

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

SCHLAGEL 5-2HZ

PLAN A

Plan: PERMIT REV 0

Standard Planning Report

29 May, 2020

Project: WELD-NAD83-UTMFT13N
Site: 3N-67W-05 Schlager 10-5HZ Pad
Well: SCHLAGEL 5-2HZ
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	1037.83	8.07	93.56	1036.05	-2.35	37.73	1.50	93.56	37.76	
4	1837.83	8.07	93.56	1828.14	-9.31	149.78	0.00	0.00	149.89	
5	2241.20	0.00	0.00	2230.18	-11.07	178.08	2.00	180.00	178.21	
6	6307.84	0.00	0.00	6296.82	-11.07	178.08	0.00	0.00	178.21	
7	6510.48	16.22	90.95	6496.76	-11.54	206.57	8.01	90.95	206.70	
8	7427.66	89.59	90.96	7013.00	-22.96	889.01	8.00	0.02	889.23	
9	18620.32	89.59	90.96	7093.96	-210.89	12079.80	0.00	0.00	12081.53	SCHLAGEL 5-2HZ INT TARG 1
10	18658.15	89.62	90.40	7094.22	-211.34	12117.62	1.50	-86.86	12119.35	
11	25343.56	89.62	90.40	7138.95	-257.49	18802.72	0.00	0.00	18804.48	Schlager 5-2HZ Toe

SURFACE HOLE LOCATION: SCHLAGEL 5-2HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14619203.09	1664747.35	40.253901	-104.912797

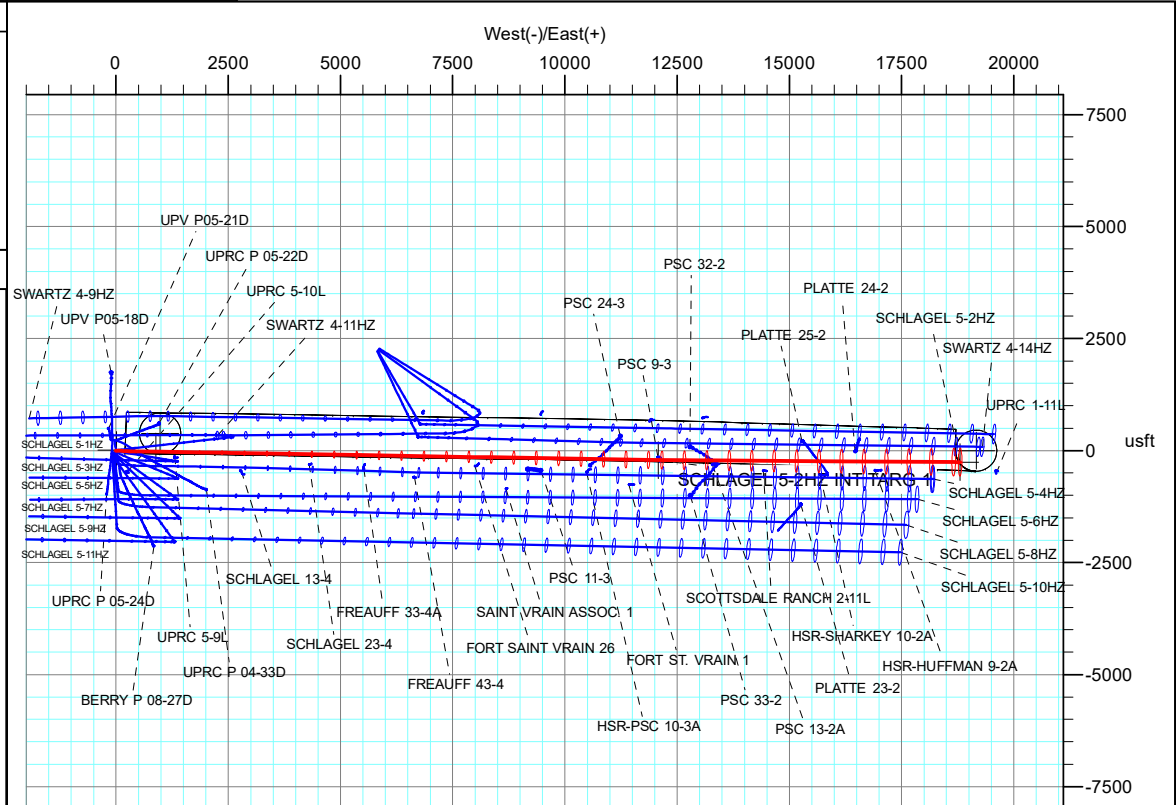
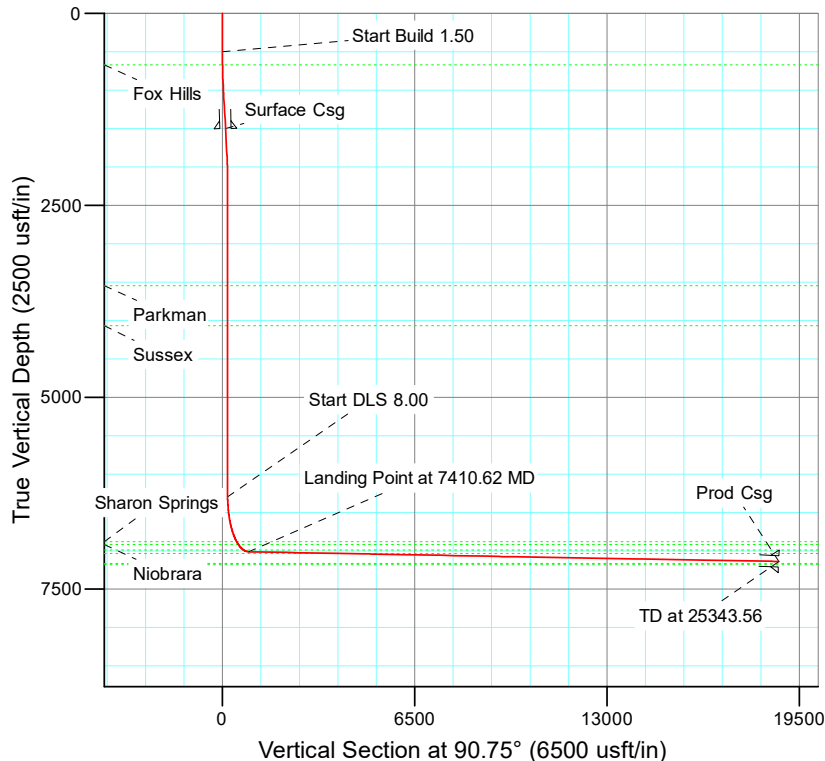
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Schlager 5-2HZ Heel	7013.00	-22.96	889.01	40.253838	-104.909610
Schlager 5-2HZ Toe	7138.95	-257.49	18802.72	40.253174	-104.845407

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
672.00	672.06	Fox Hills
3548.00	3559.02	Parkman
4070.00	4081.02	Sussex
6883.00	6994.56	Sharon Springs
6920.00	7063.85	Niobrara
6988.00	7243.21	Nio B
7035.00	10469.31	Nio C

SHL **Heel** **Toe**
2270' FSL **2258' FSL** **2350' FSL**
2210' FEL **1320' FEL** **968' FWL**



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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 5-2HZ					
Well Position	+N/-S	-10.56 usft	Northing:	14,619,203.09 usft	Latitude:	40.253901
	+E/-W	-10.79 usft	Easting:	1,664,747.35 usft	Longitude:	-104.912797
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	51,969.50019965

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	90.75	

Plan Survey Tool Program		Date	5/29/2020		
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	25,343.56	PERMIT REV 0 (PLAN A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

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Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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	
1,037.83	8.07	93.56	1,036.05	-2.35	37.73	1.50	1.50	0.00	93.56	
1,837.83	8.07	93.56	1,828.14	-9.31	149.78	0.00	0.00	0.00	0.00	
2,241.20	0.00	0.00	2,230.18	-11.07	178.08	2.00	-2.00	0.00	180.00	
6,307.84	0.00	0.00	6,296.82	-11.07	178.08	0.00	0.00	0.00	0.00	
6,510.48	16.22	90.95	6,496.76	-11.54	206.57	8.01	8.01	0.00	90.95	
7,427.66	89.59	90.96	7,013.00	-22.96	889.01	8.00	8.00	0.00	0.02	
18,620.32	89.59	90.96	7,093.96	-210.89	12,079.80	0.00	0.00	0.00	0.00	SCHLAGEL 5-2HZ IN
18,658.15	89.62	90.40	7,094.22	-211.34	12,117.62	1.50	0.08	-1.50	-86.86	
25,343.56	89.62	90.40	7,138.95	-257.49	18,802.72	0.00	0.00	0.00	0.00	Schlagel 5-2HZ Toe

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Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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	93.56	599.99	-0.08	1.31	1.31	1.50	1.50	0.00
603.87	1.56	93.56	603.86	-0.09	1.41	1.41	1.50	1.50	0.00
Start 5705.66 hold at 603.87 MD									
672.06	2.58	93.56	672.00	-0.24	3.87	3.87	1.50	1.50	0.00
Fox Hills									
700.00	3.00	93.56	699.91	-0.32	5.22	5.23	1.50	1.50	0.00
800.00	4.50	93.56	799.69	-0.73	11.75	11.76	1.50	1.50	0.00
900.00	6.00	93.56	899.27	-1.30	20.88	20.90	1.50	1.50	0.00
1,000.00	7.50	93.56	998.57	-2.03	32.62	32.64	1.50	1.50	0.00
1,037.83	8.07	93.56	1,036.05	-2.35	37.73	37.76	1.50	1.50	0.00
1,100.00	8.07	93.56	1,097.61	-2.89	46.44	46.47	0.00	0.00	0.00
1,200.00	8.07	93.56	1,196.62	-3.76	60.44	60.49	0.00	0.00	0.00
1,300.00	8.07	93.56	1,295.63	-4.63	74.45	74.50	0.00	0.00	0.00
1,400.00	8.07	93.56	1,394.64	-5.50	88.46	88.52	0.00	0.00	0.00
1,500.00	8.07	93.56	1,493.65	-6.37	102.46	102.54	0.00	0.00	0.00
1,506.41	8.07	93.56	1,500.00	-6.43	103.36	103.44	0.00	0.00	0.00
Surface Csg									
1,600.00	8.07	93.56	1,592.66	-7.24	116.47	116.56	0.00	0.00	0.00
1,700.00	8.07	93.56	1,691.67	-8.11	130.48	130.57	0.00	0.00	0.00
1,800.00	8.07	93.56	1,790.68	-8.98	144.48	144.59	0.00	0.00	0.00
1,837.83	8.07	93.56	1,828.14	-9.31	149.78	149.89	0.00	0.00	0.00
1,900.00	6.82	93.56	1,889.78	-9.81	157.82	157.94	2.00	-2.00	0.00
2,000.00	4.82	93.56	1,989.26	-10.44	167.95	168.07	2.00	-2.00	0.00
2,100.00	2.82	93.56	2,089.03	-10.85	174.61	174.73	2.00	-2.00	0.00
2,200.00	0.82	93.56	2,188.98	-11.05	177.78	177.91	2.00	-2.00	0.00
2,241.20	0.00	0.00	2,230.18	-11.07	178.08	178.21	2.00	-2.00	0.00
2,300.00	0.00	0.00	2,288.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,400.00	0.00	0.00	2,388.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,500.00	0.00	0.00	2,488.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,600.00	0.00	0.00	2,588.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,700.00	0.00	0.00	2,688.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,800.00	0.00	0.00	2,788.98	-11.07	178.08	178.21	0.00	0.00	0.00
2,900.00	0.00	0.00	2,888.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,000.00	0.00	0.00	2,988.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,100.00	0.00	0.00	3,088.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,200.00	0.00	0.00	3,188.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,300.00	0.00	0.00	3,288.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,400.00	0.00	0.00	3,388.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,500.00	0.00	0.00	3,488.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,559.02	0.00	0.00	3,548.00	-11.07	178.08	178.21	0.00	0.00	0.00
Parkman									
3,600.00	0.00	0.00	3,588.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,700.00	0.00	0.00	3,688.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,800.00	0.00	0.00	3,788.98	-11.07	178.08	178.21	0.00	0.00	0.00
3,900.00	0.00	0.00	3,888.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,000.00	0.00	0.00	3,988.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,081.02	0.00	0.00	4,070.00	-11.07	178.08	178.21	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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)
Sussex									
4,100.00	0.00	0.00	4,088.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,200.00	0.00	0.00	4,188.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,300.00	0.00	0.00	4,288.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,400.00	0.00	0.00	4,388.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,500.00	0.00	0.00	4,488.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,600.00	0.00	0.00	4,588.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,700.00	0.00	0.00	4,688.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,800.00	0.00	0.00	4,788.98	-11.07	178.08	178.21	0.00	0.00	0.00
4,900.00	0.00	0.00	4,888.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,000.00	0.00	0.00	4,988.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,100.00	0.00	0.00	5,088.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,200.00	0.00	0.00	5,188.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,300.00	0.00	0.00	5,288.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,400.00	0.00	0.00	5,388.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,500.00	0.00	0.00	5,488.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,600.00	0.00	0.00	5,588.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,700.00	0.00	0.00	5,688.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,800.00	0.00	0.00	5,788.98	-11.07	178.08	178.21	0.00	0.00	0.00
5,900.00	0.00	0.00	5,888.98	-11.07	178.08	178.21	0.00	0.00	0.00
6,000.00	0.00	0.00	5,988.98	-11.07	178.08	178.21	0.00	0.00	0.00
6,100.00	0.00	0.00	6,088.98	-11.07	178.08	178.21	0.00	0.00	0.00
6,200.00	0.00	0.00	6,188.98	-11.07	178.08	178.21	0.00	0.00	0.00
6,307.84	0.00	0.00	6,296.82	-11.07	178.08	178.21	0.00	0.00	0.00
6,309.53	0.13	90.95	6,298.51	-11.07	178.08	178.21	8.01	8.01	0.00
Start DLS 8.00 TFO -17.81									
6,350.00	3.37	90.95	6,338.95	-11.09	179.32	179.45	8.01	8.01	0.00
6,400.00	7.38	90.95	6,388.72	-11.17	184.00	184.13	8.01	8.01	0.00
6,450.00	11.38	90.95	6,438.04	-11.30	192.15	192.28	8.01	8.01	0.00
6,500.00	15.38	90.95	6,486.68	-11.49	203.72	203.85	8.01	8.01	0.00
6,510.48	16.22	90.95	6,496.76	-11.54	206.57	206.70	8.01	8.01	0.00
6,550.00	19.38	90.95	6,534.38	-11.74	218.65	218.79	8.00	8.00	0.01
6,600.00	23.38	90.95	6,580.93	-12.04	236.88	237.01	8.00	8.00	0.00
6,650.00	27.38	90.95	6,626.10	-12.40	258.30	258.44	8.00	8.00	0.00
6,700.00	31.38	90.95	6,669.65	-12.81	282.82	282.97	8.00	8.00	0.00
6,750.00	35.38	90.96	6,711.40	-13.27	310.33	310.47	8.00	8.00	0.00
6,800.00	39.38	90.96	6,751.12	-13.77	340.67	340.82	8.00	8.00	0.00
6,850.00	43.38	90.96	6,788.63	-14.32	373.71	373.87	8.00	8.00	0.00
6,900.00	47.38	90.96	6,823.74	-14.92	409.29	409.45	8.00	8.00	0.00
6,950.00	51.38	90.96	6,856.29	-15.55	447.23	447.39	8.00	8.00	0.00
6,994.56	54.94	90.96	6,883.00	-16.15	482.88	483.05	8.00	8.00	0.00
Sharon Springs									
7,000.00	55.38	90.96	6,886.11	-16.22	487.34	487.51	8.00	8.00	0.00
7,050.00	59.38	90.96	6,913.06	-16.93	529.44	529.62	8.00	8.00	0.00
7,063.85	60.49	90.96	6,920.00	-17.13	541.43	541.61	8.00	8.00	0.00
Niobrara									
7,100.00	63.38	90.96	6,937.01	-17.66	573.31	573.50	8.00	8.00	0.00
7,150.00	67.38	90.96	6,957.84	-18.43	618.75	618.94	8.00	8.00	0.00
7,200.00	71.38	90.96	6,975.44	-19.21	665.53	665.73	8.00	8.00	0.00
7,243.21	74.83	90.96	6,988.00	-19.90	706.86	707.06	8.00	8.00	0.00
Nio B									
7,250.00	75.37	90.96	6,989.75	-20.01	713.43	713.63	8.00	8.00	0.00
7,300.00	79.37	90.96	7,000.67	-20.83	762.20	762.41	8.00	8.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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)
7,350.00	83.37	90.96	7,008.17	-21.66	811.62	811.83	8.00	8.00	0.00
7,400.00	87.37	90.96	7,012.20	-22.50	861.44	861.66	8.00	8.00	0.00
7,410.62	88.22	90.96	7,012.61	-22.68	872.05	872.27	8.00	8.00	0.00
Start 17870.28 hold at 7410.62 MD									
7,427.66	89.59	90.96	7,013.00	-22.96	889.01	889.23	8.00	8.00	0.00
7,500.00	89.59	90.96	7,013.52	-24.17	961.34	961.57	0.00	0.00	0.00
7,600.00	89.59	90.96	7,014.25	-25.85	1,061.32	1,061.57	0.00	0.00	0.00
7,700.00	89.59	90.96	7,014.97	-27.53	1,161.30	1,161.56	0.00	0.00	0.00
7,800.00	89.59	90.96	7,015.69	-29.21	1,261.29	1,261.56	0.00	0.00	0.00
7,900.00	89.59	90.96	7,016.42	-30.89	1,361.27	1,361.56	0.00	0.00	0.00
8,000.00	89.59	90.96	7,017.14	-32.57	1,461.25	1,461.55	0.00	0.00	0.00
8,100.00	89.59	90.96	7,017.86	-34.25	1,561.23	1,561.55	0.00	0.00	0.00
8,200.00	89.59	90.96	7,018.59	-35.93	1,661.22	1,661.55	0.00	0.00	0.00
8,300.00	89.59	90.96	7,019.31	-37.61	1,761.20	1,761.54	0.00	0.00	0.00
8,400.00	89.59	90.96	7,020.03	-39.29	1,861.18	1,861.54	0.00	0.00	0.00
8,500.00	89.59	90.96	7,020.76	-40.97	1,961.17	1,961.54	0.00	0.00	0.00
8,600.00	89.59	90.96	7,021.48	-42.64	2,061.15	2,061.53	0.00	0.00	0.00
8,700.00	89.59	90.96	7,022.20	-44.32	2,161.13	2,161.53	0.00	0.00	0.00
8,800.00	89.59	90.96	7,022.93	-46.00	2,261.12	2,261.53	0.00	0.00	0.00
8,900.00	89.59	90.96	7,023.65	-47.68	2,361.10	2,361.52	0.00	0.00	0.00
9,000.00	89.59	90.96	7,024.37	-49.36	2,461.08	2,461.52	0.00	0.00	0.00
9,100.00	89.59	90.96	7,025.10	-51.04	2,561.07	2,561.52	0.00	0.00	0.00
9,200.00	89.59	90.96	7,025.82	-52.72	2,661.05	2,661.51	0.00	0.00	0.00
9,300.00	89.59	90.96	7,026.54	-54.40	2,761.03	2,761.51	0.00	0.00	0.00
9,400.00	89.59	90.96	7,027.27	-56.08	2,861.02	2,861.51	0.00	0.00	0.00
9,500.00	89.59	90.96	7,027.99	-57.76	2,961.00	2,961.50	0.00	0.00	0.00
9,600.00	89.59	90.96	7,028.71	-59.43	3,060.98	3,061.50	0.00	0.00	0.00
9,700.00	89.59	90.96	7,029.44	-61.11	3,160.97	3,161.50	0.00	0.00	0.00
9,800.00	89.59	90.96	7,030.16	-62.79	3,260.95	3,261.49	0.00	0.00	0.00
9,900.00	89.59	90.96	7,030.88	-64.47	3,360.93	3,361.49	0.00	0.00	0.00
10,000.00	89.59	90.96	7,031.61	-66.15	3,460.92	3,461.49	0.00	0.00	0.00
10,100.00	89.59	90.96	7,032.33	-67.83	3,560.90	3,561.48	0.00	0.00	0.00
10,200.00	89.59	90.96	7,033.05	-69.51	3,660.88	3,661.48	0.00	0.00	0.00
10,300.00	89.59	90.96	7,033.78	-71.19	3,760.87	3,761.48	0.00	0.00	0.00
10,400.00	89.59	90.96	7,034.50	-72.87	3,860.85	3,861.47	0.00	0.00	0.00
10,469.31	89.59	90.96	7,035.00	-74.03	3,930.15	3,930.78	0.00	0.00	0.00
Nio C									
10,500.00	89.59	90.96	7,035.22	-74.55	3,960.83	3,961.47	0.00	0.00	0.00
10,600.00	89.59	90.96	7,035.95	-76.23	4,060.82	4,061.47	0.00	0.00	0.00
10,700.00	89.59	90.96	7,036.67	-77.90	4,160.80	4,161.46	0.00	0.00	0.00
10,800.00	89.59	90.96	7,037.39	-79.58	4,260.78	4,261.46	0.00	0.00	0.00
10,900.00	89.59	90.96	7,038.12	-81.26	4,360.77	4,361.46	0.00	0.00	0.00
11,000.00	89.59	90.96	7,038.84	-82.94	4,460.75	4,461.45	0.00	0.00	0.00
11,100.00	89.59	90.96	7,039.56	-84.62	4,560.73	4,561.45	0.00	0.00	0.00
11,200.00	89.59	90.96	7,040.29	-86.30	4,660.72	4,661.45	0.00	0.00	0.00
11,300.00	89.59	90.96	7,041.01	-87.98	4,760.70	4,761.44	0.00	0.00	0.00
11,400.00	89.59	90.96	7,041.73	-89.66	4,860.68	4,861.44	0.00	0.00	0.00
11,500.00	89.59	90.96	7,042.46	-91.34	4,960.67	4,961.44	0.00	0.00	0.00
11,600.00	89.59	90.96	7,043.18	-93.02	5,060.65	5,061.43	0.00	0.00	0.00
11,700.00	89.59	90.96	7,043.90	-94.69	5,160.63	5,161.43	0.00	0.00	0.00
11,800.00	89.59	90.96	7,044.62	-96.37	5,260.62	5,261.43	0.00	0.00	0.00
11,900.00	89.59	90.96	7,045.35	-98.05	5,360.60	5,361.42	0.00	0.00	0.00
12,000.00	89.59	90.96	7,046.07	-99.73	5,460.58	5,461.42	0.00	0.00	0.00
12,100.00	89.59	90.96	7,046.79	-101.41	5,560.57	5,561.42	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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)
12,200.00	89.59	90.96	7,047.52	-103.09	5,660.55	5,661.41	0.00	0.00	0.00
12,300.00	89.59	90.96	7,048.24	-104.77	5,760.53	5,761.41	0.00	0.00	0.00
12,400.00	89.59	90.96	7,048.96	-106.45	5,860.52	5,861.41	0.00	0.00	0.00
12,500.00	89.59	90.96	7,049.69	-108.13	5,960.50	5,961.40	0.00	0.00	0.00
12,600.00	89.59	90.96	7,050.41	-109.81	6,060.48	6,061.40	0.00	0.00	0.00
12,700.00	89.59	90.96	7,051.13	-111.49	6,160.47	6,161.40	0.00	0.00	0.00
12,800.00	89.59	90.96	7,051.86	-113.16	6,260.45	6,261.39	0.00	0.00	0.00
12,900.00	89.59	90.96	7,052.58	-114.84	6,360.43	6,361.39	0.00	0.00	0.00
13,000.00	89.59	90.96	7,053.30	-116.52	6,460.42	6,461.39	0.00	0.00	0.00
13,100.00	89.59	90.96	7,054.03	-118.20	6,560.40	6,561.38	0.00	0.00	0.00
13,200.00	89.59	90.96	7,054.75	-119.88	6,660.38	6,661.38	0.00	0.00	0.00
13,300.00	89.59	90.96	7,055.47	-121.56	6,760.37	6,761.38	0.00	0.00	0.00
13,400.00	89.59	90.96	7,056.20	-123.24	6,860.35	6,861.37	0.00	0.00	0.00
13,500.00	89.59	90.96	7,056.92	-124.92	6,960.33	6,961.37	0.00	0.00	0.00
13,600.00	89.59	90.96	7,057.64	-126.60	7,060.32	7,061.37	0.00	0.00	0.00
13,700.00	89.59	90.96	7,058.37	-128.28	7,160.30	7,161.36	0.00	0.00	0.00
13,800.00	89.59	90.96	7,059.09	-129.95	7,260.28	7,261.36	0.00	0.00	0.00
13,900.00	89.59	90.96	7,059.81	-131.63	7,360.27	7,361.36	0.00	0.00	0.00
14,000.00	89.59	90.96	7,060.54	-133.31	7,460.25	7,461.35	0.00	0.00	0.00
14,100.00	89.59	90.96	7,061.26	-134.99	7,560.23	7,561.35	0.00	0.00	0.00
14,200.00	89.59	90.96	7,061.98	-136.67	7,660.22	7,661.35	0.00	0.00	0.00
14,300.00	89.59	90.96	7,062.71	-138.35	7,760.20	7,761.34	0.00	0.00	0.00
14,400.00	89.59	90.96	7,063.43	-140.03	7,860.18	7,861.34	0.00	0.00	0.00
14,500.00	89.59	90.96	7,064.15	-141.71	7,960.17	7,961.34	0.00	0.00	0.00
14,600.00	89.59	90.96	7,064.88	-143.39	8,060.15	8,061.34	0.00	0.00	0.00
14,700.00	89.59	90.96	7,065.60	-145.07	8,160.13	8,161.33	0.00	0.00	0.00
14,800.00	89.59	90.96	7,066.32	-146.74	8,260.12	8,261.33	0.00	0.00	0.00
14,900.00	89.59	90.96	7,067.05	-148.42	8,360.10	8,361.33	0.00	0.00	0.00
15,000.00	89.59	90.96	7,067.77	-150.10	8,460.08	8,461.32	0.00	0.00	0.00
15,100.00	89.59	90.96	7,068.49	-151.78	8,560.07	8,561.32	0.00	0.00	0.00
15,200.00	89.59	90.96	7,069.22	-153.46	8,660.05	8,661.32	0.00	0.00	0.00
15,300.00	89.59	90.96	7,069.94	-155.14	8,760.03	8,761.31	0.00	0.00	0.00
15,400.00	89.59	90.96	7,070.66	-156.82	8,860.02	8,861.31	0.00	0.00	0.00
15,500.00	89.59	90.96	7,071.39	-158.50	8,960.00	8,961.31	0.00	0.00	0.00
15,600.00	89.59	90.96	7,072.11	-160.18	9,059.98	9,061.30	0.00	0.00	0.00
15,700.00	89.59	90.96	7,072.83	-161.86	9,159.96	9,161.30	0.00	0.00	0.00
15,800.00	89.59	90.96	7,073.56	-163.54	9,259.95	9,261.30	0.00	0.00	0.00
15,900.00	89.59	90.96	7,074.28	-165.21	9,359.93	9,361.29	0.00	0.00	0.00
16,000.00	89.59	90.96	7,075.00	-166.89	9,459.91	9,461.29	0.00	0.00	0.00
16,100.00	89.59	90.96	7,075.73	-168.57	9,559.90	9,561.29	0.00	0.00	0.00
16,200.00	89.59	90.96	7,076.45	-170.25	9,659.88	9,661.28	0.00	0.00	0.00
16,300.00	89.59	90.96	7,077.17	-171.93	9,759.86	9,761.28	0.00	0.00	0.00
16,400.00	89.59	90.96	7,077.90	-173.61	9,859.85	9,861.28	0.00	0.00	0.00
16,500.00	89.59	90.96	7,078.62	-175.29	9,959.83	9,961.27	0.00	0.00	0.00
16,600.00	89.59	90.96	7,079.34	-176.97	10,059.81	10,061.27	0.00	0.00	0.00
16,700.00	89.59	90.96	7,080.07	-178.65	10,159.80	10,161.27	0.00	0.00	0.00
16,800.00	89.59	90.96	7,080.79	-180.33	10,259.78	10,261.26	0.00	0.00	0.00
16,900.00	89.59	90.96	7,081.51	-182.00	10,359.76	10,361.26	0.00	0.00	0.00
17,000.00	89.59	90.96	7,082.24	-183.68	10,459.75	10,461.26	0.00	0.00	0.00
17,100.00	89.59	90.96	7,082.96	-185.36	10,559.73	10,561.25	0.00	0.00	0.00
17,200.00	89.59	90.96	7,083.68	-187.04	10,659.71	10,661.25	0.00	0.00	0.00
17,300.00	89.59	90.96	7,084.41	-188.72	10,759.70	10,761.25	0.00	0.00	0.00
17,400.00	89.59	90.96	7,085.13	-190.40	10,859.68	10,861.24	0.00	0.00	0.00
17,500.00	89.59	90.96	7,085.85	-192.08	10,959.66	10,961.24	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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)
17,600.00	89.59	90.96	7,086.58	-193.76	11,059.65	11,061.24	0.00	0.00	0.00
17,700.00	89.59	90.96	7,087.30	-195.44	11,159.63	11,161.23	0.00	0.00	0.00
17,800.00	89.59	90.96	7,088.02	-197.12	11,259.61	11,261.23	0.00	0.00	0.00
17,900.00	89.59	90.96	7,088.75	-198.80	11,359.60	11,361.23	0.00	0.00	0.00
18,000.00	89.59	90.96	7,089.47	-200.47	11,459.58	11,461.22	0.00	0.00	0.00
18,100.00	89.59	90.96	7,090.19	-202.15	11,559.56	11,561.22	0.00	0.00	0.00
18,200.00	89.59	90.96	7,090.92	-203.83	11,659.55	11,661.22	0.00	0.00	0.00
18,300.00	89.59	90.96	7,091.64	-205.51	11,759.53	11,761.21	0.00	0.00	0.00
18,400.00	89.59	90.96	7,092.36	-207.19	11,859.51	11,861.21	0.00	0.00	0.00
18,500.00	89.59	90.96	7,093.09	-208.87	11,959.50	11,961.21	0.00	0.00	0.00
18,600.00	89.59	90.96	7,093.81	-210.55	12,059.48	12,061.20	0.00	0.00	0.00
18,620.32	89.59	90.96	7,093.96	-210.89	12,079.80	12,081.53	0.00	0.00	0.00
18,658.15	89.62	90.40	7,094.22	-211.34	12,117.62	12,119.35	1.50	0.08	-1.50
18,700.00	89.62	90.40	7,094.50	-211.63	12,159.47	12,161.20	0.00	0.00	0.00
18,800.00	89.62	90.40	7,095.17	-212.32	12,259.47	12,261.20	0.00	0.00	0.00
18,900.00	89.62	90.40	7,095.84	-213.01	12,359.46	12,361.19	0.00	0.00	0.00
19,000.00	89.62	90.40	7,096.51	-213.70	12,459.46	12,461.19	0.00	0.00	0.00
19,100.00	89.62	90.40	7,097.18	-214.39	12,559.45	12,561.18	0.00	0.00	0.00
19,200.00	89.62	90.40	7,097.84	-215.08	12,659.45	12,661.18	0.00	0.00	0.00
19,300.00	89.62	90.40	7,098.51	-215.77	12,759.44	12,761.17	0.00	0.00	0.00
19,400.00	89.62	90.40	7,099.18	-216.46	12,859.44	12,861.17	0.00	0.00	0.00
19,500.00	89.62	90.40	7,099.85	-217.15	12,959.43	12,961.17	0.00	0.00	0.00
19,600.00	89.62	90.40	7,100.52	-217.84	13,059.43	13,061.16	0.00	0.00	0.00
19,700.00	89.62	90.40	7,101.19	-218.53	13,159.43	13,161.16	0.00	0.00	0.00
19,800.00	89.62	90.40	7,101.86	-219.22	13,259.42	13,261.15	0.00	0.00	0.00
19,900.00	89.62	90.40	7,102.53	-219.91	13,359.42	13,361.15	0.00	0.00	0.00
20,000.00	89.62	90.40	7,103.20	-220.60	13,459.41	13,461.15	0.00	0.00	0.00
20,100.00	89.62	90.40	7,103.87	-221.29	13,559.41	13,561.14	0.00	0.00	0.00
20,200.00	89.62	90.40	7,104.54	-221.98	13,659.40	13,661.14	0.00	0.00	0.00
20,300.00	89.62	90.40	7,105.20	-222.67	13,759.40	13,761.13	0.00	0.00	0.00
20,400.00	89.62	90.40	7,105.87	-223.36	13,859.39	13,861.13	0.00	0.00	0.00
20,500.00	89.62	90.40	7,106.54	-224.05	13,959.39	13,961.12	0.00	0.00	0.00
20,600.00	89.62	90.40	7,107.21	-224.74	14,059.38	14,061.12	0.00	0.00	0.00
20,700.00	89.62	90.40	7,107.88	-225.43	14,159.38	14,161.12	0.00	0.00	0.00
20,800.00	89.62	90.40	7,108.55	-226.12	14,259.37	14,261.11	0.00	0.00	0.00
20,900.00	89.62	90.40	7,109.22	-226.81	14,359.37	14,361.11	0.00	0.00	0.00
21,000.00	89.62	90.40	7,109.89	-227.50	14,459.36	14,461.10	0.00	0.00	0.00
21,100.00	89.62	90.40	7,110.56	-228.20	14,559.36	14,561.10	0.00	0.00	0.00
21,200.00	89.62	90.40	7,111.23	-228.89	14,659.36	14,661.10	0.00	0.00	0.00
21,300.00	89.62	90.40	7,111.90	-229.58	14,759.35	14,761.09	0.00	0.00	0.00
21,400.00	89.62	90.40	7,112.56	-230.27	14,859.35	14,861.09	0.00	0.00	0.00
21,500.00	89.62	90.40	7,113.23	-230.96	14,959.34	14,961.08	0.00	0.00	0.00
21,600.00	89.62	90.40	7,113.90	-231.65	15,059.34	15,061.08	0.00	0.00	0.00
21,700.00	89.62	90.40	7,114.57	-232.34	15,159.33	15,161.08	0.00	0.00	0.00
21,800.00	89.62	90.40	7,115.24	-233.03	15,259.33	15,261.07	0.00	0.00	0.00
21,900.00	89.62	90.40	7,115.91	-233.72	15,359.32	15,361.07	0.00	0.00	0.00
22,000.00	89.62	90.40	7,116.58	-234.41	15,459.32	15,461.06	0.00	0.00	0.00
22,100.00	89.62	90.40	7,117.25	-235.10	15,559.31	15,561.06	0.00	0.00	0.00
22,200.00	89.62	90.40	7,117.92	-235.79	15,659.31	15,661.05	0.00	0.00	0.00
22,300.00	89.62	90.40	7,118.59	-236.48	15,759.30	15,761.05	0.00	0.00	0.00
22,400.00	89.62	90.40	7,119.26	-237.17	15,859.30	15,861.05	0.00	0.00	0.00
22,500.00	89.62	90.40	7,119.92	-237.86	15,959.30	15,961.04	0.00	0.00	0.00
22,600.00	89.62	90.40	7,120.59	-238.55	16,059.29	16,061.04	0.00	0.00	0.00
22,700.00	89.62	90.40	7,121.26	-239.24	16,159.29	16,161.03	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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)	
22,800.00	89.62	90.40	7,121.93	-239.93	16,259.28	16,261.03	0.00	0.00	0.00	
22,900.00	89.62	90.40	7,122.60	-240.62	16,359.28	16,361.03	0.00	0.00	0.00	
23,000.00	89.62	90.40	7,123.27	-241.31	16,459.27	16,461.02	0.00	0.00	0.00	
23,100.00	89.62	90.40	7,123.94	-242.00	16,559.27	16,561.02	0.00	0.00	0.00	
23,200.00	89.62	90.40	7,124.61	-242.69	16,659.26	16,661.01	0.00	0.00	0.00	
23,300.00	89.62	90.40	7,125.28	-243.38	16,759.26	16,761.01	0.00	0.00	0.00	
23,400.00	89.62	90.40	7,125.95	-244.07	16,859.25	16,861.00	0.00	0.00	0.00	
23,500.00	89.62	90.40	7,126.62	-244.76	16,959.25	16,961.00	0.00	0.00	0.00	
23,600.00	89.62	90.40	7,127.28	-245.45	17,059.24	17,061.00	0.00	0.00	0.00	
23,700.00	89.62	90.40	7,127.95	-246.14	17,159.24	17,160.99	0.00	0.00	0.00	
23,800.00	89.62	90.40	7,128.62	-246.83	17,259.24	17,260.99	0.00	0.00	0.00	
23,900.00	89.62	90.40	7,129.29	-247.52	17,359.23	17,360.98	0.00	0.00	0.00	
24,000.00	89.62	90.40	7,129.96	-248.21	17,459.23	17,460.98	0.00	0.00	0.00	
24,100.00	89.62	90.40	7,130.63	-248.91	17,559.22	17,560.98	0.00	0.00	0.00	
24,200.00	89.62	90.40	7,131.30	-249.60	17,659.22	17,660.97	0.00	0.00	0.00	
24,300.00	89.62	90.40	7,131.97	-250.29	17,759.21	17,760.97	0.00	0.00	0.00	
24,400.00	89.62	90.40	7,132.64	-250.98	17,859.21	17,860.96	0.00	0.00	0.00	
24,500.00	89.62	90.40	7,133.31	-251.67	17,959.20	17,960.96	0.00	0.00	0.00	
24,600.00	89.62	90.40	7,133.98	-252.36	18,059.20	18,060.95	0.00	0.00	0.00	
24,700.00	89.62	90.40	7,134.64	-253.05	18,159.19	18,160.95	0.00	0.00	0.00	
24,800.00	89.62	90.40	7,135.31	-253.74	18,259.19	18,260.95	0.00	0.00	0.00	
24,900.00	89.62	90.40	7,135.98	-254.43	18,359.18	18,360.94	0.00	0.00	0.00	
25,000.00	89.62	90.40	7,136.65	-255.12	18,459.18	18,460.94	0.00	0.00	0.00	
25,100.00	89.62	90.40	7,137.32	-255.81	18,559.18	18,560.93	0.00	0.00	0.00	
25,200.00	89.62	90.40	7,137.99	-256.50	18,659.17	18,660.93	0.00	0.00	0.00	
25,300.00	89.62	90.40	7,138.66	-257.19	18,759.17	18,760.93	0.00	0.00	0.00	
25,343.56	89.62	90.40	7,138.95	-257.49	18,802.72	18,804.48	0.00	0.00	0.00	
TD at 25280.89										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Schlagel 5-2HZ Heel - hit/miss target - Shape - Point	0.00	0.00	7,013.00	-22.96	889.01	14,619,181.00	1,665,636.38	40.253838	-104.909611
SCHLAGEL 5-2HZ INT 1 - plan hits target center - Point	0.00	0.00	7,093.96	-210.89	12,079.80	14,619,004.08	1,676,827.35	40.253314	-104.869502
Schlagel 5-2HZ Toe - plan hits target center - Point	0.00	0.00	7,138.95	-257.49	18,802.72	14,618,964.09	1,683,550.31	40.253174	-104.845407

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,506.41	1,500.00	Surface Csg	9-5/8	13-1/2	
25,343.56	7,138.95	Prod Csg	5-1/2	7-7/8	

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SCHLAGEL 5-2HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB 17' @ 4887.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB 17' @ 4887.00usft
Site:	3N-67W-05 Schlagel 10-5HZ Pad	North Reference:	True
Well:	SCHLAGEL 5-2HZ	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				
3,559.02	3,548.00	Parkman				
4,081.02	4,070.00	Sussex				
6,994.56	6,883.00	Sharon Springs				
7,063.85	6,920.00	Niobrara				
7,243.21	6,988.00	Nio B				
10,469.31	7,035.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Start Build 1.50	
603.87	603.86	-0.09	1.41	Start 5705.66 hold at 603.87 MD	
6,309.53	6,298.51	-11.07	178.08	Start DLS 8.00 TFO -17.81	
7,410.62	7,012.61	-22.68	872.05	Start 17870.28 hold at 7410.62 MD	
25,343.56	7,138.95	-257.49	18,802.72	TD at 25280.89	