

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-15 JDB 16-15HZ PAD
JDB 15-6HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.045525/-104.757754
Survey Program: MWD+IFR+MSA

Standard Planning Report

22 July, 2018

Project: WELD-NAD83-UTMFT13N
Site: 1N-66W-15 JDB 16-15HZ PAD
Well: JDB 15-6HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1526.50	9-5/8
7510.00	8882.23	5-1/2

WELL DETAILS: JDB 15-6HZ

GL = 5152.00

RKB = 17" @ 5169.00usft (Drilling Rig)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	2250.00	30.75	81.67	2153.00	77.80	531.36	1.50	81.67	-79.75	
4	7708.48	30.75	81.67	6844.05	482.13	3292.80	0.00	0.00	-494.19	
5	8882.23	89.47	180.21	7510.00	-227.73	3677.85	8.00	97.62	214.25	
6	14422.99	89.47	180.21	7561.00	-5768.22	3657.47	0.00	0.00	5754.77	JDB 15-6HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
JDB 15-6HZ_SHL	0.00	0.00	0.00	40.045525	-104.757754
JDB 15-6HZ_BHL	7561.00	-5768.22	3657.47	40.029684	-104.744688

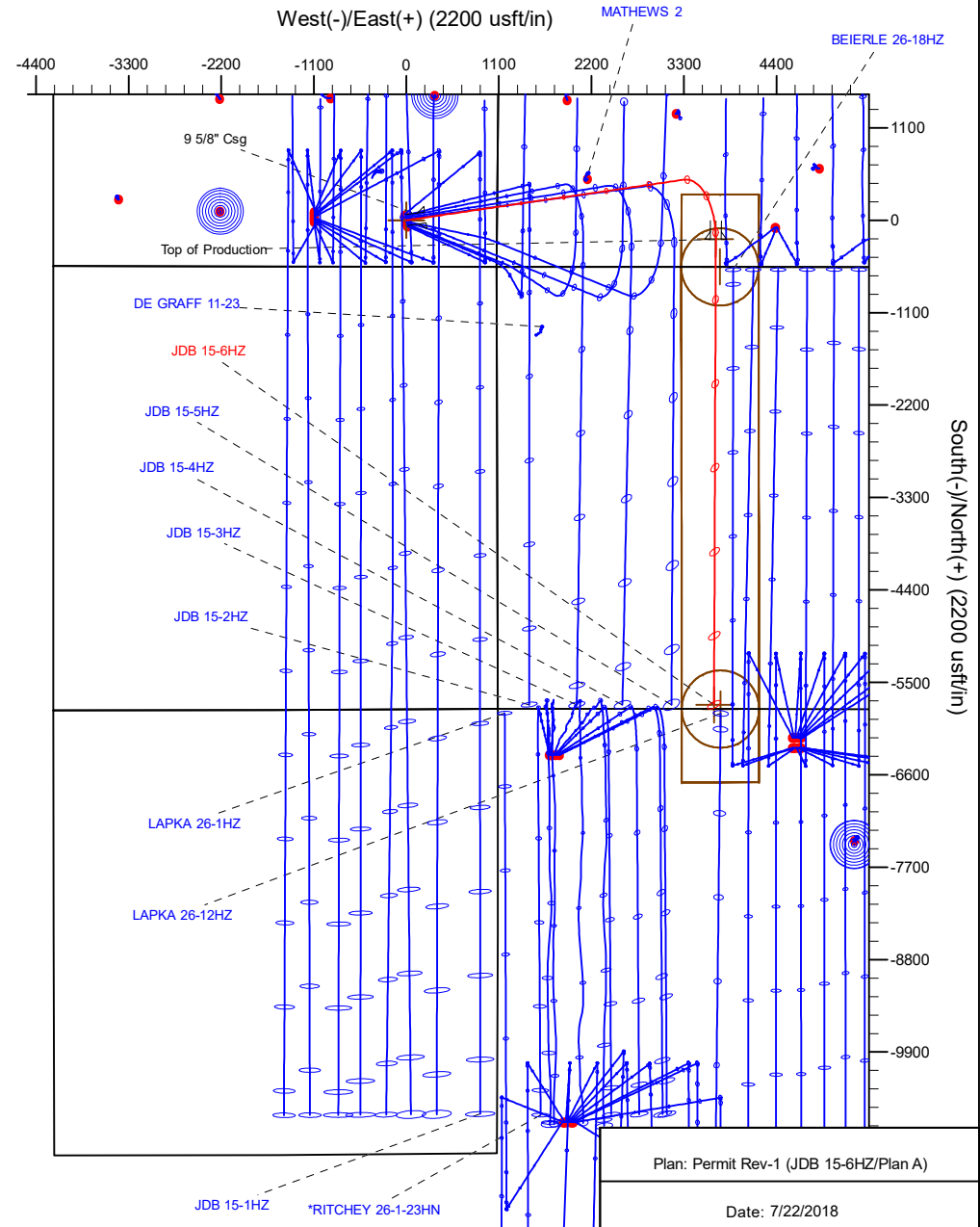
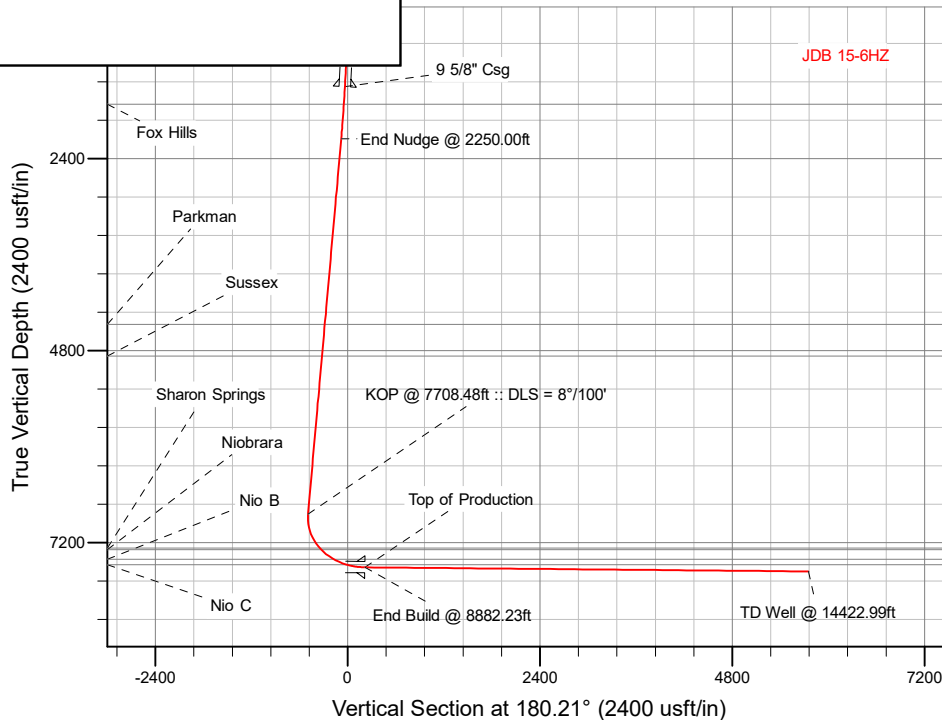
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1719.00	1762.19	Fox Hills
4472.00	4948.38	Parkman
4868.00	5409.16	Sussex
7269.00	8234.39	Sharon Springs
7289.00	8264.14	Niobrara
7412.00	8480.74	Nio B
7478.00	8658.15	Nio C

SHL
553' FSL
1079' FEL

HEEL
330' FSL
2596' FWL

TOE
50' FSL
2572' FWL



Plan: Permit Rev-1 (JDB 15-6HZ/Plan A)

Date: 7/22/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Site:	1N-66W-15 JDB 16-15HZ PAD	North Reference:	True
Well:	JDB 15-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	1N-66W-15 JDB 16-15HZ PAD			
Site Position:		Northing:	14,543,476.02 usft	Latitude: 40.045725
From:	Lat/Long	Easting:	1,708,195.02 usft	Longitude: -104.757817
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.16 °

Well	JDB 15-6HZ			
Well Position	+N/-S	-72.83 usft	Northing:	14,543,403.24 usft
	+E/-W	17.63 usft	Easting:	1,708,212.85 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	Ground Level: 5,152.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/10/2018	8.06	66.55	52,084.74199502

Design	Permit Rev-1			
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	180.21

Plan Survey Tool Program	Date	7/22/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination
2	1,500.00	14,422.99	Permit Rev-1 (Plan A)	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,250.00	30.75	81.67	2,153.00	77.80	531.36	1.50	1.50	0.00	81.67	
7,708.48	30.75	81.67	6,844.05	482.13	3,292.80	0.00	0.00	0.00	0.00	
8,882.23	89.47	180.21	7,510.00	-227.73	3,677.85	8.00	5.00	8.40	97.62	
14,422.99	89.47	180.21	7,561.00	-5,768.22	3,657.47	0.00	0.00	0.00	0.00	JDB 15-6HZ_BHL

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Site:	1N-66W-15 JDB 16-15HZ PAD	North Reference:	True
Well:	JDB 15-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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
Begin Nudge @ 200.00ft									
300.00	1.50	81.67	299.99	0.19	1.30	-0.19	1.50	1.50	0.00
400.00	3.00	81.67	399.91	0.76	5.18	-0.78	1.50	1.50	0.00
500.00	4.50	81.67	499.69	1.71	11.65	-1.75	1.50	1.50	0.00
600.00	6.00	81.67	599.27	3.03	20.70	-3.11	1.50	1.50	0.00
700.00	7.50	81.67	698.57	4.73	32.33	-4.85	1.50	1.50	0.00
800.00	9.00	81.67	797.54	6.81	46.53	-6.98	1.50	1.50	0.00
900.00	10.50	81.67	896.09	9.27	63.29	-9.50	1.50	1.50	0.00
1,000.00	12.00	81.67	994.16	12.09	82.59	-12.40	1.50	1.50	0.00
1,100.00	13.50	81.67	1,091.70	15.29	104.43	-15.67	1.50	1.50	0.00
1,200.00	15.00	81.67	1,188.62	18.86	128.78	-19.33	1.50	1.50	0.00
1,300.00	16.50	81.67	1,284.86	22.79	155.64	-23.36	1.50	1.50	0.00
1,400.00	18.00	81.67	1,380.36	27.08	184.98	-27.76	1.50	1.50	0.00
1,500.00	19.50	81.67	1,475.05	31.74	216.78	-32.54	1.50	1.50	0.00
1,526.50	19.90	81.67	1,500.00	33.04	225.62	-33.86	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	21.00	81.67	1,568.86	36.76	251.03	-37.68	1.50	1.50	0.00
1,700.00	22.50	81.67	1,661.74	42.12	287.69	-43.18	1.50	1.50	0.00
1,762.19	23.43	81.67	1,719.00	45.64	311.70	-46.78	1.50	1.50	0.00
Fox Hills									
1,800.00	24.00	81.67	1,753.62	47.84	326.75	-49.04	1.50	1.50	0.00
1,900.00	25.50	81.67	1,844.43	53.91	368.17	-55.26	1.50	1.50	0.00
2,000.00	27.00	81.67	1,934.12	60.31	411.93	-61.82	1.50	1.50	0.00
2,100.00	28.50	81.67	2,022.61	67.06	458.00	-68.74	1.50	1.50	0.00
2,200.00	30.00	81.67	2,109.86	74.14	506.35	-75.99	1.50	1.50	0.00
2,250.00	30.75	81.67	2,153.00	77.80	531.36	-79.75	1.50	1.50	0.00
End Nudge @ 2250.00ft									
2,300.00	30.75	81.67	2,195.97	81.51	556.66	-83.54	0.00	0.00	0.00
2,400.00	30.75	81.67	2,281.91	88.91	607.25	-91.14	0.00	0.00	0.00
2,500.00	30.75	81.67	2,367.85	96.32	657.84	-98.73	0.00	0.00	0.00
2,600.00	30.75	81.67	2,453.79	103.73	708.43	-106.32	0.00	0.00	0.00
2,700.00	30.75	81.67	2,539.73	111.13	759.02	-113.92	0.00	0.00	0.00
2,800.00	30.75	81.67	2,625.67	118.54	809.61	-121.51	0.00	0.00	0.00
2,900.00	30.75	81.67	2,711.61	125.95	860.20	-129.10	0.00	0.00	0.00
3,000.00	30.75	81.67	2,797.55	133.36	910.79	-136.69	0.00	0.00	0.00
3,100.00	30.75	81.67	2,883.49	140.76	961.38	-144.29	0.00	0.00	0.00
3,200.00	30.75	81.67	2,969.43	148.17	1,011.97	-151.88	0.00	0.00	0.00
3,300.00	30.75	81.67	3,055.37	155.58	1,062.56	-159.47	0.00	0.00	0.00
3,400.00	30.75	81.67	3,141.31	162.99	1,113.15	-167.06	0.00	0.00	0.00
3,500.00	30.75	81.67	3,227.25	170.39	1,163.74	-174.66	0.00	0.00	0.00
3,600.00	30.75	81.67	3,313.19	177.80	1,214.33	-182.25	0.00	0.00	0.00
3,700.00	30.75	81.67	3,399.14	185.21	1,264.92	-189.84	0.00	0.00	0.00
3,800.00	30.75	81.67	3,485.08	192.62	1,315.51	-197.44	0.00	0.00	0.00
3,900.00	30.75	81.67	3,571.02	200.02	1,366.10	-205.03	0.00	0.00	0.00
4,000.00	30.75	81.67	3,656.96	207.43	1,416.69	-212.62	0.00	0.00	0.00
4,100.00	30.75	81.67	3,742.90	214.84	1,467.28	-220.21	0.00	0.00	0.00
4,200.00	30.75	81.67	3,828.84	222.24	1,517.87	-227.81	0.00	0.00	0.00
4,300.00	30.75	81.67	3,914.78	229.65	1,568.46	-235.40	0.00	0.00	0.00
4,400.00	30.75	81.67	4,000.72	237.06	1,619.05	-242.99	0.00	0.00	0.00
4,500.00	30.75	81.67	4,086.66	244.47	1,669.64	-250.58	0.00	0.00	0.00

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Site:	1N-66W-15 JDB 16-15HZ PAD	North Reference:	True
Well:	JDB 15-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)	
4,600.00	30.75	81.67	4,172.60	251.87	1,720.22	-258.18	0.00	0.00	0.00	
4,700.00	30.75	81.67	4,258.54	259.28	1,770.81	-265.77	0.00	0.00	0.00	
4,800.00	30.75	81.67	4,344.48	266.69	1,821.40	-273.36	0.00	0.00	0.00	
4,900.00	30.75	81.67	4,430.42	274.10	1,871.99	-280.95	0.00	0.00	0.00	
4,948.38	30.75	81.67	4,472.00	277.68	1,896.47	-284.63	0.00	0.00	0.00	
Parkman										
5,000.00	30.75	81.67	4,516.36	281.50	1,922.58	-288.55	0.00	0.00	0.00	
5,100.00	30.75	81.67	4,602.30	288.91	1,973.17	-296.14	0.00	0.00	0.00	
5,200.00	30.75	81.67	4,688.24	296.32	2,023.76	-303.73	0.00	0.00	0.00	
5,300.00	30.75	81.67	4,774.19	303.72	2,074.35	-311.33	0.00	0.00	0.00	
5,400.00	30.75	81.67	4,860.13	311.13	2,124.94	-318.92	0.00	0.00	0.00	
5,409.16	30.75	81.67	4,868.00	311.81	2,129.58	-319.61	0.00	0.00	0.00	
Sussex										
5,500.00	30.75	81.67	4,946.07	318.54	2,175.53	-326.51	0.00	0.00	0.00	
5,600.00	30.75	81.67	5,032.01	325.95	2,226.12	-334.10	0.00	0.00	0.00	
5,700.00	30.75	81.67	5,117.95	333.35	2,276.71	-341.70	0.00	0.00	0.00	
5,800.00	30.75	81.67	5,203.89	340.76	2,327.30	-349.29	0.00	0.00	0.00	
5,900.00	30.75	81.67	5,289.83	348.17	2,377.89	-356.88	0.00	0.00	0.00	
6,000.00	30.75	81.67	5,375.77	355.58	2,428.48	-364.47	0.00	0.00	0.00	
6,100.00	30.75	81.67	5,461.71	362.98	2,479.07	-372.07	0.00	0.00	0.00	
6,200.00	30.75	81.67	5,547.65	370.39	2,529.66	-379.66	0.00	0.00	0.00	
6,300.00	30.75	81.67	5,633.59	377.80	2,580.25	-387.25	0.00	0.00	0.00	
6,400.00	30.75	81.67	5,719.53	385.21	2,630.84	-394.85	0.00	0.00	0.00	
6,500.00	30.75	81.67	5,805.47	392.61	2,681.43	-402.44	0.00	0.00	0.00	
6,600.00	30.75	81.67	5,891.41	400.02	2,732.02	-410.03	0.00	0.00	0.00	
6,700.00	30.75	81.67	5,977.35	407.43	2,782.61	-417.62	0.00	0.00	0.00	
6,800.00	30.75	81.67	6,063.30	414.83	2,833.20	-425.22	0.00	0.00	0.00	
6,900.00	30.75	81.67	6,149.24	422.24	2,883.79	-432.81	0.00	0.00	0.00	
7,000.00	30.75	81.67	6,235.18	429.65	2,934.38	-440.40	0.00	0.00	0.00	
7,100.00	30.75	81.67	6,321.12	437.06	2,984.97	-447.99	0.00	0.00	0.00	
7,200.00	30.75	81.67	6,407.06	444.46	3,035.56	-455.59	0.00	0.00	0.00	
7,300.00	30.75	81.67	6,493.00	451.87	3,086.15	-463.18	0.00	0.00	0.00	
7,400.00	30.75	81.67	6,578.94	459.28	3,136.74	-470.77	0.00	0.00	0.00	
7,500.00	30.75	81.67	6,664.88	466.69	3,187.33	-478.37	0.00	0.00	0.00	
7,600.00	30.75	81.67	6,750.82	474.09	3,237.92	-485.96	0.00	0.00	0.00	
7,700.00	30.75	81.67	6,836.76	481.50	3,288.51	-493.55	0.00	0.00	0.00	
7,708.48	30.75	81.67	6,844.05	482.13	3,292.80	-494.19	0.00	0.00	0.00	
KOP @ 7708.48ft :: DLS = 8°/100'										
7,800.00	30.57	96.05	6,922.88	483.07	3,339.16	-495.30	8.00	-0.20	15.71	
7,900.00	32.14	111.17	7,008.41	470.76	3,389.33	-483.18	8.00	1.57	15.11	
8,000.00	35.31	124.43	7,091.69	444.78	3,438.05	-457.38	8.00	3.17	13.26	
8,100.00	39.70	135.44	7,171.09	405.62	3,484.37	-418.39	8.00	4.39	11.01	
8,200.00	44.94	144.43	7,245.07	354.05	3,527.39	-366.98	8.00	5.24	8.99	
8,234.39	46.89	147.14	7,269.00	333.62	3,541.27	-346.60	8.00	5.67	7.86	
Sharon Springs										
8,264.14	48.63	149.34	7,289.00	314.89	3,552.86	-327.91	8.00	5.83	7.40	
Niobrara										
8,300.00	50.77	151.84	7,312.19	291.07	3,566.28	-304.14	8.00	5.98	6.97	
8,400.00	56.99	158.07	7,371.15	217.91	3,600.27	-231.10	8.00	6.22	6.23	
8,480.74	62.22	162.48	7,412.00	152.38	3,623.69	-165.66	8.00	6.47	5.46	
Nio B										
8,500.00	63.48	163.46	7,420.79	135.99	3,628.71	-149.29	8.00	6.58	5.12	
8,600.00	70.16	168.27	7,460.15	46.91	3,651.04	-60.29	8.00	6.67	4.81	

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Site:	1N-66W-15 JDB 16-15HZ PAD	North Reference:	True
Well:	JDB 15-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
8,658.15	74.09	170.88	7,478.00	-7.51	3,661.04	-5.91	8.00	6.77	4.48
Nio C									
8,700.00	76.94	172.69	7,488.47	-47.61	3,666.83	34.17	8.00	6.82	4.33
8,800.00	83.81	176.86	7,505.18	-145.71	3,675.76	132.24	8.00	6.86	4.18
8,882.23	89.47	180.21	7,510.00	-227.73	3,677.85	214.25	8.00	6.89	4.07
End Build @ 8882.23ft - Top of Production									
8,900.00	89.47	180.21	7,510.17	-245.50	3,677.78	232.02	0.00	0.00	0.00
9,000.00	89.47	180.21	7,511.09	-345.49	3,677.42	332.01	0.00	0.00	0.00
9,100.00	89.47	180.21	7,512.01	-445.49	3,677.05	432.01	0.00	0.00	0.00
9,200.00	89.47	180.21	7,512.93	-545.48	3,676.68	532.00	0.00	0.00	0.00
9,300.00	89.47	180.21	7,513.85	-645.48	3,676.31	632.00	0.00	0.00	0.00
9,400.00	89.47	180.21	7,514.77	-745.47	3,675.95	731.99	0.00	0.00	0.00
9,500.00	89.47	180.21	7,515.69	-845.47	3,675.58	831.99	0.00	0.00	0.00
9,600.00	89.47	180.21	7,516.61	-945.46	3,675.21	931.99	0.00	0.00	0.00
9,700.00	89.47	180.21	7,517.53	-1,045.46	3,674.84	1,031.98	0.00	0.00	0.00
9,800.00	89.47	180.21	7,518.45	-1,145.45	3,674.47	1,131.98	0.00	0.00	0.00
9,900.00	89.47	180.21	7,519.37	-1,245.45	3,674.11	1,231.97	0.00	0.00	0.00
10,000.00	89.47	180.21	7,520.29	-1,345.44	3,673.74	1,331.97	0.00	0.00	0.00
10,100.00	89.47	180.21	7,521.21	-1,445.44	3,673.37	1,431.96	0.00	0.00	0.00
10,200.00	89.47	180.21	7,522.13	-1,545.43	3,673.00	1,531.96	0.00	0.00	0.00
10,300.00	89.47	180.21	7,523.05	-1,645.43	3,672.64	1,631.96	0.00	0.00	0.00
10,400.00	89.47	180.21	7,523.97	-1,745.42	3,672.27	1,731.95	0.00	0.00	0.00
10,500.00	89.47	180.21	7,524.89	-1,845.42	3,671.90	1,831.95	0.00	0.00	0.00
10,600.00	89.47	180.21	7,525.81	-1,945.41	3,671.53	1,931.94	0.00	0.00	0.00
10,700.00	89.47	180.21	7,526.73	-2,045.41	3,671.16	2,031.94	0.00	0.00	0.00
10,800.00	89.47	180.21	7,527.65	-2,145.40	3,670.80	2,131.94	0.00	0.00	0.00
10,900.00	89.47	180.21	7,528.57	-2,245.40	3,670.43	2,231.93	0.00	0.00	0.00
11,000.00	89.47	180.21	7,529.49	-2,345.39	3,670.06	2,331.93	0.00	0.00	0.00
11,100.00	89.47	180.21	7,530.42	-2,445.39	3,669.69	2,431.92	0.00	0.00	0.00
11,200.00	89.47	180.21	7,531.34	-2,545.38	3,669.33	2,531.92	0.00	0.00	0.00
11,300.00	89.47	180.21	7,532.26	-2,645.38	3,668.96	2,631.91	0.00	0.00	0.00
11,400.00	89.47	180.21	7,533.18	-2,745.37	3,668.59	2,731.91	0.00	0.00	0.00
11,500.00	89.47	180.21	7,534.10	-2,845.37	3,668.22	2,831.91	0.00	0.00	0.00
11,600.00	89.47	180.21	7,535.02	-2,945.36	3,667.85	2,931.90	0.00	0.00	0.00
11,700.00	89.47	180.21	7,535.94	-3,045.36	3,667.49	3,031.90	0.00	0.00	0.00
11,800.00	89.47	180.21	7,536.86	-3,145.35	3,667.12	3,131.89	0.00	0.00	0.00
11,900.00	89.47	180.21	7,537.78	-3,245.35	3,666.75	3,231.89	0.00	0.00	0.00
12,000.00	89.47	180.21	7,538.70	-3,345.34	3,666.38	3,331.88	0.00	0.00	0.00
12,100.00	89.47	180.21	7,539.62	-3,445.34	3,666.02	3,431.88	0.00	0.00	0.00
12,200.00	89.47	180.21	7,540.54	-3,545.33	3,665.65	3,531.88	0.00	0.00	0.00
12,300.00	89.47	180.21	7,541.46	-3,645.33	3,665.28	3,631.87	0.00	0.00	0.00
12,400.00	89.47	180.21	7,542.38	-3,745.33	3,664.91	3,731.87	0.00	0.00	0.00
12,500.00	89.47	180.21	7,543.30	-3,845.32	3,664.54	3,831.86	0.00	0.00	0.00
12,600.00	89.47	180.21	7,544.22	-3,945.32	3,664.18	3,931.86	0.00	0.00	0.00
12,700.00	89.47	180.21	7,545.14	-4,045.31	3,663.81	4,031.85	0.00	0.00	0.00
12,800.00	89.47	180.21	7,546.06	-4,145.31	3,663.44	4,131.85	0.00	0.00	0.00
12,900.00	89.47	180.21	7,546.98	-4,245.30	3,663.07	4,231.85	0.00	0.00	0.00
13,000.00	89.47	180.21	7,547.90	-4,345.30	3,662.71	4,331.84	0.00	0.00	0.00
13,100.00	89.47	180.21	7,548.82	-4,445.29	3,662.34	4,431.84	0.00	0.00	0.00
13,200.00	89.47	180.21	7,549.74	-4,545.29	3,661.97	4,531.83	0.00	0.00	0.00
13,300.00	89.47	180.21	7,550.66	-4,645.28	3,661.60	4,631.83	0.00	0.00	0.00
13,400.00	89.47	180.21	7,551.58	-4,745.28	3,661.23	4,731.82	0.00	0.00	0.00
13,500.00	89.47	180.21	7,552.50	-4,845.27	3,660.87	4,831.82	0.00	0.00	0.00
13,600.00	89.47	180.21	7,553.43	-4,945.27	3,660.50	4,931.82	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5169.00usft (Drilling Rig)
Site:	1N-66W-15 JDB 16-15HZ PAD	North Reference:	True
Well:	JDB 15-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
13,700.00	89.47	180.21	7,554.35	-5,045.26	3,660.13	5,031.81	0.00	0.00	0.00
13,800.00	89.47	180.21	7,555.27	-5,145.26	3,659.76	5,131.81	0.00	0.00	0.00
13,900.00	89.47	180.21	7,556.19	-5,245.25	3,659.40	5,231.80	0.00	0.00	0.00
14,000.00	89.47	180.21	7,557.11	-5,345.25	3,659.03	5,331.80	0.00	0.00	0.00
14,100.00	89.47	180.21	7,558.03	-5,445.24	3,658.66	5,431.80	0.00	0.00	0.00
14,200.00	89.47	180.21	7,558.95	-5,545.24	3,658.29	5,531.79	0.00	0.00	0.00
14,300.00	89.47	180.21	7,559.87	-5,645.23	3,657.92	5,631.79	0.00	0.00	0.00
14,400.00	89.47	180.21	7,560.79	-5,745.23	3,657.56	5,731.78	0.00	0.00	0.00
14,422.99	89.47	180.21	7,561.00	-5,768.22	3,657.47	5,754.77	0.00	0.00	0.00
TD Well @ 14422.99ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,526.50	1,500.00	9 5/8" Csg	9-5/8	13-1/2
8,882.23	7,510.00	Top of Production	5-1/2	7-7/8

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,762.19	1,719.00	Fox Hills				
4,948.38	4,472.00	Parkman				
5,409.16	4,868.00	Sussex				
8,234.39	7,269.00	Sharon Springs				
8,264.14	7,289.00	Niobrara				
8,480.74	7,412.00	Nio B				
8,658.15	7,478.00	Nio C				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft
2,250.00	2,153.00	77.80	531.36	End Nudge @ 2250.00ft
7,708.48	6,844.05	482.13	3,292.80	KOP @ 7708.48ft :: DLS = 8°/100'
8,882.23	7,510.00	-227.73	3,677.85	End Build @ 8882.23ft
14,422.99	7,561.00	-5,768.22	3,657.47	TD Well @ 14422.99ft