44	537.12	6,512.60	0.00	0.00	0.00	
17,200.00	90.00	179.68	7,839.92	-6,595.44	537.68	6,612.53	0.00	0.00	0.00	
17,300.00	90.00	179.68	7,839.92	-6,695.44	538.24	6,712.46	0.00	0.00	0.00	
17,400.00	90.00	179.68	7,839.92	-6,795.44	538.81	6,812.39	0.00	0.00	0.00	
17,500.00	90.00	179.68	7,839.92	-6,895.44	539.37	6,912.32	0.00	0.00	0.00	
17,600.00	90.00	179.68	7,839.92	-6,995.43	539.93	7,012.25	0.00	0.00	0.00	
17,700.00	90.00	179.68	7,839.92	-7,095.43	540.49	7,112.18	0.00	0.00	0.00	
17,800.00	90.00	179.68	7,839.93	-7,195.43	541.05	7,212.10	0.00	0.00	0.00	
17,900.00	90.00	179.68	7,839.93	-7,295.43	541.61	7,312.03	0.00	0.00	0.00	
18,000.00	90.00	179.68	7,839.93	-7,395.43	542.17	7,411.96	0.00	0.00	0.00	
18,100.00	90.00	179.68	7,839.93	-7,495.43	542.74	7,511.89	0.00	0.00	0.00	
18,200.00	90.00	179.68	7,839.93	-7,595.43	543.30	7,611.82	0.00	0.00	0.00	
18,300.00	90.00	179.68	7,839.93	-7,695.42	543.86	7,711.75	0.00	0.00	0.00	
18,400.00	90.00	179.68	7,839.93	-7,795.42	544.42	7,811.68	0.00	0.00	0.00	
18,500.00	90.00	179.68	7,839.93	-7,895.42	544.98	7,911.61	0.00	0.00	0.00	
18,600.00	90.00	179.68	7,839.93	-7,995.42	545.55	8,011.54	0.00	0.00	0.00	
18,700.00	90.00	179.68	7,839.93	-8,095.42	546.11	8,111.47	0.00	0.00	0.00	
18,800.00	90.00	179.68	7,839.93	-8,195.42	546.67	8,211.40	0.00	0.00	0.00	
18,900.00	90.00	179.68	7,839.93	-8,295.41	547.23	8,311.32	0.00	0.00	0.00	
19,000.00	90.00	179.68	7,839.93	-8,395.41	547.79	8,411.25	0.00	0.00	0.00	
19,100.00	90.00	179.68	7,839.93	-8,495.41	548.36	8,511.18	0.00	0.00	0.00	
19,200.00	90.00	179.68	7,839.93	-8,595.41	548.92	8,611.11	0.00	0.00	0.00	
19,300.00	90.00	179.68	7,839.93	-8,695.41	549.48	8,711.04	0.00	0.00	0.00	
19,400.00	90.00	179.68	7,839.94	-8,795.41	550.04	8,810.97	0.00	0.00	0.00	
19,500.00	90.00	179.68	7,839.94	-8,895.40	550.61	8,910.90	0.00	0.00	0.00	
19,600.00	90.00	179.68	7,839.94	-8,995.40	551.17	9,010.83	0.00	0.00	0.00	
19,700.00	90.00	179.68	7,839.94	-9,095.40	551.73	9,110.76	0.00	0.00	0.00	
19,800.00	90.00	179.68	7,839.94	-9,195.40	552.30	9,210.69	0.00	0.00	0.00	
19,900.00	90.00	179.68	7,839.94	-9,295.40	552.86	9,310.62	0.00	0.00	0.00	
20,000.00	90.00	179.68	7,839.94	-9,395.40	553.42	9,410.54	0.00	0.00	0.00	
20,100.00	90.00	179.68	7,839.94	-9,495.40	553.98	9,510.47	0.00	0.00	0.00	
20,200.00	90.00	179.68	7,839.94	-9,595.39	554.55	9,610.40	0.00	0.00	0.00	
20,300.00	90.00	179.68	7,839.94	-9,695.39	555.11	9,710.33	0.00	0.00	0.00	
20,400.00	90.00	179.68	7,839.94	-9,795.39	555.67	9,810.26	0.00	0.00	0.00	
20,500.00	90.00	179.68	7,839.95	-9,895.39	556.24	9,910.19	0.00	0.00	0.00	
20,600.00	90.00	179.68	7,839.95	-9,995.39	556.80	10,010.12	0.00	0.00	0.00	
20,700.00	90.00	179.68	7,839.95	-10,095.39	557.36	10,110.05	0.00	0.00	0.00	
20,800.00	90.00	179.68	7,839.95	-10,195.38	557.93	10,209.98	0.00	0.00	0.00	
20,900.00	90.00	179.68	7,839.95	-10,295.38	558.49	10,309.91	0.00	0.00	0.00	
21,000.00	90.00	179.68	7,839.95	-10,395.38	559.05	10,409.84	0.00	0.00	0.00	
23,887.49	90.00	179.68	7,840.00	-13,282.82	575.34	13,295.28	0.00	0.00	0.00	
TD at 23887.49										

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-5N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5261.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5261.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
INTERCHANGE A S22-30-5N - plan hits target center - Point	0.00	0.00	7,840.00	1,970.37	489.81	1,238,237.84	3,142,292.18	39° 59' 10.424 N	104° 59' 31.891 W
INTERCHANGE A S22-30-5N - plan hits target center - Point	0.00	0.00	7,840.00	-13,282.82	575.34	1,222,985.39	3,142,464.77	39° 56' 39.682 N	104° 59' 30.797 W

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
5,267.21	4,915.00	PARKMAN				
5,394.60	5,030.00	SUSSEX				
8,160.73	7,624.00	SHANNON				
8,210.30	7,664.00	NIOBRARA				
8,536.15	7,830.00	NIO B TARGET				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
800.00	800.00	0.00	0.00	Start Build 2.00	
2,074.09	2,032.50	273.32	54.39	Start 4505.82 hold at 2074.09 MD	
6,579.91	6,100.00	2,174.55	432.76	Start Drop -2.00	
7,853.99	7,332.50	2,447.87	487.15	Start 30.00 hold at 7853.99 MD	
7,883.99	7,362.50	2,447.87	487.15	Start DLS 12.00 TFO 179.68	
8,634.06	7,840.00	1,970.37	489.81	Start DLS 0.00 TFO -115.70	
23,887.49	7,840.00	-13,282.82	575.34	TD at 23887.49	