

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-05 Schlagel 10-5HZ Pad

SCHLAGEL 5-8HZ

PLAN A

Plan: PERMIT REV 0

Standard Planning Report

02 June, 2020

Project: WELD-NAD83-UTMFT13N
Site: 3N-67W-05 Schlager 10-5HZ Pad
Well: SCHLAGEL 5-8HZ
Wellbore: PLAN A
Design: PERMIT REV 1

US ROCKIES WATTENBERG PLANNING

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1230.94	10.96	173.51	1226.49	-69.28	7.88	1.50	173.51	9.50	
4	6431.29	10.96	173.51	6331.91	-1052.01	119.73	0.00	0.00	144.30	
5	7533.87	89.70	91.41	7017.00	-1200.26	828.56	8.00	-82.30	856.40	Schlager 5-8HZ Heel
6	13057.55	89.62	91.41	7050.00	-1336.01	6350.47	0.00	-177.68	6379.98	SCHLAGEL 5-8HZ Int Targ 1
7	13064.07	89.63	91.31	7050.04	-1336.17	6356.99	1.50	-83.36	6386.50	
8	24382.14	89.63	91.31	7123.76	-1594.81	17671.86	0.00	0.00	17704.32	Schlager 5-8HZ Toe

SURFACE HOLE LOCATION: SCHLAGEL 5-8HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14619140.47	1664682.75	40.253729	-104.913028

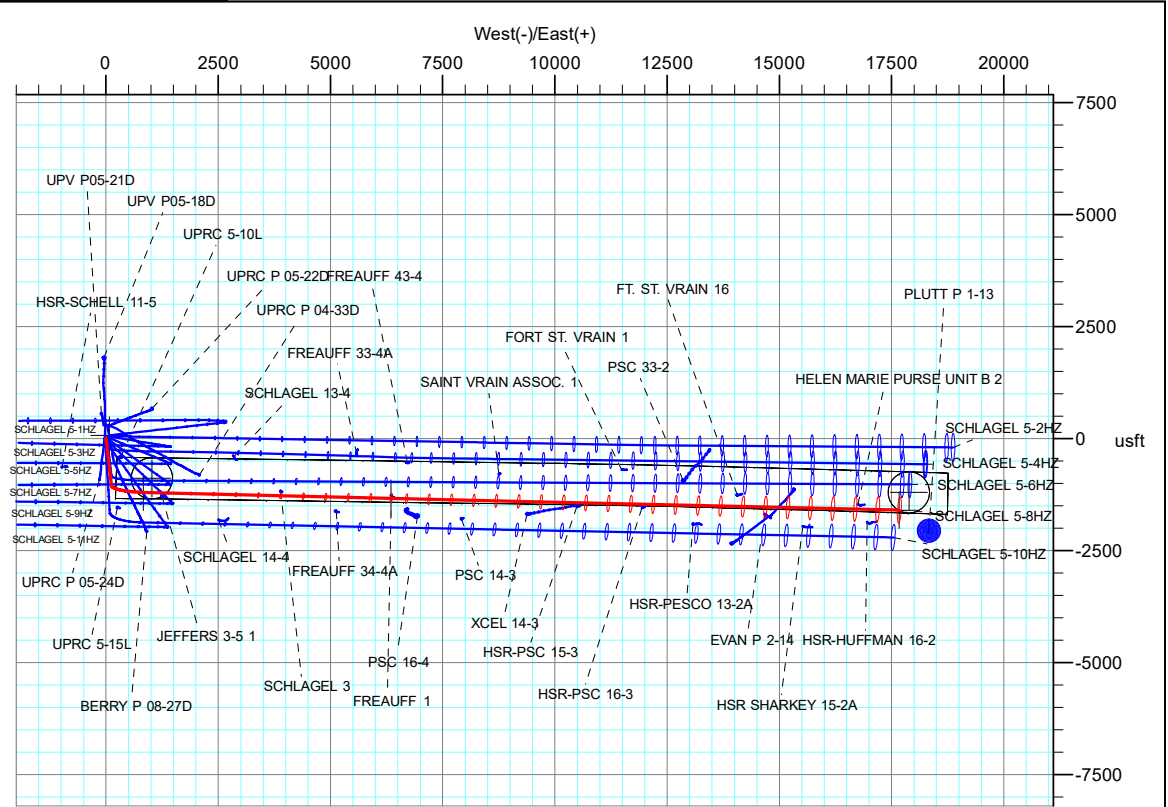
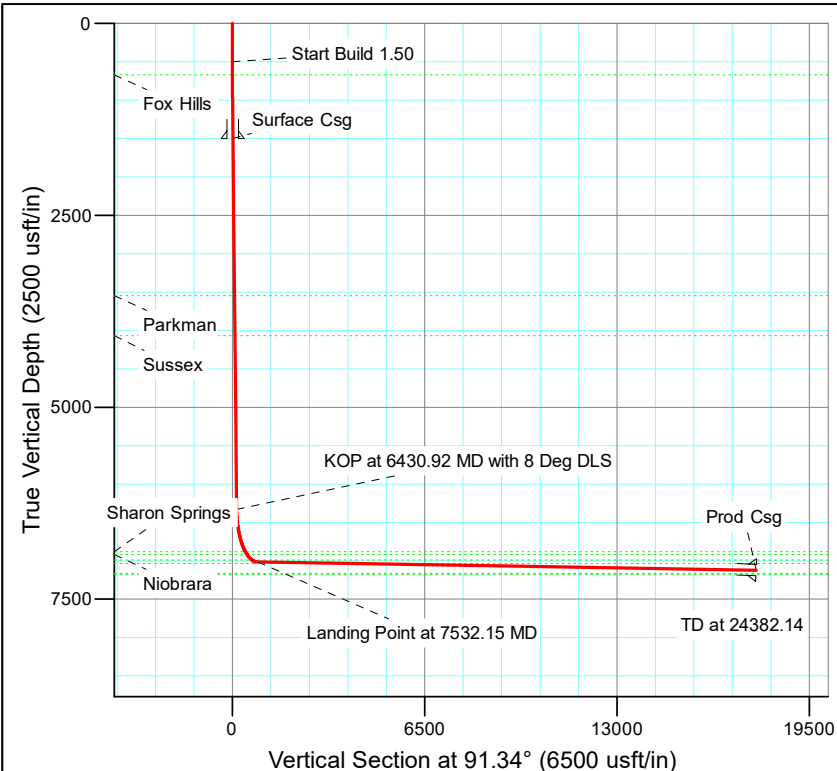
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Schlager 5-8HZ Heel	7017.00	-1200.26	828.56	40.250433	-104.910059
Schlager 5-8HZ Toe	7123.76	-1594.81	17671.86	40.249332	-104.849695

SHL **Heel** **Toe**
2206' FSL **1016' FSL** **909' FSL**
2274' FEL **1450' FEL** **206' FEL**

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
672.00	672.06	Fox Hills
3548.00	3595.62	Parkman
4070.00	4127.32	Sussex
6883.00	7088.25	Sharon Springs
6920.00	7157.07	Niobrara
6988.00	7331.28	Nio B
7035.00	10713.03	Nio C



Azimuths to True North
Magnetic North: 7.97°

Magnetic Field
Strength: 51969.4snT
Dip Angle: 66.64°
Date: 5/13/2020
Model: IGRF2015

CASING DETAILS

TVD	MD	Name	Size
1500.00	1509.54	Surface Csg	9-5/8
7123.76	24382.14	Prod Csg	5-1/2

ELEVATION

GROUND ELEVATION: 4870.00
RKB = 17' @ 4887ft

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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			
Site Position:		Northing:	14,619,213.65 usft	Latitude:	40.253930
From:	Lat/Long	Easting:	1,664,758.13 usft	Longitude:	-104.912758
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.06 °

Well	SCHLAGEL 5-8HZ					
Well Position	+N/-S	-73.11 usft	Northing:	14,619,140.47 usft	Latitude:	40.253729
	+E/-W	-75.45 usft	Easting:	1,664,682.75 usft	Longitude:	-104.913029
Position Uncertainty	3.28 usft		Wellhead Elevation:		Ground Level:	4,870.00 usft

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/13/2020	7.97	66.64	51,969.40284713

Design	PERMIT REV 0				
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	91.34	

Plan Survey Tool Program		Date	6/2/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	PERMIT REV 0 (PLAN A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	24,382.14	PERMIT REV 0 (PLAN A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,230.94	10.96	173.51	1,226.49	-69.28	7.88	1.50	1.50	0.00	173.51	
6,431.29	10.96	173.51	6,331.91	-1,052.01	119.73	0.00	0.00	0.00	0.00	
7,533.87	89.70	91.41	7,017.00	-1,200.26	828.56	8.00	7.14	-7.45	-82.30	Schlagel 5-8HZ Heel
13,057.55	89.62	91.41	7,050.00	-1,336.01	6,350.47	0.00	0.00	0.00	-177.68	SCHLAGEL 5-8HZ Int
13,064.07	89.63	91.31	7,050.04	-1,336.17	6,356.99	1.50	0.17	-1.49	-83.36	
24,382.14	89.63	91.31	7,123.76	-1,594.81	17,671.86	0.00	0.00	0.00	0.00	Schlagel 5-8HZ Toe

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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
400.00	0.00	0.00	400.00	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
Start Build 1.50									
600.00	1.50	173.51	599.99	-1.30	0.15	0.18	1.50	1.50	0.00
672.06	2.58	173.51	672.00	-3.85	0.44	0.53	1.50	1.50	0.00
Fox Hills									
700.00	3.00	173.51	699.91	-5.20	0.59	0.71	1.50	1.50	0.00
800.00	4.50	173.51	799.69	-11.70	1.33	1.60	1.50	1.50	0.00
900.00	6.00	173.51	899.27	-20.79	2.37	2.85	1.50	1.50	0.00
1,000.00	7.50	173.51	998.57	-32.47	3.70	4.45	1.50	1.50	0.00
1,100.00	9.00	173.51	1,097.54	-46.73	5.32	6.41	1.50	1.50	0.00
1,200.00	10.50	173.51	1,196.09	-63.55	7.23	8.72	1.50	1.50	0.00
1,230.94	10.96	173.51	1,226.49	-69.28	7.88	9.50	1.50	1.50	0.00
1,300.00	10.96	173.51	1,294.29	-82.33	9.37	11.29	0.00	0.00	0.00
1,400.00	10.96	173.51	1,392.46	-101.22	11.52	13.88	0.00	0.00	0.00
1,500.00	10.96	173.51	1,490.64	-120.12	13.67	16.48	0.00	0.00	0.00
1,509.54	10.96	173.51	1,500.00	-121.92	13.88	16.72	0.00	0.00	0.00
Surface Csg									
1,600.00	10.96	173.51	1,588.81	-139.02	15.82	19.07	0.00	0.00	0.00
1,700.00	10.96	173.51	1,686.99	-157.92	17.97	21.66	0.00	0.00	0.00
1,800.00	10.96	173.51	1,785.16	-176.81	20.12	24.25	0.00	0.00	0.00
1,900.00	10.96	173.51	1,883.33	-195.71	22.27	26.84	0.00	0.00	0.00
2,000.00	10.96	173.51	1,981.51	-214.61	24.42	29.44	0.00	0.00	0.00
2,100.00	10.96	173.51	2,079.68	-233.51	26.57	32.03	0.00	0.00	0.00
2,200.00	10.96	173.51	2,177.86	-252.40	28.73	34.62	0.00	0.00	0.00
2,300.00	10.96	173.51	2,276.03	-271.30	30.88	37.21	0.00	0.00	0.00
2,400.00	10.96	173.51	2,374.21	-290.20	33.03	39.80	0.00	0.00	0.00
2,500.00	10.96	173.51	2,472.38	-309.10	35.18	42.40	0.00	0.00	0.00
2,600.00	10.96	173.51	2,570.56	-327.99	37.33	44.99	0.00	0.00	0.00
2,700.00	10.96	173.51	2,668.73	-346.89	39.48	47.58	0.00	0.00	0.00
2,800.00	10.96	173.51	2,766.91	-365.79	41.63	50.17	0.00	0.00	0.00
2,900.00	10.96	173.51	2,865.08	-384.69	43.78	52.76	0.00	0.00	0.00
3,000.00	10.96	173.51	2,963.26	-403.58	45.93	55.36	0.00	0.00	0.00
3,100.00	10.96	173.51	3,061.43	-422.48	48.08	57.95	0.00	0.00	0.00
3,200.00	10.96	173.51	3,159.60	-441.38	50.23	60.54	0.00	0.00	0.00
3,300.00	10.96	173.51	3,257.78	-460.28	52.38	63.13	0.00	0.00	0.00
3,400.00	10.96	173.51	3,355.95	-479.17	54.53	65.72	0.00	0.00	0.00
3,500.00	10.96	173.51	3,454.13	-498.07	56.68	68.32	0.00	0.00	0.00
3,595.62	10.96	173.51	3,548.00	-516.14	58.74	70.79	0.00	0.00	0.00
Parkman									
3,600.00	10.96	173.51	3,552.30	-516.97	58.83	70.91	0.00	0.00	0.00
3,700.00	10.96	173.51	3,650.48	-535.86	60.99	73.50	0.00	0.00	0.00
3,800.00	10.96	173.51	3,748.65	-554.76	63.14	76.09	0.00	0.00	0.00
3,900.00	10.96	173.51	3,846.83	-573.66	65.29	78.68	0.00	0.00	0.00
4,000.00	10.96	173.51	3,945.00	-592.56	67.44	81.28	0.00	0.00	0.00
4,100.00	10.96	173.51	4,043.18	-611.45	69.59	83.87	0.00	0.00	0.00
4,127.32	10.96	173.51	4,070.00	-616.62	70.18	84.58	0.00	0.00	0.00
Sussex									
4,200.00	10.96	173.51	4,141.35	-630.35	71.74	86.46	0.00	0.00	0.00
4,300.00	10.96	173.51	4,239.53	-649.25	73.89	89.05	0.00	0.00	0.00

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)
4,400.00	10.96	173.51	4,337.70	-668.15	76.04	91.64	0.00	0.00	0.00
4,500.00	10.96	173.51	4,435.88	-687.04	78.19	94.24	0.00	0.00	0.00
4,600.00	10.96	173.51	4,534.05	-705.94	80.34	96.83	0.00	0.00	0.00
4,700.00	10.96	173.51	4,632.22	-724.84	82.49	99.42	0.00	0.00	0.00
4,800.00	10.96	173.51	4,730.40	-743.74	84.64	102.01	0.00	0.00	0.00
4,900.00	10.96	173.51	4,828.57	-762.63	86.79	104.60	0.00	0.00	0.00
5,000.00	10.96	173.51	4,926.75	-781.53	88.94	107.20	0.00	0.00	0.00
5,100.00	10.96	173.51	5,024.92	-800.43	91.09	109.79	0.00	0.00	0.00
5,200.00	10.96	173.51	5,123.10	-819.33	93.25	112.38	0.00	0.00	0.00
5,300.00	10.96	173.51	5,221.27	-838.22	95.40	114.97	0.00	0.00	0.00
5,400.00	10.96	173.51	5,319.45	-857.12	97.55	117.56	0.00	0.00	0.00
5,500.00	10.96	173.51	5,417.62	-876.02	99.70	120.16	0.00	0.00	0.00
5,600.00	10.96	173.51	5,515.80	-894.92	101.85	122.75	0.00	0.00	0.00
5,700.00	10.96	173.51	5,613.97	-913.81	104.00	125.34	0.00	0.00	0.00
5,800.00	10.96	173.51	5,712.15	-932.71	106.15	127.93	0.00	0.00	0.00
5,900.00	10.96	173.51	5,810.32	-951.61	108.30	130.52	0.00	0.00	0.00
6,000.00	10.96	173.51	5,908.50	-970.51	110.45	133.12	0.00	0.00	0.00
6,100.00	10.96	173.51	6,006.67	-989.40	112.60	135.71	0.00	0.00	0.00
6,200.00	10.96	173.51	6,104.84	-1,008.30	114.75	138.30	0.00	0.00	0.00
6,300.00	10.96	173.51	6,203.02	-1,027.20	116.90	140.89	0.00	0.00	0.00
6,400.00	10.96	173.51	6,301.19	-1,046.10	119.05	143.48	0.00	0.00	0.00
6,430.92	10.96	173.51	6,331.55	-1,051.94	119.72	144.29	0.00	0.00	0.00
KOP at 6430.92 MD with 8 Deg DLS									
6,431.29	10.96	173.51	6,331.91	-1,052.01	119.73	144.30	0.00	0.00	0.00
6,450.00	11.26	165.89	6,350.27	-1,055.55	120.37	145.02	8.00	1.59	-40.71
6,500.00	12.89	148.33	6,399.18	-1,065.03	124.49	149.37	8.00	3.26	-35.12
6,550.00	15.40	135.51	6,447.67	-1,074.52	132.08	157.17	8.00	5.02	-25.64
6,600.00	18.44	126.50	6,495.51	-1,083.97	143.09	168.40	8.00	6.07	-18.01
6,650.00	21.77	120.07	6,542.46	-1,093.32	157.48	183.00	8.00	6.68	-12.87
6,700.00	25.30	115.31	6,588.30	-1,102.54	175.17	200.90	8.00	7.05	-9.52
6,750.00	28.94	111.66	6,632.80	-1,111.57	196.07	222.02	8.00	7.28	-7.29
6,800.00	32.65	108.78	6,675.75	-1,120.38	220.10	246.24	8.00	7.44	-5.77
6,850.00	36.43	106.43	6,716.93	-1,128.93	247.12	273.45	8.00	7.54	-4.70
6,900.00	40.24	104.46	6,756.14	-1,137.16	277.01	303.52	8.00	7.62	-3.93
6,950.00	44.08	102.78	6,793.20	-1,145.05	309.62	336.31	8.00	7.68	-3.35
7,000.00	47.94	101.33	6,827.93	-1,152.54	344.79	371.65	8.00	7.72	-2.92
7,050.00	51.81	100.03	6,860.15	-1,159.61	382.35	409.36	8.00	7.75	-2.58
7,088.25	54.79	99.14	6,883.00	-1,164.72	412.58	439.71	8.00	7.78	-2.35
Sharon Springs									
7,100.00	55.70	98.87	6,889.70	-1,166.23	422.12	449.28	8.00	7.79	-2.23
7,150.00	59.60	97.82	6,916.45	-1,172.35	463.91	491.19	8.00	7.80	-2.11
7,157.07	60.15	97.67	6,920.00	-1,173.17	469.97	497.27	8.00	7.81	-2.02
Niobrara									
7,200.00	63.51	96.84	6,940.26	-1,177.95	507.50	534.91	8.00	7.81	-1.94
7,250.00	67.42	95.93	6,961.02	-1,183.00	552.70	580.21	8.00	7.83	-1.82
7,300.00	71.34	95.07	6,978.63	-1,187.48	599.27	626.87	8.00	7.84	-1.72
7,331.28	73.79	94.55	6,988.00	-1,189.98	629.00	656.66	8.00	7.84	-1.66
Nio B									
7,350.00	75.26	94.25	6,993.00	-1,191.37	646.99	674.67	8.00	7.85	-1.62
7,400.00	79.18	93.45	7,004.05	-1,194.64	695.63	723.38	8.00	7.85	-1.59
7,450.00	83.11	92.68	7,011.74	-1,197.28	744.96	772.75	8.00	7.85	-1.55
7,500.00	87.04	91.92	7,016.04	-1,199.28	794.72	822.55	8.00	7.86	-1.52
7,532.15	89.56	91.44	7,016.99	-1,200.22	826.84	854.68	8.00	7.86	-1.51

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)
Landing Point at 7532.15 MD									
7,533.87	89.70	91.41	7,017.00	-1,200.26	828.56	856.40	8.00	7.86	-1.51
7,600.00	89.70	91.41	7,017.35	-1,201.89	894.67	922.53	0.00	0.00	0.00
7,700.00	89.70	91.41	7,017.87	-1,204.35	994.64	1,022.53	0.00	0.00	0.00
7,800.00	89.70	91.41	7,018.40	-1,206.81	1,094.61	1,122.53	0.00	0.00	0.00
7,900.00	89.69	91.41	7,018.94	-1,209.27	1,194.57	1,222.53	0.00	0.00	0.00
8,000.00	89.69	91.41	7,019.47	-1,211.73	1,294.54	1,322.52	0.00	0.00	0.00
8,100.00	89.69	91.41	7,020.01	-1,214.19	1,394.51	1,422.52	0.00	0.00	0.00
8,200.00	89.69	91.41	7,020.55	-1,216.65	1,494.48	1,522.52	0.00	0.00	0.00
8,300.00	89.69	91.41	7,021.09	-1,219.11	1,594.45	1,622.52	0.00	0.00	0.00
8,400.00	89.69	91.41	7,021.64	-1,221.57	1,694.42	1,722.52	0.00	0.00	0.00
8,500.00	89.69	91.41	7,022.19	-1,224.03	1,794.38	1,822.52	0.00	0.00	0.00
8,600.00	89.68	91.41	7,022.74	-1,226.49	1,894.35	1,922.52	0.00	0.00	0.00
8,700.00	89.68	91.41	7,023.29	-1,228.95	1,994.32	2,022.51	0.00	0.00	0.00
8,800.00	89.68	91.41	7,023.85	-1,231.41	2,094.29	2,122.51	0.00	0.00	0.00
8,900.00	89.68	91.41	7,024.40	-1,233.87	2,194.26	2,222.51	0.00	0.00	0.00
9,000.00	89.68	91.41	7,024.97	-1,236.32	2,294.22	2,322.51	0.00	0.00	0.00
9,100.00	89.68	91.41	7,025.53	-1,238.78	2,394.19	2,422.51	0.00	0.00	0.00
9,200.00	89.67	91.41	7,026.10	-1,241.24	2,494.16	2,522.51	0.00	0.00	0.00
9,300.00	89.67	91.41	7,026.67	-1,243.70	2,594.13	2,622.50	0.00	0.00	0.00
9,400.00	89.67	91.41	7,027.24	-1,246.16	2,694.10	2,722.50	0.00	0.00	0.00
9,500.00	89.67	91.41	7,027.81	-1,248.62	2,794.07	2,822.50	0.00	0.00	0.00
9,600.00	89.67	91.41	7,028.39	-1,251.08	2,894.03	2,922.50	0.00	0.00	0.00
9,700.00	89.67	91.41	7,028.97	-1,253.53	2,994.00	3,022.50	0.00	0.00	0.00
9,800.00	89.67	91.41	7,029.55	-1,255.99	3,093.97	3,122.50	0.00	0.00	0.00
9,900.00	89.66	91.41	7,030.14	-1,258.45	3,193.94	3,222.49	0.00	0.00	0.00
10,000.00	89.66	91.41	7,030.73	-1,260.91	3,293.91	3,322.49	0.00	0.00	0.00
10,100.00	89.66	91.41	7,031.32	-1,263.37	3,393.87	3,422.49	0.00	0.00	0.00
10,200.00	89.66	91.41	7,031.91	-1,265.83	3,493.84	3,522.49	0.00	0.00	0.00
10,300.00	89.66	91.41	7,032.51	-1,268.28	3,593.81	3,622.49	0.00	0.00	0.00
10,400.00	89.66	91.41	7,033.11	-1,270.74	3,693.78	3,722.48	0.00	0.00	0.00
10,500.00	89.65	91.41	7,033.71	-1,273.20	3,793.75	3,822.48	0.00	0.00	0.00
10,600.00	89.65	91.41	7,034.31	-1,275.66	3,893.71	3,922.48	0.00	0.00	0.00
10,700.00	89.65	91.41	7,034.92	-1,278.11	3,993.68	4,022.48	0.00	0.00	0.00
10,713.03	89.65	91.41	7,035.00	-1,278.43	4,006.71	4,035.51	0.00	0.00	0.00
Nio C									
10,800.00	89.65	91.41	7,035.53	-1,280.57	4,093.65	4,122.48	0.00	0.00	0.00
10,900.00	89.65	91.41	7,036.14	-1,283.03	4,193.62	4,222.47	0.00	0.00	0.00
11,000.00	89.65	91.41	7,036.76	-1,285.48	4,293.59	4,322.47	0.00	0.00	0.00
11,100.00	89.65	91.41	7,037.37	-1,287.94	4,393.55	4,422.47	0.00	0.00	0.00
11,200.00	89.64	91.41	7,038.00	-1,290.40	4,493.52	4,522.47	0.00	0.00	0.00
11,300.00	89.64	91.41	7,038.62	-1,292.85	4,593.49	4,622.47	0.00	0.00	0.00
11,400.00	89.64	91.41	7,039.24	-1,295.31	4,693.46	4,722.46	0.00	0.00	0.00
11,500.00	89.64	91.41	7,039.87	-1,297.77	4,793.43	4,822.46	0.00	0.00	0.00
11,600.00	89.64	91.41	7,040.50	-1,300.22	4,893.39	4,922.46	0.00	0.00	0.00
11,700.00	89.64	91.41	7,041.14	-1,302.68	4,993.36	5,022.46	0.00	0.00	0.00
11,800.00	89.63	91.41	7,041.77	-1,305.14	5,093.33	5,122.46	0.00	0.00	0.00
11,900.00	89.63	91.41	7,042.41	-1,307.59	5,193.30	5,222.45	0.00	0.00	0.00
12,000.00	89.63	91.41	7,043.05	-1,310.05	5,293.26	5,322.45	0.00	0.00	0.00
12,100.00	89.63	91.41	7,043.70	-1,312.50	5,393.23	5,422.45	0.00	0.00	0.00
12,200.00	89.63	91.41	7,044.34	-1,314.96	5,493.20	5,522.45	0.00	0.00	0.00
12,300.00	89.63	91.41	7,044.99	-1,317.41	5,593.17	5,622.45	0.00	0.00	0.00
12,400.00	89.63	91.41	7,045.65	-1,319.87	5,693.14	5,722.44	0.00	0.00	0.00
12,500.00	89.62	91.41	7,046.30	-1,322.32	5,793.10	5,822.44	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)
12,600.00	89.62	91.41	7,046.96	-1,324.78	5,893.07	5,922.44	0.00	0.00	0.00
12,700.00	89.62	91.41	7,047.62	-1,327.23	5,993.04	6,022.44	0.00	0.00	0.00
12,800.00	89.62	91.41	7,048.28	-1,329.69	6,093.01	6,122.43	0.00	0.00	0.00
12,900.00	89.62	91.41	7,048.95	-1,332.14	6,192.97	6,222.43	0.00	0.00	0.00
13,000.00	89.62	91.41	7,049.61	-1,334.60	6,292.94	6,322.43	0.00	0.00	0.00
13,057.55	89.62	91.41	7,050.00	-1,336.01	6,350.47	6,379.98	0.00	0.00	0.00
13,064.07	89.63	91.31	7,050.04	-1,336.17	6,356.99	6,386.50	1.50	0.17	-1.49
13,100.00	89.63	91.31	7,050.28	-1,336.99	6,392.91	6,422.43	0.00	0.00	0.00
13,200.00	89.63	91.31	7,050.93	-1,339.27	6,492.88	6,522.43	0.00	0.00	0.00
13,300.00	89.63	91.31	7,051.58	-1,341.56	6,592.85	6,622.42	0.00	0.00	0.00
13,400.00	89.63	91.31	7,052.23	-1,343.84	6,692.83	6,722.42	0.00	0.00	0.00
13,500.00	89.63	91.31	7,052.88	-1,346.13	6,792.80	6,822.42	0.00	0.00	0.00
13,600.00	89.63	91.31	7,053.53	-1,348.41	6,892.77	6,922.42	0.00	0.00	0.00
13,700.00	89.63	91.31	7,054.19	-1,350.70	6,992.74	7,022.42	0.00	0.00	0.00
13,800.00	89.63	91.31	7,054.84	-1,352.98	7,092.71	7,122.41	0.00	0.00	0.00
13,900.00	89.63	91.31	7,055.49	-1,355.27	7,192.68	7,222.41	0.00	0.00	0.00
14,000.00	89.63	91.31	7,056.14	-1,357.55	7,292.66	7,322.41	0.00	0.00	0.00
14,100.00	89.63	91.31	7,056.79	-1,359.84	7,392.63	7,422.41	0.00	0.00	0.00
14,200.00	89.63	91.31	7,057.44	-1,362.12	7,492.60	7,522.40	0.00	0.00	0.00
14,300.00	89.63	91.31	7,058.09	-1,364.41	7,592.57	7,622.40	0.00	0.00	0.00
14,400.00	89.63	91.31	7,058.74	-1,366.70	7,692.54	7,722.40	0.00	0.00	0.00
14,500.00	89.63	91.31	7,059.40	-1,368.98	7,792.52	7,822.40	0.00	0.00	0.00
14,600.00	89.63	91.31	7,060.05	-1,371.27	7,892.49	7,922.40	0.00	0.00	0.00
14,700.00	89.63	91.31	7,060.70	-1,373.55	7,992.46	8,022.39	0.00	0.00	0.00
14,800.00	89.63	91.31	7,061.35	-1,375.84	8,092.43	8,122.39	0.00	0.00	0.00
14,900.00	89.63	91.31	7,062.00	-1,378.12	8,192.40	8,222.39	0.00	0.00	0.00
15,000.00	89.63	91.31	7,062.65	-1,380.41	8,292.37	8,322.39	0.00	0.00	0.00
15,100.00	89.63	91.31	7,063.30	-1,382.69	8,392.35	8,422.39	0.00	0.00	0.00
15,200.00	89.63	91.31	7,063.96	-1,384.98	8,492.32	8,522.38	0.00	0.00	0.00
15,300.00	89.63	91.31	7,064.61	-1,387.26	8,592.29	8,622.38	0.00	0.00	0.00
15,400.00	89.63	91.31	7,065.26	-1,389.55	8,692.26	8,722.38	0.00	0.00	0.00
15,500.00	89.63	91.31	7,065.91	-1,391.83	8,792.23	8,822.38	0.00	0.00	0.00
15,600.00	89.63	91.31	7,066.56	-1,394.12	8,892.20	8,922.37	0.00	0.00	0.00
15,700.00	89.63	91.31	7,067.21	-1,396.40	8,992.18	9,022.37	0.00	0.00	0.00
15,800.00	89.63	91.31	7,067.86	-1,398.69	9,092.15	9,122.37	0.00	0.00	0.00
15,900.00	89.63	91.31	7,068.51	-1,400.97	9,192.12	9,222.37	0.00	0.00	0.00
16,000.00	89.63	91.31	7,069.17	-1,403.26	9,292.09	9,322.37	0.00	0.00	0.00
16,100.00	89.63	91.31	7,069.82	-1,405.54	9,392.06	9,422.36	0.00	0.00	0.00
16,200.00	89.63	91.31	7,070.47	-1,407.83	9,492.04	9,522.36	0.00	0.00	0.00
16,300.00	89.63	91.31	7,071.12	-1,410.11	9,592.01	9,622.36	0.00	0.00	0.00
16,400.00	89.63	91.31	7,071.77	-1,412.40	9,691.98	9,722.36	0.00	0.00	0.00
16,500.00	89.63	91.31	7,072.42	-1,414.68	9,791.95	9,822.36	0.00	0.00	0.00
16,600.00	89.63	91.31	7,073.07	-1,416.97	9,891.92	9,922.35	0.00	0.00	0.00
16,700.00	89.63	91.31	7,073.72	-1,419.25	9,991.89	10,022.35	0.00	0.00	0.00
16,800.00	89.63	91.31	7,074.38	-1,421.54	10,091.87	10,122.35	0.00	0.00	0.00
16,900.00	89.63	91.31	7,075.03	-1,423.83	10,191.84	10,222.35	0.00	0.00	0.00
17,000.00	89.63	91.31	7,075.68	-1,426.11	10,291.81	10,322.34	0.00	0.00	0.00
17,100.00	89.63	91.31	7,076.33	-1,428.40	10,391.78	10,422.34	0.00	0.00	0.00
17,200.00	89.63	91.31	7,076.98	-1,430.68	10,491.75	10,522.34	0.00	0.00	0.00
17,300.00	89.63	91.31	7,077.63	-1,432.97	10,591.72	10,622.34	0.00	0.00	0.00
17,400.00	89.63	91.31	7,078.28	-1,435.25	10,691.70	10,722.34	0.00	0.00	0.00
17,500.00	89.63	91.31	7,078.94	-1,437.54	10,791.67	10,822.33	0.00	0.00	0.00
17,600.00	89.63	91.31	7,079.59	-1,439.82	10,891.64	10,922.33	0.00	0.00	0.00
17,700.00	89.63	91.31	7,080.24	-1,442.11	10,991.61	11,022.33	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)
17,800.00	89.63	91.31	7,080.89	-1,444.39	11,091.58	11,122.33	0.00	0.00	0.00
17,900.00	89.63	91.31	7,081.54	-1,446.68	11,191.56	11,222.33	0.00	0.00	0.00
18,000.00	89.63	91.31	7,082.19	-1,448.96	11,291.53	11,322.32	0.00	0.00	0.00
18,100.00	89.63	91.31	7,082.84	-1,451.25	11,391.50	11,422.32	0.00	0.00	0.00
18,200.00	89.63	91.31	7,083.49	-1,453.53	11,491.47	11,522.32	0.00	0.00	0.00
18,300.00	89.63	91.31	7,084.15	-1,455.82	11,591.44	11,622.32	0.00	0.00	0.00
18,400.00	89.63	91.31	7,084.80	-1,458.10	11,691.41	11,722.31	0.00	0.00	0.00
18,500.00	89.63	91.31	7,085.45	-1,460.39	11,791.39	11,822.31	0.00	0.00	0.00
18,600.00	89.63	91.31	7,086.10	-1,462.67	11,891.36	11,922.31	0.00	0.00	0.00
18,700.00	89.63	91.31	7,086.75	-1,464.96	11,991.33	12,022.31	0.00	0.00	0.00
18,800.00	89.63	91.31	7,087.40	-1,467.24	12,091.30	12,122.31	0.00	0.00	0.00
18,900.00	89.63	91.31	7,088.05	-1,469.53	12,191.27	12,222.30	0.00	0.00	0.00
19,000.00	89.63	91.31	7,088.71	-1,471.81	12,291.24	12,322.30	0.00	0.00	0.00
19,100.00	89.63	91.31	7,089.36	-1,474.10	12,391.22	12,422.30	0.00	0.00	0.00
19,200.00	89.63	91.31	7,090.01	-1,476.38	12,491.19	12,522.30	0.00	0.00	0.00
19,300.00	89.63	91.31	7,090.66	-1,478.67	12,591.16	12,622.30	0.00	0.00	0.00
19,400.00	89.63	91.31	7,091.31	-1,480.96	12,691.13	12,722.29	0.00	0.00	0.00
19,500.00	89.63	91.31	7,091.96	-1,483.24	12,791.10	12,822.29	0.00	0.00	0.00
19,600.00	89.63	91.31	7,092.61	-1,485.53	12,891.08	12,922.29	0.00	0.00	0.00
19,700.00	89.63	91.31	7,093.26	-1,487.81	12,991.05	13,022.29	0.00	0.00	0.00
19,800.00	89.63	91.31	7,093.92	-1,490.10	13,091.02	13,122.29	0.00	0.00	0.00
19,900.00	89.63	91.31	7,094.57	-1,492.38	13,190.99	13,222.28	0.00	0.00	0.00
20,000.00	89.63	91.31	7,095.22	-1,494.67	13,290.96	13,322.28	0.00	0.00	0.00
20,100.00	89.63	91.31	7,095.87	-1,496.95	13,390.93	13,422.28	0.00	0.00	0.00
20,200.00	89.63	91.31	7,096.52	-1,499.24	13,490.91	13,522.28	0.00	0.00	0.00
20,300.00	89.63	91.31	7,097.17	-1,501.52	13,590.88	13,622.27	0.00	0.00	0.00
20,400.00	89.63	91.31	7,097.82	-1,503.81	13,690.85	13,722.27	0.00	0.00	0.00
20,500.00	89.63	91.31	7,098.48	-1,506.09	13,790.82	13,822.27	0.00	0.00	0.00
20,600.00	89.63	91.31	7,099.13	-1,508.38	13,890.79	13,922.27	0.00	0.00	0.00
20,700.00	89.63	91.31	7,099.78	-1,510.66	13,990.76	14,022.27	0.00	0.00	0.00
20,800.00	89.63	91.31	7,100.43	-1,512.95	14,090.74	14,122.26	0.00	0.00	0.00
20,900.00	89.63	91.31	7,101.08	-1,515.23	14,190.71	14,222.26	0.00	0.00	0.00
21,000.00	89.63	91.31	7,101.73	-1,517.52	14,290.68	14,322.26	0.00	0.00	0.00
21,100.00	89.63	91.31	7,102.38	-1,519.80	14,390.65	14,422.26	0.00	0.00	0.00
21,200.00	89.63	91.31	7,103.03	-1,522.09	14,490.62	14,522.26	0.00	0.00	0.00
21,300.00	89.63	91.31	7,103.69	-1,524.37	14,590.60	14,622.25	0.00	0.00	0.00
21,400.00	89.63	91.31	7,104.34	-1,526.66	14,690.57	14,722.25	0.00	0.00	0.00
21,500.00	89.63	91.31	7,104.99	-1,528.94	14,790.54	14,822.25	0.00	0.00	0.00
21,600.00	89.63	91.31	7,105.64	-1,531.23	14,890.51	14,922.25	0.00	0.00	0.00
21,700.00	89.63	91.31	7,106.29	-1,533.52	14,990.48	15,022.24	0.00	0.00	0.00
21,800.00	89.63	91.31	7,106.94	-1,535.80	15,090.45	15,122.24	0.00	0.00	0.00
21,900.00	89.63	91.31	7,107.59	-1,538.09	15,190.43	15,222.24	0.00	0.00	0.00
22,000.00	89.63	91.31	7,108.24	-1,540.37	15,290.40	15,322.24	0.00	0.00	0.00
22,100.00	89.63	91.31	7,108.90	-1,542.66	15,390.37	15,422.24	0.00	0.00	0.00
22,200.00	89.63	91.31	7,109.55	-1,544.94	15,490.34	15,522.23	0.00	0.00	0.00
22,300.00	89.63	91.31	7,110.20	-1,547.23	15,590.31	15,622.23	0.00	0.00	0.00
22,400.00	89.63	91.31	7,110.85	-1,549.51	15,690.28	15,722.23	0.00	0.00	0.00
22,500.00	89.63	91.31	7,111.50	-1,551.80	15,790.26	15,822.23	0.00	0.00	0.00
22,600.00	89.63	91.31	7,112.15	-1,554.08	15,890.23	15,922.23	0.00	0.00	0.00
22,700.00	89.63	91.31	7,112.80	-1,556.37	15,990.20	16,022.22	0.00	0.00	0.00
22,800.00	89.63	91.31	7,113.46	-1,558.65	16,090.17	16,122.22	0.00	0.00	0.00
22,900.00	89.63	91.31	7,114.11	-1,560.94	16,190.14	16,222.22	0.00	0.00	0.00
23,000.00	89.63	91.31	7,114.76	-1,563.22	16,290.12	16,322.22	0.00	0.00	0.00
23,100.00	89.63	91.31	7,115.41	-1,565.51	16,390.09	16,422.21	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

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)	
23,200.00	89.63	91.31	7,116.06	-1,567.79	16,490.06	16,522.21	0.00	0.00	0.00	
23,300.00	89.63	91.31	7,116.71	-1,570.08	16,590.03	16,622.21	0.00	0.00	0.00	
23,400.00	89.63	91.31	7,117.36	-1,572.36	16,690.00	16,722.21	0.00	0.00	0.00	
23,500.00	89.63	91.31	7,118.01	-1,574.65	16,789.97	16,822.21	0.00	0.00	0.00	
23,600.00	89.63	91.31	7,118.67	-1,576.93	16,889.95	16,922.20	0.00	0.00	0.00	
23,700.00	89.63	91.31	7,119.32	-1,579.22	16,989.92	17,022.20	0.00	0.00	0.00	
23,800.00	89.63	91.31	7,119.97	-1,581.50	17,089.89	17,122.20	0.00	0.00	0.00	
23,900.00	89.63	91.31	7,120.62	-1,583.79	17,189.86	17,222.20	0.00	0.00	0.00	
24,000.00	89.63	91.31	7,121.27	-1,586.07	17,289.83	17,322.20	0.00	0.00	0.00	
24,100.00	89.63	91.31	7,121.92	-1,588.36	17,389.80	17,422.19	0.00	0.00	0.00	
24,200.00	89.63	91.31	7,122.57	-1,590.65	17,489.78	17,522.19	0.00	0.00	0.00	
24,300.00	89.63	91.31	7,123.23	-1,592.93	17,589.75	17,622.19	0.00	0.00	0.00	
24,380.42	89.63	91.31	7,123.75	-1,594.77	17,670.15	17,702.61	0.00	0.00	0.00	
TD at 24380.42										
24,382.14	89.63	91.31	7,123.76	-1,594.81	17,671.86	17,704.32	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Schlagel 5-8HZ Heel	0.00	0.00	7,017.00	-1,200.26	828.56	14,617,941.02	1,665,512.48	40.250433	-104.910059
- plan hits target center									
- Point									
SCHLAGEL 5-8HZ Int Tz	0.00	0.00	7,050.00	-1,336.01	6,350.47	14,617,810.68	1,671,034.53	40.250058	-104.890269
- plan hits target center									
- Point									
Schlagel 5-8HZ Toe	0.00	0.00	7,123.76	-1,594.81	17,671.86	14,617,562.99	1,682,356.16	40.249333	-104.849696
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,509.54	1,500.00	Surface Csg	9-5/8	13-1/2	
24,382.14	7,123.76	Prod Csg	5-1/2	7-7/8	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV 0		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
672.06	672.00	Fox Hills			
3,595.62	3,548.00	Parkman			
4,127.32	4,070.00	Sussex			
7,088.25	6,883.00	Sharon Springs			
7,157.07	6,920.00	Niobrara			
7,331.28	6,988.00	Nio B			
10,713.03	7,035.00	Nio C			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 1.50
6,430.92	6,331.55	-1,051.94	119.72	KOP at 6430.92 MD with 8 Deg DLS
7,532.15	7,016.99	-1,200.22	826.84	Landing Point at 7532.15 MD
24,380.42	7,123.75	-1,594.77	17,670.15	TD at 24380.42