

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**5N-67W-04 SCHMERGE EAST 9-4HZ PAD**

**SCHMERGE EAST 4-14HZ**

**Plan D**

**Plan: Permit Rev-2**

## **Standard Planning Report**

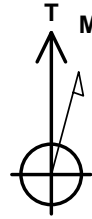
**25 July, 2024**

Project: WELD-NAD83-UTMFT13N  
Site: 5N-67W-04 SCHMERGE EAST 9-4HZ PAD  
Well: SCHMERGE EAST 4-14HZ  
Wellbore: Plan D  
Design: Permit Rev-2

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Name	Size
2652.00	2693.25	8.625" CSG	8-5/8
7197.00	16672.11	5.5" CSG	5-1/2



Azimuths to True North  
Magnetic North: 7.60°  
Magnetic Field  
Strength: 51626.1nT  
Dip Angle: 66.53°  
Date: 7/25/2024  
Model: IGRF2020

## 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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	982.67	11.74	165.42	977.20	-77.33	20.11	1.50	165.42	-21.46	
4	6582.90	11.74	165.42	6460.28	-1180.12	306.96	0.00	0.00	-327.51	
5	7745.10	89.84	271.00	7201.00	-1315.51	-408.68	8.00	105.30	385.66	
6	10963.00	89.84	271.00	7209.99	-1259.35	-3626.08	0.00	0.00	3603.55	
7	12951.89	90.15	90.00	7222.72	13.73	-3614.93	9.00	90.57	3614.62	
8	13151.89	90.15	90.00	7222.20	13.73	-3414.93	0.00	0.00	3414.65	
9	13411.68	90.42	93.89	7220.91	4.92	-3155.34	1.50	86.02	3154.95	
10	16672.11	90.42	93.89	7197.00	-216.13	97.49	0.00	0.00	-101.25	SCHMERGE EAST 4-14HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
SCHMERGE EAST 4-14HZ_SHL	0.00	14682002.01	1671022.24	40.426329	-104.890027
SCHMERGE EAST 4-14HZ_LP	7201.00	14680685.97	1670615.10	40.422717	-104.891496
SCHMERGE EAST 4-14HZ_BHL	7197.00	14681786.00	1671120.00	40.425736	-104.889677

## WELL DETAILS: SCHMERGE EAST 4-14HZ

GL = 4897'

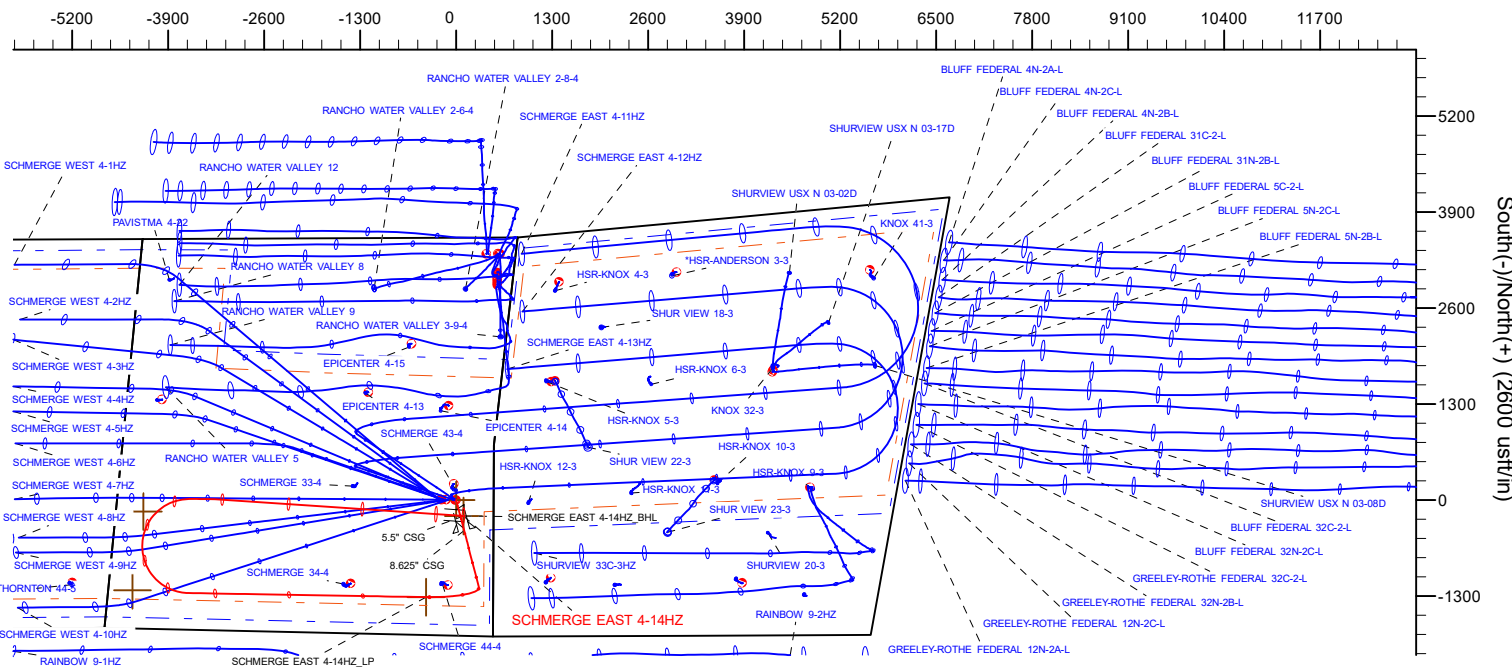
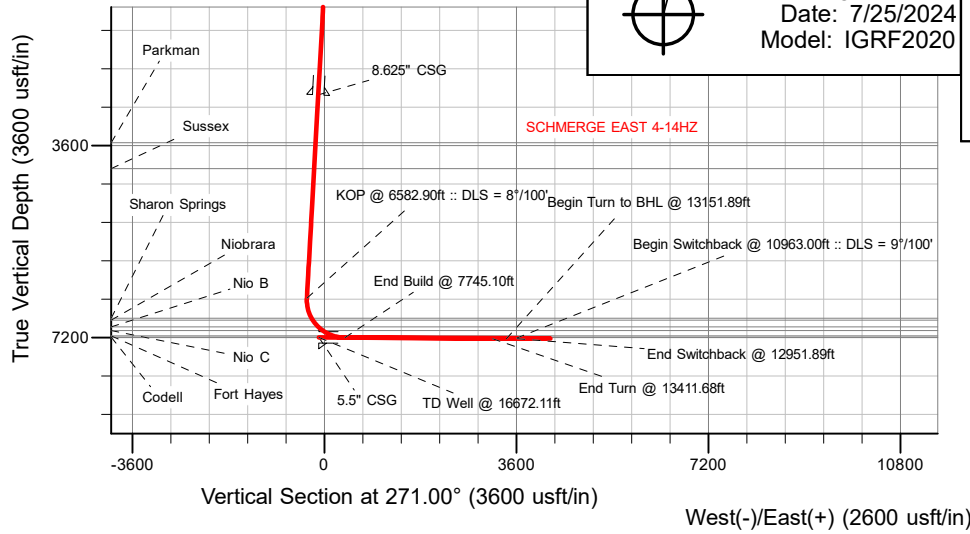
RKB = 17' @ 4914.00usft (RIG)

Plan: Permit Rev-2 (SCHMERGE EAST 4-14HZ/Plan D)

Date: 7/25/2024

## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
762.00	764.05	Fox Hills
3546.00	3606.35	Parkman
4032.00	4102.73	Sussex
6837.00	6982.07	Sharon Springs
6874.00	7025.89	Niobrara
6998.00	7188.52	Nio B
7066.00	7295.60	Nio C
7169.00	7530.07	Fort Hayes
7190.00	7620.17	Codell



SHL  
1838' FSL  
509' FEL

LP  
514' FSL  
910' FEL

BHL  
1624' FSL  
410' FEL

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

<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)		

Site		5N-67W-04 SCHMERGE EAST 9-4HZ PAD			
Site Position:		Northing:	14,682,077.76 usft	Latitude:	40.426538
From:	Map	Easting:	1,670,814.33 usft	Longitude:	-104.890774
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well		SCHMERGE EAST 4-14HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,682,002.01 usft	Latitude:	40.426329
	+E/-W	0.00 usft	Easting:	1,671,022.24 usft	Longitude:	-104.890028
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,897.00 usft
Grid Convergence:		0.07 °				

<b>Wellbore</b>	Plan D				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF202013	7/25/2024	7.60	66.53	51,626.12116852

<b>Design</b>	Permit Rev-2				
<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	271.00	

<b>Plan Survey Tool Program</b>		<b>Date</b>	7/25/2024		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	2,652.00	Permit Rev-2 (Plan D)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	2,652.00	16,672.11	Permit Rev-2 (Plan D)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHMERGE EAST 4-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4914.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4914.00usft (RIG)
Site:	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	North Reference:	True
Well:	SCHMERGE EAST 4-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan D		
Design:	Permit Rev-2		

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	
982.67	11.74	165.42	977.20	-77.33	20.11	1.50	1.50	0.00	165.42	
6,582.90	11.74	165.42	6,460.28	-1,180.12	306.96	0.00	0.00	0.00	0.00	
7,745.10	89.84	271.00	7,201.00	-1,315.51	-408.68	8.00	6.72	9.08	105.30	
10,963.00	89.84	271.00	7,209.99	-1,259.35	-3,626.08	0.00	0.00	0.00	0.00	
12,951.89	90.15	90.00	7,222.72	13.73	-3,614.93	9.00	0.02	9.00	90.57	
13,151.89	90.15	90.00	7,222.20	13.73	-3,414.93	0.00	0.00	0.00	0.00	
13,411.69	90.42	93.89	7,220.91	4.92	-3,155.34	1.50	0.10	1.50	86.02	
16,672.11	90.42	93.89	7,197.00	-216.13	97.49	0.00	0.00	0.00	0.00	SCHMERGE EAST 4-

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

## 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)
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
Begin Nudge @ 200.00ft									
300.00	1.50	165.42	299.99	-1.27	0.33	-0.35	1.50	1.50	0.00
400.00	3.00	165.42	399.91	-5.07	1.32	-1.41	1.50	1.50	0.00
500.00	4.50	165.42	499.69	-11.40	2.96	-3.16	1.50	1.50	0.00
600.00	6.00	165.42	599.27	-20.25	5.27	-5.62	1.50	1.50	0.00
700.00	7.50	165.42	698.57	-31.63	8.23	-8.78	1.50	1.50	0.00
764.05	8.46	165.42	762.00	-40.23	10.46	-11.17	1.50	1.50	0.00
Fox Hills									
800.00	9.00	165.42	797.54	-45.51	11.84	-12.63	1.50	1.50	0.00
900.00	10.50	165.42	896.09	-61.90	16.10	-17.18	1.50	1.50	0.00
982.67	11.74	165.42	977.20	-77.33	20.11	-21.46	1.50	1.50	0.00
Hold Tangent @ 982.67ft									
1,000.00	11.74	165.42	994.17	-80.74	21.00	-22.41	0.00	0.00	0.00
1,100.00	11.74	165.42	1,092.08	-100.44	26.12	-27.87	0.00	0.00	0.00
1,200.00	11.74	165.42	1,189.99	-120.13	31.25	-33.34	0.00	0.00	0.00
1,300.00	11.74	165.42	1,287.90	-139.82	36.37	-38.80	0.00	0.00	0.00
1,400.00	11.74	165.42	1,385.80	-159.51	41.49	-44.27	0.00	0.00	0.00
1,500.00	11.74	165.42	1,483.71	-179.20	46.61	-49.73	0.00	0.00	0.00
1,600.00	11.74	165.42	1,581.62	-198.90	51.73	-55.20	0.00	0.00	0.00
1,700.00	11.74	165.42	1,679.53	-218.59	56.86	-60.66	0.00	0.00	0.00
1,800.00	11.74	165.42	1,777.44	-238.28	61.98	-66.13	0.00	0.00	0.00
1,900.00	11.74	165.42	1,875.35	-257.97	67.10	-71.59	0.00	0.00	0.00
2,000.00	11.74	165.42	1,973.25	-277.66	72.22	-77.06	0.00	0.00	0.00
2,100.00	11.74	165.42	2,071.16	-297.36	77.34	-82.52	0.00	0.00	0.00
2,200.00	11.74	165.42	2,169.07	-317.05	82.47	-87.99	0.00	0.00	0.00
2,300.00	11.74	165.42	2,266.98	-336.74	87.59	-93.45	0.00	0.00	0.00
2,400.00	11.74	165.42	2,364.89	-356.43	92.71	-98.92	0.00	0.00	0.00
2,500.00	11.74	165.42	2,462.79	-376.12	97.83	-104.38	0.00	0.00	0.00
2,600.00	11.74	165.42	2,560.70	-395.81	102.95	-109.85	0.00	0.00	0.00
2,693.25	11.74	165.42	2,652.00	-414.18	107.73	-114.94	0.00	0.00	0.00
8.625" CSG									
2,700.00	11.74	165.42	2,658.61	-415.51	108.08	-115.31	0.00	0.00	0.00
2,800.00	11.74	165.42	2,756.52	-435.20	113.20	-120.78	0.00	0.00	0.00
2,900.00	11.74	165.42	2,854.43	-454.89	118.32	-126.24	0.00	0.00	0.00
3,000.00	11.74	165.42	2,952.33	-474.58	123.44	-131.71	0.00	0.00	0.00
3,100.00	11.74	165.42	3,050.24	-494.27	128.56	-137.17	0.00	0.00	0.00
3,200.00	11.74	165.42	3,148.15	-513.97	133.69	-142.64	0.00	0.00	0.00
3,300.00	11.74	165.42	3,246.06	-533.66	138.81	-148.10	0.00	0.00	0.00
3,400.00	11.74	165.42	3,343.97	-553.35	143.93	-153.57	0.00	0.00	0.00
3,500.00	11.74	165.42	3,441.87	-573.04	149.05	-159.03	0.00	0.00	0.00
3,600.00	11.74	165.42	3,539.78	-592.73	154.17	-164.50	0.00	0.00	0.00
3,606.35	11.74	165.42	3,546.00	-593.98	154.50	-164.84	0.00	0.00	0.00
Parkman									
3,700.00	11.74	165.42	3,637.69	-612.42	159.30	-169.96	0.00	0.00	0.00
3,800.00	11.74	165.42	3,735.60	-632.12	164.42	-175.43	0.00	0.00	0.00
3,900.00	11.74	165.42	3,833.51	-651.81	169.54	-180.89	0.00	0.00	0.00
4,000.00	11.74	165.42	3,931.42	-671.50	174.66	-186.36	0.00	0.00	0.00
4,100.00	11.74	165.42	4,029.32	-691.19	179.78	-191.82	0.00	0.00	0.00
4,102.73	11.74	165.42	4,032.00	-691.73	179.92	-191.97	0.00	0.00	0.00
Sussex									

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

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)
4,200.00	11.74	165.42	4,127.23	-710.88	184.91	-197.28	0.00	0.00	0.00
4,300.00	11.74	165.42	4,225.14	-730.58	190.03	-202.75	0.00	0.00	0.00
4,400.00	11.74	165.42	4,323.05	-750.27	195.15	-208.21	0.00	0.00	0.00
4,500.00	11.74	165.42	4,420.96	-769.96	200.27	-213.68	0.00	0.00	0.00
4,600.00	11.74	165.42	4,518.86	-789.65	205.39	-219.14	0.00	0.00	0.00
4,700.00	11.74	165.42	4,616.77	-809.34	210.52	-224.61	0.00	0.00	0.00
4,800.00	11.74	165.42	4,714.68	-829.04	215.64	-230.07	0.00	0.00	0.00
4,900.00	11.74	165.42	4,812.59	-848.73	220.76	-235.54	0.00	0.00	0.00
5,000.00	11.74	165.42	4,910.50	-868.42	225.88	-241.00	0.00	0.00	0.00
5,100.00	11.74	165.42	5,008.40	-888.11	231.00	-246.47	0.00	0.00	0.00
5,200.00	11.74	165.42	5,106.31	-907.80	236.13	-251.93	0.00	0.00	0.00
5,300.00	11.74	165.42	5,204.22	-927.49	241.25	-257.40	0.00	0.00	0.00
5,400.00	11.74	165.42	5,302.13	-947.19	246.37	-262.86	0.00	0.00	0.00
5,500.00	11.74	165.42	5,400.04	-966.88	251.49	-268.33	0.00	0.00	0.00
5,600.00	11.74	165.42	5,497.94	-986.57	256.61	-273.79	0.00	0.00	0.00
5,700.00	11.74	165.42	5,595.85	-1,006.26	261.74	-279.26	0.00	0.00	0.00
5,800.00	11.74	165.42	5,693.76	-1,025.95	266.86	-284.72	0.00	0.00	0.00
5,900.00	11.74	165.42	5,791.67	-1,045.65	271.98	-290.19	0.00	0.00	0.00
6,000.00	11.74	165.42	5,889.58	-1,065.34	277.10	-295.65	0.00	0.00	0.00
6,100.00	11.74	165.42	5,987.49	-1,085.03	282.22	-301.12	0.00	0.00	0.00
6,200.00	11.74	165.42	6,085.39	-1,104.72	287.35	-306.58	0.00	0.00	0.00
6,300.00	11.74	165.42	6,183.30	-1,124.41	292.47	-312.05	0.00	0.00	0.00
6,400.00	11.74	165.42	6,281.21	-1,144.10	297.59	-317.51	0.00	0.00	0.00
6,500.00	11.74	165.42	6,379.12	-1,163.80	302.71	-322.98	0.00	0.00	0.00
6,582.90	11.74	165.42	6,460.28	-1,180.12	306.96	-327.51	0.00	0.00	0.00
<b>KOP @ 6582.90ft :: DLS = 8°/100'</b>									
6,600.00	11.45	172.08	6,477.04	-1,183.49	307.63	-328.24	8.00	-1.67	38.94
6,650.00	11.53	192.25	6,526.05	-1,193.29	307.25	-328.03	8.00	0.16	40.34
6,700.00	12.90	210.11	6,574.94	-1,203.01	303.39	-324.34	8.00	2.73	35.72
6,750.00	15.21	223.63	6,623.45	-1,212.59	296.06	-317.18	8.00	4.62	27.03
6,800.00	18.11	233.29	6,671.36	-1,221.98	285.30	-306.59	8.00	5.80	19.33
6,850.00	21.36	240.24	6,718.42	-1,231.15	271.17	-292.61	8.00	6.49	13.89
6,900.00	24.81	245.38	6,764.41	-1,240.04	253.72	-275.32	8.00	6.92	10.28
6,950.00	28.41	249.31	6,809.11	-1,248.62	233.04	-254.80	8.00	7.19	7.86
6,982.07	30.76	251.38	6,837.00	-1,253.93	218.13	-239.98	8.00	7.34	6.45
<b>Sharon Springs</b>									
7,000.00	32.09	252.42	6,852.30	-1,256.84	209.25	-231.15	8.00	7.41	5.78
7,025.89	34.02	253.79	6,874.00	-1,260.94	195.74	-217.71	8.00	7.46	5.28
<b>Niobrara</b>									
7,050.00	35.83	254.94	6,893.77	-1,264.65	182.44	-204.49	8.00	7.51	4.79
7,100.00	39.62	257.04	6,933.31	-1,272.03	152.76	-174.94	8.00	7.58	4.20
7,150.00	43.44	258.83	6,970.73	-1,278.94	120.34	-142.65	8.00	7.64	3.58
7,188.52	46.40	260.05	6,998.00	-1,283.92	93.61	-116.00	8.00	7.68	3.15
<b>Nio B</b>									
7,200.00	47.29	260.38	7,005.85	-1,285.34	85.35	-107.77	8.00	7.71	2.95
7,250.00	51.15	261.75	7,038.51	-1,291.21	47.96	-70.49	8.00	7.73	2.74
7,295.60	54.69	262.88	7,066.00	-1,296.06	11.91	-34.53	8.00	7.75	2.47
<b>Nio C</b>									
7,300.00	55.03	262.98	7,068.53	-1,296.50	8.34	-30.97	8.00	7.77	2.35
7,350.00	58.92	264.10	7,095.78	-1,301.21	-33.30	10.59	8.00	7.78	2.24
7,400.00	62.81	265.13	7,120.12	-1,305.30	-76.78	53.98	8.00	7.80	2.06
7,450.00	66.72	266.09	7,141.43	-1,308.75	-121.86	99.00	8.00	7.81	1.92
7,500.00	70.63	267.00	7,159.61	-1,311.55	-168.35	145.43	8.00	7.82	1.81

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

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)
7,530.07	72.98	267.52	7,169.00	-1,312.92	-196.88	173.94	8.00	7.83	1.74
<b>Fort Hayes</b>									
7,550.00	74.54	267.86	7,174.57	-1,313.69	-216.00	193.04	8.00	7.83	1.70
7,600.00	78.46	268.69	7,186.24	-1,315.15	-264.58	241.59	8.00	7.84	1.66
7,620.17	80.04	269.02	7,190.00	-1,315.55	-284.39	261.39	8.00	7.84	1.63
<b>Codell</b>									
7,650.00	82.38	269.50	7,194.56	-1,315.93	-313.87	290.86	8.00	7.84	1.61
7,700.00	86.30	270.29	7,199.49	-1,316.02	-363.62	340.59	8.00	7.84	1.59
7,745.10	89.84	271.00	7,201.00	-1,315.51	-408.68	385.66	8.00	7.84	1.57
<b>End Build @ 7745.10ft</b>									
7,800.00	89.84	271.00	7,201.16	-1,314.55	-463.57	440.56	0.00	0.00	0.00
7,900.00	89.84	271.00	7,201.44	-1,312.81	-563.56	540.56	0.00	0.00	0.00
8,000.00	89.84	271.00	7,201.72	-1,311.06	-663.54	640.56	0.00	0.00	0.00
8,100.00	89.84	271.00	7,202.00	-1,309.32	-763.53	740.56	0.00	0.00	0.00
8,200.00	89.84	271.00	7,202.28	-1,307.57	-863.51	840.56	0.00	0.00	0.00
8,300.00	89.84	271.00	7,202.55	-1,305.83	-963.49	940.56	0.00	0.00	0.00
8,400.00	89.84	271.00	7,202.83	-1,304.08	-1,063.48	1,040.56	0.00	0.00	0.00
8,500.00	89.84	271.00	7,203.11	-1,302.33	-1,163.46	1,140.56	0.00	0.00	0.00
8,600.00	89.84	271.00	7,203.39	-1,300.59	-1,263.45	1,240.56	0.00	0.00	0.00
8,700.00	89.84	271.00	7,203.67	-1,298.84	-1,363.43	1,340.56	0.00	0.00	0.00
8,800.00	89.84	271.00	7,203.95	-1,297.10	-1,463.42	1,440.56	0.00	0.00	0.00
8,900.00	89.84	271.00	7,204.23	-1,295.35	-1,563.40	1,540.56	0.00	0.00	0.00
9,000.00	89.84	271.00	7,204.51	-1,293.61	-1,663.39	1,640.56	0.00	0.00	0.00
9,100.00	89.84	271.00	7,204.79	-1,291.86	-1,763.37	1,740.55	0.00	0.00	0.00
9,200.00	89.84	271.00	7,205.07	-1,290.12	-1,863.35	1,840.55	0.00	0.00	0.00
9,300.00	89.84	271.00	7,205.35	-1,288.37	-1,963.34	1,940.55	0.00	0.00	0.00
9,400.00	89.84	271.00	7,205.63	-1,286.63	-2,063.32	2,040.55	0.00	0.00	0.00
9,500.00	89.84	271.00	7,205.91	-1,284.88	-2,163.31	2,140.55	0.00	0.00	0.00
9,600.00	89.84	271.00	7,206.18	-1,283.14	-2,263.29	2,240.55	0.00	0.00	0.00
9,700.00	89.84	271.00	7,206.46	-1,281.39	-2,363.28	2,340.55	0.00	0.00	0.00
9,800.00	89.84	271.00	7,206.74	-1,279.65	-2,463.26	2,440.55	0.00	0.00	0.00
9,900.00	89.84	271.00	7,207.02	-1,277.90	-2,563.24	2,540.55	0.00	0.00	0.00
10,000.00	89.84	271.00	7,207.30	-1,276.16	-2,663.23	2,640.55	0.00	0.00	0.00
10,100.00	89.84	271.00	7,207.58	-1,274.41	-2,763.21	2,740.55	0.00	0.00	0.00
10,200.00	89.84	271.00	7,207.86	-1,272.67	-2,863.20	2,840.55	0.00	0.00	0.00
10,300.00	89.84	271.00	7,208.14	-1,270.92	-2,963.18	2,940.55	0.00	0.00	0.00
10,400.00	89.84	271.00	7,208.42	-1,269.18	-3,063.17	3,040.55	0.00	0.00	0.00
10,500.00	89.84	271.00	7,208.70	-1,267.43	-3,163.15	3,140.55	0.00	0.00	0.00
10,600.00	89.84	271.00	7,208.98	-1,265.69	-3,263.14	3,240.55	0.00	0.00	0.00
10,700.00	89.84	271.00	7,209.26	-1,263.94	-3,363.12	3,340.55	0.00	0.00	0.00
10,800.00	89.84	271.00	7,209.54	-1,262.19	-3,463.10	3,440.55	0.00	0.00	0.00
10,900.00	89.84	271.00	7,209.81	-1,260.45	-3,563.09	3,540.55	0.00	0.00	0.00
10,963.00	89.84	271.00	7,209.99	-1,259.35	-3,626.08	3,603.55	0.00	0.00	0.00
<b>Begin Switchback @ 10963.00ft :: DLS = 9°/100'</b>									
11,000.00	89.81	274.33	7,210.10	-1,257.63	-3,663.03	3,640.53	9.00	-0.09	9.00
11,050.00	89.76	278.83	7,210.29	-1,251.90	-3,712.69	3,690.28	9.00	-0.09	9.00
11,100.00	89.72	283.33	7,210.52	-1,242.30	-3,761.75	3,739.49	9.00	-0.08	9.00
11,150.00	89.68	287.83	7,210.78	-1,228.87	-3,809.90	3,787.87	9.00	-0.08	9.00
11,200.00	89.64	292.33	7,211.07	-1,211.71	-3,856.84	3,835.11	9.00	-0.08	9.00
11,250.00	89.61	296.83	7,211.40	-1,190.92	-3,902.30	3,880.92	9.00	-0.07	9.00
11,300.00	89.57	301.33	7,211.76	-1,166.62	-3,945.99	3,925.02	9.00	-0.07	9.00
11,350.00	89.54	305.83	7,212.14	-1,138.98	-3,987.63	3,967.14	9.00	-0.06	9.00
11,400.00	89.51	310.33	7,212.56	-1,108.15	-4,026.98	4,007.02	9.00	-0.06	9.00
11,450.00	89.49	314.83	7,212.99	-1,074.33	-4,063.78	4,044.41	9.00	-0.05	9.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

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)
11,500.00	89.47	319.33	7,213.45	-1,037.72	-4,097.82	4,079.09	9.00	-0.04	9.00
11,550.00	89.45	323.83	7,213.92	-998.56	-4,128.88	4,110.83	9.00	-0.04	9.00
11,600.00	89.43	328.33	7,214.41	-957.08	-4,156.78	4,139.44	9.00	-0.03	9.00
11,650.00	89.42	332.83	7,214.91	-913.54	-4,181.33	4,164.75	9.00	-0.02	9.00
11,700.00	89.41	337.33	7,215.42	-868.21	-4,202.39	4,186.60	9.00	-0.02	9.00
11,750.00	89.41	341.83	7,215.94	-821.37	-4,219.83	4,204.85	9.00	-0.01	9.00
11,800.00	89.41	346.33	7,216.45	-773.30	-4,233.54	4,219.40	9.00	0.00	9.00
11,850.00	89.41	350.83	7,216.97	-724.31	-4,243.44	4,230.15	9.00	0.01	9.00
11,900.00	89.42	355.33	7,217.48	-674.69	-4,249.46	4,237.03	9.00	0.01	9.00
11,950.00	89.43	359.83	7,217.99	-624.75	-4,251.57	4,240.01	9.00	0.02	9.00
12,000.00	89.44	4.33	7,218.49	-574.80	-4,249.75	4,239.07	9.00	0.03	9.00
12,050.00	89.46	8.83	7,218.97	-525.14	-4,244.02	4,234.21	9.00	0.03	9.00
12,100.00	89.48	13.33	7,219.43	-476.09	-4,234.41	4,225.46	9.00	0.04	9.00
12,150.00	89.50	17.83	7,219.88	-427.94	-4,220.99	4,212.87	9.00	0.05	9.00
12,200.00	89.53	22.33	7,220.31	-380.99	-4,203.82	4,196.53	9.00	0.05	9.00
12,250.00	89.56	26.83	7,220.71	-335.54	-4,183.03	4,176.54	9.00	0.06	9.00
12,300.00	89.59	31.33	7,221.08	-291.85	-4,158.73	4,153.01	9.00	0.06	9.00
12,350.00	89.62	35.83	7,221.43	-250.21	-4,131.08	4,126.09	9.00	0.07	9.00
12,400.00	89.66	40.33	7,221.74	-210.87	-4,100.25	4,095.95	9.00	0.07	9.00
12,450.00	89.70	44.83	7,222.02	-174.06	-4,066.43	4,062.77	9.00	0.08	9.00
12,500.00	89.74	49.33	7,222.27	-140.02	-4,029.82	4,026.76	9.00	0.08	9.00
12,550.00	89.78	53.83	7,222.48	-108.96	-3,990.66	3,988.15	9.00	0.09	9.00
12,600.00	89.83	58.33	7,222.65	-81.07	-3,949.18	3,947.16	9.00	0.09	9.00
12,650.00	89.87	62.83	7,222.78	-56.51	-3,905.64	3,904.05	9.00	0.09	9.00
12,700.00	89.92	67.33	7,222.87	-35.45	-3,860.30	3,859.10	9.00	0.09	9.00
12,750.00	89.96	71.83	7,222.92	-18.01	-3,813.46	3,812.56	9.00	0.09	9.00
12,800.00	90.01	76.33	7,222.94	-4.30	-3,765.39	3,764.74	9.00	0.09	9.00
12,850.00	90.06	80.83	7,222.91	5.59	-3,716.39	3,715.92	9.00	0.09	9.00
12,900.00	90.10	85.33	7,222.84	11.62	-3,666.76	3,666.41	9.00	0.09	9.00
12,951.89	90.15	90.00	7,222.72	13.73	-3,614.93	3,614.62	9.00	0.09	9.00
End Switchback @ 12951.89ft									
13,000.00	90.15	90.00	7,222.60	13.73	-3,566.82	3,566.52	0.00	0.00	0.00
13,100.00	90.15	90.00	7,222.33	13.73	-3,466.82	3,466.53	0.00	0.00	0.00
13,151.89	90.15	90.00	7,222.20	13.73	-3,414.93	3,414.65	0.00	0.00	0.00
Begin Turn to BHL @ 13151.89ft									
13,200.00	90.20	90.72	7,222.05	13.43	-3,366.82	3,366.55	1.50	0.10	1.50
13,300.00	90.30	92.22	7,221.61	10.86	-3,266.86	3,266.55	1.50	0.10	1.50
13,400.00	90.41	93.71	7,220.99	5.69	-3,167.00	3,166.62	1.50	0.10	1.50
13,411.68	90.42	93.89	7,220.91	4.92	-3,155.35	3,154.95	1.50	0.10	1.50
End Turn @ 13411.68ft									
13,500.00	90.42	93.89	7,220.26	-1.07	-3,067.23	3,066.75	0.00	0.00	0.00
13,600.00	90.42	93.89	7,219.52	-7.85	-2,967.46	2,966.88	0.00	0.00	0.00
13,700.00	90.42	93.89	7,218.79	-14.63	-2,867.70	2,867.01	0.00	0.00	0.00
13,800.00	90.42	93.89	7,218.06	-21.41	-2,767.93	2,767.13	0.00	0.00	0.00
13,900.00	90.42	93.89	7,217.33	-28.19	-2,668.16	2,667.26	0.00	0.00	0.00
14,000.00	90.42	93.89	7,216.59	-34.97	-2,568.40	2,567.39	0.00	0.00	0.00
14,100.00	90.42	93.89	7,215.86	-41.75	-2,468.63	2,467.52	0.00	0.00	0.00
14,200.00	90.42	93.89	7,215.13	-48.53	-2,368.86	2,367.65	0.00	0.00	0.00
14,300.00	90.42	93.89	7,214.39	-55.31	-2,269.09	2,267.78	0.00	0.00	0.00
14,400.00	90.42	93.89	7,213.66	-62.09	-2,169.33	2,167.91	0.00	0.00	0.00
14,500.00	90.42	93.89	7,212.93	-68.87	-2,069.56	2,068.04	0.00	0.00	0.00
14,600.00	90.42	93.89	7,212.19	-75.65	-1,969.79	1,968.17	0.00	0.00	0.00
14,700.00	90.42	93.89	7,211.46	-82.43	-1,870.02	1,868.30	0.00	0.00	0.00



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

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)	
14,800.00	90.42	93.89	7,210.73	-89.21	-1,770.26	1,768.43	0.00	0.00	0.00	
14,900.00	90.42	93.89	7,209.99	-95.99	-1,670.49	1,668.56	0.00	0.00	0.00	
15,000.00	90.42	93.89	7,209.26	-102.77	-1,570.72	1,568.69	0.00	0.00	0.00	
15,100.00	90.42	93.89	7,208.53	-109.55	-1,470.96	1,468.82	0.00	0.00	0.00	
15,200.00	90.42	93.89	7,207.79	-116.33	-1,371.19	1,368.95	0.00	0.00	0.00	
15,300.00	90.42	93.89	7,207.06	-123.11	-1,271.42	1,269.08	0.00	0.00	0.00	
15,400.00	90.42	93.89	7,206.33	-129.89	-1,171.65	1,169.21	0.00	0.00	0.00	
15,500.00	90.42	93.89	7,205.59	-136.67	-1,071.89	1,069.34	0.00	0.00	0.00	
15,600.00	90.42	93.89	7,204.86	-143.44	-972.12	969.47	0.00	0.00	0.00	
15,700.00	90.42	93.89	7,204.13	-150.22	-872.35	869.60	0.00	0.00	0.00	
15,800.00	90.42	93.89	7,203.39	-157.00	-772.59	769.73	0.00	0.00	0.00	
15,900.00	90.42	93.89	7,202.66	-163.78	-672.82	669.86	0.00	0.00	0.00	
16,000.00	90.42	93.89	7,201.93	-170.56	-573.05	569.99	0.00	0.00	0.00	
16,100.00	90.42	93.89	7,201.19	-177.34	-473.28	470.12	0.00	0.00	0.00	
16,200.00	90.42	93.89	7,200.46	-184.12	-373.52	370.25	0.00	0.00	0.00	
16,300.00	90.42	93.89	7,199.73	-190.90	-273.75	270.38	0.00	0.00	0.00	
16,400.00	90.42	93.89	7,199.00	-197.68	-173.98	170.51	0.00	0.00	0.00	
16,500.00	90.42	93.89	7,198.26	-204.46	-74.22	70.64	0.00	0.00	0.00	
16,600.00	90.42	93.89	7,197.53	-211.24	25.55	-29.23	0.00	0.00	0.00	
16,672.11	90.42	93.89	7,197.00	-216.13	97.49	-101.25	0.00	0.00	0.00	
TD Well @ 16672.11ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
2,693.25	2,652.00	8.625" CSG	8-5/8	12-1/4	
16,672.11	7,197.00	5.5" CSG	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
764.05	762.00	Fox Hills				
3,606.35	3,546.00	Parkman				
4,102.73	4,032.00	Sussex				
6,982.07	6,837.00	Sharon Springs				
7,025.89	6,874.00	Niobrara				
7,188.52	6,998.00	Nio B				
7,295.60	7,066.00	Nio C				
7,530.07	7,169.00	Fort Hayes				
7,620.17	7,190.00	Codell				

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SCHMERGE EAST 4-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4914.00usft (RIG)
<b>Site:</b>	5N-67W-04 SCHMERGE EAST 9-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SCHMERGE EAST 4-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan D		
<b>Design:</b>	Permit Rev-2		

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
982.67	977.20	-77.33	20.11	Hold Tangent @ 982.67ft
6,582.90	6,460.28	-1,180.12	306.96	KOP @ 6582.90ft :: DLS = 8°/100'
7,745.10	7,201.00	-1,315.51	-408.68	End Build @ 7745.10ft
10,963.00	7,209.99	-1,259.35	-3,626.08	Begin Switchback @ 10963.00ft :: DLS = 9°/100'
12,951.89	7,222.72	13.73	-3,614.93	End Switchback @ 12951.89ft
13,151.89	7,222.20	13.73	-3,414.93	Begin Turn to BHL @ 13151.89ft
13,411.68	7,220.91	4.92	-3,155.35	End Turn @ 13411.68ft
16,672.11	7,197.00	-216.13	97.49	TD Well @ 16672.11ft