

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**4N-67W-21 WALTERS 14-21HZ PAD**

**WALTERS 21-2HZ**

## **Plan A**

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

SHL Lat/Long: 40.294102/-104.897550

Survey Program: MWD+IFR+MSA

## **Standard Planning Report**

**07 March, 2018**

Project: WELD-NAD83-UTMFT13N  
 Site: 4N-67W-21 WALTERS 14-21HZ PAD  
 Well: WALTERS 21-2HZ  
 Wellbore: Plan A  
 Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

CASING DETAILS		
TVD	MD	Size
1500.00	1523.46	9-5/8
7167.00	7890.21	5-1/2

WELL DETAILS: WALTERS 21-2HZ  
 GL = 4938'  
 RKB = 17" @ 4955.00usft (Drilling Rig)

## SECTION DETAILS

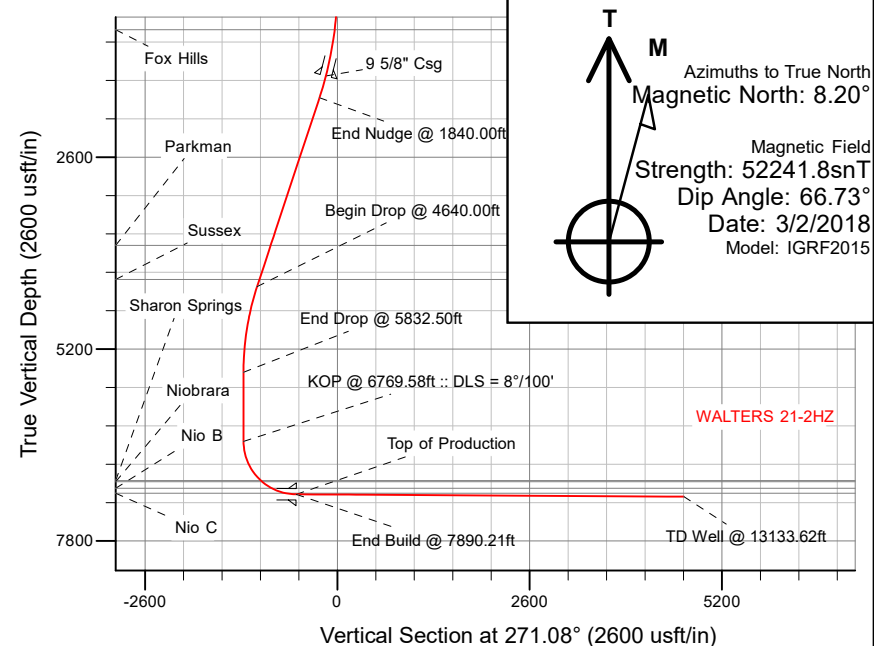
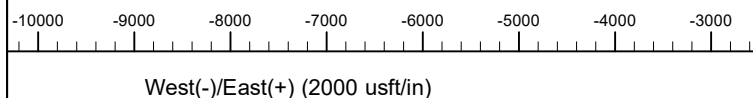
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1840.00	23.85	49.30	1794.48	212.70	247.29	1.50	49.30	-243.23	
4	4640.00	23.85	49.30	4355.38	950.98	1105.62	0.00	0.00	-1087.50	
5	5832.50	0.00	0.00	5513.74	1110.50	1291.08	2.00	180.00	-1269.92	
6	6769.58	0.00	0.00	6450.82	1110.50	1291.08	0.00	0.00	-1269.92	
7	7890.21	89.65	271.08	7167.00	1123.86	579.38	8.00	271.08	-558.09	
8	13133.62	89.65	271.08	7199.00	1222.25	-4663.01	0.00	0.00	4685.22	WALTERS 21-2HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
WALTERS 21-2HZ_SHL	0.00	0.00	0.00	40.294102	-104.897550
WALTERS 21-2HZ_BHL	7199.00	1222.25	-4663.01	40.297457	-104.914273

## FORMATION TOP DETAILS

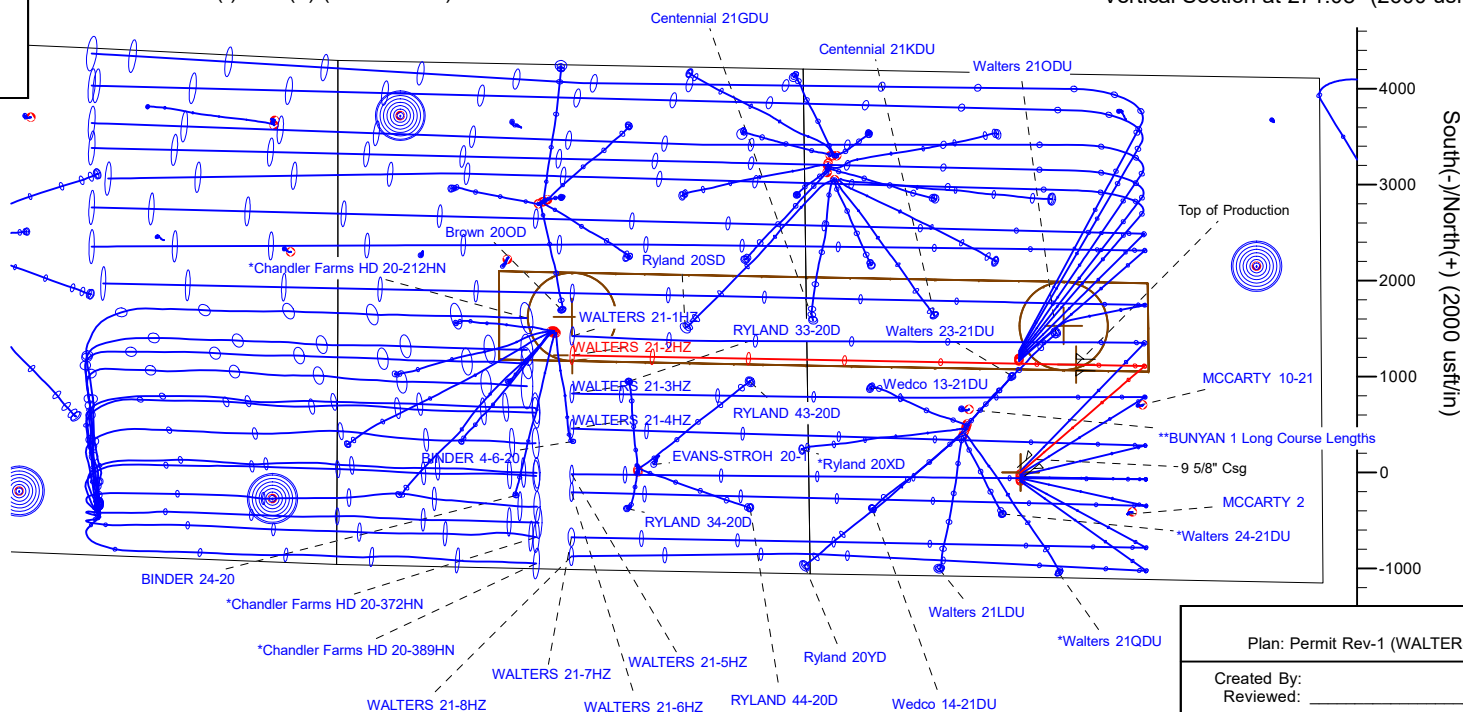
TVDPath	MDPath	Formation
874.00	876.81	Fox Hills
3795.00	4027.30	Parkman
4255.00	4530.25	Sussex
6980.00	7365.03	Sharon Springs
6995.00	7387.69	Niobrara
7084.00	7546.33	Nio B
7152.00	7747.67	Nio C



SHL  
 1091' FSL  
 2202' FWL

HEEL  
 2225' FSL  
 2550' FEL

TOE  
 2233' FSL  
 2442' FWL



Plan: Permit Rev-1 (WALTERS 21-2HZ/Plan A)

Created By: \_\_\_\_\_ Date: 3/7/2018  
 Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well WALTERS 21-2HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Site:</b>	4N-67W-21 WALTERS 14-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WALTERS 21-2HZ	<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>	4N-67W-21 WALTERS 14-21HZ PAD			
<b>Site Position:</b>		<b>Northing:</b>	14,633,862.07 usft	<b>Latitude:</b> 40.294143
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,668,984.40 usft	<b>Longitude:</b> -104.897550
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.07 °

Well	WALTERS 21-2HZ					
Well Position	+N/-S	-14.93 usft	Northing:	14,633,847.14 usft	Latitude:	40.294102
	+E/-W	0.00 usft	Easting:	1,668,984.42 usft	Longitude:	-104.897550
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,938.00 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	3/2/2018	8.20	66.73	52,241.77811242

<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	271.08

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/6/2018		
<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	13,133.62	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

Corporate  
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well WALTERS 21-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4955.00usft (Drilling Rig)
Site:	4N-67W-21 WALTERS 14-21HZ PAD	North Reference:	True
Well:	WALTERS 21-2HZ	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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,840.00	23.85	49.30	1,794.48	212.70	247.29	1.50	1.50	0.00	49.30	
4,640.00	23.85	49.30	4,355.38	950.98	1,105.62	0.00	0.00	0.00	0.00	
5,832.50	0.00	0.00	5,513.74	1,110.50	1,291.08	2.00	-2.00	0.00	180.00	
6,769.58	0.00	0.00	6,450.82	1,110.50	1,291.08	0.00	0.00	0.00	0.00	
7,890.21	89.65	271.08	7,167.00	1,123.86	579.38	8.00	8.00	-7.94	271.08	
13,133.62	89.65	271.08	7,199.00	1,222.25	-4,663.01	0.00	0.00	0.00	0.00	WALTERS 21-2HZ_B

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well WALTERS 21-2HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Site:</b>	4N-67W-21 WALTERS 14-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WALTERS 21-2HZ	<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
Begin Nudge @ 250.00ft									
300.00	0.75	49.30	300.00	0.21	0.25	-0.24	1.50	1.50	0.00
400.00	2.25	49.30	399.96	1.92	2.23	-2.20	1.50	1.50	0.00
500.00	3.75	49.30	499.82	5.33	6.20	-6.10	1.50	1.50	0.00
600.00	5.25	49.30	599.51	10.45	12.15	-11.95	1.50	1.50	0.00
700.00	6.75	49.30	698.96	17.27	20.07	-19.74	1.50	1.50	0.00
800.00	8.25	49.30	798.10	25.78	29.97	-29.48	1.50	1.50	0.00
876.81	9.40	49.30	874.00	33.46	38.90	-38.27	1.50	1.50	0.00
Fox Hills									
900.00	9.75	49.30	896.87	35.98	41.83	-41.14	1.50	1.50	0.00
1,000.00	11.25	49.30	995.19	47.86	55.64	-54.73	1.50	1.50	0.00
1,100.00	12.75	49.30	1,093.00	61.42	71.41	-70.23	1.50	1.50	0.00
1,200.00	14.25	49.30	1,190.24	76.64	89.10	-87.64	1.50	1.50	0.00
1,300.00	15.75	49.30	1,286.83	93.52	108.72	-106.94	1.50	1.50	0.00
1,400.00	17.25	49.30	1,382.71	112.04	130.26	-128.12	1.50	1.50	0.00
1,500.00	18.75	49.30	1,477.81	132.19	153.68	-151.16	1.50	1.50	0.00
1,523.46	19.10	49.30	1,500.00	137.15	159.45	-156.84	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	49.30	1,572.07	153.96	178.99	-176.06	1.50	1.50	0.00
1,700.00	21.75	49.30	1,665.43	177.32	206.16	-202.78	1.50	1.50	0.00
1,800.00	23.25	49.30	1,757.81	202.28	235.17	-231.31	1.50	1.50	0.00
1,840.00	23.85	49.30	1,794.48	212.70	247.29	-243.23	1.50	1.50	0.00
End Nudge @ 1840.00ft									
1,900.00	23.85	49.30	1,849.36	228.52	265.68	-261.32	0.00	0.00	0.00
2,000.00	23.85	49.30	1,940.82	254.89	296.33	-291.48	0.00	0.00	0.00
2,100.00	23.85	49.30	2,032.28	281.25	326.99	-321.63	0.00	0.00	0.00
2,200.00	23.85	49.30	2,123.74	307.62	357.64	-351.78	0.00	0.00	0.00
2,300.00	23.85	49.30	2,215.20	333.99	388.30	-381.93	0.00	0.00	0.00
2,400.00	23.85	49.30	2,306.66	360.36	418.95	-412.09	0.00	0.00	0.00
2,500.00	23.85	49.30	2,398.12	386.72	449.61	-442.24	0.00	0.00	0.00
2,600.00	23.85	49.30	2,489.58	413.09	480.26	-472.39	0.00	0.00	0.00
2,700.00	23.85	49.30	2,581.04	439.46	510.92	-502.54	0.00	0.00	0.00
2,800.00	23.85	49.30	2,672.50	465.82	541.57	-532.69	0.00	0.00	0.00
2,900.00	23.85	49.30	2,763.96	492.19	572.23	-562.85	0.00	0.00	0.00
3,000.00	23.85	49.30	2,855.42	518.56	602.88	-593.00	0.00	0.00	0.00
3,100.00	23.85	49.30	2,946.88	544.93	633.53	-623.15	0.00	0.00	0.00
3,200.00	23.85	49.30	3,038.34	571.29	664.19	-653.30	0.00	0.00	0.00
3,300.00	23.85	49.30	3,129.81	597.66	694.84	-683.46	0.00	0.00	0.00
3,400.00	23.85	49.30	3,221.27	624.03	725.50	-713.61	0.00	0.00	0.00
3,500.00	23.85	49.30	3,312.73	650.39	756.15	-743.76	0.00	0.00	0.00
3,600.00	23.85	49.30	3,404.19	676.76	786.81	-773.91	0.00	0.00	0.00
3,700.00	23.85	49.30	3,495.65	703.13	817.46	-804.06	0.00	0.00	0.00
3,800.00	23.85	49.30	3,587.11	729.50	848.12	-834.22	0.00	0.00	0.00
3,900.00	23.85	49.30	3,678.57	755.86	878.77	-864.37	0.00	0.00	0.00
4,000.00	23.85	49.30	3,770.03	782.23	909.43	-894.52	0.00	0.00	0.00
4,027.30	23.85	49.30	3,795.00	789.43	917.80	-902.75	0.00	0.00	0.00
Parkman									
4,100.00	23.85	49.30	3,861.49	808.60	940.08	-924.67	0.00	0.00	0.00
4,200.00	23.85	49.30	3,952.95	834.96	970.74	-954.83	0.00	0.00	0.00
4,300.00	23.85	49.30	4,044.41	861.33	1,001.39	-984.98	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well WALTERS 21-2HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Site:</b>	4N-67W-21 WALTERS 14-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WALTERS 21-2HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

## Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Section (usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)
4,400.00	23.85	49.30	4,135.87	887.70	1,032.05	-1,015.13	0.00	0.00	0.00
4,500.00	23.85	49.30	4,227.33	914.07	1,062.70	-1,045.28	0.00	0.00	0.00
4,530.25	23.85	49.30	4,255.00	922.04	1,071.97	-1,054.40	0.00	0.00	0.00
Sussex									
4,600.00	23.85	49.30	4,318.79	940.43	1,093.35	-1,075.43	0.00	0.00	0.00
4,640.00	23.85	49.30	4,355.38	950.98	1,105.62	-1,087.50	0.00	0.00	0.00
Begin Drop @ 4640.00ft									
4,700.00	22.65	49.30	4,410.51	966.42	1,123.57	-1,105.16	2.00	-2.00	0.00
4,800.00	20.65	49.30	4,503.45	990.48	1,151.54	-1,132.67	2.00	-2.00	0.00
4,900.00	18.65	49.30	4,597.62	1,012.41	1,177.03	-1,157.74	2.00	-2.00	0.00
5,000.00	16.65	49.30	4,692.91	1,032.18	1,200.02	-1,180.35	2.00	-2.00	0.00
5,100.00	14.65	49.30	4,789.19	1,049.77	1,220.47	-1,200.47	2.00	-2.00	0.00
5,200.00	12.65	49.30	4,886.36	1,065.16	1,238.36	-1,218.06	2.00	-2.00	0.00
5,300.00	10.65	49.30	4,984.30	1,078.33	1,253.67	-1,233.12	2.00	-2.00	0.00
5,400.00	8.65	49.30	5,082.88	1,089.26	1,266.38	-1,245.62	2.00	-2.00	0.00
5,500.00	6.65	49.30	5,181.98	1,097.94	1,276.47	-1,255.55	2.00	-2.00	0.00
5,600.00	4.65	49.30	5,281.49	1,104.36	1,283.93	-1,262.89	2.00	-2.00	0.00
5,700.00	2.65	49.30	5,381.29	1,108.51	1,288.76	-1,267.64	2.00	-2.00	0.00
5,800.00	0.65	49.30	5,481.24	1,110.38	1,290.94	-1,269.78	2.00	-2.00	0.00
5,832.50	0.00	0.00	5,513.74	1,110.50	1,291.08	-1,269.92	2.00	-2.00	0.00
End Drop @ 5832.50ft									
5,900.00	0.00	0.00	5,581.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,000.00	0.00	0.00	5,681.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,100.00	0.00	0.00	5,781.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,200.00	0.00	0.00	5,881.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,300.00	0.00	0.00	5,981.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,400.00	0.00	0.00	6,081.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,500.00	0.00	0.00	6,181.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,600.00	0.00	0.00	6,281.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,700.00	0.00	0.00	6,381.24	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
6,769.58	0.00	0.00	6,450.82	1,110.50	1,291.08	-1,269.92	0.00	0.00	0.00
KOP @ 6769.58ft :: DLS = 8°/100'									
6,800.00	2.43	271.08	6,481.23	1,110.52	1,290.44	-1,269.27	8.00	8.00	0.00
6,900.00	10.43	271.08	6,580.52	1,110.73	1,279.24	-1,258.08	8.00	8.00	0.00
7,000.00	18.43	271.08	6,677.28	1,111.19	1,254.34	-1,233.17	8.00	8.00	0.00
7,100.00	26.43	271.08	6,769.64	1,111.91	1,216.22	-1,195.04	8.00	8.00	0.00
7,200.00	34.43	271.08	6,855.79	1,112.86	1,165.61	-1,144.43	8.00	8.00	0.00
7,300.00	42.43	271.08	6,934.06	1,114.03	1,103.51	-1,082.32	8.00	8.00	0.00
7,365.03	47.64	271.08	6,980.00	1,114.89	1,057.53	-1,036.33	8.00	8.00	0.00
Sharon Springs									
7,387.69	49.45	271.08	6,995.00	1,115.21	1,040.55	-1,019.35	8.00	8.00	0.00
Niobrara									
7,400.00	50.43	271.08	7,002.93	1,115.38	1,031.13	-1,009.92	8.00	8.00	0.00
7,500.00	58.43	271.08	7,061.04	1,116.91	949.86	-928.64	8.00	8.00	0.00
7,546.33	62.14	271.08	7,084.00	1,117.66	909.64	-888.42	8.00	8.00	0.00
Nio B									
7,600.00	66.43	271.08	7,107.28	1,118.57	861.30	-840.07	8.00	8.00	0.00
7,700.00	74.43	271.08	7,140.75	1,120.34	767.17	-745.92	8.00	8.00	0.00
7,747.67	78.25	271.08	7,152.00	1,121.21	720.87	-699.61	8.00	8.00	0.00
Nio C									
7,800.00	82.43	271.08	7,160.78	1,122.17	669.30	-648.03	8.00	8.00	0.00
7,890.21	89.65	271.08	7,167.00	1,123.86	579.38	-558.09	8.00	8.00	0.00
End Build @ 7890.21ft - Top of Production									

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well WALTERS 21-2HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Site:</b>	4N-67W-21 WALTERS 14-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WALTERS 21-2HZ	<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)
7,900.00	89.65	271.08	7,167.06	1,124.05	569.59	-548.30	0.00	0.00	0.00
8,000.00	89.65	271.08	7,167.67	1,125.92	469.61	-448.31	0.00	0.00	0.00
8,100.00	89.65	271.08	7,168.28	1,127.80	369.63	-348.31	0.00	0.00	0.00
8,200.00	89.65	271.08	7,168.89	1,129.68	269.65	-248.31	0.00	0.00	0.00
8,300.00	89.65	271.08	7,169.50	1,131.55	169.67	-148.31	0.00	0.00	0.00
8,400.00	89.65	271.08	7,170.11	1,133.43	69.69	-48.31	0.00	0.00	0.00
8,500.00	89.65	271.08	7,170.72	1,135.30	-30.29	51.69	0.00	0.00	0.00
8,600.00	89.65	271.08	7,171.33	1,137.18	-130.27	151.68	0.00	0.00	0.00
8,700.00	89.65	271.08	7,171.94	1,139.06	-230.25	251.68	0.00	0.00	0.00
8,800.00	89.65	271.08	7,172.55	1,140.93	-330.23	351.68	0.00	0.00	0.00
8,900.00	89.65	271.08	7,173.16	1,142.81	-430.21	451.68	0.00	0.00	0.00
9,000.00	89.65	271.08	7,173.77	1,144.69	-530.19	551.68	0.00	0.00	0.00
9,100.00	89.65	271.08	7,174.38	1,146.56	-630.18	651.67	0.00	0.00	0.00
9,200.00	89.65	271.08	7,175.00	1,148.44	-730.16	751.67	0.00	0.00	0.00
9,300.00	89.65	271.08	7,175.61	1,150.32	-830.14	851.67	0.00	0.00	0.00
9,400.00	89.65	271.08	7,176.22	1,152.19	-930.12	951.67	0.00	0.00	0.00
9,500.00	89.65	271.08	7,176.83	1,154.07	-1,030.10	1,051.67	0.00	0.00	0.00
9,600.00	89.65	271.08	7,177.44	1,155.95	-1,130.08	1,151.67	0.00	0.00	0.00
9,700.00	89.65	271.08	7,178.05	1,157.82	-1,230.06	1,251.66	0.00	0.00	0.00
9,800.00	89.65	271.08	7,178.66	1,159.70	-1,330.04	1,351.66	0.00	0.00	0.00
9,900.00	89.65	271.08	7,179.27	1,161.57	-1,430.02	1,451.66	0.00	0.00	0.00
10,000.00	89.65	271.08	7,179.88	1,163.45	-1,530.00	1,551.66	0.00	0.00	0.00
10,100.00	89.65	271.08	7,180.49	1,165.33	-1,629.98	1,651.66	0.00	0.00	0.00
10,200.00	89.65	271.08	7,181.10	1,167.20	-1,729.96	1,751.65	0.00	0.00	0.00
10,300.00	89.65	271.08	7,181.71	1,169.08	-1,829.94	1,851.65	0.00	0.00	0.00
10,400.00	89.65	271.08	7,182.32	1,170.96	-1,929.92	1,951.65	0.00	0.00	0.00
10,500.00	89.65	271.08	7,182.93	1,172.83	-2,029.90	2,051.65	0.00	0.00	0.00
10,600.00	89.65	271.08	7,183.54	1,174.71	-2,129.88	2,151.65	0.00	0.00	0.00
10,700.00	89.65	271.08	7,184.15	1,176.59	-2,229.86	2,251.64	0.00	0.00	0.00
10,800.00	89.65	271.08	7,184.76	1,178.46	-2,329.84	2,351.64	0.00	0.00	0.00
10,900.00	89.65	271.08	7,185.37	1,180.34	-2,429.83	2,451.64	0.00	0.00	0.00
11,000.00	89.65	271.08	7,185.98	1,182.22	-2,529.81	2,551.64	0.00	0.00	0.00
11,100.00	89.65	271.08	7,186.59	1,184.09	-2,629.79	2,651.64	0.00	0.00	0.00
11,200.00	89.65	271.08	7,187.20	1,185.97	-2,729.77	2,751.64	0.00	0.00	0.00
11,300.00	89.65	271.08	7,187.81	1,187.84	-2,829.75	2,851.63	0.00	0.00	0.00
11,400.00	89.65	271.08	7,188.42	1,189.72	-2,929.73	2,951.63	0.00	0.00	0.00
11,500.00	89.65	271.08	7,189.03	1,191.60	-3,029.71	3,051.63	0.00	0.00	0.00
11,600.00	89.65	271.08	7,189.64	1,193.47	-3,129.69	3,151.63	0.00	0.00	0.00
11,700.00	89.65	271.08	7,190.25	1,195.35	-3,229.67	3,251.63	0.00	0.00	0.00
11,800.00	89.65	271.08	7,190.86	1,197.23	-3,329.65	3,351.62	0.00	0.00	0.00
11,900.00	89.65	271.08	7,191.47	1,199.10	-3,429.63	3,451.62	0.00	0.00	0.00
12,000.00	89.65	271.08	7,192.08	1,200.98	-3,529.61	3,551.62	0.00	0.00	0.00
12,100.00	89.65	271.08	7,192.69	1,202.86	-3,629.59	3,651.62	0.00	0.00	0.00
12,200.00	89.65	271.08	7,193.30	1,204.73	-3,729.57	3,751.62	0.00	0.00	0.00
12,300.00	89.65	271.08	7,193.91	1,206.61	-3,829.55	3,851.61	0.00	0.00	0.00
12,400.00	89.65	271.08	7,194.52	1,208.49	-3,929.53	3,951.61	0.00	0.00	0.00
12,500.00	89.65	271.08	7,195.13	1,210.36	-4,029.51	4,051.61	0.00	0.00	0.00
12,600.00	89.65	271.08	7,195.74	1,212.24	-4,129.49	4,151.61	0.00	0.00	0.00
12,700.00	89.65	271.08	7,196.35	1,214.11	-4,229.47	4,251.61	0.00	0.00	0.00
12,800.00	89.65	271.08	7,196.96	1,215.99	-4,329.46	4,351.61	0.00	0.00	0.00
12,900.00	89.65	271.08	7,197.57	1,217.87	-4,429.44	4,451.60	0.00	0.00	0.00
13,000.00	89.65	271.08	7,198.18	1,219.74	-4,529.42	4,551.60	0.00	0.00	0.00
13,100.00	89.65	271.08	7,198.80	1,221.62	-4,629.40	4,651.60	0.00	0.00	0.00
13,133.62	89.65	271.08	7,199.00	1,222.25	-4,663.01	4,685.22	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well WALTERS 21-2HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4955.00usft (Drilling Rig)
<b>Site:</b>	4N-67W-21 WALTERS 14-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WALTERS 21-2HZ	<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)
TD Well @ 13133.62ft									

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	
7,890.21	7,167.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
876.81	874.00	Fox Hills				
4,027.30	3,795.00	Parkman				
4,530.25	4,255.00	Sussex				
7,365.03	6,980.00	Sharon Springs				
7,387.69	6,995.00	Niobrara				
7,546.33	7,084.00	Nio B				
7,747.67	7,152.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,840.00	1,794.48	212.70	247.29	End Nudge @ 1840.00ft	
4,640.00	4,355.38	950.98	1,105.62	Begin Drop @ 4640.00ft	
5,832.50	5,513.74	1,110.50	1,291.08	End Drop @ 5832.50ft	
6,769.58	6,450.82	1,110.50	1,291.08	KOP @ 6769.58ft :: DLS = 8°/100'	
7,890.21	7,167.00	1,123.86	579.38	End Build @ 7890.21ft	
13,133.62	7,199.00	1,222.25	-4,663.01	TD Well @ 13133.62ft	