

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-05 SCHLAGEL 10-5HZ PAD WEST

SCHLAGEL 5-3HZ

Plan A

Plan: Permit Rev-2

Standard Planning Report

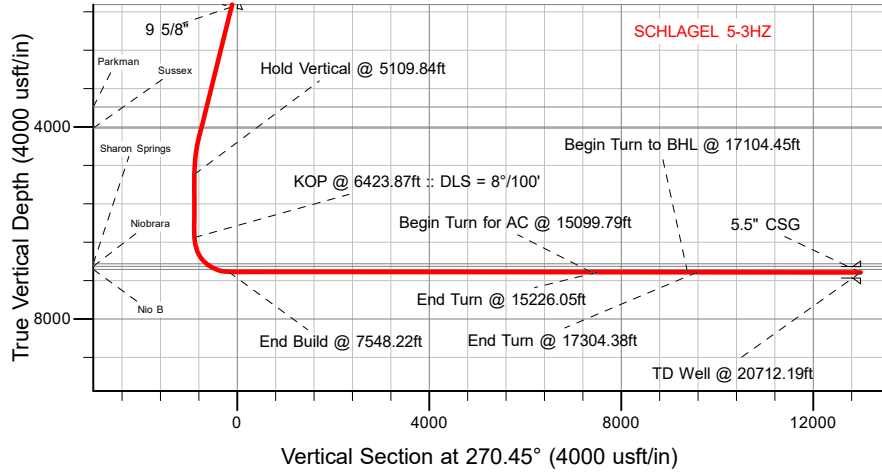
01 September, 2021

Project: WELD-NAD83-UTMFT13N
 Site: 3N-67W-05 SCHLAGEL 10-5HZ PAD WEST
 Well: SCHLAGEL 5-3HZ
 Wellbore: Plan A
 Design: Permit Rev-2

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1511.08	9 5/8"	9-5/8
7031.00	20712.19	5.5" CSG	5-1/2



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
520.00	0.00	0.00	520.00	0.00	0.00	0.00	0.00	0.00	
1542.67	15.34	115.10	1530.49	-57.73	123.23	1.50	115.10	-123.68	
4342.84	15.34	115.10	4230.90	-371.96	794.06	0.00	0.00	-796.95	
5109.84	0.00	0.00	4988.77	-415.26	886.48	2.00	180.00	-889.72	
6423.87	0.00	0.00	6302.80	-415.26	886.48	0.00	0.00	-889.72	
7548.22	89.95	270.45	7019.00	-409.61	170.96	8.00	270.45	-174.17	
15099.79	89.95	270.45	7025.89	-350.00	-7380.37	0.00	0.00	7377.39	SCHLAGEL 5-3HZ_Lat Tgt 1
15226.05	89.95	272.35	7026.00	-346.92	-7506.59	1.50	89.99	7503.63	SCHLAGEL 5-3HZ_Lat Tgt 2
17104.45	89.95	272.35	7027.71	-270.02	-9383.41	0.00	0.00	9381.00	
17304.38	89.95	269.35	7027.89	-267.07	-9583.30	1.50	-90.01	9580.90	
20712.19	89.95	269.35	7031.00	-305.89	-12990.89	0.00	0.00	12988.08	SCHLAGEL 5-3HZ BHL

WELLBORE TARGET DETAILS (LAT/LONG)

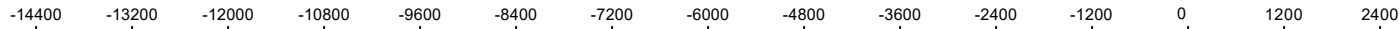
Name	TVD	Northing	Easting	Latitude	Longitude
SCHLAGEL 5-3HZ SHL	0.00	14619192.66	1664736.58	40.253872	-104.912835
SCHLAGEL 5-3HZ LP	7019.00	14618783.29	1664907.93	40.252748	-104.912223
SCHLAGEL 5-3HZ BHL	7031.00	14618874.00	1651746.00	40.253023	-104.959395

SHL
2259' FSL
2220' FEL

LP
1850' FSL
2050' FEL

BHL
1813' FSL
385' FWL

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



WELL DETAILS: SCHLAGEL 5-3HZ

GL = 4870'

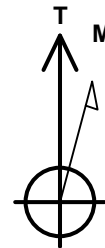
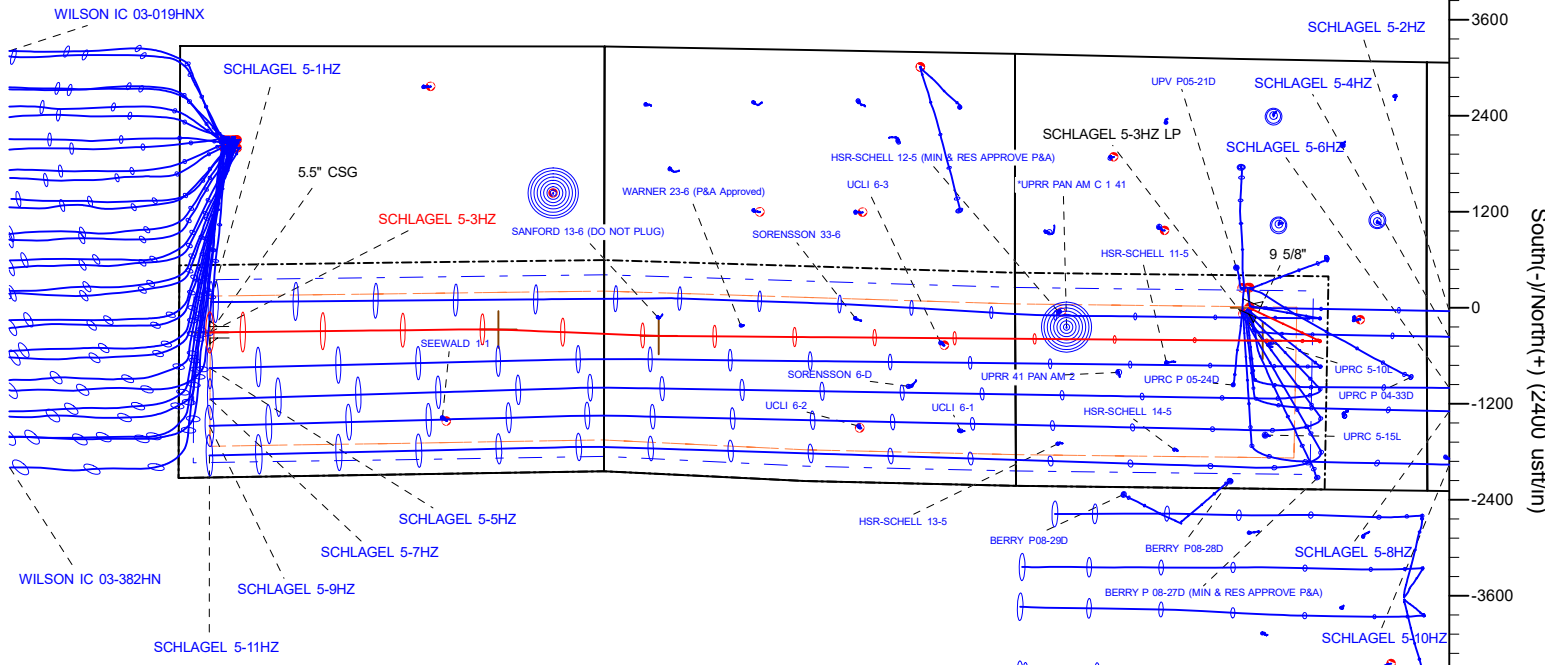
RKB = 17' @ 4887.00usft (RIG)

Plan: Permit Rev-2 (SCHLAGEL 5-3HZ/Plan A)

Date: 9/1/2021

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
740.00	740.12	Fox Hills
3582.00	3669.96	Parkman
4022.00	4126.22	Sussex
6851.00	7048.18	Sharon Springs
6902.00	7133.70	Niobrara
6969.00	7279.67	Nio B



Azimuths to True North
Magnetic North: 7.90°

Magnetic Field
Strength: 51846.9nT
Dip Angle: 66.51°
Date: 8/5/2021
Model: IGRF2020

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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 3N-67W-05 SCHLAGEL 10-5HZ PAD WEST			
Site Position:		Northing:	14,619,213.53 usft
From:	Map	Easting:	1,664,758.12 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.253930
		Longitude:	-104.912758

Well SCHLAGEL 5-3HZ			
Well Position	+N/-S	0.00 usft	Northing: 14,619,192.66 usft
	+E/-W	0.00 usft	Easting: 1,664,736.58 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: usft
Grid Convergence:		0.06 °	Ground Level: 4,870.00 usft

Wellbore Plan A					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/5/2021	7.90	66.51	51,846.87375656

Design Permit Rev-2				
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	270.45

Plan Survey Tool Program		Date	9/1/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	20,712.19	Permit Rev-2 (Plan A)	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 SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	
520.00	0.00	0.00	520.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,542.67	15.34	115.10	1,530.49	-57.73	123.23	1.50	1.50	0.00	115.10	
4,342.84	15.34	115.10	4,230.90	-371.96	794.06	0.00	0.00	0.00	0.00	
5,109.84	0.00	0.00	4,988.77	-415.26	886.48	2.00	-2.00	0.00	180.00	
6,423.87	0.00	0.00	6,302.80	-415.26	886.48	0.00	0.00	0.00	0.00	
7,548.22	89.95	270.45	7,019.00	-409.61	170.96	8.00	8.00	-7.96	270.45	
15,099.79	89.95	270.45	7,025.89	-350.00	-7,380.37	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ_Li
15,226.05	89.95	272.35	7,026.01	-346.92	-7,506.59	1.50	0.00	1.50	89.99	
17,104.45	89.95	272.35	7,027.71	-270.02	-9,383.41	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ_Li
17,304.38	89.95	269.35	7,027.89	-267.07	-9,583.30	1.50	0.00	-1.50	-90.01	
20,712.19	89.95	269.35	7,031.00	-305.89	-12,990.89	0.00	0.00	0.00	0.00	SCHLAGEL 5-3HZ Bf

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
520.00	0.00	0.00	520.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 520.00ft										
600.00	1.20	115.10	599.99	-0.36	0.76	-0.76	1.50	1.50	0.00	0.00
700.00	2.70	115.10	699.93	-1.80	3.84	-3.85	1.50	1.50	0.00	0.00
740.12	3.30	115.10	740.00	-2.69	5.74	-5.76	1.50	1.50	0.00	0.00
Fox Hills										
800.00	4.20	115.10	799.75	-4.35	9.29	-9.32	1.50	1.50	0.00	0.00
900.00	5.70	115.10	899.37	-8.01	17.10	-17.17	1.50	1.50	0.00	0.00
1,000.00	7.20	115.10	998.74	-12.78	27.28	-27.37	1.50	1.50	0.00	0.00
1,100.00	8.70	115.10	1,097.77	-18.64	39.80	-39.95	1.50	1.50	0.00	0.00
1,200.00	10.20	115.10	1,196.41	-25.61	54.67	-54.87	1.50	1.50	0.00	0.00
1,300.00	11.70	115.10	1,294.59	-33.67	71.87	-72.13	1.50	1.50	0.00	0.00
1,400.00	13.20	115.10	1,392.24	-42.81	91.39	-91.72	1.50	1.50	0.00	0.00
1,500.00	14.70	115.10	1,489.28	-53.04	113.22	-113.63	1.50	1.50	0.00	0.00
1,511.08	14.87	115.10	1,500.00	-54.24	115.78	-116.20	1.50	1.50	0.00	0.00
9 5/8"										
1,542.67	15.34	115.10	1,530.49	-57.73	123.23	-123.68	1.50	1.50	0.00	0.00
Hold Tangent @ 1542.67ft										
1,600.00	15.34	115.10	1,585.78	-64.16	136.97	-137.47	0.00	0.00	0.00	0.00
1,700.00	15.34	115.10	1,682.22	-75.38	160.93	-161.51	0.00	0.00	0.00	0.00
1,800.00	15.34	115.10	1,778.66	-86.61	184.88	-185.56	0.00	0.00	0.00	0.00
1,900.00	15.34	115.10	1,875.10	-97.83	208.84	-209.60	0.00	0.00	0.00	0.00
2,000.00	15.34	115.10	1,971.53	-109.05	232.80	-233.64	0.00	0.00	0.00	0.00
2,100.00	15.34	115.10	2,067.97	-120.27	256.75	-257.69	0.00	0.00	0.00	0.00
2,200.00	15.34	115.10	2,164.41	-131.49	280.71	-281.73	0.00	0.00	0.00	0.00
2,300.00	15.34	115.10	2,260.84	-142.72	304.67	-305.78	0.00	0.00	0.00	0.00
2,400.00	15.34	115.10	2,357.28	-153.94	328.62	-329.82	0.00	0.00	0.00	0.00
2,500.00	15.34	115.10	2,453.72	-165.16	352.58	-353.86	0.00	0.00	0.00	0.00
2,600.00	15.34	115.10	2,550.16	-176.38	376.53	-377.91	0.00	0.00	0.00	0.00
2,700.00	15.34	115.10	2,646.59	-187.60	400.49	-401.95	0.00	0.00	0.00	0.00
2,800.00	15.34	115.10	2,743.03	-198.83	424.45	-426.00	0.00	0.00	0.00	0.00
2,900.00	15.34	115.10	2,839.47	-210.05	448.40	-450.04	0.00	0.00	0.00	0.00
3,000.00	15.34	115.10	2,935.91	-221.27	472.36	-474.08	0.00	0.00	0.00	0.00
3,100.00	15.34	115.10	3,032.34	-232.49	496.32	-498.13	0.00	0.00	0.00	0.00
3,200.00	15.34	115.10	3,128.78	-243.71	520.27	-522.17	0.00	0.00	0.00	0.00
3,300.00	15.34	115.10	3,225.22	-254.94	544.23	-546.22	0.00	0.00	0.00	0.00
3,400.00	15.34	115.10	3,321.65	-266.16	568.19	-570.26	0.00	0.00	0.00	0.00
3,500.00	15.34	115.10	3,418.09	-277.38	592.14	-594.30	0.00	0.00	0.00	0.00
3,600.00	15.34	115.10	3,514.53	-288.60	616.10	-618.35	0.00	0.00	0.00	0.00
3,669.96	15.34	115.10	3,582.00	-296.45	632.86	-635.17	0.00	0.00	0.00	0.00
Parkman										
3,700.00	15.34	115.10	3,610.97	-299.82	640.06	-642.39	0.00	0.00	0.00	0.00
3,800.00	15.34	115.10	3,707.40	-311.05	664.01	-666.43	0.00	0.00	0.00	0.00
3,900.00	15.34	115.10	3,803.84	-322.27	687.97	-690.48	0.00	0.00	0.00	0.00
4,000.00	15.34	115.10	3,900.28	-333.49	711.93	-714.52	0.00	0.00	0.00	0.00
4,100.00	15.34	115.10	3,996.72	-344.71	735.88	-738.57	0.00	0.00	0.00	0.00
4,126.22	15.34	115.10	4,022.00	-347.65	742.16	-744.87	0.00	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
Sussex										
4,200.00	15.34	115.10	4,093.15	-355.93	759.84	-762.61	0.00	0.00	0.00	
4,300.00	15.34	115.10	4,189.59	-367.16	783.79	-786.65	0.00	0.00	0.00	
4,342.84	15.34	115.10	4,230.90	-371.96	794.06	-796.95	0.00	0.00	0.00	
Begin Drop @ 4342.84ft										
4,400.00	14.20	115.10	4,286.18	-378.14	807.25	-810.20	2.00	-2.00	0.00	
4,500.00	12.20	115.10	4,383.53	-387.83	827.93	-830.95	2.00	-2.00	0.00	
4,600.00	10.20	115.10	4,481.62	-396.07	845.51	-848.59	2.00	-2.00	0.00	
4,700.00	8.20	115.10	4,580.33	-402.84	859.98	-863.12	2.00	-2.00	0.00	
4,800.00	6.20	115.10	4,679.54	-408.16	871.33	-874.50	2.00	-2.00	0.00	
4,900.00	4.20	115.10	4,779.12	-412.00	879.53	-882.74	2.00	-2.00	0.00	
5,000.00	2.20	115.10	4,878.96	-414.37	884.58	-887.80	2.00	-2.00	0.00	
5,109.84	0.00	0.00	4,988.77	-415.26	886.48	-889.72	2.00	-2.00	0.00	
Hold Vertical @ 5109.84ft										
5,200.00	0.00	0.00	5,078.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,178.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,278.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,378.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,478.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,578.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,678.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,778.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,878.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,978.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,078.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,178.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,278.93	-415.26	886.48	-889.72	0.00	0.00	0.00	
6,423.87	0.00	0.00	6,302.80	-415.26	886.48	-889.72	0.00	0.00	0.00	
KOP @ 6423.87ft :: DLS = 8°/100'										
6,450.00	2.09	270.45	6,328.93	-415.26	886.01	-889.24	8.00	8.00	0.00	
6,500.00	6.09	270.45	6,378.79	-415.23	882.44	-885.68	8.00	8.00	0.00	
6,550.00	10.09	270.45	6,428.28	-415.17	875.41	-878.64	8.00	8.00	0.00	
6,600.00	14.09	270.45	6,477.16	-415.09	864.94	-868.17	8.00	8.00	0.00	
6,650.00	18.09	270.45	6,525.20	-414.98	851.08	-854.31	8.00	8.00	0.00	
6,700.00	22.09	270.45	6,572.14	-414.84	833.91	-837.14	8.00	8.00	0.00	
6,750.00	26.09	270.45	6,617.78	-414.68	813.51	-816.74	8.00	8.00	0.00	
6,800.00	30.09	270.45	6,661.88	-414.50	789.97	-793.20	8.00	8.00	0.00	
6,850.00	34.09	270.45	6,704.23	-414.29	763.41	-766.64	8.00	8.00	0.00	
6,900.00	38.09	270.45	6,744.63	-414.06	733.97	-737.20	8.00	8.00	0.00	
6,950.00	42.09	270.45	6,782.87	-413.80	701.77	-705.00	8.00	8.00	0.00	
7,000.00	46.09	270.45	6,818.78	-413.53	666.99	-670.22	8.00	8.00	0.00	
7,048.18	49.94	270.45	6,851.00	-413.24	631.18	-634.41	8.00	8.00	0.00	
Sharon Springs										
7,050.00	50.09	270.45	6,852.17	-413.23	629.79	-633.02	8.00	8.00	0.00	
7,100.00	54.09	270.45	6,882.88	-412.92	590.35	-593.58	8.00	8.00	0.00	
7,133.70	56.79	270.45	6,902.00	-412.70	562.60	-565.82	8.00	8.00	0.00	
Niobrara										
7,150.00	58.09	270.45	6,910.77	-412.59	548.87	-552.09	8.00	8.00	0.00	
7,200.00	62.09	270.45	6,935.70	-412.25	505.53	-508.76	8.00	8.00	0.00	
7,250.00	66.09	270.45	6,957.54	-411.90	460.57	-463.79	8.00	8.00	0.00	
7,279.67	68.46	270.45	6,969.00	-411.68	433.21	-436.43	8.00	8.00	0.00	
Nio B										
7,300.00	70.09	270.45	6,976.19	-411.53	414.19	-417.41	8.00	8.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
7,350.00	74.09	270.45	6,991.57	-411.16	366.63	-369.84	8.00	8.00	0.00
7,400.00	78.09	270.45	7,003.58	-410.77	318.10	-321.32	8.00	8.00	0.00
7,450.00	82.09	270.45	7,012.19	-410.38	268.86	-272.08	8.00	8.00	0.00
7,500.00	86.09	270.45	7,017.33	-409.99	219.14	-222.35	8.00	8.00	0.00
7,548.22	89.95	270.45	7,019.00	-409.61	170.96	-174.17	8.00	8.00	0.00
End Build @ 7548.22ft									
7,600.00	89.95	270.45	7,019.05	-409.20	119.18	-122.39	0.00	0.00	0.00
7,700.00	89.95	270.45	7,019.14	-408.41	19.18	-22.39	0.00	0.00	0.00
7,800.00	89.95	270.45	7,019.23	-407.62	-80.81	77.61	0.00	0.00	0.00
7,900.00	89.95	270.45	7,019.32	-406.83	-180.81	177.61	0.00	0.00	0.00
8,000.00	89.95	270.45	7,019.41	-406.04	-280.81	277.61	0.00	0.00	0.00
8,100.00	89.95	270.45	7,019.50	-405.26	-380.80	377.61	0.00	0.00	0.00
8,200.00	89.95	270.45	7,019.60	-404.47	-480.80	477.61	0.00	0.00	0.00
8,300.00	89.95	270.45	7,019.69	-403.68	-580.80	577.61	0.00	0.00	0.00
8,400.00	89.95	270.45	7,019.78	-402.89	-680.79	677.61	0.00	0.00	0.00
8,500.00	89.95	270.45	7,019.87	-402.10	-780.79	777.61	0.00	0.00	0.00
8,600.00	89.95	270.45	7,019.96	-401.31	-880.79	877.61	0.00	0.00	0.00
8,700.00	89.95	270.45	7,020.05	-400.52	-980.78	977.61	0.00	0.00	0.00
8,800.00	89.95	270.45	7,020.14	-399.73	-1,080.78	1,077.61	0.00	0.00	0.00
8,900.00	89.95	270.45	7,020.23	-398.94	-1,180.78	1,177.61	0.00	0.00	0.00
9,000.00	89.95	270.45	7,020.33	-398.15	-1,280.78	1,277.61	0.00	0.00	0.00
9,100.00	89.95	270.45	7,020.42	-397.36	-1,380.77	1,377.61	0.00	0.00	0.00
9,200.00	89.95	270.45	7,020.51	-396.57	-1,480.77	1,477.61	0.00	0.00	0.00
9,300.00	89.95	270.45	7,020.60	-395.78	-1,580.77	1,577.61	0.00	0.00	0.00
9,400.00	89.95	270.45	7,020.69	-394.99	-1,680.76	1,677.61	0.00	0.00	0.00
9,500.00	89.95	270.45	7,020.78	-394.20	-1,780.76	1,777.61	0.00	0.00	0.00
9,600.00	89.95	270.45	7,020.87	-393.41	-1,880.76	1,877.61	0.00	0.00	0.00
9,700.00	89.95	270.45	7,020.96	-392.63	-1,980.75	1,977.61	0.00	0.00	0.00
9,800.00	89.95	270.45	7,021.06	-391.84	-2,080.75	2,077.61	0.00	0.00	0.00
9,900.00	89.95	270.45	7,021.15	-391.05	-2,180.75	2,177.61	0.00	0.00	0.00
10,000.00	89.95	270.45	7,021.24	-390.26	-2,280.74	2,277.61	0.00	0.00	0.00
10,100.00	89.95	270.45	7,021.33	-389.47	-2,380.74	2,377.61	0.00	0.00	0.00
10,200.00	89.95	270.45	7,021.42	-388.68	-2,480.74	2,477.61	0.00	0.00	0.00
10,300.00	89.95	270.45	7,021.51	-387.89	-2,580.73	2,577.61	0.00	0.00	0.00
10,400.00	89.95	270.45	7,021.60	-387.10	-2,680.73	2,677.61	0.00	0.00	0.00
10,500.00	89.95	270.45	7,021.69	-386.31	-2,780.73	2,777.61	0.00	0.00	0.00
10,600.00	89.95	270.45	7,021.78	-385.52	-2,880.72	2,877.61	0.00	0.00	0.00
10,700.00	89.95	270.45	7,021.88	-384.73	-2,980.72	2,977.61	0.00	0.00	0.00
10,800.00	89.95	270.45	7,021.97	-383.94	-3,080.72	3,077.61	0.00	0.00	0.00
10,900.00	89.95	270.45	7,022.06	-383.15	-3,180.72	3,177.61	0.00	0.00	0.00
11,000.00	89.95	270.45	7,022.15	-382.36	-3,280.71	3,277.61	0.00	0.00	0.00
11,100.00	89.95	270.45	7,022.24	-381.57	-3,380.71	3,377.61	0.00	0.00	0.00
11,200.00	89.95	270.45	7,022.33	-380.78	-3,480.71	3,477.61	0.00	0.00	0.00
11,300.00	89.95	270.45	7,022.42	-379.99	-3,580.70	3,577.61	0.00	0.00	0.00
11,400.00	89.95	270.45	7,022.51	-379.21	-3,680.70	3,677.61	0.00	0.00	0.00
11,500.00	89.95	270.45	7,022.61	-378.42	-3,780.70	3,777.61	0.00	0.00	0.00
11,600.00	89.95	270.45	7,022.70	-377.63	-3,880.69	3,877.61	0.00	0.00	0.00
11,700.00	89.95	270.45	7,022.79	-376.84	-3,980.69	3,977.61	0.00	0.00	0.00
11,800.00	89.95	270.45	7,022.88	-376.05	-4,080.69	4,077.61	0.00	0.00	0.00
11,900.00	89.95	270.45	7,022.97	-375.26	-4,180.68	4,177.61	0.00	0.00	0.00
12,000.00	89.95	270.45	7,023.06	-374.47	-4,280.68	4,277.61	0.00	0.00	0.00
12,100.00	89.95	270.45	7,023.15	-373.68	-4,380.68	4,377.61	0.00	0.00	0.00
12,200.00	89.95	270.45	7,023.24	-372.89	-4,480.67	4,477.61	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
12,300.00	89.95	270.45	7,023.34	-372.10	-4,580.67	4,577.61	0.00	0.00	0.00	
12,400.00	89.95	270.45	7,023.43	-371.31	-4,680.67	4,677.61	0.00	0.00	0.00	
12,500.00	89.95	270.45	7,023.52	-370.52	-4,780.66	4,777.61	0.00	0.00	0.00	
12,600.00	89.95	270.45	7,023.61	-369.73	-4,880.66	4,877.61	0.00	0.00	0.00	
12,700.00	89.95	270.45	7,023.70	-368.94	-4,980.66	4,977.61	0.00	0.00	0.00	
12,800.00	89.95	270.45	7,023.79	-368.15	-5,080.66	5,077.61	0.00	0.00	0.00	
12,900.00	89.95	270.45	7,023.88	-367.36	-5,180.65	5,177.61	0.00	0.00	0.00	
13,000.00	89.95	270.45	7,023.97	-366.58	-5,280.65	5,277.61	0.00	0.00	0.00	
13,100.00	89.95	270.45	7,024.07	-365.79	-5,380.65	5,377.61	0.00	0.00	0.00	
13,200.00	89.95	270.45	7,024.16	-365.00	-5,480.64	5,477.61	0.00	0.00	0.00	
13,300.00	89.95	270.45	7,024.25	-364.21	-5,580.64	5,577.61	0.00	0.00	0.00	
13,400.00	89.95	270.45	7,024.34	-363.42	-5,680.64	5,677.61	0.00	0.00	0.00	
13,500.00	89.95	270.45	7,024.43	-362.63	-5,780.63	5,777.61	0.00	0.00	0.00	
13,600.00	89.95	270.45	7,024.52	-361.84	-5,880.63	5,877.61	0.00	0.00	0.00	
13,700.00	89.95	270.45	7,024.61	-361.05	-5,980.63	5,977.61	0.00	0.00	0.00	
13,800.00	89.95	270.45	7,024.70	-360.26	-6,080.62	6,077.61	0.00	0.00	0.00	
13,900.00	89.95	270.45	7,024.80	-359.47	-6,180.62	6,177.61	0.00	0.00	0.00	
14,000.00	89.95	270.45	7,024.89	-358.68	-6,280.62	6,277.61	0.00	0.00	0.00	
14,100.00	89.95	270.45	7,024.98	-357.89	-6,380.61	6,377.61	0.00	0.00	0.00	
14,200.00	89.95	270.45	7,025.07	-357.10	-6,480.61	6,477.61	0.00	0.00	0.00	
14,300.00	89.95	270.45	7,025.16	-356.31	-6,580.61	6,577.61	0.00	0.00	0.00	
14,400.00	89.95	270.45	7,025.25	-355.52	-6,680.60	6,677.61	0.00	0.00	0.00	
14,500.00	89.95	270.45	7,025.34	-354.73	-6,780.60	6,777.61	0.00	0.00	0.00	
14,600.00	89.95	270.45	7,025.43	-353.95	-6,880.60	6,877.61	0.00	0.00	0.00	
14,700.00	89.95	270.45	7,025.53	-353.16	-6,980.60	6,977.61	0.00	0.00	0.00	
14,800.00	89.95	270.45	7,025.62	-352.37	-7,080.59	7,077.61	0.00	0.00	0.00	
14,900.00	89.95	270.45	7,025.71	-351.58	-7,180.59	7,177.61	0.00	0.00	0.00	
15,000.00	89.95	270.45	7,025.80	-350.79	-7,280.59	7,277.61	0.00	0.00	0.00	
15,099.79	89.95	270.45	7,025.89	-350.00	-7,380.37	7,377.39	0.00	0.00	0.00	
Begin Turn for AC @ 15099.79ft										
15,200.00	89.95	271.96	7,025.98	-347.89	-7,480.56	7,477.59	1.50	0.00	1.50	
15,226.05	89.95	272.35	7,026.01	-346.92	-7,506.59	7,503.63	1.50	0.00	1.50	
End Turn @ 15226.05ft										
15,300.00	89.95	272.35	7,026.07	-343.89	-7,580.48	7,577.54	0.00	0.00	0.00	
15,400.00	89.95	272.35	7,026.16	-339.80	-7,680.39	7,677.49	0.00	0.00	0.00	
15,500.00	89.95	272.35	7,026.25	-335.70	-7,780.31	7,777.43	0.00	0.00	0.00	
15,600.00	89.95	272.35	7,026.34	-331.61	-7,880.23	7,877.38	0.00	0.00	0.00	
15,700.00	89.95	272.35	7,026.44	-327.51	-7,980.14	7,977.32	0.00	0.00	0.00	
15,800.00	89.95	272.35	7,026.53	-323.42	-8,080.06	8,077.27	0.00	0.00	0.00	
15,900.00	89.95	272.35	7,026.62	-319.33	-8,179.97	8,177.21	0.00	0.00	0.00	
16,000.00	89.95	272.35	7,026.71	-315.23	-8,279.89	8,277.16	0.00	0.00	0.00	
16,100.00	89.95	272.35	7,026.80	-311.14	-8,379.81	8,377.10	0.00	0.00	0.00	
16,200.00	89.95	272.35	7,026.89	-307.05	-8,479.72	8,477.05	0.00	0.00	0.00	
16,300.00	89.95	272.35	7,026.98	-302.95	-8,579.64	8,576.99	0.00	0.00	0.00	
16,400.00	89.95	272.35	7,027.07	-298.86	-8,679.55	8,676.94	0.00	0.00	0.00	
16,500.00	89.95	272.35	7,027.16	-294.76	-8,779.47	8,776.89	0.00	0.00	0.00	
16,600.00	89.95	272.35	7,027.25	-290.67	-8,879.39	8,876.83	0.00	0.00	0.00	
16,700.00	89.95	272.35	7,027.34	-286.58	-8,979.30	8,976.78	0.00	0.00	0.00	
16,800.00	89.95	272.35	7,027.43	-282.48	-9,079.22	9,076.72	0.00	0.00	0.00	
16,900.00	89.95	272.35	7,027.52	-278.39	-9,179.14	9,176.67	0.00	0.00	0.00	
17,000.00	89.95	272.35	7,027.62	-274.30	-9,279.05	9,276.61	0.00	0.00	0.00	
17,104.45	89.95	272.35	7,027.71	-270.20	-9,383.41	9,381.00	0.00	0.00	0.00	
Begin Turn to BHL @ 17104.45ft										

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
17,200.00	89.95	270.91	7,027.80	-267.30	-9,478.92	9,476.53	1.50	0.00	-1.50
17,304.38	89.95	269.35	7,027.89	-267.07	-9,583.30	9,580.90	1.50	0.00	-1.50
End Turn @ 17304.38ft									
17,400.00	89.95	269.35	7,027.98	-268.16	-9,678.91	9,676.51	0.00	0.00	0.00
17,500.00	89.95	269.35	7,028.07	-269.29	-9,778.91	9,776.49	0.00	0.00	0.00
17,600.00	89.95	269.35	7,028.16	-270.43	-9,878.90	9,876.47	0.00	0.00	0.00
17,700.00	89.95	269.35	7,028.25	-271.57	-9,978.89	9,976.45	0.00	0.00	0.00
17,800.00	89.95	269.35	7,028.34	-272.71	-10,078.89	10,076.43	0.00	0.00	0.00
17,900.00	89.95	269.35	7,028.44	-273.85	-10,178.88	10,176.42	0.00	0.00	0.00
18,000.00	89.95	269.35	7,028.53	-274.99	-10,278.87	10,276.40	0.00	0.00	0.00
18,100.00	89.95	269.35	7,028.62	-276.13	-10,378.87	10,376.38	0.00	0.00	0.00
18,200.00	89.95	269.35	7,028.71	-277.27	-10,478.86	10,476.36	0.00	0.00	0.00
18,300.00	89.95	269.35	7,028.80	-278.41	-10,578.85	10,576.34	0.00	0.00	0.00
18,400.00	89.95	269.35	7,028.89	-279.55	-10,678.85	10,676.32	0.00	0.00	0.00
18,500.00	89.95	269.35	7,028.98	-280.69	-10,778.84	10,776.30	0.00	0.00	0.00
18,600.00	89.95	269.35	7,029.07	-281.83	-10,878.83	10,876.29	0.00	0.00	0.00
18,700.00	89.95	269.35	7,029.16	-282.97	-10,978.83	10,976.27	0.00	0.00	0.00
18,800.00	89.95	269.35	7,029.26	-284.10	-11,078.82	11,076.25	0.00	0.00	0.00
18,900.00	89.95	269.35	7,029.35	-285.24	-11,178.82	11,176.23	0.00	0.00	0.00
19,000.00	89.95	269.35	7,029.44	-286.38	-11,278.81	11,276.21	0.00	0.00	0.00
19,100.00	89.95	269.35	7,029.53	-287.52	-11,378.80	11,376.19	0.00	0.00	0.00
19,200.00	89.95	269.35	7,029.62	-288.66	-11,478.80	11,476.17	0.00	0.00	0.00
19,300.00	89.95	269.35	7,029.71	-289.80	-11,578.79	11,576.16	0.00	0.00	0.00
19,400.00	89.95	269.35	7,029.80	-290.94	-11,678.78	11,676.14	0.00	0.00	0.00
19,500.00	89.95	269.35	7,029.89	-292.08	-11,778.78	11,776.12	0.00	0.00	0.00
19,600.00	89.95	269.35	7,029.99	-293.22	-11,878.77	11,876.10	0.00	0.00	0.00
19,700.00	89.95	269.35	7,030.08	-294.36	-11,978.76	11,976.08	0.00	0.00	0.00
19,800.00	89.95	269.35	7,030.17	-295.50	-12,078.76	12,076.06	0.00	0.00	0.00
19,900.00	89.95	269.35	7,030.26	-296.64	-12,178.75	12,176.04	0.00	0.00	0.00
20,000.00	89.95	269.35	7,030.35	-297.78	-12,278.74	12,276.03	0.00	0.00	0.00
20,100.00	89.95	269.35	7,030.44	-298.91	-12,378.74	12,376.01	0.00	0.00	0.00
20,200.00	89.95	269.35	7,030.53	-300.05	-12,478.73	12,475.99	0.00	0.00	0.00
20,300.00	89.95	269.35	7,030.62	-301.19	-12,578.72	12,575.97	0.00	0.00	0.00
20,400.00	89.95	269.35	7,030.72	-302.33	-12,678.72	12,675.95	0.00	0.00	0.00
20,500.00	89.95	269.35	7,030.81	-303.47	-12,778.71	12,775.93	0.00	0.00	0.00
20,600.00	89.95	269.35	7,030.90	-304.61	-12,878.70	12,875.91	0.00	0.00	0.00
20,700.00	89.95	269.35	7,030.99	-305.75	-12,978.70	12,975.90	0.00	0.00	0.00
20,712.19	89.95	269.35	7,031.00	-305.89	-12,990.89	12,988.08	0.00	0.00	0.00
TD Well @ 20712.19ft - 5.5" CSG									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,511.08	1,500.00	9 5/8"	9-5/8	13-1/2
20,712.19	7,031.00	5.5" CSG	5-1/2	7-7/8

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SCHLAGEL 5-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	3N-67W-05 SCHLAGEL 10-5HZ PAD WEST	North Reference:	True
Well:	SCHLAGEL 5-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
740.12	740.00	Fox Hills			
3,669.96	3,582.00	Parkman			
4,126.22	4,022.00	Sussex			
7,048.18	6,851.00	Sharon Springs			
7,133.70	6,902.00	Niobrara			
7,279.67	6,969.00	Nio B			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
520.00	520.00	0.00	0.00		Begin Nudge @ 520.00ft
1,542.67	1,530.49	-57.73	123.23		Hold Tangent @ 1542.67ft
4,342.84	4,230.90	-371.96	794.06		Begin Drop @ 4342.84ft
5,109.84	4,988.77	-415.26	886.48		Hold Vertical @ 5109.84ft
6,423.87	6,302.80	-415.26	886.48		KOP @ 6423.87ft :: DLS = 8°/100'
7,548.22	7,019.00	-409.61	170.96		End Build @ 7548.22ft
15,099.79	7,025.89	-350.00	-7,380.37		Begin Turn for AC @ 15099.79ft
15,226.05	7,026.01	-346.92	-7,506.59		End Turn @ 15226.05ft
17,104.45	7,027.71	-270.02	-9,383.41		Begin Turn to BHL @ 17104.45ft
17,304.38	7,027.89	-267.07	-9,583.30		End Turn @ 17304.38ft
20,712.19	7,031.00	-305.89	-12,990.89		TD Well @ 20712.19ft