

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-68W-08 MAE J 14-8HZ PAD  
MAE J 8-7HZ**

## **Plan A**

### **Plan: Permit Rev-1**

SHL Lat/Long: 40.060464/-105.028601  
Survey Program: MWD+IFR

## **Standard Planning Report**

**02 November, 2018**

Project: WELD-NAD83-UTMFT13N  
 Site: 1N-68W-08 MAE J 14-8HZ PAD  
 Well: MAE J 8-7HZ  
 Wellbore: Plan A  
 Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Name	Size
1500.00	1523.46	9 5/8" Csg	9-5/8
7626.00	8652.61	Top of Production	5-1/2

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1908.00	24.87	122.20	1856.42	-188.76	299.74	1.50	122.20	-183.92	
4	7372.59	24.87	122.20	6814.25	-1413.41	2244.46	0.00	0.00	-1377.19	
5	8652.61	89.77	0.92	7626.00	-722.37	2575.70	8.00	-118.95	-680.92	
6	13899.28	89.77	0.92	7647.00	4523.59	2659.55	0.00	0.00	4565.71	MAE J 8-7HZ_BHL

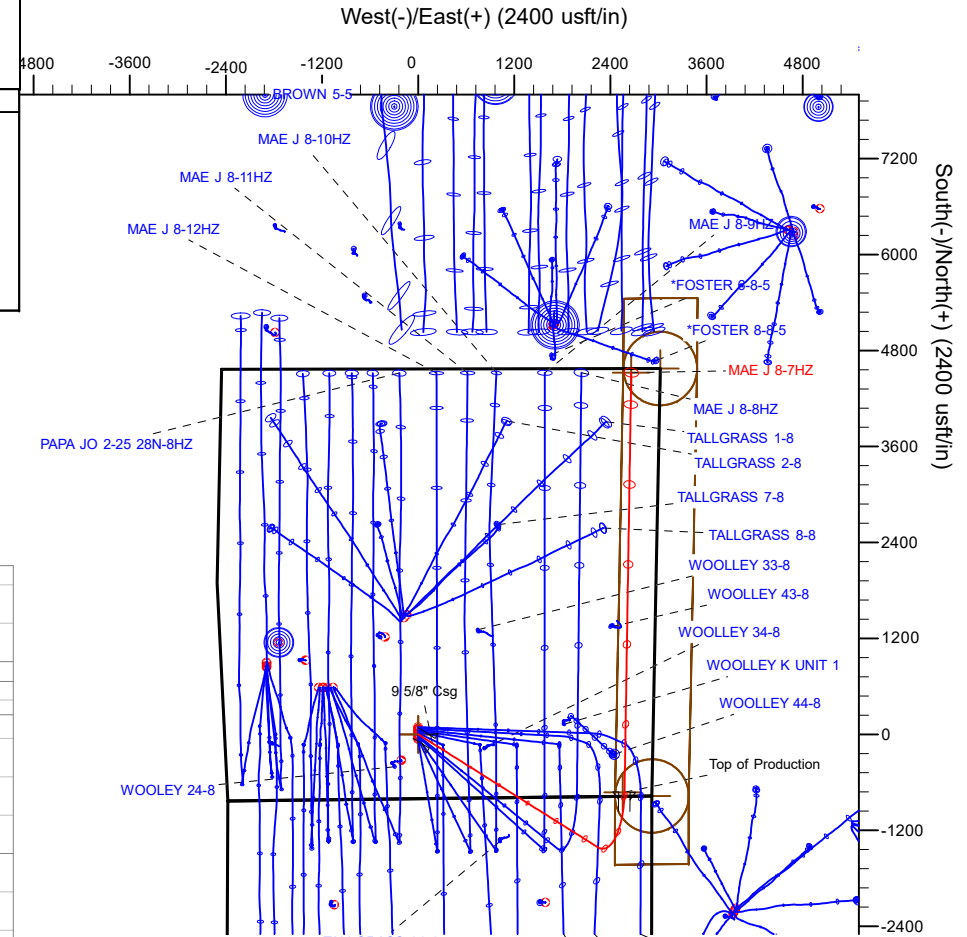
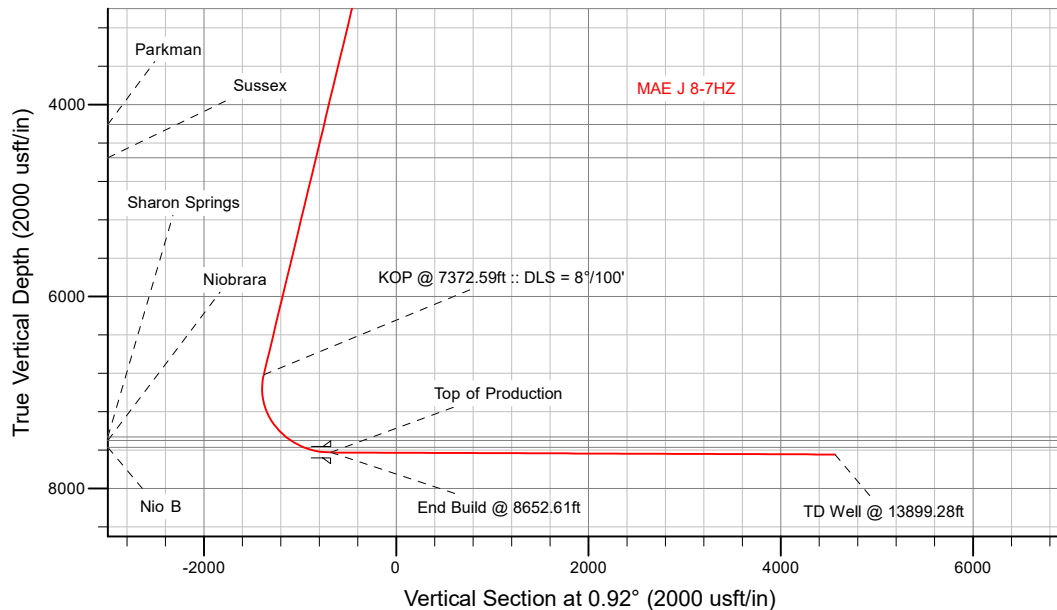
## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-7HZ_SHL	0.00	0.00	0.00	40.060464	-105.028601
MAE J 8-7HZ_BHL	7647.00	4523.59	2659.55	40.072886	-105.019094

**SHL**  
806' FSL  
2415' FWL

**HEEL**  
50' FSL  
342' FEL

**BHL**  
50' FNL  
360' FEL



## WELL DETAILS: MAE J 8-7HZ

GL = 5083'

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-7HZ/Plan A)

Date: 11/6/2018

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well MAE J 8-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-08 MAE J 14-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MAE J 8-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<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)		

<b>Site</b>	1N-68W-08 MAE J 14-8HZ PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,548,842.20 usft	<b>Latitude:</b>	40.060711
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,632,414.30 usft	<b>Longitude:</b>	-105.028600
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.02 °

<b>Well</b>	MAE J 8-7HZ					
<b>Well Position</b>	<b>+N/-S</b>	-89.94 usft	<b>Northing:</b>	14,548,752.26 usft	<b>Latitude:</b>	40.060464
	<b>+E/-W</b>	-0.28 usft	<b>Easting:</b>	1,632,414.00 usft	<b>Longitude:</b>	-105.028601
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,083.00 usft

<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>
	IGRF2015	10/31/2018	8.18	66.51	52,029.16029750

<b>Design</b>	Permit Rev-1			
<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	0.92

<b>Plan Survey Tool Program</b>	<b>Date</b>	11/2/2018			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	13,899.28	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

<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 (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,908.00	24.87	122.20	1,856.42	-188.76	299.74	1.50	1.50	0.00	122.20	
7,372.59	24.87	122.20	6,814.25	-1,413.41	2,244.46	0.00	0.00	0.00	0.00	
8,652.61	89.77	0.92	7,626.00	-722.37	2,575.70	8.00	5.07	-9.48	-118.95	
13,899.28	89.77	0.92	7,647.00	4,523.59	2,659.55	0.00	0.00	0.00	0.00	MAE J 8-7HZ_BHL

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well MAE J 8-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-08 MAE J 14-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MAE J 8-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 250.00ft</b>									
300.00	0.75	122.20	300.00	-0.17	0.28	-0.17	1.50	1.50	0.00
400.00	2.25	122.20	399.96	-1.57	2.49	-1.53	1.50	1.50	0.00
500.00	3.75	122.20	499.82	-4.36	6.92	-4.25	1.50	1.50	0.00
600.00	5.25	122.20	599.51	-8.54	13.56	-8.32	1.50	1.50	0.00
700.00	6.75	122.20	698.96	-14.11	22.40	-13.75	1.50	1.50	0.00
800.00	8.25	122.20	798.10	-21.06	33.45	-20.52	1.50	1.50	0.00
900.00	9.75	122.20	896.87	-29.40	46.69	-28.65	1.50	1.50	0.00
1,000.00	11.25	122.20	995.19	-39.11	62.11	-38.11	1.50	1.50	0.00
1,078.48	12.43	122.20	1,072.00	-47.69	75.73	-46.47	1.50	1.50	0.00
<b>Fox Hills</b>									
1,100.00	12.75	122.20	1,093.00	-50.19	79.70	-48.90	1.50	1.50	0.00
1,200.00	14.25	122.20	1,190.24	-62.63	99.45	-61.02	1.50	1.50	0.00
1,300.00	15.75	122.20	1,286.83	-76.42	121.35	-74.46	1.50	1.50	0.00
1,400.00	17.25	122.20	1,382.71	-91.55	145.39	-89.21	1.50	1.50	0.00
1,500.00	18.75	122.20	1,477.81	-108.02	171.53	-105.25	1.50	1.50	0.00
1,523.46	19.10	122.20	1,500.00	-112.08	177.97	-109.20	1.50	1.50	0.00
<b>9 5/8" Csg</b>									
1,600.00	20.25	122.20	1,572.07	-125.81	199.78	-122.58	1.50	1.50	0.00
1,700.00	21.75	122.20	1,665.43	-144.90	230.10	-141.19	1.50	1.50	0.00
1,800.00	23.25	122.20	1,757.81	-165.30	262.48	-161.06	1.50	1.50	0.00
1,900.00	24.75	122.20	1,849.16	-186.97	296.90	-182.18	1.50	1.50	0.00
1,908.00	24.87	122.20	1,856.42	-188.76	299.74	-183.92	1.50	1.50	0.00
<b>Hold Tangent @ 1908.00ft</b>									
2,000.00	24.87	122.20	1,939.89	-209.38	332.48	-204.01	0.00	0.00	0.00
2,100.00	24.87	122.20	2,030.62	-231.79	368.07	-225.85	0.00	0.00	0.00
2,200.00	24.87	122.20	2,121.35	-254.20	403.66	-247.68	0.00	0.00	0.00
2,300.00	24.87	122.20	2,212.07	-276.61	439.25	-269.52	0.00	0.00	0.00
2,400.00	24.87	122.20	2,302.80	-299.02	474.83	-291.36	0.00	0.00	0.00
2,500.00	24.87	122.20	2,393.52	-321.43	510.42	-313.19	0.00	0.00	0.00
2,600.00	24.87	122.20	2,484.25	-343.84	546.01	-335.03	0.00	0.00	0.00
2,700.00	24.87	122.20	2,574.98	-366.25	581.60	-356.86	0.00	0.00	0.00
2,800.00	24.87	122.20	2,665.70	-388.66	617.18	-378.70	0.00	0.00	0.00
2,900.00	24.87	122.20	2,756.43	-411.07	652.77	-400.54	0.00	0.00	0.00
3,000.00	24.87	122.20	2,847.16	-433.48	688.36	-422.37	0.00	0.00	0.00
3,100.00	24.87	122.20	2,937.88	-455.89	723.95	-444.21	0.00	0.00	0.00
3,200.00	24.87	122.20	3,028.61	-478.30	759.53	-466.05	0.00	0.00	0.00
3,300.00	24.87	122.20	3,119.34	-500.71	795.12	-487.88	0.00	0.00	0.00
3,400.00	24.87	122.20	3,210.06	-523.13	830.71	-509.72	0.00	0.00	0.00
3,500.00	24.87	122.20	3,300.79	-545.54	866.30	-531.56	0.00	0.00	0.00
3,600.00	24.87	122.20	3,391.52	-567.95	901.88	-553.39	0.00	0.00	0.00
3,700.00	24.87	122.20	3,482.24	-590.36	937.47	-575.23	0.00	0.00	0.00
3,800.00	24.87	122.20	3,572.97	-612.77	973.06	-597.07	0.00	0.00	0.00
3,900.00	24.87	122.20	3,663.69	-635.18	1,008.65	-618.90	0.00	0.00	0.00
4,000.00	24.87	122.20	3,754.42	-657.59	1,044.23	-640.74	0.00	0.00	0.00
4,100.00	24.87	122.20	3,845.15	-680.00	1,079.82	-662.57	0.00	0.00	0.00
4,200.00	24.87	122.20	3,935.87	-702.41	1,115.41	-684.41	0.00	0.00	0.00
4,300.00	24.87	122.20	4,026.60	-724.82	1,151.00	-706.25	0.00	0.00	0.00
4,400.00	24.87	122.20	4,117.33	-747.23	1,186.58	-728.08	0.00	0.00	0.00
4,498.84	24.87	122.20	4,207.00	-769.38	1,221.76	-749.67	0.00	0.00	0.00

## Corporate Planning Report

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<b>Well:</b>	MAE J 8-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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>Parkman</b>									
4,500.00	24.87	122.20	4,208.05	-769.64	1,222.17	-749.92	0.00	0.00	0.00
4,600.00	24.87	122.20	4,298.78	-792.05	1,257.76	-771.76	0.00	0.00	0.00
4,700.00	24.87	122.20	4,389.51	-814.46	1,293.35	-793.59	0.00	0.00	0.00
4,800.00	24.87	122.20	4,480.23	-836.87	1,328.93	-815.43	0.00	0.00	0.00
4,882.41	24.87	122.20	4,555.00	-855.34	1,358.26	-833.42	0.00	0.00	0.00
<b>Sussex</b>									
4,900.00	24.87	122.20	4,570.96	-859.29	1,364.52	-837.27	0.00	0.00	0.00
5,000.00	24.87	122.20	4,661.69	-881.70	1,400.11	-859.10	0.00	0.00	0.00
5,100.00	24.87	122.20	4,752.41	-904.11	1,435.70	-880.94	0.00	0.00	0.00
5,200.00	24.87	122.20	4,843.14	-926.52	1,471.28	-902.77	0.00	0.00	0.00
5,300.00	24.87	122.20	4,933.86	-948.93	1,506.87	-924.61	0.00	0.00	0.00
5,400.00	24.87	122.20	5,024.59	-971.34	1,542.46	-946.45	0.00	0.00	0.00
5,500.00	24.87	122.20	5,115.32	-993.75	1,578.05	-968.28	0.00	0.00	0.00
5,600.00	24.87	122.20	5,206.04	-1,016.16	1,613.64	-990.12	0.00	0.00	0.00
5,700.00	24.87	122.20	5,296.77	-1,038.57	1,649.22	-1,011.96	0.00	0.00	0.00
5,800.00	24.87	122.20	5,387.50	-1,060.98	1,684.81	-1,033.79	0.00	0.00	0.00
5,900.00	24.87	122.20	5,478.22	-1,083.39	1,720.40	-1,055.63	0.00	0.00	0.00
6,000.00	24.87	122.20	5,568.95	-1,105.80	1,755.99	-1,077.47	0.00	0.00	0.00
6,100.00	24.87	122.20	5,659.68	-1,128.21	1,791.57	-1,099.30	0.00	0.00	0.00
6,200.00	24.87	122.20	5,750.40	-1,150.62	1,827.16	-1,121.14	0.00	0.00	0.00
6,300.00	24.87	122.20	5,841.13	-1,173.04	1,862.75	-1,142.97	0.00	0.00	0.00
6,400.00	24.87	122.20	5,931.86	-1,195.45	1,898.34	-1,164.81	0.00	0.00	0.00
6,500.00	24.87	122.20	6,022.58	-1,217.86	1,933.92	-1,186.65	0.00	0.00	0.00
6,600.00	24.87	122.20	6,113.31	-1,240.27	1,969.51	-1,208.48	0.00	0.00	0.00
6,700.00	24.87	122.20	6,204.03	-1,262.68	2,005.10	-1,230.32	0.00	0.00	0.00
6,800.00	24.87	122.20	6,294.76	-1,285.09	2,040.69	-1,252.16	0.00	0.00	0.00
6,900.00	24.87	122.20	6,385.49	-1,307.50	2,076.27	-1,273.99	0.00	0.00	0.00
7,000.00	24.87	122.20	6,476.21	-1,329.91	2,111.86	-1,295.83	0.00	0.00	0.00
7,100.00	24.87	122.20	6,566.94	-1,352.32	2,147.45	-1,317.67	0.00	0.00	0.00
7,200.00	24.87	122.20	6,657.67	-1,374.73	2,183.04	-1,339.50	0.00	0.00	0.00
7,300.00	24.87	122.20	6,748.39	-1,397.14	2,218.62	-1,361.34	0.00	0.00	0.00
7,372.59	24.87	122.20	6,814.25	-1,413.41	2,244.46	-1,377.19	0.00	0.00	0.00
<b>KOP @ 7372.59ft :: DLS = 8°/100'</b>									
7,400.00	23.88	117.46	6,839.22	-1,419.04	2,254.26	-1,382.66	8.00	-3.61	-17.31
7,500.00	21.72	97.47	6,931.54	-1,430.80	2,290.63	-1,393.83	8.00	-2.16	-19.99
7,600.00	22.26	76.05	7,024.41	-1,428.63	2,327.42	-1,391.08	8.00	0.54	-21.42
7,700.00	25.32	57.61	7,116.03	-1,412.59	2,363.92	-1,374.45	8.00	3.06	-18.43
7,800.00	30.13	43.81	7,204.62	-1,382.98	2,399.41	-1,344.27	8.00	4.82	-13.80
7,900.00	36.01	33.82	7,288.44	-1,340.37	2,433.20	-1,301.13	8.00	5.88	-9.99
8,000.00	42.50	26.41	7,365.88	-1,285.60	2,464.64	-1,245.87	8.00	6.49	-7.41
8,100.00	49.37	20.68	7,435.41	-1,219.74	2,493.11	-1,179.55	8.00	6.86	-5.73
8,147.04	52.68	18.38	7,465.00	-1,185.28	2,505.31	-1,144.90	8.00	7.05	-4.88
<b>Sharon Springs</b>									
8,200.00	56.46	16.03	7,495.70	-1,144.06	2,518.06	-1,103.48	8.00	7.14	-4.44
8,207.85	57.03	15.70	7,500.00	-1,137.75	2,519.85	-1,097.14	8.00	7.18	-4.21
<b>Niobrara</b>									
8,300.00	63.70	12.10	7,545.55	-1,060.04	2,539.00	-1,019.14	8.00	7.25	-3.91
8,368.01	68.68	9.71	7,573.00	-998.97	2,550.74	-957.88	8.00	7.32	-3.52
<b>Nio B</b>									
8,400.00	71.04	8.64	7,584.02	-969.32	2,555.53	-928.16	8.00	7.36	-3.34
8,500.00	78.43	5.47	7,610.33	-873.65	2,567.32	-832.32	8.00	7.39	-3.17
8,600.00	85.86	2.47	7,623.99	-774.91	2,574.15	-733.47	8.00	7.43	-3.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well MAE J 8-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-08 MAE J 14-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MAE J 8-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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)
8,652.61	89.77	0.92	7,626.00	-722.37	2,575.70	-680.92	8.00	7.44	-2.95
<b>End Build @ 8652.61ft - Top of Production</b>									
8,700.00	89.77	0.92	7,626.19	-674.99	2,576.46	-633.53	0.00	0.00	0.00
8,800.00	89.77	0.92	7,626.59	-575.00	2,578.06	-533.53	0.00	0.00	0.00
8,900.00	89.77	0.92	7,626.99	-475.01	2,579.66	-433.53	0.00	0.00	0.00
9,000.00	89.77	0.92	7,627.39	-375.03	2,581.25	-333.53	0.00	0.00	0.00
9,100.00	89.77	0.92	7,627.79	-275.04	2,582.85	-233.53	0.00	0.00	0.00
9,200.00	89.77	0.92	7,628.19	-175.05	2,584.45	-133.53	0.00	0.00	0.00
9,300.00	89.77	0.92	7,628.59	-75.07	2,586.05	-33.53	0.00	0.00	0.00
9,400.00	89.77	0.92	7,628.99	24.92	2,587.65	66.46	0.00	0.00	0.00
9,500.00	89.77	0.92	7,629.39	124.91	2,589.24	166.46	0.00	0.00	0.00
9,600.00	89.77	0.92	7,629.79	224.89	2,590.84	266.46	0.00	0.00	0.00
9,700.00	89.77	0.92	7,630.19	324.88	2,592.44	366.46	0.00	0.00	0.00
9,800.00	89.77	0.92	7,630.59	424.87	2,594.04	466.46	0.00	0.00	0.00
9,900.00	89.77	0.92	7,630.99	524.85	2,595.64	566.46	0.00	0.00	0.00
10,000.00	89.77	0.92	7,631.39	624.84	2,597.24	666.46	0.00	0.00	0.00
10,100.00	89.77	0.92	7,631.79	724.82	2,598.83	766.46	0.00	0.00	0.00
10,200.00	89.77	0.92	7,632.19	824.81	2,600.43	866.46	0.00	0.00	0.00
10,300.00	89.77	0.92	7,632.59	924.80	2,602.03	966.46	0.00	0.00	0.00
10,400.00	89.77	0.92	7,632.99	1,024.78	2,603.63	1,066.46	0.00	0.00	0.00
10,500.00	89.77	0.92	7,633.39	1,124.77	2,605.23	1,166.46	0.00	0.00	0.00
10,600.00	89.77	0.92	7,633.79	1,224.76	2,606.82	1,266.46	0.00	0.00	0.00
10,700.00	89.77	0.92	7,634.19	1,324.74	2,608.42	1,366.45	0.00	0.00	0.00
10,800.00	89.77	0.92	7,634.60	1,424.73	2,610.02	1,466.45	0.00	0.00	0.00
10,900.00	89.77	0.92	7,635.00	1,524.72	2,611.62	1,566.45	0.00	0.00	0.00
11,000.00	89.77	0.92	7,635.40	1,624.70	2,613.22	1,666.45	0.00	0.00	0.00
11,100.00	89.77	0.92	7,635.80	1,724.69	2,614.81	1,766.45	0.00	0.00	0.00
11,200.00	89.77	0.92	7,636.20	1,824.68	2,616.41	1,866.45	0.00	0.00	0.00
11,300.00	89.77	0.92	7,636.60	1,924.66	2,618.01	1,966.45	0.00	0.00	0.00
11,400.00	89.77	0.92	7,637.00	2,024.65	2,619.61	2,066.45	0.00	0.00	0.00
11,500.00	89.77	0.92	7,637.40	2,124.63	2,621.21	2,166.45	0.00	0.00	0.00
11,600.00	89.77	0.92	7,637.80	2,224.62	2,622.80	2,266.45	0.00	0.00	0.00
11,700.00	89.77	0.92	7,638.20	2,324.61	2,624.40	2,366.45	0.00	0.00	0.00
11,800.00	89.77	0.92	7,638.60	2,424.59	2,626.00	2,466.45	0.00	0.00	0.00
11,900.00	89.77	0.92	7,639.00	2,524.58	2,627.60	2,566.44	0.00	0.00	0.00
12,000.00	89.77	0.92	7,639.40	2,624.57	2,629.20	2,666.44	0.00	0.00	0.00
12,100.00	89.77	0.92	7,639.80	2,724.55	2,630.79	2,766.44	0.00	0.00	0.00
12,200.00	89.77	0.92	7,640.20	2,824.54	2,632.39	2,866.44	0.00	0.00	0.00
12,300.00	89.77	0.92	7,640.60	2,924.53	2,633.99	2,966.44	0.00	0.00	0.00
12,400.00	89.77	0.92	7,641.00	3,024.51	2,635.59	3,066.44	0.00	0.00	0.00
12,500.00	89.77	0.92	7,641.40	3,124.50	2,637.19	3,166.44	0.00	0.00	0.00
12,600.00	89.77	0.92	7,641.80	3,224.49	2,638.78	3,266.44	0.00	0.00	0.00
12,700.00	89.77	0.92	7,642.20	3,324.47	2,640.38	3,366.44	0.00	0.00	0.00
12,800.00	89.77	0.92	7,642.60	3,424.46	2,641.98	3,466.44	0.00	0.00	0.00
12,900.00	89.77	0.92	7,643.00	3,524.44	2,643.58	3,566.44	0.00	0.00	0.00
13,000.00	89.77	0.92	7,643.40	3,624.43	2,645.18	3,666.44	0.00	0.00	0.00
13,100.00	89.77	0.92	7,643.80	3,724.42	2,646.78	3,766.44	0.00	0.00	0.00
13,200.00	89.77	0.92	7,644.20	3,824.40	2,648.37	3,866.43	0.00	0.00	0.00
13,300.00	89.77	0.92	7,644.60	3,924.39	2,649.97	3,966.43	0.00	0.00	0.00
13,400.00	89.77	0.92	7,645.00	4,024.38	2,651.57	4,066.43	0.00	0.00	0.00
13,500.00	89.77	0.92	7,645.40	4,124.36	2,653.17	4,166.43	0.00	0.00	0.00
13,600.00	89.77	0.92	7,645.80	4,224.35	2,654.77	4,266.43	0.00	0.00	0.00
13,700.00	89.77	0.92	7,646.20	4,324.34	2,656.36	4,366.43	0.00	0.00	0.00
13,800.00	89.77	0.92	7,646.60	4,424.32	2,657.96	4,466.43	0.00	0.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well MAE J 8-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5100.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-08 MAE J 14-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MAE J 8-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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)
13,899.28	89.77	0.92	7,647.00	4,523.59	2,659.55	4,565.71	0.00	0.00	0.00
<b>TD Well @ 13899.28ft</b>									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,523.46	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,652.61	7,626.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,078.48	1,072.00	Fox Hills				
4,498.84	4,207.00	Parkman				
4,882.41	4,555.00	Sussex				
8,147.04	7,465.00	Sharon Springs				
8,207.85	7,500.00	Niobrara				
8,368.01	7,573.00	Nio B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,908.00	1,856.42	-188.76	299.74	Hold Tangent @ 1908.00ft	
7,372.59	6,814.25	-1,413.41	2,244.46	KOP @ 7372.59ft :: DLS = 8°/100'	
8,652.61	7,626.00	-722.37	2,575.70	End Build @ 8652.61ft	
13,899.28	7,647.00	4,523.59	2,659.55	TD Well @ 13899.28ft	