

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-4HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060587/-105.028600
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 8-4HZ
 Wellbore: Plan A
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1520.67	9 5/8" Csg	9-5/8
7821.00	8409.96	Top of Production	5-1/2

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1540.00	18.60	98.10	1518.33	-28.11	197.52	1.50	98.10	28.97	
4	4340.00	18.60	98.10	4172.09	-153.95	1081.70	0.00	0.00	158.67	
5	5270.00	0.00	0.00	5085.84	-175.03	1229.84	2.00	-180.00	180.40	
6	7288.98	0.00	0.00	7104.82	-175.03	1229.84	0.00	0.00	180.40	
7	8409.96	89.68	179.75	7821.00	-887.20	1232.96	8.00	179.75	892.57	
8	13573.54	89.68	179.75	7850.00	-6050.65	1255.65	0.00	0.00	6056.07	MAE J 8-4HZ_BHL

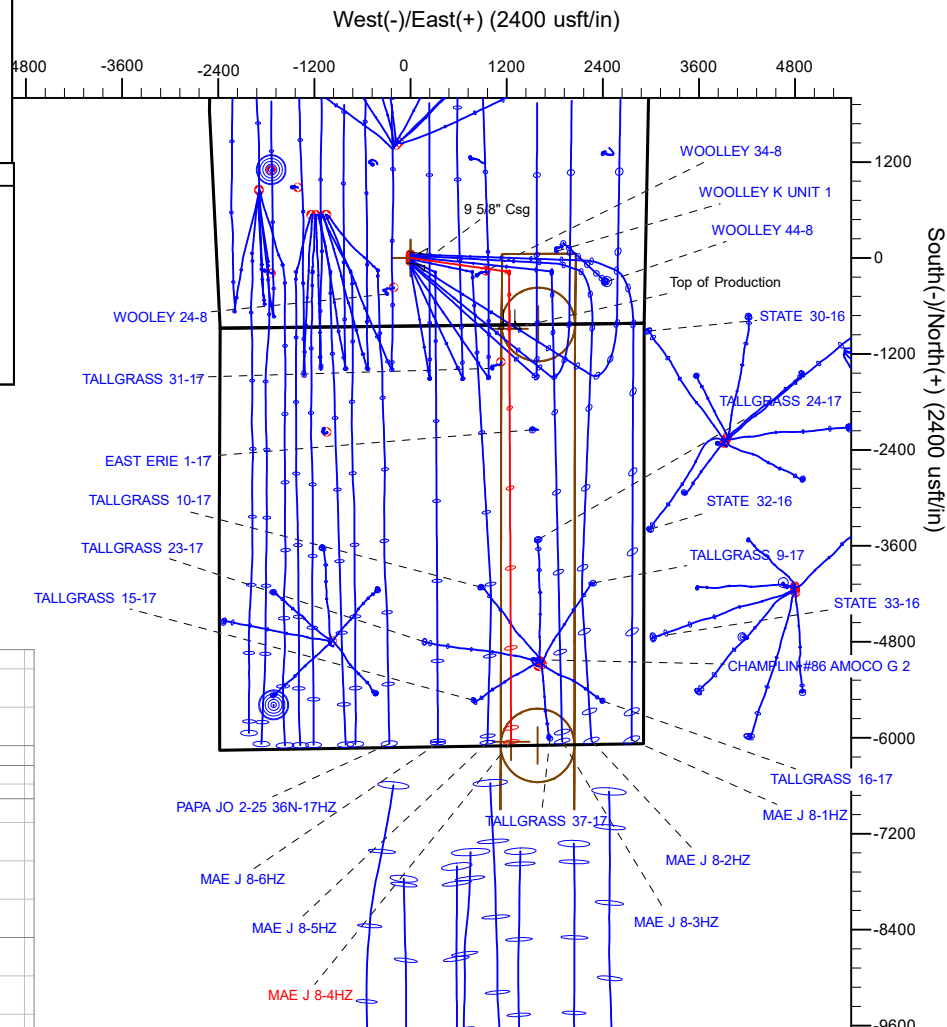
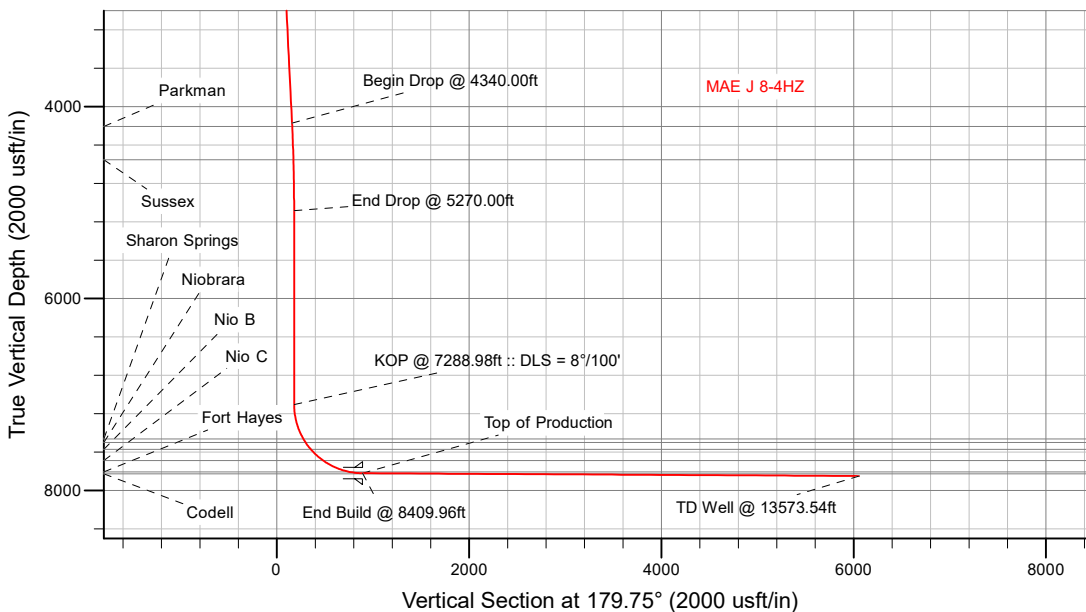
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-4HZ_SHL	0.00	0.00	0.00	40.060587	-105.028600
MAE J 8-4HZ_BHL	7850.00	-6050.65	1255.65	40.043971	-105.024113

SHL
851' FSL
2417' FWL

HEEL
50' FNL
1681' FEL

BHL
51' FSL
1653' FEL



WELL DETAILS: MAE J 8-4HZ

5083.00
RKB = 17' @ 5100.00usft (Drilling Rig)
Plan: Permit Rev-1 (MAE J 8-4HZ/Plan A)
Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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

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

Well	MAE J 8-4HZ					
Well Position	+N-S	-45.15 usft	Northing:	14,548,797.05 usft	Latitude:	40.060587
	+E-W	0.00 usft	Easting:	1,632,414.29 usft	Longitude:	-105.028600
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,083.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/31/2018	8.18	66.51	52,029.22467717

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	179.75

Plan Survey Tool Program	Date	11/2/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
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	13,573.54	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,540.00	18.60	98.10	1,518.33	-28.11	197.52	1.50	1.50	0.00	98.10	
4,340.00	18.60	98.10	4,172.09	-153.95	1,081.70	0.00	0.00	0.00	0.00	
5,270.00	0.00	0.00	5,085.84	-175.03	1,229.84	2.00	-2.00	-10.55	-180.00	
7,288.98	0.00	0.00	7,104.82	-175.03	1,229.84	0.00	0.00	0.00	0.00	
8,409.96	89.68	179.75	7,821.00	-887.20	1,232.96	8.00	8.00	16.03	179.75	
13,573.54	89.68	179.75	7,850.00	-6,050.65	1,255.65	0.00	0.00	0.00	0.00	MAE J 8-4HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 300.00ft										
400.00	1.50	98.10	399.99	-0.18	1.30	0.19	1.50	1.50	1.50	0.00
500.00	3.00	98.10	499.91	-0.74	5.18	0.76	1.50	1.50	1.50	0.00
600.00	4.50	98.10	599.69	-1.66	11.66	1.71	1.50	1.50	1.50	0.00
700.00	6.00	98.10	699.27	-2.95	20.72	3.04	1.50	1.50	1.50	0.00
800.00	7.50	98.10	798.57	-4.60	32.35	4.75	1.50	1.50	1.50	0.00
900.00	9.00	98.10	897.54	-6.63	46.56	6.83	1.50	1.50	1.50	0.00
1,000.00	10.50	98.10	996.09	-9.01	63.32	9.29	1.50	1.50	1.50	0.00
1,077.35	11.66	98.10	1,072.00	-11.11	78.04	11.45	1.50	1.50	1.50	0.00
Fox Hills										
1,100.00	12.00	98.10	1,094.16	-11.76	82.64	12.12	1.50	1.50	1.50	0.00
1,200.00	13.50	98.10	1,191.70	-14.87	104.49	15.33	1.50	1.50	1.50	0.00
1,300.00	15.00	98.10	1,288.62	-18.34	128.86	18.90	1.50	1.50	1.50	0.00
1,400.00	16.50	98.10	1,384.86	-22.16	155.73	22.84	1.50	1.50	1.50	0.00
1,500.00	18.00	98.10	1,480.36	-26.34	185.09	27.15	1.50	1.50	1.50	0.00
1,520.67	18.31	98.10	1,500.00	-27.25	191.46	28.08	1.50	1.50	1.50	0.00
9 5/8" Csg										
1,540.00	18.60	98.10	1,518.33	-28.11	197.52	28.97	1.50	1.50	1.50	0.00
End Nudge @ 1540.00ft										
1,600.00	18.60	98.10	1,575.20	-30.81	216.47	31.75	0.00	0.00	0.00	0.00
1,700.00	18.60	98.10	1,669.98	-35.30	248.04	36.38	0.00	0.00	0.00	0.00
1,800.00	18.60	98.10	1,764.75	-39.80	279.62	41.02	0.00	0.00	0.00	0.00
1,900.00	18.60	98.10	1,859.53	-44.29	311.20	45.65	0.00	0.00	0.00	0.00
2,000.00	18.60	98.10	1,954.31	-48.78	342.78	50.28	0.00	0.00	0.00	0.00
2,100.00	18.60	98.10	2,049.09	-53.28	374.35	54.91	0.00	0.00	0.00	0.00
2,200.00	18.60	98.10	2,143.86	-57.77	405.93	59.54	0.00	0.00	0.00	0.00
2,300.00	18.60	98.10	2,238.64	-62.27	437.51	64.18	0.00	0.00	0.00	0.00
2,400.00	18.60	98.10	2,333.42	-66.76	469.09	68.81	0.00	0.00	0.00	0.00
2,500.00	18.60	98.10	2,428.19	-71.26	500.67	73.44	0.00	0.00	0.00	0.00
2,600.00	18.60	98.10	2,522.97	-75.75	532.24	78.07	0.00	0.00	0.00	0.00
2,700.00	18.60	98.10	2,617.75	-80.24	563.82	82.70	0.00	0.00	0.00	0.00
2,800.00	18.60	98.10	2,712.52	-84.74	595.40	87.33	0.00	0.00	0.00	0.00
2,900.00	18.60	98.10	2,807.30	-89.23	626.98	91.97	0.00	0.00	0.00	0.00
3,000.00	18.60	98.10	2,902.08	-93.73	658.55	96.60	0.00	0.00	0.00	0.00
3,100.00	18.60	98.10	2,996.85	-98.22	690.13	101.23	0.00	0.00	0.00	0.00
3,200.00	18.60	98.10	3,091.63	-102.71	721.71	105.86	0.00	0.00	0.00	0.00
3,300.00	18.60	98.10	3,186.41	-107.21	753.29	110.49	0.00	0.00	0.00	0.00
3,400.00	18.60	98.10	3,281.18	-111.70	784.87	115.13	0.00	0.00	0.00	0.00
3,500.00	18.60	98.10	3,375.96	-116.20	816.44	119.76	0.00	0.00	0.00	0.00
3,600.00	18.60	98.10	3,470.74	-120.69	848.02	124.39	0.00	0.00	0.00	0.00
3,700.00	18.60	98.10	3,565.51	-125.19	879.60	129.02	0.00	0.00	0.00	0.00
3,800.00	18.60	98.10	3,660.29	-129.68	911.18	133.65	0.00	0.00	0.00	0.00
3,900.00	18.60	98.10	3,755.07	-134.17	942.75	138.29	0.00	0.00	0.00	0.00
4,000.00	18.60	98.10	3,849.85	-138.67	974.33	142.92	0.00	0.00	0.00	0.00
4,100.00	18.60	98.10	3,944.62	-143.16	1,005.91	147.55	0.00	0.00	0.00	0.00
4,200.00	18.60	98.10	4,039.40	-147.66	1,037.49	152.18	0.00	0.00	0.00	0.00
4,300.00	18.60	98.10	4,134.18	-152.15	1,069.06	156.81	0.00	0.00	0.00	0.00
4,340.00	18.60	98.10	4,172.09	-153.95	1,081.70	158.67	0.00	0.00	0.00	0.00
Begin Drop @ 4340.00ft										
4,376.76	17.86	98.10	4,207.00	-155.57	1,093.08	160.34	2.00	-2.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
Parkman									
4,400.00	17.40	98.10	4,229.15	-156.56	1,100.05	161.36	2.00	-2.00	0.00
4,500.00	15.40	98.10	4,325.08	-160.54	1,128.00	165.46	2.00	-2.00	0.00
4,600.00	13.40	98.10	4,421.93	-164.04	1,152.62	169.07	2.00	-2.00	0.00
4,700.00	11.40	98.10	4,519.59	-167.07	1,173.88	172.19	2.00	-2.00	0.00
4,736.08	10.68	98.10	4,555.00	-168.04	1,180.72	173.19	2.00	-2.00	0.00
Sussex									
4,800.00	9.40	98.10	4,617.94	-169.61	1,191.75	174.81	2.00	-2.00	0.00
4,900.00	7.40	98.10	4,716.87	-171.67	1,206.21	176.93	2.00	-2.00	0.00
5,000.00	5.40	98.10	4,816.24	-173.24	1,217.25	178.55	2.00	-2.00	0.00
5,100.00	3.40	98.10	4,915.94	-174.32	1,224.84	179.66	2.00	-2.00	0.00
5,200.00	1.40	98.10	5,015.84	-174.91	1,228.99	180.27	2.00	-2.00	0.00
5,270.00	0.00	0.00	5,085.84	-175.03	1,229.84	180.40	2.00	-2.00	-140.14
End Drop @ 5270.00ft									
5,300.00	0.00	0.00	5,115.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,400.00	0.00	0.00	5,215.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,500.00	0.00	0.00	5,315.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,600.00	0.00	0.00	5,415.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,700.00	0.00	0.00	5,515.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,800.00	0.00	0.00	5,615.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
5,900.00	0.00	0.00	5,715.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,000.00	0.00	0.00	5,815.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,100.00	0.00	0.00	5,915.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,200.00	0.00	0.00	6,015.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,300.00	0.00	0.00	6,115.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,400.00	0.00	0.00	6,215.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,500.00	0.00	0.00	6,315.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,600.00	0.00	0.00	6,415.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,700.00	0.00	0.00	6,515.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,615.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
6,900.00	0.00	0.00	6,715.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
7,000.00	0.00	0.00	6,815.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
7,100.00	0.00	0.00	6,915.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
7,200.00	0.00	0.00	7,015.84	-175.03	1,229.84	180.40	0.00	0.00	0.00
7,288.98	0.00	0.00	7,104.82	-175.03	1,229.84	180.40	0.00	0.00	0.00
KOP @ 7288.98ft :: DLS = 8°/100'									
7,300.00	0.88	179.75	7,115.84	-175.12	1,229.84	180.48	8.00	8.00	1,631.11
7,400.00	8.88	179.75	7,215.39	-183.62	1,229.87	188.98	8.00	8.00	0.00
7,500.00	16.88	179.75	7,312.80	-205.89	1,229.97	211.26	8.00	8.00	0.00
7,600.00	24.88	179.75	7,406.15	-241.51	1,230.13	246.87	8.00	8.00	0.00
7,666.39	30.19	179.75	7,465.00	-272.19	1,230.26	277.56	8.00	8.00	0.00
Sharon Springs									
7,700.00	32.88	179.75	7,493.64	-289.77	1,230.34	295.13	8.00	8.00	0.00
7,707.59	33.49	179.75	7,500.00	-293.93	1,230.36	299.29	8.00	8.00	0.00
Niobrara									
7,799.25	40.82	179.75	7,573.00	-349.25	1,230.60	354.61	8.00	8.00	0.00
Nio B									
7,800.00	40.88	179.75	7,573.57	-349.74	1,230.60	355.10	8.00	8.00	0.00
7,900.00	48.88	179.75	7,644.37	-420.24	1,230.91	425.61	8.00	8.00	0.00
7,970.43	54.52	179.75	7,688.00	-475.49	1,231.16	480.86	8.00	8.00	0.00
Nio C									
8,000.00	56.88	179.75	7,704.66	-499.92	1,231.26	505.28	8.00	8.00	0.00
8,100.00	64.88	179.75	7,753.29	-587.21	1,231.65	592.57	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
8,200.00	72.88	179.75	7,789.29	-680.41	1,232.06	685.78	8.00	8.00	0.00
8,267.07	78.25	179.75	7,806.00	-745.34	1,232.34	750.71	8.00	8.00	0.00
Fort Hayes									
8,300.00	80.88	179.75	7,811.96	-777.72	1,232.48	783.09	8.00	8.00	0.00
8,400.00	88.88	179.75	7,820.88	-877.24	1,232.92	882.61	8.00	8.00	0.00
8,409.96	89.68	179.75	7,821.00	-887.20	1,232.96	892.57	8.00	8.00	0.00
End Build @ 8409.96ft - Top of Production									
8,500.00	89.68	179.75	7,821.51	-977.24	1,233.36	982.61	0.00	0.00	0.00
8,600.00	89.68	179.75	7,822.07	-1,077.24	1,233.80	1,082.61	0.00	0.00	0.00
8,700.00	89.68	179.75	7,822.63	-1,177.23	1,234.24	1,182.61	0.00	0.00	0.00
8,800.00	89.68	179.75	7,823.19	-1,277.23	1,234.68	1,282.61	0.00	0.00	0.00
8,900.00	89.68	179.75	7,823.76	-1,377.23	1,235.12	1,382.61	0.00	0.00	0.00
9,000.00	89.68	179.75	7,824.32	-1,477.23	1,235.56	1,482.60	0.00	0.00	0.00
9,100.00	89.68	179.75	7,824.88	-1,577.22	1,236.00	1,582.60	0.00	0.00	0.00
9,200.00	89.68	179.75	7,825.44	-1,677.22	1,236.44	1,682.60	0.00	0.00	0.00
9,299.72	89.68	179.75	7,826.00	-1,776.94	1,236.87	1,782.32	0.00	0.00	0.00
Codell									
9,300.00	89.68	179.75	7,826.00	-1,777.22	1,236.88	1,782.60	0.00	0.00	0.00
9,400.00	89.68	179.75	7,826.56	-1,877.22	1,237.31	1,882.60	0.00	0.00	0.00
9,500.00	89.68	179.75	7,827.12	-1,977.21	1,237.75	1,982.60	0.00	0.00	0.00
9,600.00	89.68	179.75	7,827.69	-2,077.21	1,238.19	2,082.59	0.00	0.00	0.00
9,700.00	89.68	179.75	7,828.25	-2,177.21	1,238.63	2,182.59	0.00	0.00	0.00
9,800.00	89.68	179.75	7,828.81	-2,277.21	1,239.07	2,282.59	0.00	0.00	0.00
9,900.00	89.68	179.75	7,829.37	-2,377.20	1,239.51	2,382.59	0.00	0.00	0.00
10,000.00	89.68	179.75	7,829.93	-2,477.20	1,239.95	2,482.59	0.00	0.00	0.00
10,100.00	89.68	179.75	7,830.49	-2,577.20	1,240.39	2,582.59	0.00	0.00	0.00
10,200.00	89.68	179.75	7,831.06	-2,677.20	1,240.83	2,682.59	0.00	0.00	0.00
10,300.00	89.68	179.75	7,831.62	-2,777.19	1,241.27	2,782.58	0.00	0.00	0.00
10,400.00	89.68	179.75	7,832.18	-2,877.19	1,241.71	2,882.58	0.00	0.00	0.00
10,500.00	89.68	179.75	7,832.74	-2,977.19	1,242.15	2,982.58	0.00	0.00	0.00
10,600.00	89.68	179.75	7,833.30	-3,077.19	1,242.59	3,082.58	0.00	0.00	0.00
10,700.00	89.68	179.75	7,833.86	-3,177.18	1,243.03	3,182.58	0.00	0.00	0.00
10,800.00	89.68	179.75	7,834.43	-3,277.18	1,243.47	3,282.58	0.00	0.00	0.00
10,900.00	89.68	179.75	7,834.99	-3,377.18	1,243.90	3,382.57	0.00	0.00	0.00
11,000.00	89.68	179.75	7,835.55	-3,477.18	1,244.34	3,482.57	0.00	0.00	0.00
11,100.00	89.68	179.75	7,836.11	-3,577.17	1,244.78	3,582.57	0.00	0.00	0.00
11,200.00	89.68	179.75	7,836.67	-3,677.17	1,245.22	3,682.57	0.00	0.00	0.00
11,300.00	89.68	179.75	7,837.23	-3,777.17	1,245.66	3,782.57	0.00	0.00	0.00
11,400.00	89.68	179.75	7,837.79	-3,877.17	1,246.10	3,882.57	0.00	0.00	0.00
11,500.00	89.68	179.75	7,838.36	-3,977.16	1,246.54	3,982.56	0.00	0.00	0.00
11,600.00	89.68	179.75	7,838.92	-4,077.16	1,246.98	4,082.56	0.00	0.00	0.00
11,700.00	89.68	179.75	7,839.48	-4,177.16	1,247.42	4,182.56	0.00	0.00	0.00
11,800.00	89.68	179.75	7,840.04	-4,277.16	1,247.86	4,282.56	0.00	0.00	0.00
11,900.00	89.68	179.75	7,840.60	-4,377.15	1,248.30	4,382.56	0.00	0.00	0.00
12,000.00	89.68	179.75	7,841.16	-4,477.15	1,248.74	4,482.56	0.00	0.00	0.00
12,100.00	89.68	179.75	7,841.73	-4,577.15	1,249.18	4,582.56	0.00	0.00	0.00
12,200.00	89.68	179.75	7,842.29	-4,677.15	1,249.62	4,682.55	0.00	0.00	0.00
12,300.00	89.68	179.75	7,842.85	-4,777.14	1,250.06	4,782.55	0.00	0.00	0.00
12,400.00	89.68	179.75	7,843.41	-4,877.14	1,250.50	4,882.55	0.00	0.00	0.00
12,500.00	89.68	179.75	7,843.97	-4,977.14	1,250.93	4,982.55	0.00	0.00	0.00
12,600.00	89.68	179.75	7,844.53	-5,077.14	1,251.37	5,082.55	0.00	0.00	0.00
12,700.00	89.68	179.75	7,845.09	-5,177.13	1,251.81	5,182.55	0.00	0.00	0.00
12,800.00	89.68	179.75	7,845.66	-5,277.13	1,252.25	5,282.54	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
12,900.00	89.68	179.75	7,846.22	-5,377.13	1,252.69	5,382.54	0.00	0.00	0.00
13,000.00	89.68	179.75	7,846.78	-5,477.13	1,253.13	5,482.54	0.00	0.00	0.00
13,100.00	89.68	179.75	7,847.34	-5,577.12	1,253.57	5,582.54	0.00	0.00	0.00
13,200.00	89.68	179.75	7,847.90	-5,677.12	1,254.01	5,682.54	0.00	0.00	0.00
13,300.00	89.68	179.75	7,848.46	-5,777.12	1,254.45	5,782.54	0.00	0.00	0.00
13,400.00	89.68	179.75	7,849.03	-5,877.12	1,254.89	5,882.53	0.00	0.00	0.00
13,500.00	89.68	179.75	7,849.59	-5,977.11	1,255.33	5,982.53	0.00	0.00	0.00
13,573.54	89.68	179.75	7,850.00	-6,050.65	1,255.65	6,056.07	0.00	0.00	0.00
TD Well @ 13573.54ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,520.67	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,409.96	7,821.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,077.35	1,072.00	Fox Hills			
4,376.76	4,207.00	Parkman			
4,736.08	4,555.00	Sussex			
7,666.39	7,465.00	Sharon Springs			
7,707.59	7,500.00	Niobrara			
7,799.25	7,573.00	Nio B			
7,970.43	7,688.00	Nio C			
8,267.07	7,806.00	Fort Hayes			
9,299.72	7,826.00	Codell			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Begin Nudge @ 300.00ft	
1,540.00	1,518.33	-28.11	197.52	End Nudge @ 1540.00ft	
4,340.00	4,172.09	-153.95	1,081.70	Begin Drop @ 4340.00ft	
5,270.00	5,085.84	-175.03	1,229.84	End Drop @ 5270.00ft	
7,288.98	7,104.82	-175.03	1,229.84	KOP @ 7288.98ft :: DLS = 8°/100'	
8,409.96	7,821.00	-887.20	1,232.96	End Build @ 8409.96ft	
13,573.54	7,850.00	-6,050.65	1,255.65	TD Well @ 13573.54ft	