

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
4N-68W-13 SBJ 22-13HZ PAD
SBJ 13-1HZ**

Plan C

Plan: PERMIT REV-2

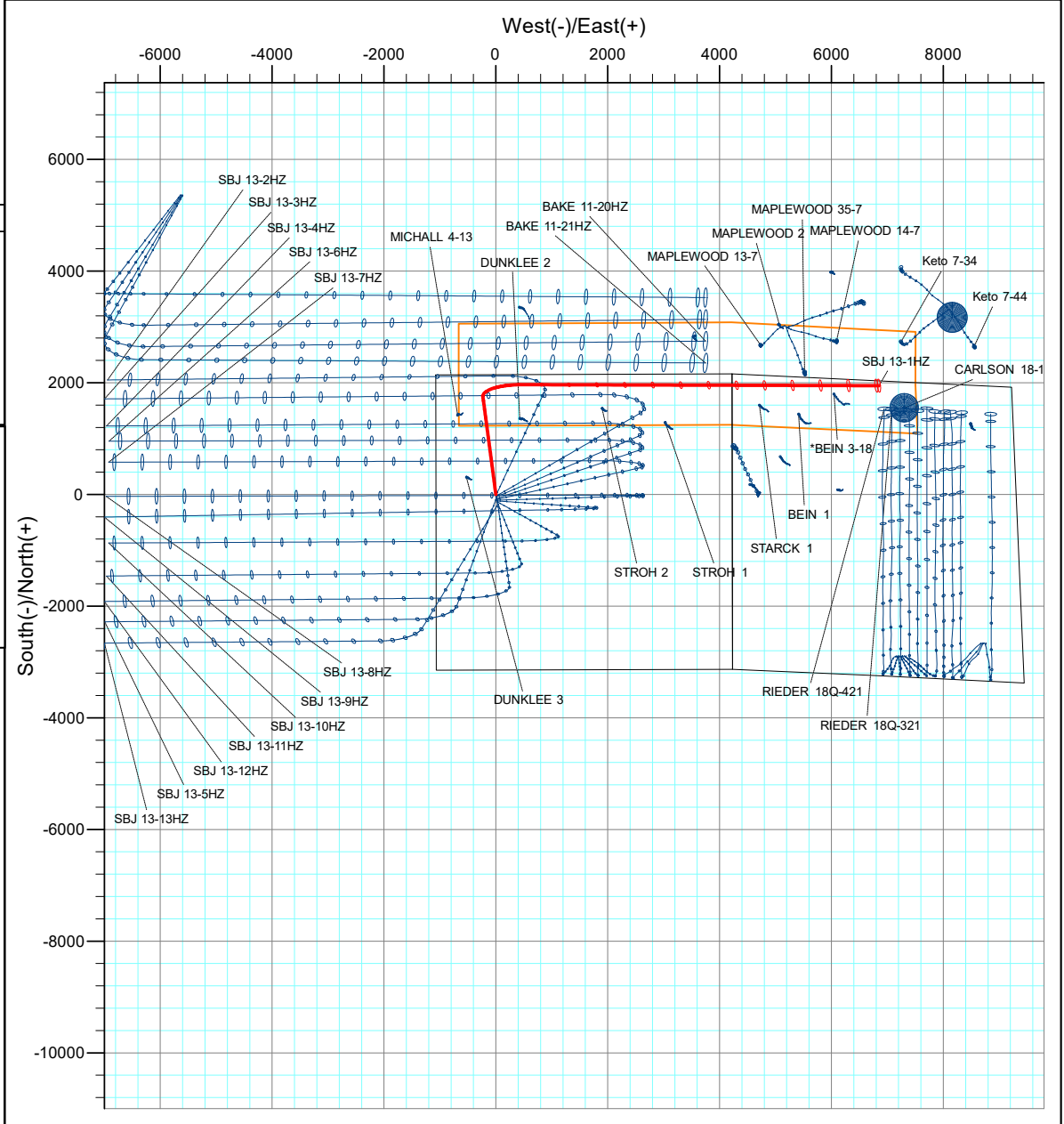
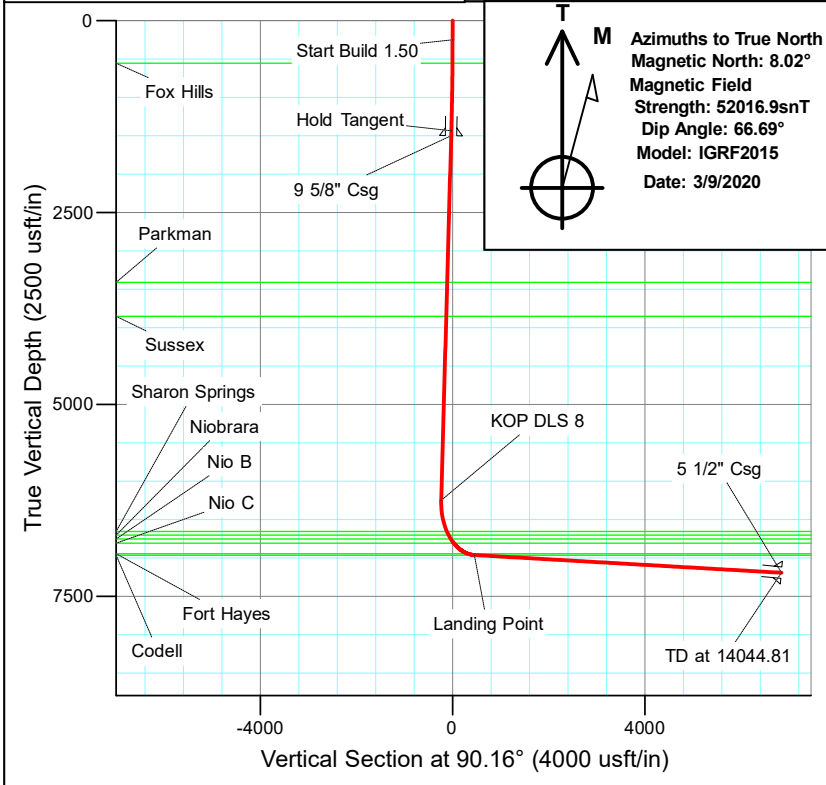
Standard Planning Report

04 May, 2021

Project: WELD-NAD83-UTMFT13N Site: 4N-68W-13 SBJ 22-13HZ PAD Well: SBJ 13-1HZ Wellbore: Plan C Design: PERMIT REV-2	ELEVATION		SURFACE HOLE LOCATION: SBJ 13-1HZ							
	GROUND ELEVATION: 4859.00 RKB = 17' @ 4876ft		+N/-S 0.00	+E/-W 0.00	Northing 14641504.57	Easting 1652429.79	Latitude 40.315167	Longitude -104.956905		
	CASING DETAILS		DESIGN TARGET DETAILS							
	TVD	MD	Name	Size						
	1500.00	1523.26	9 5/8" Csg	9-5/8	Name	TVD	Northing	Easting	Latitude	Longitude
	7194.00	14044.81	5 1/2" Csg	5-1/2	SBJ 13-1HZ LP	6963.00	14643471.00	1652889.00	40.320566	-104.955254
					SBJ 13-1HZ BHL	7194.00	14643456.00	1659278.00	40.320514	-104.932333

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1455.84	18.09	352.45	1435.91	187.12	-24.79	1.50	352.45	-25.32	
4	6521.41	18.09	352.45	6251.15	1746.21	-231.37	0.00	0.00	-236.25	
5	7651.62	87.93	90.16	6963.00	1966.21	460.16	8.00	97.97	454.67	SBJ 13-1HZ LP
6	14044.81	87.93	90.16	7194.00	1948.10	6849.16	0.00	0.00	6843.69	SBJ 13-1HZ BHL

			FORMATION TOP DETAILS		
SHL	HEEL	TOE	TVDPath	MDPath	Formation
2144' FNL	179' FNL	86' FNL	556.00	556.33	Fox Hills
1065' FWL	1535' FWL	2370' FEL	3411.00	3533.61	Parkman
Section 13	Section 13	Section 18	3854.00	3999.64	Sussex
SWNW	NENW	NWNE	6656.00	6969.89	Sharon Springs
			6703.00	7030.74	Niobrara
			6755.00	7103.24	Nio B
			6808.00	7185.32	Nio C
			6947.00	7520.95	Fort Hayes
			6967.00	7762.33	Codell



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-1HZ
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 13-1HZ	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 13-1HZ					
Well Position	+N/-S	359.06 usft	Northing:	14,641,504.57 usft	Latitude:	40.315167
	+E/-W	-87.53 usft	Easting:	1,652,429.79 usft	Longitude:	-104.956905
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	52,016.89870344

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	90.16

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	14,044.81	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	
1,455.84	18.09	352.45	1,435.91	187.12	-24.79	1.50	1.50	0.00	352.45	
6,521.41	18.09	352.45	6,251.15	1,746.21	-231.37	0.00	0.00	0.00	0.00	
7,651.62	87.93	90.16	6,963.00	1,966.21	460.16	8.00	6.18	8.65	97.97	SBJ 13-1HZ LP
14,044.81	87.93	90.16	7,194.00	1,948.10	6,849.16	0.00	0.00	0.00	0.00	SBJ 13-1HZ BHL

Corporate Planning Report

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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 13-1HZ	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	352.45	300.00	0.32	-0.04	-0.04	1.50	1.50	0.00
400.00	2.25	352.45	399.96	2.92	-0.39	-0.39	1.50	1.50	0.00
500.00	3.75	352.45	499.82	8.11	-1.07	-1.10	1.50	1.50	0.00
556.33	4.59	352.45	556.00	12.17	-1.61	-1.65	1.50	1.50	0.00
Fox Hills									
600.00	5.25	352.45	599.51	15.89	-2.10	-2.15	1.50	1.50	0.00
700.00	6.75	352.45	698.96	26.25	-3.48	-3.55	1.50	1.50	0.00
800.00	8.25	352.45	798.10	39.19	-5.19	-5.30	1.50	1.50	0.00
900.00	9.75	352.45	896.87	54.69	-7.25	-7.40	1.50	1.50	0.00
1,000.00	11.25	352.45	995.19	72.76	-9.64	-9.84	1.50	1.50	0.00
1,100.00	12.75	352.45	1,093.00	93.37	-12.37	-12.63	1.50	1.50	0.00
1,200.00	14.25	352.45	1,190.24	116.51	-15.44	-15.76	1.50	1.50	0.00
1,300.00	15.75	352.45	1,286.83	142.17	-18.84	-19.23	1.50	1.50	0.00
1,400.00	17.25	352.45	1,382.71	170.32	-22.57	-23.04	1.50	1.50	0.00
1,455.84	18.09	352.45	1,435.91	187.12	-24.79	-25.32	1.50	1.50	0.00
Hold Tangent									
1,500.00	18.09	352.45	1,477.89	200.72	-26.59	-27.16	0.00	0.00	0.00
1,523.26	18.09	352.45	1,500.00	207.87	-27.54	-28.12	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	18.09	352.45	1,572.95	231.49	-30.67	-31.32	0.00	0.00	0.00
1,700.00	18.09	352.45	1,668.01	262.27	-34.75	-35.48	0.00	0.00	0.00
1,800.00	18.09	352.45	1,763.06	293.05	-38.83	-39.65	0.00	0.00	0.00
1,900.00	18.09	352.45	1,858.12	323.83	-42.91	-43.81	0.00	0.00	0.00
2,000.00	18.09	352.45	1,953.18	354.61	-46.99	-47.98	0.00	0.00	0.00
2,100.00	18.09	352.45	2,048.24	385.38	-51.06	-52.14	0.00	0.00	0.00
2,200.00	18.09	352.45	2,143.30	416.16	-55.14	-56.30	0.00	0.00	0.00
2,300.00	18.09	352.45	2,238.35	446.94	-59.22	-60.47	0.00	0.00	0.00
2,400.00	18.09	352.45	2,333.41	477.72	-63.30	-64.63	0.00	0.00	0.00
2,500.00	18.09	352.45	2,428.47	508.50	-67.38	-68.80	0.00	0.00	0.00
2,600.00	18.09	352.45	2,523.53	539.27	-71.45	-72.96	0.00	0.00	0.00
2,700.00	18.09	352.45	2,618.59	570.05	-75.53	-77.12	0.00	0.00	0.00
2,800.00	18.09	352.45	2,713.65	600.83	-79.61	-81.29	0.00	0.00	0.00
2,900.00	18.09	352.45	2,808.70	631.61	-83.69	-85.45	0.00	0.00	0.00
3,000.00	18.09	352.45	2,903.76	662.39	-87.77	-89.62	0.00	0.00	0.00
3,100.00	18.09	352.45	2,998.82	693.16	-91.84	-93.78	0.00	0.00	0.00
3,200.00	18.09	352.45	3,093.88	723.94	-95.92	-97.94	0.00	0.00	0.00
3,300.00	18.09	352.45	3,188.94	754.72	-100.00	-102.11	0.00	0.00	0.00
3,400.00	18.09	352.45	3,284.00	785.50	-104.08	-106.27	0.00	0.00	0.00
3,500.00	18.09	352.45	3,379.05	816.28	-108.16	-110.44	0.00	0.00	0.00
3,533.61	18.09	352.45	3,411.00	826.62	-109.53	-111.83	0.00	0.00	0.00
Parkman									
3,600.00	18.09	352.45	3,474.11	847.05	-112.23	-114.60	0.00	0.00	0.00
3,700.00	18.09	352.45	3,569.17	877.83	-116.31	-118.76	0.00	0.00	0.00
3,800.00	18.09	352.45	3,664.23	908.61	-120.39	-122.93	0.00	0.00	0.00
3,900.00	18.09	352.45	3,759.29	939.39	-124.47	-127.09	0.00	0.00	0.00
3,999.64	18.09	352.45	3,854.00	970.05	-128.53	-131.24	0.00	0.00	0.00
Sussex									
4,000.00	18.09	352.45	3,854.35	970.17	-128.55	-131.26	0.00	0.00	0.00

**Corporate
Planning Report**

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Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-1HZ	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)	
4,100.00	18.09	352.45	3,949.40	1,000.94	-132.62	-135.42	0.00	0.00	0.00	
4,200.00	18.09	352.45	4,044.46	1,031.72	-136.70	-139.58	0.00	0.00	0.00	
4,300.00	18.09	352.45	4,139.52	1,062.50	-140.78	-143.75	0.00	0.00	0.00	
4,400.00	18.09	352.45	4,234.58	1,093.28	-144.86	-147.91	0.00	0.00	0.00	
4,500.00	18.09	352.45	4,329.64	1,124.06	-148.94	-152.08	0.00	0.00	0.00	
4,600.00	18.09	352.45	4,424.70	1,154.84	-153.02	-156.24	0.00	0.00	0.00	
4,700.00	18.09	352.45	4,519.75	1,185.61	-157.09	-160.40	0.00	0.00	0.00	
4,800.00	18.09	352.45	4,614.81	1,216.39	-161.17	-164.57	0.00	0.00	0.00	
4,900.00	18.09	352.45	4,709.87	1,247.17	-165.25	-168.73	0.00	0.00	0.00	
5,000.00	18.09	352.45	4,804.93	1,277.95	-169.33	-172.90	0.00	0.00	0.00	
5,100.00	18.09	352.45	4,899.99	1,308.73	-173.41	-177.06	0.00	0.00	0.00	
5,200.00	18.09	352.45	4,995.05	1,339.50	-177.48	-181.22	0.00	0.00	0.00	
5,300.00	18.09	352.45	5,090.10	1,370.28	-181.56	-185.39	0.00	0.00	0.00	
5,400.00	18.09	352.45	5,185.16	1,401.06	-185.64	-189.55	0.00	0.00	0.00	
5,500.00	18.09	352.45	5,280.22	1,431.84	-189.72	-193.72	0.00	0.00	0.00	
5,600.00	18.09	352.45	5,375.28	1,462.62	-193.80	-197.88	0.00	0.00	0.00	
5,700.00	18.09	352.45	5,470.34	1,493.39	-197.87	-202.04	0.00	0.00	0.00	
5,800.00	18.09	352.45	5,565.40	1,524.17	-201.95	-206.21	0.00	0.00	0.00	
5,900.00	18.09	352.45	5,660.45	1,554.95	-206.03	-210.37	0.00	0.00	0.00	
6,000.00	18.09	352.45	5,755.51	1,585.73	-210.11	-214.54	0.00	0.00	0.00	
6,100.00	18.09	352.45	5,850.57	1,616.51	-214.19	-218.70	0.00	0.00	0.00	
6,200.00	18.09	352.45	5,945.63	1,647.28	-218.26	-222.86	0.00	0.00	0.00	
6,300.00	18.09	352.45	6,040.69	1,678.06	-222.34	-227.03	0.00	0.00	0.00	
6,400.00	18.09	352.45	6,135.75	1,708.84	-226.42	-231.19	0.00	0.00	0.00	
6,500.00	18.09	352.45	6,230.80	1,739.62	-230.50	-235.36	0.00	0.00	0.00	
6,521.41	18.09	352.45	6,251.15	1,746.21	-231.37	-236.25	0.00	0.00	0.00	
KOP DLS 8										
6,600.00	18.27	12.69	6,325.90	1,770.35	-230.27	-235.21	8.00	0.23	25.75	
6,700.00	21.28	34.78	6,420.12	1,800.59	-216.45	-221.48	8.00	3.01	22.09	
6,800.00	26.38	50.17	6,511.65	1,829.77	-188.99	-194.10	8.00	5.09	15.39	
6,900.00	32.59	60.47	6,598.72	1,857.32	-148.44	-153.62	8.00	6.21	10.30	
6,969.89	37.30	65.74	6,656.00	1,875.31	-112.73	-117.96	8.00	6.74	7.53	
Sharon Springs										
7,000.00	39.39	67.66	6,679.62	1,882.70	-95.57	-100.82	8.00	6.95	6.39	
7,030.74	41.56	69.46	6,703.00	1,889.98	-76.99	-82.27	8.00	7.04	5.84	
Niobrara										
7,100.00	46.53	72.99	6,752.78	1,905.41	-31.41	-36.73	8.00	7.17	5.10	
7,103.24	46.76	73.14	6,755.00	1,906.09	-29.16	-34.48	8.00	7.25	4.65	
Nio B										
7,185.32	52.77	76.62	6,808.00	1,922.34	31.31	25.94	8.00	7.32	4.23	
Nio C										
7,200.00	53.85	77.18	6,816.77	1,925.01	42.77	37.40	8.00	7.39	3.83	
7,300.00	61.30	80.64	6,870.36	1,941.13	125.55	120.13	8.00	7.45	3.46	
7,400.00	68.83	83.64	6,912.50	1,953.44	215.31	209.86	8.00	7.52	3.00	
7,500.00	76.40	86.35	6,942.36	1,961.71	310.31	304.83	8.00	7.57	2.71	
7,520.95	77.99	86.89	6,947.00	1,962.92	330.69	325.21	8.00	7.59	2.59	
Fort Hayes										
7,600.00	84.00	88.89	6,959.37	1,965.78	408.68	403.19	8.00	7.60	2.52	
7,651.62	87.93	90.16	6,963.00	1,966.21	460.16	454.67	8.00	7.61	2.47	
Landing Point										
7,700.00	87.93	90.16	6,964.75	1,966.07	508.51	503.02	0.00	0.00	0.00	
7,762.33	87.93	90.16	6,967.00	1,965.89	570.80	565.30	0.00	0.00	0.00	
Codell										

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7,800.00	87.93	90.16	6,968.36	1,965.79	608.44	602.95	0.00	0.00	0.00	
7,900.00	87.93	90.16	6,971.97	1,965.50	708.38	702.89	0.00	0.00	0.00	
8,000.00	87.93	90.16	6,975.59	1,965.22	808.31	802.82	0.00	0.00	0.00	
8,100.00	87.93	90.16	6,979.20	1,964.94	908.25	902.76	0.00	0.00	0.00	
8,200.00	87.93	90.16	6,982.81	1,964.65	1,008.18	1,002.69	0.00	0.00	0.00	
8,300.00	87.93	90.16	6,986.43	1,964.37	1,108.12	1,102.63	0.00	0.00	0.00	
8,400.00	87.93	90.16	6,990.04	1,964.09	1,208.05	1,202.56	0.00	0.00	0.00	
8,500.00	87.93	90.16	6,993.65	1,963.80	1,307.98	1,302.49	0.00	0.00	0.00	
8,600.00	87.93	90.16	6,997.27	1,963.52	1,407.92	1,402.43	0.00	0.00	0.00	
8,700.00	87.93	90.16	7,000.88	1,963.24	1,507.85	1,502.36	0.00	0.00	0.00	
8,800.00	87.93	90.16	7,004.49	1,962.95	1,607.79	1,602.30	0.00	0.00	0.00	
8,900.00	87.93	90.16	7,008.11	1,962.67	1,707.72	1,702.23	0.00	0.00	0.00	
9,000.00	87.93	90.16	7,011.72	1,962.39	1,807.66	1,802.17	0.00	0.00	0.00	
9,100.00	87.93	90.16	7,015.33	1,962.10	1,907.59	1,902.10	0.00	0.00	0.00	
9,200.00	87.93	90.16	7,018.95	1,961.82	2,007.52	2,002.04	0.00	0.00	0.00	
9,300.00	87.93	90.16	7,022.56	1,961.54	2,107.46	2,101.97	0.00	0.00	0.00	
9,400.00	87.93	90.16	7,026.17	1,961.25	2,207.39	2,201.91	0.00	0.00	0.00	
9,500.00	87.93	90.16	7,029.79	1,960.97	2,307.33	2,301.84	0.00	0.00	0.00	
9,600.00	87.93	90.16	7,033.40	1,960.69	2,407.26	2,401.78	0.00	0.00	0.00	
9,700.00	87.93	90.16	7,037.01	1,960.40	2,507.20	2,501.71	0.00	0.00	0.00	
9,800.00	87.93	90.16	7,040.63	1,960.12	2,607.13	2,601.65	0.00	0.00	0.00	
9,900.00	87.93	90.16	7,044.24	1,959.84	2,707.06	2,701.58	0.00	0.00	0.00	
10,000.00	87.93	90.16	7,047.85	1,959.55	2,807.00	2,801.52	0.00	0.00	0.00	
10,100.00	87.93	90.16	7,051.47	1,959.27	2,906.93	2,901.45	0.00	0.00	0.00	
10,200.00	87.93	90.16	7,055.08	1,958.99	3,006.87	3,001.38	0.00	0.00	0.00	
10,300.00	87.93	90.16	7,058.69	1,958.70	3,106.80	3,101.32	0.00	0.00	0.00	
10,400.00	87.93	90.16	7,062.31	1,958.42	3,206.74	3,201.25	0.00	0.00	0.00	
10,500.00	87.93	90.16	7,065.92	1,958.14	3,306.67	3,301.19	0.00	0.00	0.00	
10,600.00	87.93	90.16	7,069.53	1,957.85	3,406.60	3,401.12	0.00	0.00	0.00	
10,700.00	87.93	90.16	7,073.14	1,957.57	3,506.54	3,501.06	0.00	0.00	0.00	
10,800.00	87.93	90.16	7,076.76	1,957.29	3,606.47	3,600.99	0.00	0.00	0.00	
10,900.00	87.93	90.16	7,080.37	1,957.00	3,706.41	3,700.93	0.00	0.00	0.00	
11,000.00	87.93	90.16	7,083.98	1,956.72	3,806.34	3,800.86	0.00	0.00	0.00	
11,100.00	87.93	90.16	7,087.60	1,956.44	3,906.28	3,900.80	0.00	0.00	0.00	
11,200.00	87.93	90.16	7,091.21	1,956.15	4,006.21	4,000.73	0.00	0.00	0.00	
11,300.00	87.93	90.16	7,094.82	1,955.87	4,106.14	4,100.67	0.00	0.00	0.00	
11,400.00	87.93	90.16	7,098.44	1,955.59	4,206.08	4,200.60	0.00	0.00	0.00	
11,500.00	87.93	90.16	7,102.05	1,955.31	4,306.01	4,300.54	0.00	0.00	0.00	
11,600.00	87.93	90.16	7,105.66	1,955.02	4,405.95	4,400.47	0.00	0.00	0.00	
11,700.00	87.93	90.16	7,109.28	1,954.74	4,505.88	4,500.41	0.00	0.00	0.00	
11,800.00	87.93	90.16	7,112.89	1,954.46	4,605.82	4,600.34	0.00	0.00	0.00	
11,900.00	87.93	90.16	7,116.50	1,954.17	4,705.75	4,700.27	0.00	0.00	0.00	
12,000.00	87.93	90.16	7,120.12	1,953.89	4,805.68	4,800.21	0.00	0.00	0.00	
12,100.00	87.93	90.16	7,123.73	1,953.61	4,905.62	4,900.14	0.00	0.00	0.00	
12,200.00	87.93	90.16	7,127.34	1,953.32	5,005.55	5,000.08	0.00	0.00	0.00	
12,300.00	87.93	90.16	7,130.96	1,953.04	5,105.49	5,100.01	0.00	0.00	0.00	
12,400.00	87.93	90.16	7,134.57	1,952.76	5,205.42	5,199.95	0.00	0.00	0.00	
12,500.00	87.93	90.16	7,138.18	1,952.47	5,305.36	5,299.88	0.00	0.00	0.00	
12,600.00	87.93	90.16	7,141.80	1,952.19	5,405.29	5,399.82	0.00	0.00	0.00	
12,700.00	87.93	90.16	7,145.41	1,951.91	5,505.22	5,499.75	0.00	0.00	0.00	
12,800.00	87.93	90.16	7,149.02	1,951.62	5,605.16	5,599.69	0.00	0.00	0.00	
12,900.00	87.93	90.16	7,152.64	1,951.34	5,705.09	5,699.62	0.00	0.00	0.00	
13,000.00	87.93	90.16	7,156.25	1,951.06	5,805.03	5,799.56	0.00	0.00	0.00	
13,100.00	87.93	90.16	7,159.86	1,950.77	5,904.96	5,899.49	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-1HZ
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 13-1HZ	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)	
13,200.00	87.93	90.16	7,163.48	1,950.49	6,004.90	5,999.43	0.00	0.00	0.00	
13,300.00	87.93	90.16	7,167.09	1,950.21	6,104.83	6,099.36	0.00	0.00	0.00	
13,400.00	87.93	90.16	7,170.70	1,949.92	6,204.76	6,199.30	0.00	0.00	0.00	
13,500.00	87.93	90.16	7,174.31	1,949.64	6,304.70	6,299.23	0.00	0.00	0.00	
13,600.00	87.93	90.16	7,177.93	1,949.36	6,404.63	6,399.16	0.00	0.00	0.00	
13,700.00	87.93	90.16	7,181.54	1,949.07	6,504.57	6,499.10	0.00	0.00	0.00	
13,800.00	87.93	90.16	7,185.15	1,948.79	6,604.50	6,599.03	0.00	0.00	0.00	
13,900.00	87.93	90.16	7,188.77	1,948.51	6,704.44	6,698.97	0.00	0.00	0.00	
14,000.00	87.93	90.16	7,192.38	1,948.22	6,804.37	6,798.90	0.00	0.00	0.00	
14,044.81	87.93	90.16	7,194.00	1,948.10	6,849.15	6,843.68	0.00	0.00	0.00	
TD at 14044.81 - 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 13-1HZ LP - hit/miss target - Shape - Point	0.00	0.00	6,963.00	1,966.21	460.16	14,643,471.00	1,652,889.00	40.320566	-104.955254
SBJ 13-1HZ BHL - plan hits target center - Point	0.00	0.00	7,194.00	1,948.10	6,849.16	14,643,456.00	1,659,278.00	40.320514	-104.932333

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
1,523.26	1,500.00	9 5/8" Csg	9-5/8	13-1/2		
14,044.81	7,194.00	5 1/2" Csg	5-1/2	7-7/8		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
556.33	556.00	Fox Hills				
3,533.61	3,411.00	Parkman				
3,999.64	3,854.00	Sussex				
6,969.89	6,656.00	Sharon Springs				
7,030.74	6,703.00	Niobrara				
7,103.24	6,755.00	Nio B				
7,185.32	6,808.00	Nio C				
7,520.95	6,947.00	Fort Hayes				
7,762.33	6,967.00	Codell				

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-1HZ
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 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	PERMIT REV-2		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)		Comment
250.00	250.00	0.00	0.00		Start Build 1.50
1,455.84	1,435.91	187.12	-24.79		Hold Tangent
6,521.41	6,251.15	1,746.21	-231.37		KOP DLS 8
7,651.62	6,963.00	1,966.21	460.16		Landing Point
14,044.81	7,194.00	1,948.10	6,849.16		TD at 14044.81