

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-2HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060670/-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 8-2HZ
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
7715.00	8495.10	Top of Production	5-1/2

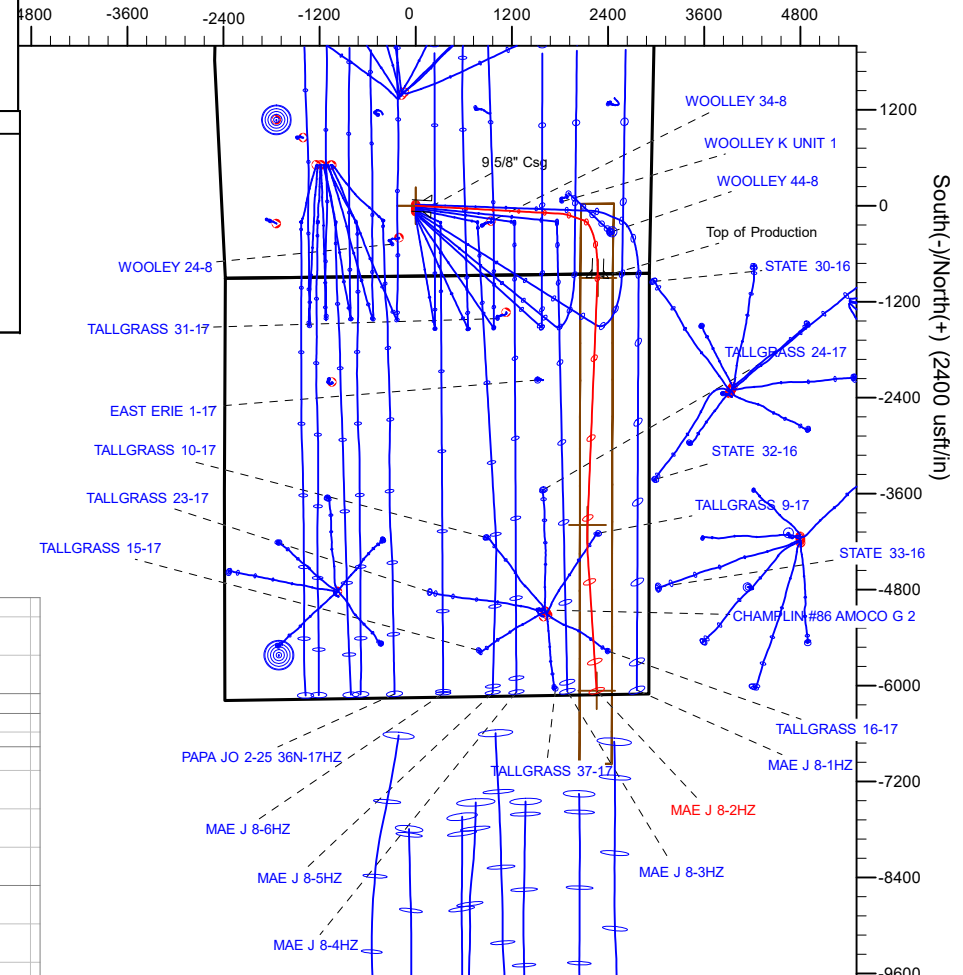
SECTION DETAILS

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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1560.00	18.90	93.15	1537.27	-11.32	205.63	1.50	93.15	10.92	
4	6506.67	18.90	93.15	6217.24	-99.36	1805.52	0.00	0.00	95.90	
5	6841.54	18.90	108.70	6534.26	-119.75	1911.11	1.50	97.36	116.08	
6	7436.08	18.90	108.70	7096.75	-181.49	2093.53	0.00	0.00	177.47	
7	8495.10	89.97	182.30	7715.00	-901.87	2267.66	8.00	74.45	897.51	
8	11586.49	89.97	182.30	7716.82	-3990.76	2143.42	0.00	0.00	3986.64	MAE J 8-2HZ_target
9	11989.09	89.97	176.26	7717.05	-4393.14	2148.45	1.50	-89.99	4389.01	
10	13665.06	89.97	176.26	7718.00	-6065.55	2257.65	0.00	0.00	6061.20	MAE J 8-2HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-2HZ_SHL	0.00	0.00	0.00	40.060670	-105.028600
MAE J 8-2HZ_BHL	7718.00	-6065.55	2257.65	40.044013	-105.020533

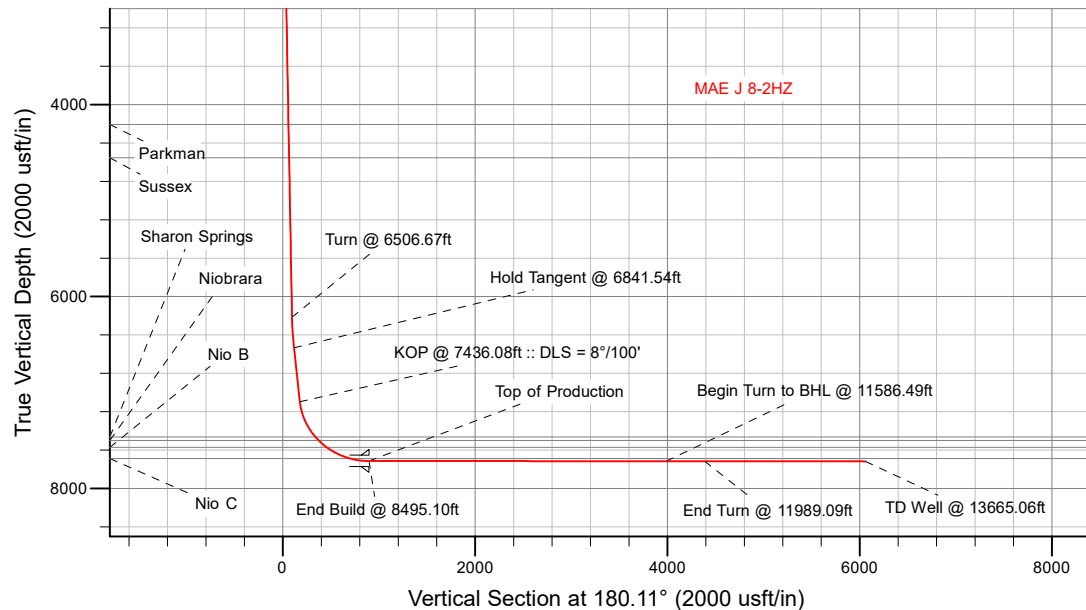
West(-)/East(+) (2400 usft/in)



SHL
881' FSL
2419' FWL

HEEL
50' FNL
644' FEL

BHL
50' FSL
651' FEL



WELL DETAILS: MAE J 8-2HZ

5083.00

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-2HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-2HZ
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 8-2HZ	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 8-2HZ					
Well Position	+N/-S	-14.93 usft	Northing:	14,548,827.27 usft	Latitude:	40.060670
	+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	52,029.26804804

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	180.11	

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	13,665.06	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

Corporate
Planning Report

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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 8-2HZ	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	
1,560.00	18.90	93.15	1,537.27	-11.32	205.63	1.50	1.50	0.00	93.15	
6,506.67	18.90	93.15	6,217.24	-99.36	1,805.52	0.00	0.00	0.00	0.00	
6,841.54	18.90	108.70	6,534.26	-119.75	1,911.11	1.50	0.00	4.64	97.36	
7,436.08	18.90	108.70	7,096.75	-181.49	2,093.53	0.00	0.00	0.00	0.00	
8,495.10	89.97	182.30	7,715.00	-901.87	2,267.66	8.00	6.71	6.95	74.45	
11,586.49	89.97	182.30	7,716.82	-3,990.76	2,143.42	0.00	0.00	0.00	0.00	MAE J 8-2HZ_target
11,989.09	89.97	176.26	7,717.05	-4,393.14	2,148.45	1.50	0.00	-1.50	-89.99	
13,665.06	89.97	176.26	7,718.00	-6,065.55	2,257.65	0.00	0.00	0.00	0.00	MAE J 8-2HZ_BHL

Corporate Planning Report

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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 8-2HZ	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
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
Begin Nudge @ 300.00ft									
400.00	1.50	93.15	399.99	-0.07	1.31	0.07	1.50	1.50	0.00
500.00	3.00	93.15	499.91	-0.29	5.23	0.28	1.50	1.50	0.00
600.00	4.50	93.15	599.69	-0.65	11.76	0.62	1.50	1.50	0.00
700.00	6.00	93.15	699.27	-1.15	20.89	1.11	1.50	1.50	0.00
800.00	7.50	93.15	798.57	-1.80	32.63	1.73	1.50	1.50	0.00
900.00	9.00	93.15	897.54	-2.58	46.96	2.49	1.50	1.50	0.00
1,000.00	10.50	93.15	996.09	-3.51	63.86	3.39	1.50	1.50	0.00
1,077.35	11.66	93.15	1,072.00	-4.33	78.71	4.18	1.50	1.50	0.00
Fox Hills									
1,100.00	12.00	93.15	1,094.16	-4.59	83.34	4.43	1.50	1.50	0.00
1,200.00	13.50	93.15	1,191.70	-5.80	105.38	5.60	1.50	1.50	0.00
1,300.00	15.00	93.15	1,288.62	-7.15	129.96	6.90	1.50	1.50	0.00
1,400.00	16.50	93.15	1,384.86	-8.64	157.06	8.34	1.50	1.50	0.00
1,500.00	18.00	93.15	1,480.36	-10.27	186.67	9.91	1.50	1.50	0.00
1,520.67	18.31	93.15	1,500.00	-10.63	193.10	10.26	1.50	1.50	0.00
9 5/8" Csg									
1,560.00	18.90	93.15	1,537.27	-11.32	205.63	10.92	1.50	1.50	0.00
Hold Tangent @ 1560.00ft									
1,600.00	18.90	93.15	1,575.12	-12.03	218.56	11.61	0.00	0.00	0.00
1,700.00	18.90	93.15	1,669.73	-13.81	250.91	13.33	0.00	0.00	0.00
1,800.00	18.90	93.15	1,764.33	-15.59	283.25	15.04	0.00	0.00	0.00
1,900.00	18.90	93.15	1,858.94	-17.37	315.59	16.76	0.00	0.00	0.00
2,000.00	18.90	93.15	1,953.55	-19.15	347.94	18.48	0.00	0.00	0.00
2,100.00	18.90	93.15	2,048.16	-20.93	380.28	20.20	0.00	0.00	0.00
2,200.00	18.90	93.15	2,142.77	-22.71	412.62	21.92	0.00	0.00	0.00
2,300.00	18.90	93.15	2,237.38	-24.49	444.96	23.63	0.00	0.00	0.00
2,400.00	18.90	93.15	2,331.99	-26.27	477.31	25.35	0.00	0.00	0.00
2,500.00	18.90	93.15	2,426.59	-28.05	509.65	27.07	0.00	0.00	0.00
2,600.00	18.90	93.15	2,521.20	-29.83	541.99	28.79	0.00	0.00	0.00
2,700.00	18.90	93.15	2,615.81	-31.61	574.34	30.50	0.00	0.00	0.00
2,800.00	18.90	93.15	2,710.42	-33.39	606.68	32.22	0.00	0.00	0.00
2,900.00	18.90	93.15	2,805.03	-35.17	639.02	33.94	0.00	0.00	0.00
3,000.00	18.90	93.15	2,899.64	-36.95	671.36	35.66	0.00	0.00	0.00
3,100.00	18.90	93.15	2,994.24	-38.73	703.71	37.38	0.00	0.00	0.00
3,200.00	18.90	93.15	3,088.85	-40.51	736.05	39.09	0.00	0.00	0.00
3,300.00	18.90	93.15	3,183.46	-42.29	768.39	40.81	0.00	0.00	0.00
3,400.00	18.90	93.15	3,278.07	-44.07	800.74	42.53	0.00	0.00	0.00
3,500.00	18.90	93.15	3,372.68	-45.85	833.08	44.25	0.00	0.00	0.00
3,600.00	18.90	93.15	3,467.29	-47.63	865.42	45.97	0.00	0.00	0.00
3,700.00	18.90	93.15	3,561.90	-49.41	897.76	47.68	0.00	0.00	0.00
3,800.00	18.90	93.15	3,656.50	-51.19	930.11	49.40	0.00	0.00	0.00
3,900.00	18.90	93.15	3,751.11	-52.97	962.45	51.12	0.00	0.00	0.00
4,000.00	18.90	93.15	3,845.72	-54.75	994.79	52.84	0.00	0.00	0.00
4,100.00	18.90	93.15	3,940.33	-56.53	1,027.13	54.55	0.00	0.00	0.00
4,200.00	18.90	93.15	4,034.94	-58.31	1,059.48	56.27	0.00	0.00	0.00
4,300.00	18.90	93.15	4,129.55	-60.09	1,091.82	57.99	0.00	0.00	0.00
4,381.87	18.90	93.15	4,207.00	-61.54	1,118.30	59.40	0.00	0.00	0.00
Parkman									
4,400.00	18.90	93.15	4,224.16	-61.87	1,124.16	59.71	0.00	0.00	0.00

Corporate Planning Report

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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 8-2HZ	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	18.90	93.15	4,318.76	-63.65	1,156.51	61.43	0.00	0.00	0.00	
4,600.00	18.90	93.15	4,413.37	-65.43	1,188.85	63.14	0.00	0.00	0.00	
4,700.00	18.90	93.15	4,507.98	-67.21	1,221.19	64.86	0.00	0.00	0.00	
4,749.70	18.90	93.15	4,555.00	-68.09	1,237.27	65.72	0.00	0.00	0.00	
Sussex										
4,800.00	18.90	93.15	4,602.59	-68.99	1,253.53	66.58	0.00	0.00	0.00	
4,900.00	18.90	93.15	4,697.20	-70.77	1,285.88	68.30	0.00	0.00	0.00	
5,000.00	18.90	93.15	4,791.81	-72.55	1,318.22	70.02	0.00	0.00	0.00	
5,100.00	18.90	93.15	4,886.42	-74.33	1,350.56	71.73	0.00	0.00	0.00	
5,200.00	18.90	93.15	4,981.02	-76.11	1,382.91	73.45	0.00	0.00	0.00	
5,300.00	18.90	93.15	5,075.63	-77.89	1,415.25	75.17	0.00	0.00	0.00	
5,400.00	18.90	93.15	5,170.24	-79.67	1,447.59	76.89	0.00	0.00	0.00	
5,500.00	18.90	93.15	5,264.85	-81.45	1,479.93	78.60	0.00	0.00	0.00	
5,600.00	18.90	93.15	5,359.46	-83.23	1,512.28	80.32	0.00	0.00	0.00	
5,700.00	18.90	93.15	5,454.07	-85.01	1,544.62	82.04	0.00	0.00	0.00	
5,800.00	18.90	93.15	5,548.68	-86.79	1,576.96	83.76	0.00	0.00	0.00	
5,900.00	18.90	93.15	5,643.28	-88.57	1,609.31	85.48	0.00	0.00	0.00	
6,000.00	18.90	93.15	5,737.89	-90.35	1,641.65	87.19	0.00	0.00	0.00	
6,100.00	18.90	93.15	5,832.50	-92.13	1,673.99	88.91	0.00	0.00	0.00	
6,200.00	18.90	93.15	5,927.11	-93.91	1,706.33	90.63	0.00	0.00	0.00	
6,300.00	18.90	93.15	6,021.72	-95.69	1,738.68	92.35	0.00	0.00	0.00	
6,400.00	18.90	93.15	6,116.33	-97.47	1,771.02	94.06	0.00	0.00	0.00	
6,500.00	18.90	93.15	6,210.94	-99.25	1,803.36	95.78	0.00	0.00	0.00	
6,506.67	18.90	93.15	6,217.24	-99.36	1,805.52	95.90	0.00	0.00	0.00	
Turn @ 6506.67ft										
6,600.00	18.77	97.47	6,305.58	-102.15	1,835.50	98.62	1.50	-0.14	4.63	
6,700.00	18.74	102.13	6,400.28	-107.61	1,867.16	104.03	1.50	-0.03	4.67	
6,800.00	18.83	106.79	6,494.96	-115.65	1,898.32	112.01	1.50	0.09	4.65	
6,841.54	18.90	108.70	6,534.26	-119.75	1,911.11	116.08	1.50	0.17	4.61	
Hold Tangent @ 6841.54ft										
6,900.00	18.90	108.70	6,589.57	-125.82	1,929.05	122.11	0.00	0.00	0.00	
7,000.00	18.90	108.70	6,684.18	-136.20	1,959.73	132.44	0.00	0.00	0.00	
7,100.00	18.90	108.70	6,778.79	-146.59	1,990.41	142.77	0.00	0.00	0.00	
7,200.00	18.90	108.70	6,873.40	-156.97	2,021.09	153.09	0.00	0.00	0.00	
7,300.00	18.90	108.70	6,968.01	-167.36	2,051.78	163.42	0.00	0.00	0.00	
7,400.00	18.90	108.70	7,062.62	-177.74	2,082.46	173.74	0.00	0.00	0.00	
7,436.08	18.90	108.70	7,096.75	-181.49	2,093.53	177.47	0.00	0.00	0.00	
KOP @ 7436.08ft :: DLS = 8°/100'										
7,500.00	20.84	122.67	7,156.90	-190.95	2,112.92	186.90	8.00	3.03	21.85	
7,600.00	25.62	139.07	7,248.86	-216.93	2,142.10	212.81	8.00	4.78	16.40	
7,700.00	31.65	150.11	7,336.65	-256.07	2,169.38	251.90	8.00	6.03	11.04	
7,800.00	38.34	157.78	7,418.57	-307.61	2,194.22	303.40	8.00	6.70	7.67	
7,861.05	42.62	161.40	7,465.00	-344.75	2,207.99	340.51	8.00	7.01	5.94	
Sharon Springs										
7,900.00	45.41	163.42	7,493.01	-370.55	2,216.15	366.29	8.00	7.15	5.18	
7,910.02	46.13	163.91	7,500.00	-377.44	2,218.17	373.18	8.00	7.20	4.86	
Niobrara										
8,000.00	52.69	167.82	7,558.52	-443.67	2,234.74	439.38	8.00	7.29	4.35	
8,024.39	54.49	168.76	7,573.00	-462.88	2,238.72	458.58	8.00	7.37	3.86	
Nio B										
8,100.00	60.10	171.43	7,613.84	-525.53	2,249.61	521.21	8.00	7.43	3.53	
8,200.00	67.60	174.53	7,657.89	-614.56	2,260.49	610.22	8.00	7.50	3.11	
8,293.09	74.63	177.14	7,688.00	-702.35	2,266.84	698.00	8.00	7.55	2.79	

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
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Well:	MAE J 8-2HZ	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	75.16	177.32	7,689.80	-709.01	2,267.17	704.66	8.00	7.57	2.68
8,400.00	82.74	179.92	7,708.96	-807.05	2,269.50	802.69	8.00	7.58	2.60
8,495.10	89.97	182.30	7,715.00	-901.87	2,267.66	897.51	8.00	7.60	2.51
End Build @ 8495.10ft - Top of Production									
8,500.00	89.97	182.30	7,715.01	-906.76	2,267.46	902.41	0.00	0.00	0.00
8,600.00	89.97	182.30	7,715.07	-1,006.68	2,263.44	1,002.33	0.00	0.00	0.00
8,700.00	89.97	182.30	7,715.12	-1,106.60	2,259.42	1,102.26	0.00	0.00	0.00
8,800.00	89.97	182.30	7,715.18	-1,206.52	2,255.40	1,202.19	0.00	0.00	0.00
8,900.00	89.97	182.30	7,715.24	-1,306.44	2,251.39	1,302.11	0.00	0.00	0.00
9,000.00	89.97	182.30	7,715.30	-1,406.36	2,247.37	1,402.04	0.00	0.00	0.00
9,100.00	89.97	182.30	7,715.36	-1,506.28	2,243.35	1,501.97	0.00	0.00	0.00
9,200.00	89.97	182.30	7,715.42	-1,606.20	2,239.33	1,601.89	0.00	0.00	0.00
9,300.00	89.97	182.30	7,715.48	-1,706.12	2,235.31	1,701.82	0.00	0.00	0.00
9,400.00	89.97	182.30	7,715.54	-1,806.03	2,231.29	1,801.75	0.00	0.00	0.00
9,500.00	89.97	182.30	7,715.59	-1,905.95	2,227.27	1,901.67	0.00	0.00	0.00
9,600.00	89.97	182.30	7,715.65	-2,005.87	2,223.25	2,001.60	0.00	0.00	0.00
9,700.00	89.97	182.30	7,715.71	-2,105.79	2,219.24	2,101.53	0.00	0.00	0.00
9,800.00	89.97	182.30	7,715.77	-2,205.71	2,215.22	2,201.45	0.00	0.00	0.00
9,900.00	89.97	182.30	7,715.83	-2,305.63	2,211.20	2,301.38	0.00	0.00	0.00
10,000.00	89.97	182.30	7,715.89	-2,405.55	2,207.18	2,401.31	0.00	0.00	0.00
10,100.00	89.97	182.30	7,715.95	-2,505.47	2,203.16	2,501.23	0.00	0.00	0.00
10,200.00	89.97	182.30	7,716.01	-2,605.39	2,199.14	2,601.16	0.00	0.00	0.00
10,300.00	89.97	182.30	7,716.06	-2,705.31	2,195.12	2,701.09	0.00	0.00	0.00
10,400.00	89.97	182.30	7,716.12	-2,805.23	2,191.10	2,801.01	0.00	0.00	0.00
10,500.00	89.97	182.30	7,716.18	-2,905.15	2,187.08	2,900.94	0.00	0.00	0.00
10,600.00	89.97	182.30	7,716.24	-3,005.07	2,183.07	3,000.87	0.00	0.00	0.00
10,700.00	89.97	182.30	7,716.30	-3,104.98	2,179.05	3,100.80	0.00	0.00	0.00
10,800.00	89.97	182.30	7,716.36	-3,204.90	2,175.03	3,200.72	0.00	0.00	0.00
10,900.00	89.97	182.30	7,716.42	-3,304.82	2,171.01	3,300.65	0.00	0.00	0.00
11,000.00	89.97	182.30	7,716.48	-3,404.74	2,166.99	3,400.58	0.00	0.00	0.00
11,100.00	89.97	182.30	7,716.53	-3,504.66	2,162.97	3,500.50	0.00	0.00	0.00
11,200.00	89.97	182.30	7,716.59	-3,604.58	2,158.95	3,600.43	0.00	0.00	0.00
11,300.00	89.97	182.30	7,716.65	-3,704.50	2,154.93	3,700.36	0.00	0.00	0.00
11,400.00	89.97	182.30	7,716.71	-3,804.42	2,150.91	3,800.28	0.00	0.00	0.00
11,500.00	89.97	182.30	7,716.77	-3,904.34	2,146.90	3,900.21	0.00	0.00	0.00
11,586.49	89.97	182.30	7,716.82	-3,990.76	2,143.42	3,986.64	0.00	0.00	0.00
Begin Turn to BHL @ 11586.49ft									
11,600.00	89.97	182.10	7,716.83	-4,004.26	2,142.90	4,000.14	1.50	0.00	-1.50
11,700.00	89.97	180.60	7,716.89	-4,104.23	2,140.54	4,100.11	1.50	0.00	-1.50
11,800.00	89.97	179.10	7,716.94	-4,204.22	2,140.80	4,200.11	1.50	0.00	-1.50
11,900.00	89.97	177.60	7,717.00	-4,304.18	2,143.68	4,300.06	1.50	0.00	-1.50
11,989.09	89.97	176.26	7,717.05	-4,393.14	2,148.45	4,389.01	1.50	0.00	-1.50
End Turn @ 11989.09ft									
12,000.00	89.97	176.26	7,717.06	-4,404.03	2,149.16	4,399.89	0.00	0.00	0.00
12,100.00	89.97	176.26	7,717.12	-4,503.81	2,155.68	4,499.67	0.00	0.00	0.00
12,200.00	89.97	176.26	7,717.17	-4,603.60	2,162.19	4,599.44	0.00	0.00	0.00
12,300.00	89.97	176.26	7,717.23	-4,703.39	2,168.71	4,699.22	0.00	0.00	0.00
12,400.00	89.97	176.26	7,717.28	-4,803.18	2,175.22	4,798.99	0.00	0.00	0.00
12,500.00	89.97	176.26	7,717.34	-4,902.96	2,181.74	4,898.77	0.00	0.00	0.00
12,600.00	89.97	176.26	7,717.40	-5,002.75	2,188.25	4,998.54	0.00	0.00	0.00
12,700.00	89.97	176.26	7,717.45	-5,102.54	2,194.77	5,098.32	0.00	0.00	0.00
12,800.00	89.97	176.26	7,717.51	-5,202.33	2,201.28	5,198.09	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-2HZ
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 8-2HZ	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	89.97	176.26	7,717.57	-5,302.11	2,207.80	5,297.87	0.00	0.00	0.00	
13,000.00	89.97	176.26	7,717.62	-5,401.90	2,214.32	5,397.64	0.00	0.00	0.00	
13,100.00	89.97	176.26	7,717.68	-5,501.69	2,220.83	5,497.42	0.00	0.00	0.00	
13,200.00	89.97	176.26	7,717.74	-5,601.48	2,227.35	5,597.19	0.00	0.00	0.00	
13,300.00	89.97	176.26	7,717.79	-5,701.26	2,233.86	5,696.97	0.00	0.00	0.00	
13,400.00	89.97	176.26	7,717.85	-5,801.05	2,240.38	5,796.74	0.00	0.00	0.00	
13,500.00	89.97	176.26	7,717.91	-5,900.84	2,246.89	5,896.52	0.00	0.00	0.00	
13,600.00	89.97	176.26	7,717.96	-6,000.63	2,253.41	5,996.29	0.00	0.00	0.00	
13,665.06	89.97	176.26	7,718.00	-6,065.55	2,257.65	6,061.20	0.00	0.00	0.00	
TD Well @ 13665.06ft										

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	
8,495.10	7,715.00	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				
4,381.87	4,207.00	Parkman				
4,749.70	4,555.00	Sussex				
7,861.05	7,465.00	Sharon Springs				
7,910.02	7,500.00	Niobrara				
8,024.39	7,573.00	Nio B				
8,293.09	7,688.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	Begin Nudge @ 300.00ft	
1,560.00	1,537.27	-11.32	205.63	Hold Tangent @ 1560.00ft	
6,506.67	6,217.24	-99.36	1,805.52	Turn @ 6506.67ft	
6,841.54	6,534.26	-119.75	1,911.11	Hold Tangent @ 6841.54ft	
7,436.08	7,096.75	-181.49	2,093.53	KOP @ 7436.08ft :: DLS = 8°/100'	
8,495.10	7,715.00	-901.87	2,267.66	End Build @ 8495.10ft	
11,586.49	7,716.82	-3,990.76	2,143.42	Begin Turn to BHL @ 11586.49ft	
11,989.09	7,717.05	-4,393.14	2,148.45	End Turn @ 11989.09ft	
13,665.06	7,718.00	-6,065.55	2,257.65	TD Well @ 13665.06ft	