

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-15 JDB 16-15HZ PAD
JDB 15-7HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.045485/-104.757741
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 15-7HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1523.46	9-5/8
7448.00	8573.28	5-1/2

WELL DETAILS: JDB 15-7HZ

GL = 5152.00

RKB = 17" @ 5169.00usft (Drilling Rig)

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	1803.33	23.30	102.00	1760.87	-64.77	304.70	1.50	102.00	-53.40	
4	3303.33	23.30	102.00	3138.54	-188.12	885.06	0.00	0.00	-155.10	
5	3728.34	28.00	112.00	3521.74	-243.03	1059.96	1.50	47.24	-203.47	
6	7333.75	28.00	112.00	6705.13	-877.10	2629.34	0.00	0.00	-778.77	
7	8573.28	89.98	2.13	7448.00	-184.61	3026.62	8.00	-107.71	-72.00	
8	13468.03	89.98	2.13	7450.00	4706.76	3208.29	0.00	0.00	4822.75	JDB 15-7HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
JDB 15-7HZ_SHL	0.00	0.00	0.00	40.045485	-104.757741
JDB 15-7HZ_BHL	7450.00	4706.76	3208.29	40.058410	-104.746275

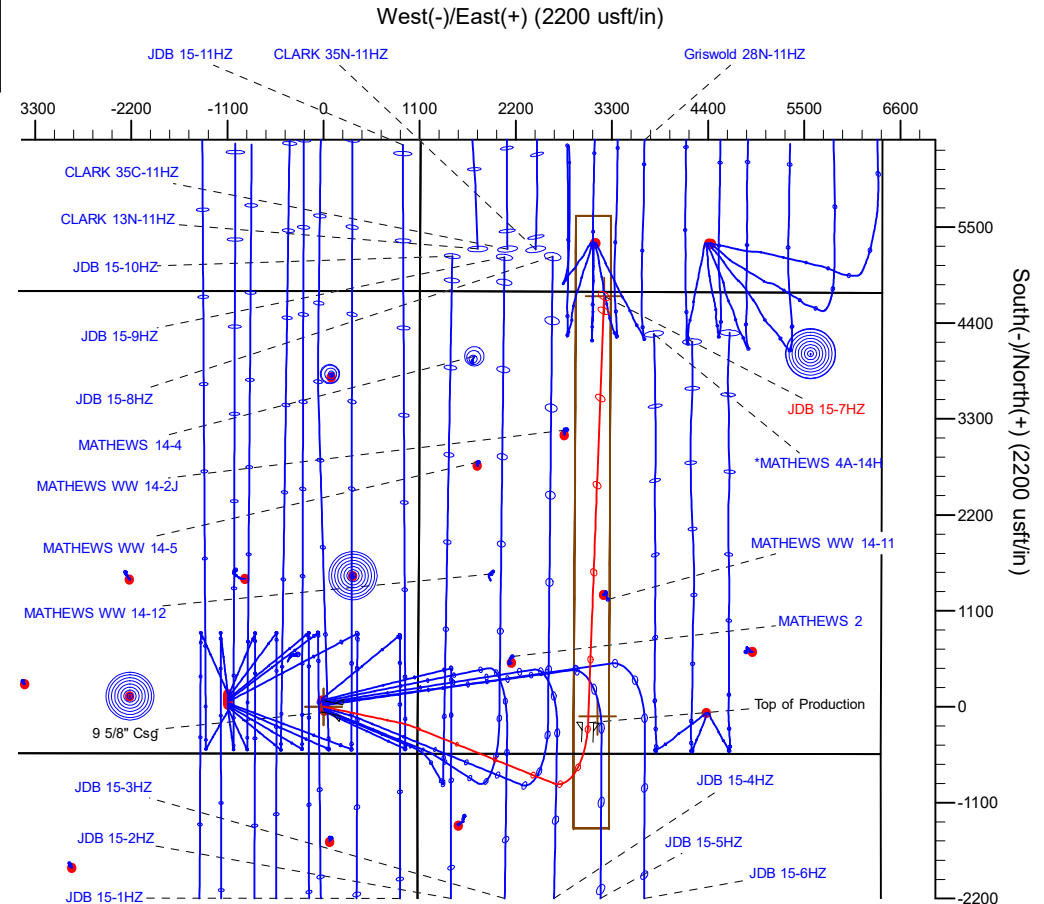
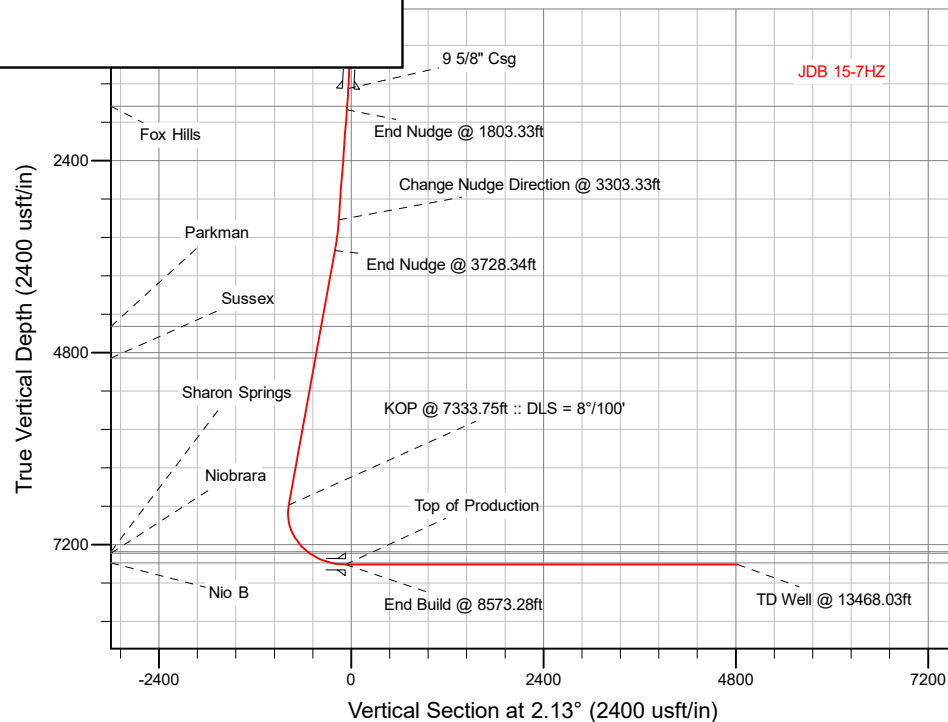
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1719.00	1757.86	Fox Hills
4472.00	4804.58	Parkman
4868.00	5253.07	Sussex
7289.00	8057.92	Sharon Springs
7309.00	8092.82	Niobrara
7428.00	8394.17	Nio B

SHL
538' FSL
1076' FEL

HEEL
355' FSL
1950' FWL

TOE
50' FNL
2107' FWL



Plan: Permit Rev-1 (JDB 15-7HZ/Plan A)

Date: 7/22/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-7HZ
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 15-7HZ	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 15-7HZ					
Well Position	+N/-S	-87.39 usft	Northing:	14,543,388.68 usft	Latitude:	40.045485
	+E/-W	21.27 usft	Easting:	1,708,216.53 usft	Longitude:	-104.757741
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	52,084.72246727

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	2.13

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+I Fixed:v2:crustal field declinatio
2	1,500.00	13,468.03	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

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 15-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	
1,803.33	23.30	102.00	1,760.87	-64.77	304.70	1.50	1.50	0.00	102.00	
3,303.33	23.30	102.00	3,138.54	-188.12	885.06	0.00	0.00	0.00	0.00	
3,728.34	28.00	112.00	3,521.74	-243.03	1,059.96	1.50	1.11	2.35	47.24	
7,333.75	28.00	112.00	6,705.13	-877.10	2,629.34	0.00	0.00	0.00	0.00	
8,573.28	89.98	2.13	7,448.00	-184.61	3,026.62	8.00	5.00	-8.86	-107.71	
13,468.03	89.98	2.13	7,450.00	4,706.76	3,208.29	0.00	0.00	0.00	0.00	JDB 15-7HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-7HZ
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 15-7HZ	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	102.00	300.00	-0.07	0.32	-0.06	1.50	1.50	0.00
400.00	2.25	102.00	399.96	-0.61	2.88	-0.50	1.50	1.50	0.00
500.00	3.75	102.00	499.82	-1.70	8.00	-1.40	1.50	1.50	0.00
600.00	5.25	102.00	599.51	-3.33	15.67	-2.75	1.50	1.50	0.00
700.00	6.75	102.00	698.96	-5.50	25.90	-4.54	1.50	1.50	0.00
800.00	8.25	102.00	798.10	-8.22	38.66	-6.78	1.50	1.50	0.00
900.00	9.75	102.00	896.87	-11.47	53.97	-9.46	1.50	1.50	0.00
1,000.00	11.25	102.00	995.19	-15.26	71.79	-12.58	1.50	1.50	0.00
1,100.00	12.75	102.00	1,093.00	-19.58	92.13	-16.14	1.50	1.50	0.00
1,200.00	14.25	102.00	1,190.24	-24.44	114.96	-20.15	1.50	1.50	0.00
1,300.00	15.75	102.00	1,286.83	-29.82	140.28	-24.58	1.50	1.50	0.00
1,400.00	17.25	102.00	1,382.71	-35.72	168.06	-29.45	1.50	1.50	0.00
1,500.00	18.75	102.00	1,477.81	-42.15	198.28	-34.75	1.50	1.50	0.00
1,523.46	19.10	102.00	1,500.00	-43.73	205.73	-36.05	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	102.00	1,572.07	-49.09	230.93	-40.47	1.50	1.50	0.00
1,700.00	21.75	102.00	1,665.43	-56.54	265.99	-46.61	1.50	1.50	0.00
1,757.86	22.62	102.00	1,719.00	-61.08	287.35	-50.36	1.50	1.50	0.00
Fox Hills									
1,800.00	23.25	102.00	1,757.81	-64.49	303.42	-53.17	1.50	1.50	0.00
1,803.33	23.30	102.00	1,760.87	-64.77	304.70	-53.40	1.50	1.50	0.00
End Nudge @ 1803.33ft									
1,900.00	23.30	102.00	1,849.66	-72.72	342.11	-59.95	0.00	0.00	0.00
2,000.00	23.30	102.00	1,941.50	-80.94	380.80	-66.73	0.00	0.00	0.00
2,100.00	23.30	102.00	2,033.34	-89.16	419.49	-73.51	0.00	0.00	0.00
2,200.00	23.30	102.00	2,125.19	-97.39	458.18	-80.29	0.00	0.00	0.00
2,300.00	23.30	102.00	2,217.03	-105.61	496.87	-87.07	0.00	0.00	0.00
2,400.00	23.30	102.00	2,308.88	-113.84	535.56	-93.85	0.00	0.00	0.00
2,500.00	23.30	102.00	2,400.72	-122.06	574.25	-100.63	0.00	0.00	0.00
2,600.00	23.30	102.00	2,492.57	-130.28	612.94	-107.41	0.00	0.00	0.00
2,700.00	23.30	102.00	2,584.41	-138.51	651.63	-114.19	0.00	0.00	0.00
2,800.00	23.30	102.00	2,676.26	-146.73	690.32	-120.97	0.00	0.00	0.00
2,900.00	23.30	102.00	2,768.10	-154.96	729.01	-127.75	0.00	0.00	0.00
3,000.00	23.30	102.00	2,859.95	-163.18	767.70	-134.53	0.00	0.00	0.00
3,100.00	23.30	102.00	2,951.79	-171.40	806.39	-141.31	0.00	0.00	0.00
3,200.00	23.30	102.00	3,043.64	-179.63	845.08	-148.09	0.00	0.00	0.00
3,300.00	23.30	102.00	3,135.48	-187.85	883.77	-154.87	0.00	0.00	0.00
3,303.33	23.30	102.00	3,138.54	-188.12	885.06	-155.10	0.00	0.00	0.00
Change Nudge Direction @ 3303.33ft									
3,400.00	24.31	104.59	3,226.99	-197.11	923.01	-162.67	1.50	1.04	2.68
3,500.00	25.39	107.06	3,317.73	-208.58	963.43	-172.63	1.50	1.08	2.47
3,600.00	26.51	109.33	3,407.65	-222.26	1,004.99	-184.75	1.50	1.12	2.28
3,700.00	27.67	111.43	3,496.68	-238.13	1,047.66	-199.03	1.50	1.16	2.10
3,728.34	28.00	112.00	3,521.74	-243.03	1,059.96	-203.47	1.50	1.17	2.00
End Nudge @ 3728.34ft									
3,800.00	28.00	112.00	3,585.01	-255.63	1,091.15	-214.90	0.00	0.00	0.00
3,900.00	28.00	112.00	3,673.31	-273.22	1,134.68	-230.86	0.00	0.00	0.00
4,000.00	28.00	112.00	3,761.60	-290.81	1,178.21	-246.81	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-7HZ
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 15-7HZ	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)	
4,100.00	28.00	112.00	3,849.90	-308.39	1,221.73	-262.77	0.00	0.00	0.00	
4,200.00	28.00	112.00	3,938.19	-325.98	1,265.26	-278.73	0.00	0.00	0.00	
4,300.00	28.00	112.00	4,026.49	-343.57	1,308.79	-294.68	0.00	0.00	0.00	
4,400.00	28.00	112.00	4,114.78	-361.15	1,352.32	-310.64	0.00	0.00	0.00	
4,500.00	28.00	112.00	4,203.08	-378.74	1,395.85	-326.60	0.00	0.00	0.00	
4,600.00	28.00	112.00	4,291.37	-396.33	1,439.38	-342.55	0.00	0.00	0.00	
4,700.00	28.00	112.00	4,379.66	-413.91	1,482.91	-358.51	0.00	0.00	0.00	
4,800.00	28.00	112.00	4,467.96	-431.50	1,526.43	-374.47	0.00	0.00	0.00	
4,804.58	28.00	112.00	4,472.00	-432.30	1,528.43	-375.20	0.00	0.00	0.00	
Parkman										
4,900.00	28.00	112.00	4,556.25	-449.09	1,569.96	-390.43	0.00	0.00	0.00	
5,000.00	28.00	112.00	4,644.55	-466.67	1,613.49	-406.38	0.00	0.00	0.00	
5,100.00	28.00	112.00	4,732.84	-484.26	1,657.02	-422.34	0.00	0.00	0.00	
5,200.00	28.00	112.00	4,821.14	-501.85	1,700.55	-438.30	0.00	0.00	0.00	
5,253.07	28.00	112.00	4,868.00	-511.18	1,723.65	-446.76	0.00	0.00	0.00	
Sussex										
5,300.00	28.00	112.00	4,909.43	-519.43	1,744.08	-454.25	0.00	0.00	0.00	
5,400.00	28.00	112.00	4,997.73	-537.02	1,787.61	-470.21	0.00	0.00	0.00	
5,500.00	28.00	112.00	5,086.02	-554.61	1,831.14	-486.17	0.00	0.00	0.00	
5,600.00	28.00	112.00	5,174.32	-572.19	1,874.66	-502.12	0.00	0.00	0.00	
5,700.00	28.00	112.00	5,262.61	-589.78	1,918.19	-518.08	0.00	0.00	0.00	
5,800.00	28.00	112.00	5,350.91	-607.37	1,961.72	-534.04	0.00	0.00	0.00	
5,900.00	28.00	112.00	5,439.20	-624.95	2,005.25	-549.99	0.00	0.00	0.00	
6,000.00	28.00	112.00	5,527.50	-642.54	2,048.78	-565.95	0.00	0.00	0.00	
6,100.00	28.00	112.00	5,615.79	-660.13	2,092.31	-581.91	0.00	0.00	0.00	
6,200.00	28.00	112.00	5,704.09	-677.71	2,135.84	-597.86	0.00	0.00	0.00	
6,300.00	28.00	112.00	5,792.38	-695.30	2,179.36	-613.82	0.00	0.00	0.00	
6,400.00	28.00	112.00	5,880.68	-712.89	2,222.89	-629.78	0.00	0.00	0.00	
6,500.00	28.00	112.00	5,968.97	-730.47	2,266.42	-645.73	0.00	0.00	0.00	
6,600.00	28.00	112.00	6,057.27	-748.06	2,309.95	-661.69	0.00	0.00	0.00	
6,700.00	28.00	112.00	6,145.56	-765.65	2,353.48	-677.65	0.00	0.00	0.00	
6,800.00	28.00	112.00	6,233.85	-783.23	2,397.01	-693.60	0.00	0.00	0.00	
6,900.00	28.00	112.00	6,322.15	-800.82	2,440.54	-709.56	0.00	0.00	0.00	
7,000.00	28.00	112.00	6,410.44	-818.41	2,484.06	-725.52	0.00	0.00	0.00	
7,100.00	28.00	112.00	6,498.74	-835.99	2,527.59	-741.47	0.00	0.00	0.00	
7,200.00	28.00	112.00	6,587.03	-853.58	2,571.12	-757.43	0.00	0.00	0.00	
7,300.00	28.00	112.00	6,675.33	-871.17	2,614.65	-773.39	0.00	0.00	0.00	
7,333.75	28.00	112.00	6,705.13	-877.10	2,629.34	-778.77	0.00	0.00	0.00	
KOP @ 7333.75ft :: DLS = 8°/100'										
7,400.00	26.83	100.76	6,763.98	-885.72	2,658.47	-786.31	8.00	-1.77	-16.97	
7,500.00	26.86	82.98	6,853.35	-887.18	2,703.13	-786.10	8.00	0.03	-17.77	
7,600.00	29.01	66.48	6,941.82	-874.72	2,747.86	-771.99	8.00	2.15	-16.50	
7,700.00	32.87	52.81	7,027.68	-848.60	2,791.78	-744.25	8.00	3.86	-13.68	
7,800.00	37.92	42.05	7,109.25	-809.31	2,834.05	-703.42	8.00	5.04	-10.76	
7,900.00	43.73	33.62	7,184.95	-757.63	2,873.83	-650.30	8.00	5.82	-8.43	
8,000.00	50.05	26.88	7,253.30	-694.56	2,910.36	-585.91	8.00	6.31	-6.75	
8,057.92	53.86	23.53	7,289.00	-653.29	2,929.75	-543.95	8.00	6.58	-5.78	
Sharon Springs										
8,092.82	56.20	21.67	7,309.00	-626.90	2,940.73	-517.17	8.00	6.70	-5.33	
Niobrara										
8,100.00	56.68	21.30	7,312.97	-621.33	2,942.92	-511.52	8.00	6.75	-5.15	
8,200.00	63.53	16.53	7,362.80	-539.36	2,970.88	-428.57	8.00	6.85	-4.77	
8,300.00	70.52	12.30	7,401.82	-450.25	2,993.70	-338.67	8.00	6.99	-4.23	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-7HZ
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 15-7HZ	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)	
8,394.17	77.19	8.64	7,428.00	-361.36	3,010.08	-249.24	8.00	7.08	-3.88	
Nio B										
8,400.00	77.60	8.43	7,429.27	-355.73	3,010.93	-243.58	8.00	7.11	-3.76	
8,500.00	84.74	4.76	7,444.62	-257.65	3,022.23	-145.14	8.00	7.13	-3.67	
8,573.28	89.98	2.13	7,448.00	-184.61	3,026.62	-71.99	8.00	7.15	-3.59	
End Build @ 8573.28ft - Top of Production										
8,600.00	89.98	2.13	7,448.01	-157.91	3,027.61	-45.27	0.00	0.00	0.00	
8,700.00	89.98	2.13	7,448.05	-57.98	3,031.32	54.73	0.00	0.00	0.00	
8,800.00	89.98	2.13	7,448.09	41.95	3,035.03	154.73	0.00	0.00	0.00	
8,900.00	89.98	2.13	7,448.13	141.88	3,038.74	254.73	0.00	0.00	0.00	
9,000.00	89.98	2.13	7,448.17	241.81	3,042.45	354.73	0.00	0.00	0.00	
9,100.00	89.98	2.13	7,448.22	341.75	3,046.17	454.73	0.00	0.00	0.00	
9,200.00	89.98	2.13	7,448.26	441.68	3,049.88	554.73	0.00	0.00	0.00	
9,300.00	89.98	2.13	7,448.30	541.61	3,053.59	654.73	0.00	0.00	0.00	
9,400.00	89.98	2.13	7,448.34	641.54	3,057.30	754.73	0.00	0.00	0.00	
9,500.00	89.98	2.13	7,448.38	741.47	3,061.01	854.73	0.00	0.00	0.00	
9,600.00	89.98	2.13	7,448.42	841.40	3,064.72	954.73	0.00	0.00	0.00	
9,700.00	89.98	2.13	7,448.46	941.33	3,068.44	1,054.73	0.00	0.00	0.00	
9,800.00	89.98	2.13	7,448.50	1,041.26	3,072.15	1,154.73	0.00	0.00	0.00	
9,900.00	89.98	2.13	7,448.54	1,141.19	3,075.86	1,254.73	0.00	0.00	0.00	
10,000.00	89.98	2.13	7,448.58	1,241.13	3,079.57	1,354.73	0.00	0.00	0.00	
10,100.00	89.98	2.13	7,448.62	1,341.06	3,083.28	1,454.73	0.00	0.00	0.00	
10,200.00	89.98	2.13	7,448.67	1,440.99	3,086.99	1,554.73	0.00	0.00	0.00	
10,300.00	89.98	2.13	7,448.71	1,540.92	3,090.71	1,654.73	0.00	0.00	0.00	
10,400.00	89.98	2.13	7,448.75	1,640.85	3,094.42	1,754.73	0.00	0.00	0.00	
10,500.00	89.98	2.13	7,448.79	1,740.78	3,098.13	1,854.73	0.00	0.00	0.00	
10,600.00	89.98	2.13	7,448.83	1,840.71	3,101.84	1,954.73	0.00	0.00	0.00	
10,700.00	89.98	2.13	7,448.87	1,940.64	3,105.55	2,054.73	0.00	0.00	0.00	
10,800.00	89.98	2.13	7,448.91	2,040.57	3,109.26	2,154.73	0.00	0.00	0.00	
10,900.00	89.98	2.13	7,448.95	2,140.51	3,112.98	2,254.73	0.00	0.00	0.00	
11,000.00	89.98	2.13	7,448.99	2,240.44	3,116.69	2,354.73	0.00	0.00	0.00	
11,100.00	89.98	2.13	7,449.03	2,340.37	3,120.40	2,454.73	0.00	0.00	0.00	
11,200.00	89.98	2.13	7,449.07	2,440.30	3,124.11	2,554.73	0.00	0.00	0.00	
11,300.00	89.98	2.13	7,449.11	2,540.23	3,127.82	2,654.73	0.00	0.00	0.00	
11,400.00	89.98	2.13	7,449.16	2,640.16	3,131.53	2,754.73	0.00	0.00	0.00	
11,500.00	89.98	2.13	7,449.20	2,740.09	3,135.24	2,854.73	0.00	0.00	0.00	
11,600.00	89.98	2.13	7,449.24	2,840.02	3,138.96	2,954.73	0.00	0.00	0.00	
11,700.00	89.98	2.13	7,449.28	2,939.95	3,142.67	3,054.73	0.00	0.00	0.00	
11,800.00	89.98	2.13	7,449.32	3,039.88	3,146.38	3,154.73	0.00	0.00	0.00	
11,900.00	89.98	2.13	7,449.36	3,139.82	3,150.09	3,254.73	0.00	0.00	0.00	
12,000.00	89.98	2.13	7,449.40	3,239.75	3,153.80	3,354.73	0.00	0.00	0.00	
12,100.00	89.98	2.13	7,449.44	3,339.68	3,157.51	3,454.73	0.00	0.00	0.00	
12,200.00	89.98	2.13	7,449.48	3,439.61	3,161.23	3,554.73	0.00	0.00	0.00	
12,300.00	89.98	2.13	7,449.52	3,539.54	3,164.94	3,654.73	0.00	0.00	0.00	
12,400.00	89.98	2.13	7,449.56	3,639.47	3,168.65	3,754.73	0.00	0.00	0.00	
12,500.00	89.98	2.13	7,449.60	3,739.40	3,172.36	3,854.73	0.00	0.00	0.00	
12,600.00	89.98	2.13	7,449.65	3,839.33	3,176.07	3,954.73	0.00	0.00	0.00	
12,700.00	89.98	2.13	7,449.69	3,939.26	3,179.78	4,054.73	0.00	0.00	0.00	
12,800.00	89.98	2.13	7,449.73	4,039.20	3,183.50	4,154.73	0.00	0.00	0.00	
12,900.00	89.98	2.13	7,449.77	4,139.13	3,187.21	4,254.73	0.00	0.00	0.00	
13,000.00	89.98	2.13	7,449.81	4,239.06	3,190.92	4,354.73	0.00	0.00	0.00	
13,100.00	89.98	2.13	7,449.85	4,338.99	3,194.63	4,454.73	0.00	0.00	0.00	
13,200.00	89.98	2.13	7,449.89	4,438.92	3,198.34	4,554.73	0.00	0.00	0.00	
13,300.00	89.98	2.13	7,449.93	4,538.85	3,202.05	4,654.73	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JDB 15-7HZ
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 15-7HZ	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)
13,400.00	89.98	2.13	7,449.97	4,638.78	3,205.77	4,754.73	0.00	0.00	0.00
13,468.03	89.98	2.13	7,450.00	4,706.76	3,208.29	4,822.75	0.00	0.00	0.00
TD Well @ 13468.03ft									

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	
8,573.28	7,448.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,757.86	1,719.00	Fox Hills			
4,804.58	4,472.00	Parkman			
5,253.07	4,868.00	Sussex			
8,057.92	7,289.00	Sharon Springs			
8,092.82	7,309.00	Niobrara			
8,394.17	7,428.00	Nio B			

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	Begin Nudge @ 250.00ft	
1,803.33	1,760.87	-64.77	304.70	End Nudge @ 1803.33ft	
3,303.33	3,138.54	-188.12	885.06	Change Nudge Direction @ 3303.33ft	
3,728.34	3,521.74	-243.03	1,059.96	End Nudge @ 3728.34ft	
7,333.75	6,705.13	-877.10	2,629.34	KOP @ 7333.75ft :: DLS = 8°/100'	
8,573.28	7,448.00	-184.61	3,026.62	End Build @ 8573.28ft	
13,468.03	7,450.00	4,706.76	3,208.29	TD Well @ 13468.03ft	