

US ROCKIES WATTENBERG PLANNING

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

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060711/-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 8-1HZ
 Wellbore: Plan A
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1526.50	9 5/8" Csg	9-5/8
7852.00	8790.85	Top of Production	5-1/2

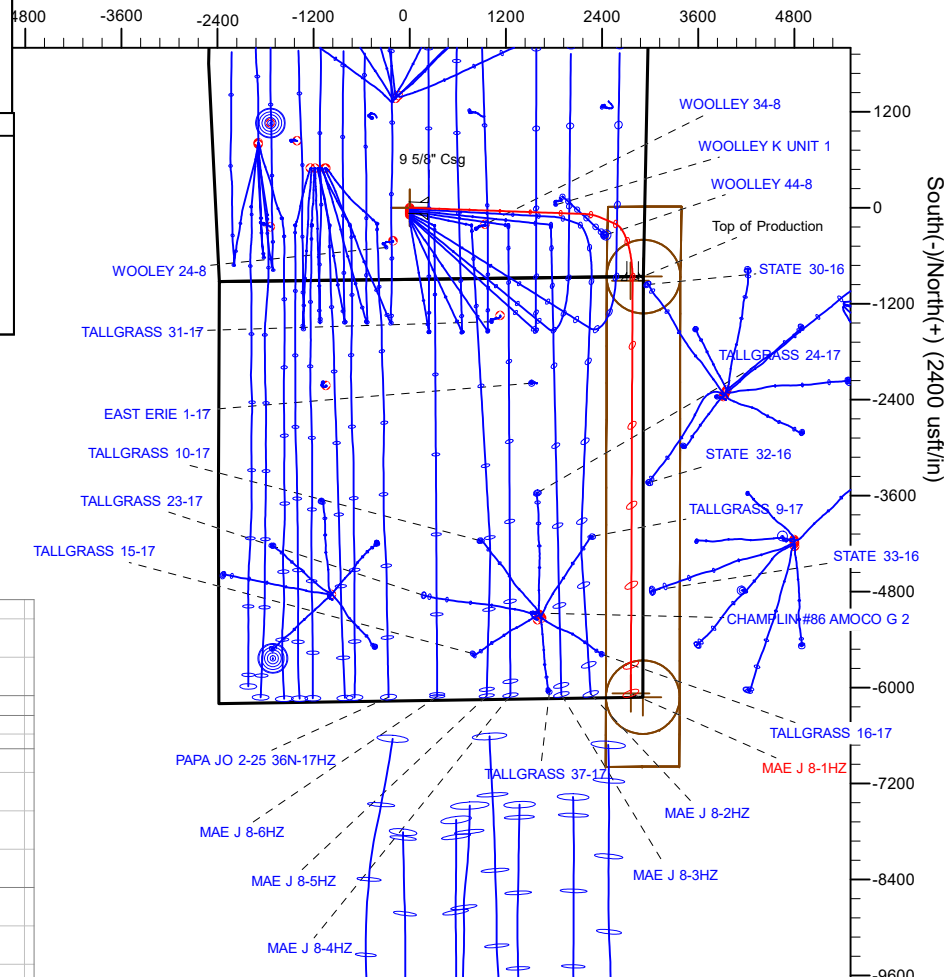
SECTION DETAILS

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1686.00	22.29	92.05	1648.80	-10.21	285.24	1.50	92.05	9.06	
4	6704.00	22.29	92.05	6291.83	-78.29	2187.32	0.00	0.00	69.51	
5	7238.70	22.29	113.30	6787.38	-122.10	2382.12	1.50	99.85	112.54	
6	7772.69	22.29	113.30	7281.48	-202.22	2568.14	0.00	0.00	191.91	
7	8790.85	90.00	180.23	7852.00	-911.32	2780.45	8.00	68.49	900.15	
8	13951.89	90.00	180.23	7852.00	-6072.32	2759.64	0.00	0.00	6061.19	MAE J 8-1HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-1HZ_SHL	0.00	0.00	0.00	40.060711	-105.028600
MAE J 8-1HZ_BHL	7852.00	-6072.32	2759.64	40.044035	-105.018740

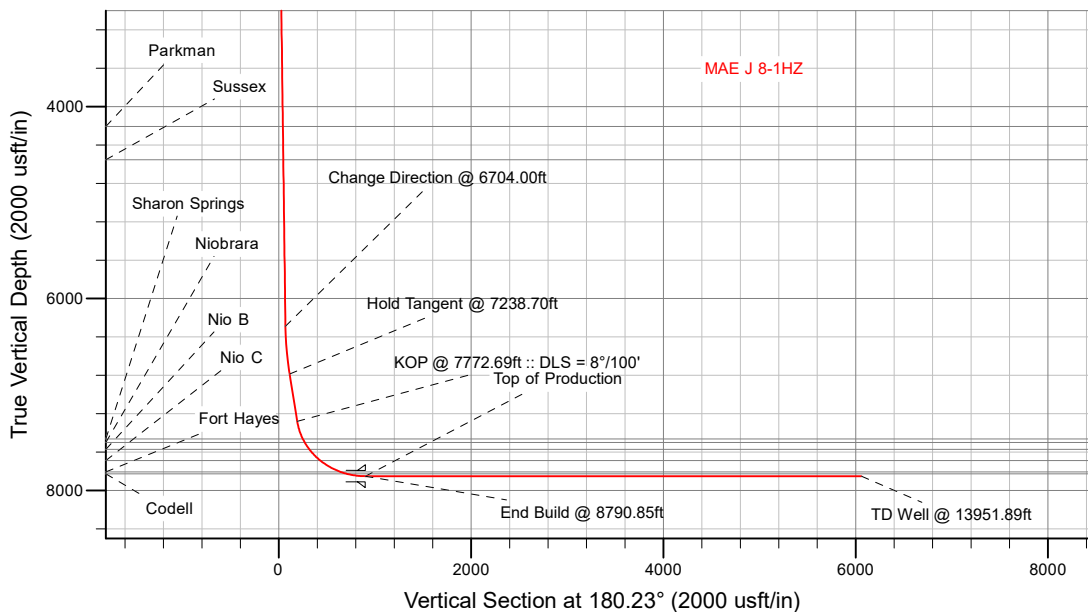
West(-)/East(+) (2400 usft/in)



SHL
896' FSL
2420' FWL

HEEL
50' FNL
138' FEL

BHL
51' FSL
149' FEL



WELL DETAILS: MAE J 8-1HZ

5083.00
 RKB = 17' @ 5100.00usft (Drilling Rig)

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

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-1HZ
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 8-1HZ	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 8-1HZ					
Well Position	+N-S	0.00 usft	Northing:	14,548,842.20 usft	Latitude:	40.060711
	+E-W	0.00 usft	Easting:	1,632,414.30 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	52,029.28947217

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	180.23

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	13,951.89	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 8-1HZ
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 8-1HZ	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,686.00	22.29	92.05	1,648.80	-10.21	285.24	1.50	1.50	0.00	92.05	
6,704.00	22.29	92.05	6,291.83	-78.29	2,187.32	0.00	0.00	0.00	0.00	
7,238.70	22.29	113.30	6,787.38	-122.10	2,382.12	1.50	0.00	3.97	99.85	
7,772.69	22.29	113.30	7,281.48	-202.22	2,568.14	0.00	0.00	0.00	0.00	
8,790.85	90.00	180.23	7,852.00	-911.32	2,780.45	8.00	6.65	6.57	68.49	
13,951.89	90.00	180.23	7,852.00	-6,072.32	2,759.64	0.00	0.00	0.00	0.00	MAE J 8-1HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-1HZ
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 8-1HZ	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
Begin Nudge @ 200.00ft										
300.00	1.50	92.05	299.99	-0.05	1.31	0.04	1.50	1.50	1.50	0.00
400.00	3.00	92.05	399.91	-0.19	5.23	0.17	1.50	1.50	1.50	0.00
500.00	4.50	92.05	499.69	-0.42	11.77	0.37	1.50	1.50	1.50	0.00
600.00	6.00	92.05	599.27	-0.75	20.91	0.66	1.50	1.50	1.50	0.00
700.00	7.50	92.05	698.57	-1.17	32.66	1.04	1.50	1.50	1.50	0.00
800.00	9.00	92.05	797.54	-1.68	47.00	1.49	1.50	1.50	1.50	0.00
900.00	10.50	92.05	896.09	-2.29	63.92	2.03	1.50	1.50	1.50	0.00
1,000.00	12.00	92.05	994.16	-2.99	83.42	2.65	1.50	1.50	1.50	0.00
1,079.76	13.20	92.05	1,072.00	-3.61	100.80	3.20	1.50	1.50	1.50	0.00
Fox Hills										
1,100.00	13.50	92.05	1,091.70	-3.78	105.47	3.35	1.50	1.50	1.50	0.00
1,200.00	15.00	92.05	1,188.62	-4.66	130.07	4.13	1.50	1.50	1.50	0.00
1,300.00	16.50	92.05	1,284.86	-5.63	157.20	5.00	1.50	1.50	1.50	0.00
1,400.00	18.00	92.05	1,380.36	-6.69	186.83	5.94	1.50	1.50	1.50	0.00
1,500.00	19.50	92.05	1,475.05	-7.84	218.95	6.96	1.50	1.50	1.50	0.00
1,526.50	19.90	92.05	1,500.00	-8.16	227.88	7.24	1.50	1.50	1.50	0.00
9 5/8" Csg										
1,600.00	21.00	92.05	1,568.86	-9.08	253.54	8.06	1.50	1.50	1.50	0.00
1,686.00	22.29	92.05	1,648.80	-10.21	285.24	9.06	1.50	1.50	1.50	0.00
Hold Tangent @ 1686.00ft										
1,700.00	22.29	92.05	1,661.75	-10.40	290.55	9.23	0.00	0.00	0.00	0.00
1,800.00	22.29	92.05	1,754.28	-11.76	328.45	10.44	0.00	0.00	0.00	0.00
1,900.00	22.29	92.05	1,846.81	-13.11	366.36	11.64	0.00	0.00	0.00	0.00
2,000.00	22.29	92.05	1,939.34	-14.47	404.26	12.85	0.00	0.00	0.00	0.00
2,100.00	22.29	92.05	2,031.86	-15.83	442.17	14.05	0.00	0.00	0.00	0.00
2,200.00	22.29	92.05	2,124.39	-17.18	480.07	15.26	0.00	0.00	0.00	0.00
2,300.00	22.29	92.05	2,216.92	-18.54	517.98	16.46	0.00	0.00	0.00	0.00
2,400.00	22.29	92.05	2,309.45	-19.90	555.89	17.67	0.00	0.00	0.00	0.00
2,500.00	22.29	92.05	2,401.97	-21.25	593.79	18.87	0.00	0.00	0.00	0.00
2,600.00	22.29	92.05	2,494.50	-22.61	631.70	20.08	0.00	0.00	0.00	0.00
2,700.00	22.29	92.05	2,587.03	-23.97	669.60	21.28	0.00	0.00	0.00	0.00
2,800.00	22.29	92.05	2,679.56	-25.32	707.51	22.48	0.00	0.00	0.00	0.00
2,900.00	22.29	92.05	2,772.08	-26.68	745.41	23.69	0.00	0.00	0.00	0.00
3,000.00	22.29	92.05	2,864.61	-28.04	783.32	24.89	0.00	0.00	0.00	0.00
3,100.00	22.29	92.05	2,957.14	-29.40	821.22	26.10	0.00	0.00	0.00	0.00
3,200.00	22.29	92.05	3,049.67	-30.75	859.13	27.30	0.00	0.00	0.00	0.00
3,300.00	22.29	92.05	3,142.19	-32.11	897.03	28.51	0.00	0.00	0.00	0.00
3,400.00	22.29	92.05	3,234.72	-33.47	934.94	29.71	0.00	0.00	0.00	0.00
3,500.00	22.29	92.05	3,327.25	-34.82	972.84	30.92	0.00	0.00	0.00	0.00
3,600.00	22.29	92.05	3,419.78	-36.18	1,010.75	32.12	0.00	0.00	0.00	0.00
3,700.00	22.29	92.05	3,512.30	-37.54	1,048.65	33.33	0.00	0.00	0.00	0.00
3,800.00	22.29	92.05	3,604.83	-38.89	1,086.56	34.53	0.00	0.00	0.00	0.00
3,900.00	22.29	92.05	3,697.36	-40.25	1,124.46	35.74	0.00	0.00	0.00	0.00
4,000.00	22.29	92.05	3,789.89	-41.61	1,162.37	36.94	0.00	0.00	0.00	0.00
4,100.00	22.29	92.05	3,882.42	-42.96	1,200.27	38.14	0.00	0.00	0.00	0.00
4,200.00	22.29	92.05	3,974.94	-44.32	1,238.18	39.35	0.00	0.00	0.00	0.00
4,300.00	22.29	92.05	4,067.47	-45.68	1,276.08	40.55	0.00	0.00	0.00	0.00
4,400.00	22.29	92.05	4,160.00	-47.03	1,313.99	41.76	0.00	0.00	0.00	0.00
4,450.80	22.29	92.05	4,207.00	-47.72	1,333.24	42.37	0.00	0.00	0.00	0.00
Parkman										

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-1HZ
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 8-1HZ	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)
4,500.00	22.29	92.05	4,252.53	-48.39	1,351.89	42.96	0.00	0.00	0.00
4,600.00	22.29	92.05	4,345.05	-49.75	1,389.80	44.17	0.00	0.00	0.00
4,700.00	22.29	92.05	4,437.58	-51.10	1,427.70	45.37	0.00	0.00	0.00
4,800.00	22.29	92.05	4,530.11	-52.46	1,465.61	46.58	0.00	0.00	0.00
4,826.90	22.29	92.05	4,555.00	-52.83	1,475.81	46.90	0.00	0.00	0.00
Sussex									
4,900.00	22.29	92.05	4,622.64	-53.82	1,503.52	47.78	0.00	0.00	0.00
5,000.00	22.29	92.05	4,715.16	-55.17	1,541.42	48.99	0.00	0.00	0.00
5,100.00	22.29	92.05	4,807.69	-56.53	1,579.33	50.19	0.00	0.00	0.00
5,200.00	22.29	92.05	4,900.22	-57.89	1,617.23	51.40	0.00	0.00	0.00
5,300.00	22.29	92.05	4,992.75	-59.24	1,655.14	52.60	0.00	0.00	0.00
5,400.00	22.29	92.05	5,085.27	-60.60	1,693.04	53.80	0.00	0.00	0.00
5,500.00	22.29	92.05	5,177.80	-61.96	1,730.95	55.01	0.00	0.00	0.00
5,600.00	22.29	92.05	5,270.33	-63.32	1,768.85	56.21	0.00	0.00	0.00
5,700.00	22.29	92.05	5,362.86	-64.67	1,806.76	57.42	0.00	0.00	0.00
5,800.00	22.29	92.05	5,455.38	-66.03	1,844.66	58.62	0.00	0.00	0.00
5,900.00	22.29	92.05	5,547.91	-67.39	1,882.57	59.83	0.00	0.00	0.00
6,000.00	22.29	92.05	5,640.44	-68.74	1,920.47	61.03	0.00	0.00	0.00
6,100.00	22.29	92.05	5,732.97	-70.10	1,958.38	62.24	0.00	0.00	0.00
6,200.00	22.29	92.05	5,825.49	-71.46	1,996.28	63.44	0.00	0.00	0.00
6,300.00	22.29	92.05	5,918.02	-72.81	2,034.19	64.65	0.00	0.00	0.00
6,400.00	22.29	92.05	6,010.55	-74.17	2,072.09	65.85	0.00	0.00	0.00
6,500.00	22.29	92.05	6,103.08	-75.53	2,110.00	67.06	0.00	0.00	0.00
6,600.00	22.29	92.05	6,195.61	-76.88	2,147.90	68.26	0.00	0.00	0.00
6,700.00	22.29	92.05	6,288.13	-78.24	2,185.81	69.46	0.00	0.00	0.00
6,704.00	22.29	92.05	6,291.83	-78.29	2,187.32	69.51	0.00	0.00	0.00
Change Direction @ 6704.00ft									
6,800.00	22.09	95.83	6,380.73	-80.78	2,223.48	71.85	1.50	-0.21	3.93
6,900.00	21.97	99.81	6,473.43	-85.87	2,260.61	76.80	1.50	-0.12	3.99
7,000.00	21.95	103.82	6,566.18	-93.53	2,297.20	84.31	1.50	-0.02	4.01
7,100.00	22.02	107.83	6,658.92	-103.74	2,333.19	94.37	1.50	0.08	4.00
7,200.00	22.20	111.79	6,751.57	-116.49	2,368.59	106.98	1.50	0.17	3.96
7,238.70	22.29	113.30	6,787.38	-122.10	2,382.12	112.54	1.50	0.24	3.91
Hold Tangent @ 7238.70ft									
7,300.00	22.29	113.30	6,844.11	-131.30	2,403.47	121.65	0.00	0.00	0.00
7,400.00	22.29	113.30	6,936.64	-146.30	2,438.31	136.51	0.00	0.00	0.00
7,500.00	22.29	113.30	7,029.16	-161.31	2,473.14	151.38	0.00	0.00	0.00
7,600.00	22.29	113.30	7,121.69	-176.31	2,507.98	166.24	0.00	0.00	0.00
7,700.00	22.29	113.30	7,214.22	-191.31	2,542.82	181.10	0.00	0.00	0.00
7,772.69	22.29	113.30	7,281.48	-202.22	2,568.14	191.91	0.00	0.00	0.00
KOP @ 7772.69ft :: DLS = 8°/100'									
7,800.00	23.18	118.47	7,306.67	-206.83	2,577.62	196.48	8.00	3.24	18.93
7,900.00	27.61	134.09	7,397.08	-232.37	2,611.62	221.89	8.00	4.44	15.62
7,978.25	32.00	143.10	7,465.00	-261.60	2,637.12	251.01	8.00	5.61	11.52
Sharon Springs									
8,000.00	33.31	145.21	7,483.31	-271.12	2,643.98	260.50	8.00	6.05	9.70
8,020.11	34.56	147.04	7,500.00	-280.44	2,650.24	269.80	8.00	6.20	9.06
Niobrara									
8,100.00	39.74	153.25	7,563.67	-322.30	2,674.09	311.56	8.00	6.48	7.78
8,112.20	40.56	154.08	7,573.00	-329.35	2,677.57	318.60	8.00	6.70	6.79
Nio B									
8,200.00	46.58	159.32	7,636.61	-384.93	2,701.34	374.08	8.00	6.87	5.97
8,278.96	52.17	163.20	7,688.00	-441.67	2,720.49	430.74	8.00	7.08	4.91

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-1HZ
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 8-1HZ	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)
Nio C									
8,300.00	53.68	164.14	7,700.69	-457.78	2,725.21	446.84	8.00	7.17	4.44
8,400.00	60.94	168.14	7,754.67	-539.44	2,745.24	528.42	8.00	7.26	4.00
8,500.00	68.31	171.60	7,797.50	-628.32	2,761.04	617.23	8.00	7.36	3.47
8,523.93	70.08	172.38	7,806.00	-650.47	2,764.16	639.37	8.00	7.41	3.23
Fort Hayes									
8,590.68	75.04	174.45	7,826.00	-713.71	2,771.44	702.58	8.00	7.43	3.10
Codell									
8,600.00	75.74	174.73	7,828.35	-722.69	2,772.29	711.55	8.00	7.45	3.01
8,700.00	83.20	177.65	7,846.62	-820.71	2,778.79	809.55	8.00	7.47	2.93
8,790.85	90.00	180.23	7,852.00	-911.32	2,780.45	900.15	8.00	7.48	2.84
End Build @ 8790.85ft - Top of Production									
8,800.00	90.00	180.23	7,852.00	-920.47	2,780.42	909.30	0.00	0.00	0.00
8,900.00	90.00	180.23	7,852.00	-1,020.47	2,780.01	1,009.30	0.00	0.00	0.00
9,000.00	90.00	180.23	7,852.00	-1,120.47	2,779.61	1,109.30	0.00	0.00	0.00
9,100.00	90.00	180.23	7,852.00	-1,220.47	2,779.21	1,209.30	0.00	0.00	0.00
9,200.00	90.00	180.23	7,852.00	-1,320.47	2,778.80	1,309.30	0.00	0.00	0.00
9,300.00	90.00	180.23	7,852.00	-1,420.47	2,778.40	1,409.30	0.00	0.00	0.00
9,400.00	90.00	180.23	7,852.00	-1,520.47	2,778.00	1,509.30	0.00	0.00	0.00
9,500.00	90.00	180.23	7,852.00	-1,620.47	2,777.59	1,609.30	0.00	0.00	0.00
9,600.00	90.00	180.23	7,852.00	-1,720.46	2,777.19	1,709.30	0.00	0.00	0.00
9,700.00	90.00	180.23	7,852.00	-1,820.46	2,776.79	1,809.30	0.00	0.00	0.00
9,800.00	90.00	180.23	7,852.00	-1,920.46	2,776.38	1,909.30	0.00	0.00	0.00
9,900.00	90.00	180.23	7,852.00	-2,020.46	2,775.98	2,009.30	0.00	0.00	0.00
10,000.00	90.00	180.23	7,852.00	-2,120.46	2,775.58	2,109.30	0.00	0.00	0.00
10,100.00	90.00	180.23	7,852.00	-2,220.46	2,775.17	2,209.30	0.00	0.00	0.00
10,200.00	90.00	180.23	7,852.00	-2,320.46	2,774.77	2,309.30	0.00	0.00	0.00
10,300.00	90.00	180.23	7,852.00	-2,420.46	2,774.37	2,409.30	0.00	0.00	0.00
10,400.00	90.00	180.23	7,852.00	-2,520.46	2,773.97	2,509.30	0.00	0.00	0.00
10,500.00	90.00	180.23	7,852.00	-2,620.46	2,773.56	2,609.30	0.00	0.00	0.00
10,600.00	90.00	180.23	7,852.00	-2,720.46	2,773.16	2,709.30	0.00	0.00	0.00
10,700.00	90.00	180.23	7,852.00	-2,820.46	2,772.76	2,809.30	0.00	0.00	0.00
10,800.00	90.00	180.23	7,852.00	-2,920.45	2,772.35	2,909.30	0.00	0.00	0.00
10,900.00	90.00	180.23	7,852.00	-3,020.45	2,771.95	3,009.30	0.00	0.00	0.00
11,000.00	90.00	180.23	7,852.00	-3,120.45	2,771.55	3,109.30	0.00	0.00	0.00
11,100.00	90.00	180.23	7,852.00	-3,220.45	2,771.14	3,209.30	0.00	0.00	0.00
11,200.00	90.00	180.23	7,852.00	-3,320.45	2,770.74	3,309.30	0.00	0.00	0.00
11,300.00	90.00	180.23	7,852.00	-3,420.45	2,770.34	3,409.30	0.00	0.00	0.00
11,400.00	90.00	180.23	7,852.00	-3,520.45	2,769.93	3,509.30	0.00	0.00	0.00
11,500.00	90.00	180.23	7,852.00	-3,620.45	2,769.53	3,609.30	0.00	0.00	0.00
11,600.00	90.00	180.23	7,852.00	-3,720.45	2,769.13	3,709.30	0.00	0.00	0.00
11,700.00	90.00	180.23	7,852.00	-3,820.45	2,768.72	3,809.30	0.00	0.00	0.00
11,800.00	90.00	180.23	7,852.00	-3,920.45	2,768.32	3,909.30	0.00	0.00	0.00
11,900.00	90.00	180.23	7,852.00	-4,020.45	2,767.92	4,009.30	0.00	0.00	0.00
12,000.00	90.00	180.23	7,852.00	-4,120.44	2,767.51	4,109.30	0.00	0.00	0.00
12,100.00	90.00	180.23	7,852.00	-4,220.44	2,767.11	4,209.30	0.00	0.00	0.00
12,200.00	90.00	180.23	7,852.00	-4,320.44	2,766.71	4,309.30	0.00	0.00	0.00
12,300.00	90.00	180.23	7,852.00	-4,420.44	2,766.30	4,409.30	0.00	0.00	0.00
12,400.00	90.00	180.23	7,852.00	-4,520.44	2,765.90	4,509.30	0.00	0.00	0.00
12,500.00	90.00	180.23	7,852.00	-4,620.44	2,765.50	4,609.30	0.00	0.00	0.00
12,600.00	90.00	180.23	7,852.00	-4,720.44	2,765.09	4,709.30	0.00	0.00	0.00
12,700.00	90.00	180.23	7,852.00	-4,820.44	2,764.69	4,809.30	0.00	0.00	0.00
12,800.00	90.00	180.23	7,852.00	-4,920.44	2,764.29	4,909.30	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-1HZ
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 8-1HZ	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	90.00	180.23	7,852.00	-5,020.44	2,763.89	5,009.30	0.00	0.00	0.00	
13,000.00	90.00	180.23	7,852.00	-5,120.44	2,763.48	5,109.30	0.00	0.00	0.00	
13,100.00	90.00	180.23	7,852.00	-5,220.44	2,763.08	5,209.30	0.00	0.00	0.00	
13,200.00	90.00	180.23	7,852.00	-5,320.44	2,762.68	5,309.30	0.00	0.00	0.00	
13,300.00	90.00	180.23	7,852.00	-5,420.43	2,762.27	5,409.30	0.00	0.00	0.00	
13,400.00	90.00	180.23	7,852.00	-5,520.43	2,761.87	5,509.30	0.00	0.00	0.00	
13,500.00	90.00	180.23	7,852.00	-5,620.43	2,761.47	5,609.30	0.00	0.00	0.00	
13,600.00	90.00	180.23	7,852.00	-5,720.43	2,761.06	5,709.30	0.00	0.00	0.00	
13,700.00	90.00	180.23	7,852.00	-5,820.43	2,760.66	5,809.30	0.00	0.00	0.00	
13,800.00	90.00	180.23	7,852.00	-5,920.43	2,760.26	5,909.30	0.00	0.00	0.00	
13,900.00	90.00	180.23	7,852.00	-6,020.43	2,759.85	6,009.30	0.00	0.00	0.00	
13,951.89	90.00	180.23	7,852.00	-6,072.32	2,759.64	6,061.19	0.00	0.00	0.00	
TD Well @ 13951.89ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,526.50	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,790.85	7,852.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,079.76	1,072.00	Fox Hills				
4,450.80	4,207.00	Parkman				
4,826.90	4,555.00	Sussex				
7,978.25	7,465.00	Sharon Springs				
8,020.11	7,500.00	Niobrara				
8,112.20	7,573.00	Nio B				
8,278.96	7,688.00	Nio C				
8,523.93	7,806.00	Fort Hayes				
8,590.68	7,826.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
1,686.00	1,648.80	-10.21	285.24	Hold Tangent @ 1686.00ft	
6,704.00	6,291.83	-78.29	2,187.32	Change Direction @ 6704.00ft	
7,238.70	6,787.38	-122.10	2,382.12	Hold Tangent @ 7238.70ft	
7,772.69	7,281.48	-202.22	2,568.14	KOP @ 7772.69ft :: DLS = 8°/100'	
8,790.85	7,852.00	-911.32	2,780.45	End Build @ 8790.85ft	
13,951.89	7,852.00	-6,072.32	2,759.64	TD Well @ 13951.89ft	