

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
4N-68W-13 SBJ 22-13HZ PAD
SBJ 13-3HZ**

Plan C

Plan: PERMIT REV-2

Standard Planning Report

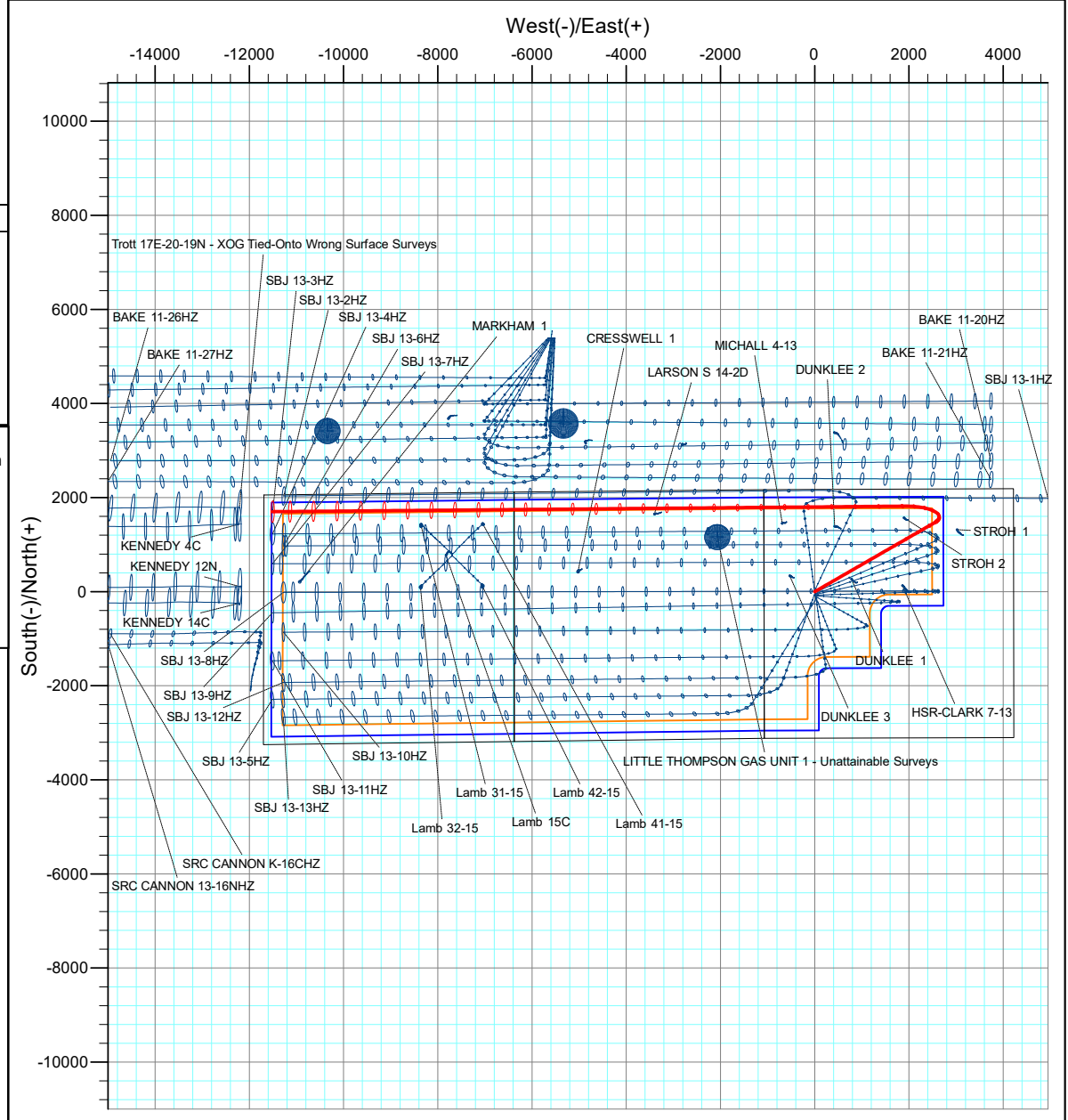
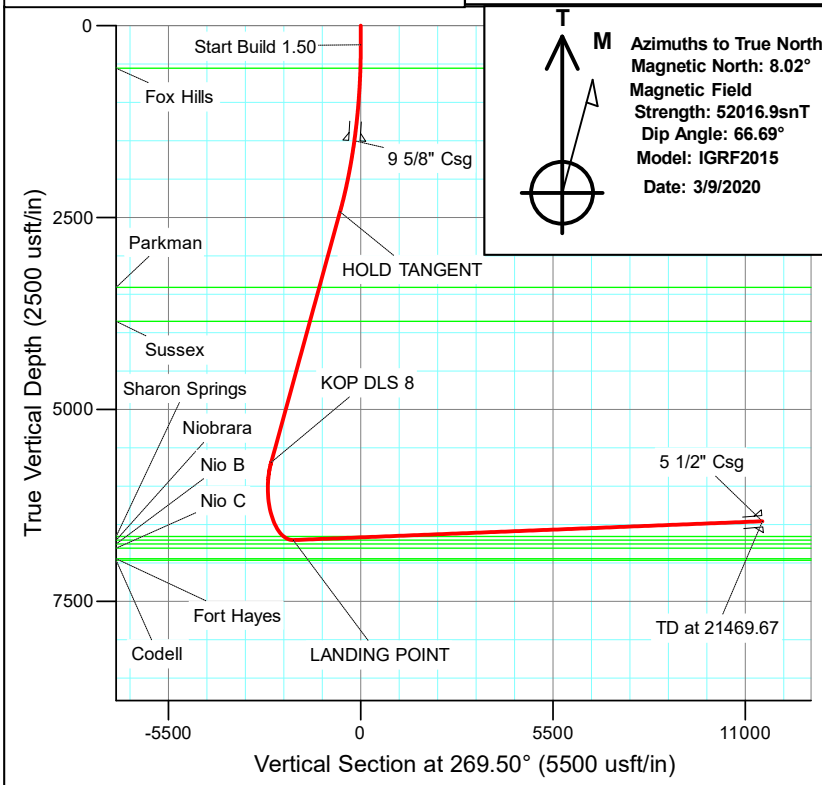
04 May, 2021

Project: WELD-NAD83-UTMFT13N Site: 4N-68W-13 SBJ 22-13HZ PAD Well: SBJ 13-3HZ Wellbore: Plan C Design: PERMIT REV-2	ELEVATION		SURFACE HOLE LOCATION: SBJ 13-3HZ							
	GROUND ELEVATION: 4859.00 RKB = 17' @ 4876ft		+N/-S 0.00	+E/-W 0.00	Northing 14641475.44	Easting 1652435.94	Latitude 40.315087	Longitude -104.956883		
	CASING DETAILS		DESIGN TARGET DETAILS							
	TVD 1500.00	MD 1523.46	Name 9 5/8" Csg	Size 9-5/8	Name					
	6458.00	21469.67	5 1/2" Csg	5-1/2	SBJ 13-3HZ BHL	6458.00	14643170.00	1640930.00	40.319748	-104.998158
					SBJ 13-3HZ LP	6703.00	14643294.00	1654349.00	40.320078	-104.950017

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	0.00
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2565.84	34.74	60.04	2426.55	339.95	589.83	1.50	60.04	-592.78	
4	6538.67	34.74	60.04	5691.30	1470.38	2551.18	0.00	0.00	-2563.91	
5	8047.86	91.05	269.50	6703.00	1817.63	1913.94	8.00	-145.11	-1929.73	SBJ 13-3HZ LP
6	21469.67	91.05	269.50	6458.00	1700.16	-11505.11	0.00	0.00	11489.84	SBJ 13-3HZ BHL

SHL **HEEL** **TOE**
 2173' FNL 362' FNL 359' FNL
 1071' FWL 2305' FEL 185' FWL
 Section 13 Section 13 Section 15
 SWNW NWNE NWNW

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
556.00	556.33	Fox Hills
3411.00	3763.80	Parkman
3854.00	4302.88	Sussex
6656.00	7765.25	Sharon Springs
6703.00	8047.86	Niobrara



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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	4N-68W-13 SBJ 22-13HZ PAD				
Site Position:		Northing:	14,641,145.55 usft	Latitude:	40.314181
From:	Lat/Long	Easting:	1,652,517.50 usft	Longitude:	-104.956591
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	SBJ 13-3HZ					
Well Position	+N/-S	329.93 usft	Northing:	14,641,475.44 usft	Latitude:	40.315087
	+E/-W	-81.40 usft	Easting:	1,652,435.94 usft	Longitude:	-104.956883
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,859.00 usft

Wellbore	Plan C				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/9/2020	8.02	66.69	52,016.85961715

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	269.50

Plan Survey Tool Program	Date	5/4/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	21,469.67	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,565.84	34.74	60.04	2,426.55	339.95	589.83	1.50	1.50	0.00	60.04	
6,538.67	34.74	60.04	5,691.30	1,470.38	2,551.18	0.00	0.00	0.00	0.00	
8,047.86	91.05	269.50	6,703.00	1,817.63	1,913.94	8.00	3.73	-9.98	-145.11	SBJ 13-3HZ LP
21,469.67	91.05	269.50	6,458.00	1,700.16	-11,505.11	0.00	0.00	0.00	0.00	SBJ 13-3HZ BHL

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Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
300.00	0.75	60.04	300.00	0.16	0.28	-0.28	1.50	1.50	0.00
400.00	2.25	60.04	399.96	1.47	2.55	-2.56	1.50	1.50	0.00
500.00	3.75	60.04	499.82	4.08	7.09	-7.12	1.50	1.50	0.00
556.33	4.59	60.04	556.00	6.13	10.64	-10.69	1.50	1.50	0.00
Fox Hills									
600.00	5.25	60.04	599.51	8.00	13.88	-13.95	1.50	1.50	0.00
700.00	6.75	60.04	698.96	13.22	22.94	-23.05	1.50	1.50	0.00
800.00	8.25	60.04	798.10	19.74	34.25	-34.42	1.50	1.50	0.00
900.00	9.75	60.04	896.87	27.55	47.80	-48.04	1.50	1.50	0.00
1,000.00	11.25	60.04	995.19	36.65	63.59	-63.91	1.50	1.50	0.00
1,100.00	12.75	60.04	1,093.00	47.03	81.60	-82.01	1.50	1.50	0.00
1,200.00	14.25	60.04	1,190.24	58.69	101.83	-102.34	1.50	1.50	0.00
1,300.00	15.75	60.04	1,286.83	71.61	124.25	-124.87	1.50	1.50	0.00
1,400.00	17.25	60.04	1,382.71	85.79	148.86	-149.60	1.50	1.50	0.00
1,500.00	18.75	60.04	1,477.81	101.22	175.63	-176.51	1.50	1.50	0.00
1,523.46	19.10	60.04	1,500.00	105.02	182.22	-183.13	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	60.04	1,572.07	117.89	204.55	-205.57	1.50	1.50	0.00
1,700.00	21.75	60.04	1,665.43	135.79	235.60	-236.77	1.50	1.50	0.00
1,800.00	23.25	60.04	1,757.81	154.90	268.75	-270.09	1.50	1.50	0.00
1,900.00	24.75	60.04	1,849.16	175.21	303.99	-305.51	1.50	1.50	0.00
2,000.00	26.25	60.04	1,939.42	196.70	341.29	-342.99	1.50	1.50	0.00
2,100.00	27.75	60.04	2,028.52	219.37	380.62	-382.52	1.50	1.50	0.00
2,200.00	29.25	60.04	2,116.40	243.20	421.96	-424.07	1.50	1.50	0.00
2,300.00	30.75	60.04	2,203.00	268.17	465.28	-467.60	1.50	1.50	0.00
2,400.00	32.25	60.04	2,288.26	294.26	510.55	-513.10	1.50	1.50	0.00
2,500.00	33.75	60.04	2,372.12	321.45	557.73	-560.52	1.50	1.50	0.00
2,565.84	34.74	60.04	2,426.55	339.95	589.83	-592.78	1.50	1.50	0.00
HOLD TANGENT									
2,600.00	34.74	60.04	2,454.62	349.67	606.70	-609.73	0.00	0.00	0.00
2,700.00	34.74	60.04	2,536.80	378.13	656.07	-659.34	0.00	0.00	0.00
2,800.00	34.74	60.04	2,618.97	406.58	705.44	-708.96	0.00	0.00	0.00
2,900.00	34.74	60.04	2,701.15	435.04	754.80	-758.57	0.00	0.00	0.00
3,000.00	34.74	60.04	2,783.33	463.49	804.17	-808.19	0.00	0.00	0.00
3,100.00	34.74	60.04	2,865.50	491.94	853.54	-857.80	0.00	0.00	0.00
3,200.00	34.74	60.04	2,947.68	520.40	902.91	-907.42	0.00	0.00	0.00
3,300.00	34.74	60.04	3,029.86	548.85	952.28	-957.03	0.00	0.00	0.00
3,400.00	34.74	60.04	3,112.04	577.31	1,001.65	-1,006.65	0.00	0.00	0.00
3,500.00	34.74	60.04	3,194.21	605.76	1,051.02	-1,056.26	0.00	0.00	0.00
3,600.00	34.74	60.04	3,276.39	634.21	1,100.39	-1,105.88	0.00	0.00	0.00
3,700.00	34.74	60.04	3,358.57	662.67	1,149.76	-1,155.50	0.00	0.00	0.00
3,763.80	34.74	60.04	3,411.00	680.82	1,181.26	-1,187.15	0.00	0.00	0.00
Parkman									
3,800.00	34.74	60.04	3,440.74	691.12	1,199.13	-1,205.11	0.00	0.00	0.00
3,900.00	34.74	60.04	3,522.92	719.58	1,248.49	-1,254.73	0.00	0.00	0.00
4,000.00	34.74	60.04	3,605.10	748.03	1,297.86	-1,304.34	0.00	0.00	0.00
4,100.00	34.74	60.04	3,687.28	776.48	1,347.23	-1,353.96	0.00	0.00	0.00
4,200.00	34.74	60.04	3,769.45	804.94	1,396.60	-1,403.57	0.00	0.00	0.00

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Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)
4,300.00	34.74	60.04	3,851.63	833.39	1,445.97	-1,453.19	0.00	0.00	0.00
4,302.88	34.74	60.04	3,854.00	834.21	1,447.39	-1,454.62	0.00	0.00	0.00
Sussex									
4,400.00	34.74	60.04	3,933.81	861.85	1,495.34	-1,502.80	0.00	0.00	0.00
4,500.00	34.74	60.04	4,015.98	890.30	1,544.71	-1,552.42	0.00	0.00	0.00
4,600.00	34.74	60.04	4,098.16	918.75	1,594.08	-1,602.03	0.00	0.00	0.00
4,700.00	34.74	60.04	4,180.34	947.21	1,643.45	-1,651.65	0.00	0.00	0.00
4,800.00	34.74	60.04	4,262.51	975.66	1,692.82	-1,701.27	0.00	0.00	0.00
4,900.00	34.74	60.04	4,344.69	1,004.12	1,742.18	-1,750.88	0.00	0.00	0.00
5,000.00	34.74	60.04	4,426.87	1,032.57	1,791.55	-1,800.50	0.00	0.00	0.00
5,100.00	34.74	60.04	4,509.05	1,061.03	1,840.92	-1,850.11	0.00	0.00	0.00
5,200.00	34.74	60.04	4,591.22	1,089.48	1,890.29	-1,899.73	0.00	0.00	0.00
5,300.00	34.74	60.04	4,673.40	1,117.93	1,939.66	-1,949.34	0.00	0.00	0.00
5,400.00	34.74	60.04	4,755.58	1,146.39	1,989.03	-1,998.96	0.00	0.00	0.00
5,500.00	34.74	60.04	4,837.75	1,174.84	2,038.40	-2,048.57	0.00	0.00	0.00
5,600.00	34.74	60.04	4,919.93	1,203.30	2,087.77	-2,098.19	0.00	0.00	0.00
5,700.00	34.74	60.04	5,002.11	1,231.75	2,137.14	-2,147.80	0.00	0.00	0.00
5,800.00	34.74	60.04	5,084.29	1,260.20	2,186.51	-2,197.42	0.00	0.00	0.00
5,900.00	34.74	60.04	5,166.46	1,288.66	2,235.87	-2,247.03	0.00	0.00	0.00
6,000.00	34.74	60.04	5,248.64	1,317.11	2,285.24	-2,296.65	0.00	0.00	0.00
6,100.00	34.74	60.04	5,330.82	1,345.57	2,334.61	-2,346.27	0.00	0.00	0.00
6,200.00	34.74	60.04	5,412.99	1,374.02	2,383.98	-2,395.88	0.00	0.00	0.00
6,300.00	34.74	60.04	5,495.17	1,402.47	2,433.35	-2,445.50	0.00	0.00	0.00
6,400.00	34.74	60.04	5,577.35	1,430.93	2,482.72	-2,495.11	0.00	0.00	0.00
6,500.00	34.74	60.04	5,659.52	1,459.38	2,532.09	-2,544.73	0.00	0.00	0.00
6,538.67	34.74	60.04	5,691.30	1,470.38	2,551.18	-2,563.91	0.00	0.00	0.00
KOP DLS 8									
6,600.00	30.82	54.56	5,742.87	1,488.23	2,579.14	-2,592.03	8.00	-6.38	-8.93
6,700.00	25.12	42.53	5,831.22	1,518.78	2,614.42	-2,627.57	8.00	-5.70	-12.04
6,800.00	20.86	25.07	5,923.36	1,550.60	2,636.35	-2,649.78	8.00	-4.26	-17.46
6,900.00	19.04	2.08	6,017.50	1,583.08	2,644.49	-2,658.21	8.00	-1.82	-22.99
7,000.00	20.32	338.46	6,111.81	1,615.58	2,638.70	-2,652.70	8.00	1.28	-23.61
7,100.00	24.22	319.90	6,204.45	1,647.47	2,619.08	-2,633.36	8.00	3.90	-18.57
7,200.00	29.72	307.01	6,293.61	1,678.13	2,586.02	-2,600.57	8.00	5.50	-12.89
7,300.00	36.10	298.08	6,377.57	1,706.97	2,540.16	-2,554.96	8.00	6.38	-8.93
7,400.00	42.96	291.59	6,454.69	1,733.41	2,482.38	-2,497.42	8.00	6.86	-6.49
7,500.00	50.10	286.61	6,523.46	1,756.96	2,413.83	-2,429.07	8.00	7.14	-4.98
7,600.00	57.42	282.59	6,582.55	1,777.14	2,335.82	-2,351.24	8.00	7.31	-4.02
7,700.00	64.84	279.18	6,630.81	1,793.56	2,249.89	-2,265.45	8.00	7.42	-3.41
7,765.25	69.72	277.18	6,656.00	1,802.10	2,190.33	-2,205.98	8.00	7.48	-3.07
Sharon Springs									
7,800.00	72.33	276.16	6,667.30	1,805.92	2,157.69	-2,173.37	8.00	7.51	-2.92
7,900.00	79.87	273.39	6,691.30	1,813.96	2,061.04	-2,076.79	8.00	7.53	-2.77
8,000.00	87.43	270.75	6,702.36	1,817.53	1,961.79	-1,977.58	8.00	7.56	-2.64
8,047.86	91.05	269.50	6,703.00	1,817.63	1,913.94	-1,929.73	8.00	7.56	-2.61
LANDING POINT - Niobrara									
8,100.00	91.05	269.50	6,702.05	1,817.17	1,861.82	-1,877.61	0.00	0.00	0.00
8,200.00	91.05	269.50	6,700.22	1,816.30	1,761.84	-1,777.62	0.00	0.00	0.00
8,300.00	91.05	269.50	6,698.40	1,815.42	1,661.86	-1,677.64	0.00	0.00	0.00
8,400.00	91.05	269.50	6,696.57	1,814.55	1,561.88	-1,577.66	0.00	0.00	0.00
8,500.00	91.05	269.50	6,694.75	1,813.67	1,461.90	-1,477.67	0.00	0.00	0.00
8,600.00	91.05	269.50	6,692.92	1,812.80	1,361.92	-1,377.69	0.00	0.00	0.00
8,700.00	91.05	269.50	6,691.10	1,811.92	1,261.94	-1,277.71	0.00	0.00	0.00

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Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)
8,800.00	91.05	269.50	6,689.27	1,811.05	1,161.96	-1,177.72	0.00	0.00	0.00
8,900.00	91.05	269.50	6,687.45	1,810.17	1,061.98	-1,077.74	0.00	0.00	0.00
9,000.00	91.05	269.50	6,685.62	1,809.29	962.00	-977.76	0.00	0.00	0.00
9,100.00	91.05	269.50	6,683.79	1,808.42	862.02	-877.77	0.00	0.00	0.00
9,200.00	91.05	269.50	6,681.97	1,807.54	762.04	-777.79	0.00	0.00	0.00
9,300.00	91.05	269.50	6,680.14	1,806.67	662.06	-677.81	0.00	0.00	0.00
9,400.00	91.05	269.50	6,678.32	1,805.79	562.09	-577.82	0.00	0.00	0.00
9,500.00	91.05	269.50	6,676.49	1,804.92	462.11	-477.84	0.00	0.00	0.00
9,600.00	91.05	269.50	6,674.67	1,804.04	362.13	-377.86	0.00	0.00	0.00
9,700.00	91.05	269.50	6,672.84	1,803.17	262.15	-277.87	0.00	0.00	0.00
9,800.00	91.05	269.50	6,671.02	1,802.29	162.17	-177.89	0.00	0.00	0.00
9,900.00	91.05	269.50	6,669.19	1,801.42	62.19	-77.91	0.00	0.00	0.00
10,000.00	91.05	269.50	6,667.37	1,800.54	-37.79	22.08	0.00	0.00	0.00
10,100.00	91.05	269.50	6,665.54	1,799.67	-137.77	122.06	0.00	0.00	0.00
10,200.00	91.05	269.50	6,663.72	1,798.79	-237.75	222.04	0.00	0.00	0.00
10,300.00	91.05	269.50	6,661.89	1,797.92	-337.73	322.03	0.00	0.00	0.00
10,400.00	91.05	269.50	6,660.06	1,797.04	-437.71	422.01	0.00	0.00	0.00
10,500.00	91.05	269.50	6,658.24	1,796.17	-537.69	521.99	0.00	0.00	0.00
10,600.00	91.05	269.50	6,656.41	1,795.29	-637.67	621.98	0.00	0.00	0.00
10,700.00	91.05	269.50	6,654.59	1,794.42	-737.65	721.96	0.00	0.00	0.00
10,800.00	91.05	269.50	6,652.76	1,793.54	-837.63	821.94	0.00	0.00	0.00
10,900.00	91.05	269.50	6,650.94	1,792.67	-937.61	921.93	0.00	0.00	0.00
11,000.00	91.05	269.50	6,649.11	1,791.79	-1,037.59	1,021.91	0.00	0.00	0.00
11,100.00	91.05	269.50	6,647.29	1,790.92	-1,137.57	1,121.89	0.00	0.00	0.00
11,200.00	91.05	269.50	6,645.46	1,790.04	-1,237.55	1,221.88	0.00	0.00	0.00
11,300.00	91.05	269.50	6,643.64	1,789.17	-1,337.53	1,321.86	0.00	0.00	0.00
11,400.00	91.05	269.50	6,641.81	1,788.29	-1,437.51	1,421.84	0.00	0.00	0.00
11,500.00	91.05	269.50	6,639.99	1,787.42	-1,537.48	1,521.83	0.00	0.00	0.00
11,600.00	91.05	269.50	6,638.16	1,786.54	-1,637.46	1,621.81	0.00	0.00	0.00
11,700.00	91.05	269.50	6,636.33	1,785.66	-1,737.44	1,721.79	0.00	0.00	0.00
11,800.00	91.05	269.50	6,634.51	1,784.79	-1,837.42	1,821.78	0.00	0.00	0.00
11,900.00	91.05	269.50	6,632.68	1,783.91	-1,937.40	1,921.76	0.00	0.00	0.00
12,000.00	91.05	269.50	6,630.86	1,783.04	-2,037.38	2,021.74	0.00	0.00	0.00
12,100.00	91.05	269.50	6,629.03	1,782.16	-2,137.36	2,121.73	0.00	0.00	0.00
12,200.00	91.05	269.50	6,627.21	1,781.29	-2,237.34	2,221.71	0.00	0.00	0.00
12,300.00	91.05	269.50	6,625.38	1,780.41	-2,337.32	2,321.69	0.00	0.00	0.00
12,400.00	91.05	269.50	6,623.56	1,779.54	-2,437.30	2,421.68	0.00	0.00	0.00
12,500.00	91.05	269.50	6,621.73	1,778.66	-2,537.28	2,521.66	0.00	0.00	0.00
12,600.00	91.05	269.50	6,619.91	1,777.79	-2,637.26	2,621.64	0.00	0.00	0.00
12,700.00	91.05	269.50	6,618.08	1,776.91	-2,737.24	2,721.63	0.00	0.00	0.00
12,800.00	91.05	269.50	6,616.26	1,776.04	-2,837.22	2,821.61	0.00	0.00	0.00
12,900.00	91.05	269.50	6,614.43	1,775.16	-2,937.20	2,921.59	0.00	0.00	0.00
13,000.00	91.05	269.50	6,612.60	1,774.29	-3,037.18	3,021.58	0.00	0.00	0.00
13,100.00	91.05	269.50	6,610.78	1,773.41	-3,137.16	3,121.56	0.00	0.00	0.00
13,200.00	91.05	269.50	6,608.95	1,772.54	-3,237.14	3,221.54	0.00	0.00	0.00
13,300.00	91.05	269.50	6,607.13	1,771.66	-3,337.12	3,321.53	0.00	0.00	0.00
13,400.00	91.05	269.50	6,605.30	1,770.79	-3,437.10	3,421.51	0.00	0.00	0.00
13,500.00	91.05	269.50	6,603.48	1,769.91	-3,537.07	3,521.50	0.00	0.00	0.00
13,600.00	91.05	269.50	6,601.65	1,769.04	-3,637.05	3,621.48	0.00	0.00	0.00
13,700.00	91.05	269.50	6,599.83	1,768.16	-3,737.03	3,721.46	0.00	0.00	0.00
13,800.00	91.05	269.50	6,598.00	1,767.29	-3,837.01	3,821.45	0.00	0.00	0.00
13,900.00	91.05	269.50	6,596.18	1,766.41	-3,936.99	3,921.43	0.00	0.00	0.00
14,000.00	91.05	269.50	6,594.35	1,765.54	-4,036.97	4,021.41	0.00	0.00	0.00
14,100.00	91.05	269.50	6,592.53	1,764.66	-4,136.95	4,121.40	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)	
14,200.00	91.05	269.50	6,590.70	1,763.79	-4,236.93	4,221.38	0.00	0.00	0.00	
14,300.00	91.05	269.50	6,588.87	1,762.91	-4,336.91	4,321.36	0.00	0.00	0.00	
14,400.00	91.05	269.50	6,587.05	1,762.03	-4,436.89	4,421.35	0.00	0.00	0.00	
14,500.00	91.05	269.50	6,585.22	1,761.16	-4,536.87	4,521.33	0.00	0.00	0.00	
14,600.00	91.05	269.50	6,583.40	1,760.28	-4,636.85	4,621.31	0.00	0.00	0.00	
14,700.00	91.05	269.50	6,581.57	1,759.41	-4,736.83	4,721.30	0.00	0.00	0.00	
14,800.00	91.05	269.50	6,579.75	1,758.53	-4,836.81	4,821.28	0.00	0.00	0.00	
14,900.00	91.05	269.50	6,577.92	1,757.66	-4,936.79	4,921.26	0.00	0.00	0.00	
15,000.00	91.05	269.50	6,576.10	1,756.78	-5,036.77	5,021.25	0.00	0.00	0.00	
15,100.00	91.05	269.50	6,574.27	1,755.91	-5,136.75	5,121.23	0.00	0.00	0.00	
15,200.00	91.05	269.50	6,572.45	1,755.03	-5,236.73	5,221.21	0.00	0.00	0.00	
15,300.00	91.05	269.50	6,570.62	1,754.16	-5,336.71	5,321.20	0.00	0.00	0.00	
15,400.00	91.05	269.50	6,568.80	1,753.28	-5,436.69	5,421.18	0.00	0.00	0.00	
15,500.00	91.05	269.50	6,566.97	1,752.41	-5,536.67	5,521.16	0.00	0.00	0.00	
15,600.00	91.05	269.50	6,565.14	1,751.53	-5,636.64	5,621.15	0.00	0.00	0.00	
15,700.00	91.05	269.50	6,563.32	1,750.66	-5,736.62	5,721.13	0.00	0.00	0.00	
15,800.00	91.05	269.50	6,561.49	1,749.78	-5,836.60	5,821.11	0.00	0.00	0.00	
15,900.00	91.05	269.50	6,559.67	1,748.91	-5,936.58	5,921.10	0.00	0.00	0.00	
16,000.00	91.05	269.50	6,557.84	1,748.03	-6,036.56	6,021.08	0.00	0.00	0.00	
16,100.00	91.05	269.50	6,556.02	1,747.16	-6,136.54	6,121.06	0.00	0.00	0.00	
16,200.00	91.05	269.50	6,554.19	1,746.28	-6,236.52	6,221.05	0.00	0.00	0.00	
16,300.00	91.05	269.50	6,552.37	1,745.41	-6,336.50	6,321.03	0.00	0.00	0.00	
16,400.00	91.05	269.50	6,550.54	1,744.53	-6,436.48	6,421.01	0.00	0.00	0.00	
16,500.00	91.05	269.50	6,548.72	1,743.66	-6,536.46	6,521.00	0.00	0.00	0.00	
16,600.00	91.05	269.50	6,546.89	1,742.78	-6,636.44	6,620.98	0.00	0.00	0.00	
16,700.00	91.05	269.50	6,545.07	1,741.91	-6,736.42	6,720.96	0.00	0.00	0.00	
16,800.00	91.05	269.50	6,543.24	1,741.03	-6,836.40	6,820.95	0.00	0.00	0.00	
16,900.00	91.05	269.50	6,541.41	1,740.15	-6,936.38	6,920.93	0.00	0.00	0.00	
17,000.00	91.05	269.50	6,539.59	1,739.28	-7,036.36	7,020.91	0.00	0.00	0.00	
17,100.00	91.05	269.50	6,537.76	1,738.40	-7,136.34	7,120.90	0.00	0.00	0.00	
17,200.00	91.05	269.50	6,535.94	1,737.53	-7,236.32	7,220.88	0.00	0.00	0.00	
17,300.00	91.05	269.50	6,534.11	1,736.65	-7,336.30	7,320.86	0.00	0.00	0.00	
17,400.00	91.05	269.50	6,532.29	1,735.78	-7,436.28	7,420.85	0.00	0.00	0.00	
17,500.00	91.05	269.50	6,530.46	1,734.90	-7,536.26	7,520.83	0.00	0.00	0.00	
17,600.00	91.05	269.50	6,528.64	1,734.03	-7,636.23	7,620.81	0.00	0.00	0.00	
17,700.00	91.05	269.50	6,526.81	1,733.15	-7,736.21	7,720.80	0.00	0.00	0.00	
17,800.00	91.05	269.50	6,524.99	1,732.28	-7,836.19	7,820.78	0.00	0.00	0.00	
17,900.00	91.05	269.50	6,523.16	1,731.40	-7,936.17	7,920.76	0.00	0.00	0.00	
18,000.00	91.05	269.50	6,521.34	1,730.53	-8,036.15	8,020.75	0.00	0.00	0.00	
18,100.00	91.05	269.50	6,519.51	1,729.65	-8,136.13	8,120.73	0.00	0.00	0.00	
18,200.00	91.05	269.50	6,517.68	1,728.78	-8,236.11	8,220.71	0.00	0.00	0.00	
18,300.00	91.05	269.50	6,515.86	1,727.90	-8,336.09	8,320.70	0.00	0.00	0.00	
18,400.00	91.05	269.50	6,514.03	1,727.03	-8,436.07	8,420.68	0.00	0.00	0.00	
18,500.00	91.05	269.50	6,512.21	1,726.15	-8,536.05	8,520.66	0.00	0.00	0.00	
18,600.00	91.05	269.50	6,510.38	1,725.28	-8,636.03	8,620.65	0.00	0.00	0.00	
18,700.00	91.05	269.50	6,508.56	1,724.40	-8,736.01	8,720.63	0.00	0.00	0.00	
18,800.00	91.05	269.50	6,506.73	1,723.53	-8,835.99	8,820.61	0.00	0.00	0.00	
18,900.00	91.05	269.50	6,504.91	1,722.65	-8,935.97	8,920.60	0.00	0.00	0.00	
19,000.00	91.05	269.50	6,503.08	1,721.78	-9,035.95	9,020.58	0.00	0.00	0.00	
19,100.00	91.05	269.50	6,501.26	1,720.90	-9,135.93	9,120.56	0.00	0.00	0.00	
19,200.00	91.05	269.50	6,499.43	1,720.03	-9,235.91	9,220.55	0.00	0.00	0.00	
19,300.00	91.05	269.50	6,497.61	1,719.15	-9,335.89	9,320.53	0.00	0.00	0.00	
19,400.00	91.05	269.50	6,495.78	1,718.28	-9,435.87	9,420.51	0.00	0.00	0.00	
19,500.00	91.05	269.50	6,493.95	1,717.40	-9,535.85	9,520.50	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)	
19,600.00	91.05	269.50	6,492.13	1,716.52	-9,635.83	9,620.48	0.00	0.00	0.00	
19,700.00	91.05	269.50	6,490.30	1,715.65	-9,735.80	9,720.46	0.00	0.00	0.00	
19,800.00	91.05	269.50	6,488.48	1,714.77	-9,835.78	9,820.45	0.00	0.00	0.00	
19,900.00	91.05	269.50	6,486.65	1,713.90	-9,935.76	9,920.43	0.00	0.00	0.00	
20,000.00	91.05	269.50	6,484.83	1,713.02	-10,035.74	10,020.41	0.00	0.00	0.00	
20,100.00	91.05	269.50	6,483.00	1,712.15	-10,135.72	10,120.40	0.00	0.00	0.00	
20,200.00	91.05	269.50	6,481.18	1,711.27	-10,235.70	10,220.38	0.00	0.00	0.00	
20,300.00	91.05	269.50	6,479.35	1,710.40	-10,335.68	10,320.36	0.00	0.00	0.00	
20,400.00	91.05	269.50	6,477.53	1,709.52	-10,435.66	10,420.35	0.00	0.00	0.00	
20,500.00	91.05	269.50	6,475.70	1,708.65	-10,535.64	10,520.33	0.00	0.00	0.00	
20,600.00	91.05	269.50	6,473.88	1,707.77	-10,635.62	10,620.31	0.00	0.00	0.00	
20,700.00	91.05	269.50	6,472.05	1,706.90	-10,735.60	10,720.30	0.00	0.00	0.00	
20,800.00	91.05	269.50	6,470.22	1,706.02	-10,835.58	10,820.28	0.00	0.00	0.00	
20,900.00	91.05	269.50	6,468.40	1,705.15	-10,935.56	10,920.26	0.00	0.00	0.00	
21,000.00	91.05	269.50	6,466.57	1,704.27	-11,035.54	11,020.25	0.00	0.00	0.00	
21,100.00	91.05	269.50	6,464.75	1,703.40	-11,135.52	11,120.23	0.00	0.00	0.00	
21,200.00	91.05	269.50	6,462.92	1,702.52	-11,235.50	11,220.21	0.00	0.00	0.00	
21,300.00	91.05	269.50	6,461.10	1,701.65	-11,335.48	11,320.20	0.00	0.00	0.00	
21,400.00	91.05	269.50	6,459.27	1,700.77	-11,435.46	11,420.18	0.00	0.00	0.00	
21,469.67	91.05	269.50	6,458.00	1,700.16	-11,505.11	11,489.84	0.00	0.00	0.00	
TD at 21469.67 - 5 1/2" Csg										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SBJ 13-3HZ BHL - hit/miss target - Shape - Point	0.00	0.00	6,458.00	1,700.16	-11,505.11	14,643,170.00	1,640,930.00	40.319748	-104.998159
SBJ 13-3HZ LP - plan hits target center - Point	0.00	0.00	6,703.00	1,817.63	1,913.94	14,643,294.00	1,654,349.00	40.320078	-104.950017

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,523.46	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
21,469.67	6,458.00	5 1/2" Csg	5-1/2	7-7/8	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	PERMIT REV-2		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
556.33	556.00	Fox Hills			
3,763.80	3,411.00	Parkman			
4,302.88	3,854.00	Sussex			
7,765.25	6,656.00	Sharon Springs			
8,047.86	6,703.00	Niobrara			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
250.00	250.00	0.00	0.00		Start Build 1.50
2,565.84	2,426.55	339.95	589.83		HOLD TANGENT
6,538.67	5,691.30	1,470.38	2,551.18		KOP DLS 8
8,047.86	6,703.00	1,817.63	1,913.94		LANDING POINT
21,469.67	6,458.00	1,700.16	-11,505.11		TD at 21469.67