

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-68W-08 YELLOWHAMMER 12-8HZ Pad

YELLOWHAMMER 4C-8HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

16 August, 2016



Azimuths to True North
Magnetic North: 8.28°

Magnetic Field
Strength: 52380.2snT
Dip Angle: 66.56°
Date: 8/15/2016
Model: IGRF2010

SITE: 1N-68W-08 YELLOWHAMMER 12-8HZ Pad

Well: YELLOWHAMMER 4C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1018.00	1023.27	Fox Hills
4185.00	4461.26	Parkman
4613.00	4930.58	Sussex
7404.00	7803.61	Sharon Springs
7445.00	7847.34	Niobrara
7586.00	8009.98	Nio B
7698.00	8153.31	Nio C
7807.00	8393.58	Fort Hayes
7827.00	8470.54	Codell

WELL DETAILS: YELLOWHAMMER 4C-8HZ

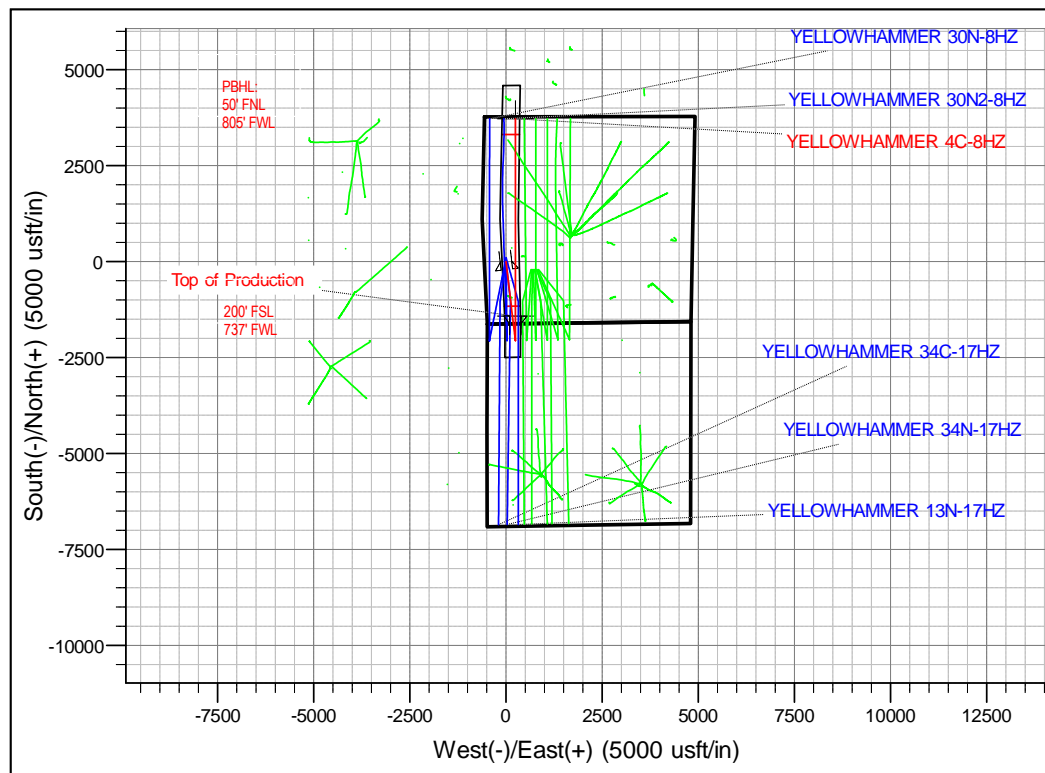
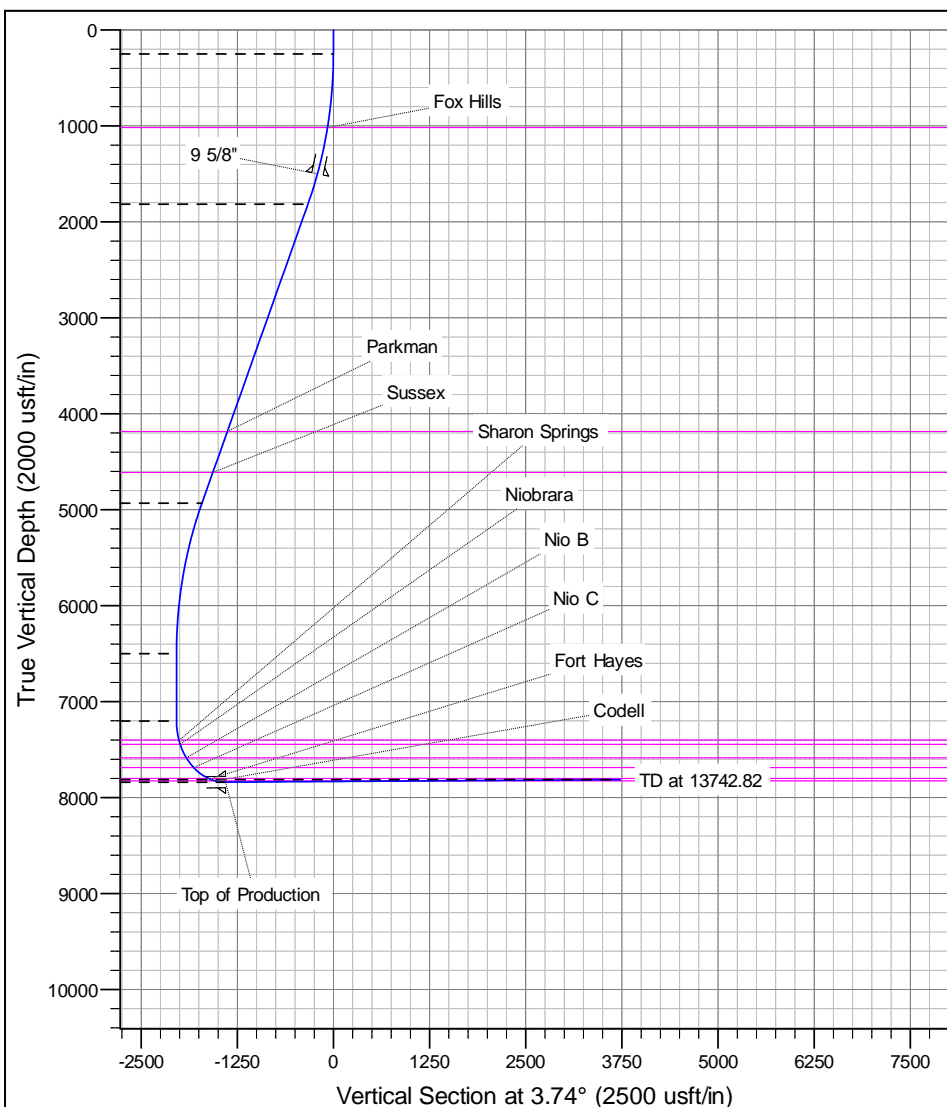
+N/-S	+E/-W	GL: 5063.00 Northing	RKB @ 5080.00usft (Original Well Elev) Easting	Latitude	Longitude	Slot
0.00	0.00	14549548.23	1630522.56	40.062648	-105.035362	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
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
1864.81	24.22	173.27	1817.14	-333.97	39.39	1.50	-330.69
5281.32	24.22	173.27	4932.86	-1726.03	203.57	0.00	-1709.09
6896.13	0.00	0.00	6500.00	-2060.00	242.96	1.50	-2039.78
7599.54	0.00	0.00	7203.40	-2060.00	242.96	0.00	-2039.78
8602.76	90.29	0.00	7840.02	-1420.16	242.96	9.00	-1401.30
13742.82	90.29	0.00	7814.00	3719.84	242.96	0.00	3727.76

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
YELLOWHAMMER 4C-8HZ_PBHL	7814.00	3719.84	242.96	14553267.97	1630767.00	40.072863	-105.034494



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well YELLOWHAMMER 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5080.00usft (Original Well Elev)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5080.00usft (Original Well Elev)
Site:	1N-68W-08 YELLOWHAMMER 12-8HZ Pad	North Reference:	True
Well:	YELLOWHAMMER 4C-8HZ	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-68W-08 YELLOWHAMMER 12-8HZ Pad											
Site Position:						Northing:			14,549,653.10 usft			Latitude:			40.062936		
From:			Lat/Long			Easting:			1,630,523.16 usft			Longitude:			-105.035360		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			-0.02 °		

Well	YELLOWHAMMER 4C-8HZ					
Well Position	+N/-S	-104.87 usft	Northing:	14,549,548.23 usft	Latitude:	40.062648
	+E/-W	-0.56 usft	Easting:	1,630,522.56 usft	Longitude:	-105.035362
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,063.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/15/2016	8.28	66.56	52,380

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	3.74

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	
1,864.81	24.22	173.27	1,817.14	-333.97	39.39	1.50	1.50	0.00	173.27	
5,281.32	24.22	173.27	4,932.86	-1,726.03	203.57	0.00	0.00	0.00	0.00	
6,896.13	0.00	0.00	6,500.00	-2,060.00	242.96	1.50	-1.50	0.00	180.00	
7,599.54	0.00	0.00	7,203.40	-2,060.00	242.96	0.00	0.00	0.00	0.00	
8,602.76	90.29	0.00	7,840.02	-1,420.16	242.96	9.00	9.00	0.00	0.00	
13,742.82	90.29	0.00	7,814.00	3,719.84	242.96	0.00	0.00	0.00	0.00	YELLOWHAMMER

Corporate Planning Report

Database: PLANNING
Company: US ROCKIES WATTENBERG PLANNING
Project: WELD-NAD83-UTMFT13N
Site: 1N-68W-08 YELLOWHAMMER 12-8HZ Pad
Well: YELLOWHAMMER 4C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well YELLOWHAMMER 4C-8HZ
TVD Reference: RKB @ 5080.00usft (Original Well Elev)
MD Reference: RKB @ 5080.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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
300.00	0.75	173.27	300.00	-0.32	0.04	-0.32	1.50	1.50	0.00
400.00	2.25	173.27	399.96	-2.92	0.34	-2.90	1.50	1.50	0.00
500.00	3.75	173.27	499.82	-8.12	0.96	-8.04	1.50	1.50	0.00
600.00	5.25	173.27	599.51	-15.91	1.88	-15.76	1.50	1.50	0.00
700.00	6.75	173.27	698.96	-26.29	3.10	-26.04	1.50	1.50	0.00
800.00	8.25	173.27	798.10	-39.26	4.63	-38.87	1.50	1.50	0.00
900.00	9.75	173.27	896.87	-54.79	6.46	-54.25	1.50	1.50	0.00
1,000.00	11.25	173.27	995.19	-72.89	8.60	-72.17	1.50	1.50	0.00
1,023.27	11.60	173.27	1,018.00	-77.47	9.14	-76.71	1.50	1.50	0.00
Fox Hills									
1,100.00	12.75	173.27	1,093.00	-93.54	11.03	-92.62	1.50	1.50	0.00
1,200.00	14.25	173.27	1,190.24	-116.72	13.77	-115.57	1.50	1.50	0.00
1,300.00	15.75	173.27	1,286.83	-142.42	16.80	-141.03	1.50	1.50	0.00
1,400.00	17.25	173.27	1,382.71	-170.63	20.12	-168.95	1.50	1.50	0.00
1,500.00	18.75	173.27	1,477.81	-201.32	23.74	-199.34	1.50	1.50	0.00
1,523.46	19.10	173.27	1,500.00	-208.87	24.63	-206.82	1.50	1.50	0.00
9 5/8"									
1,600.00	20.25	173.27	1,572.07	-234.47	27.65	-232.17	1.50	1.50	0.00
1,700.00	21.75	173.27	1,665.43	-270.06	31.85	-267.41	1.50	1.50	0.00
1,800.00	23.25	173.27	1,757.81	-308.06	36.33	-305.04	1.50	1.50	0.00
1,864.81	24.22	173.27	1,817.14	-333.97	39.39	-330.69	1.50	1.50	0.00
1,900.00	24.22	173.27	1,849.23	-348.31	41.08	-344.89	0.00	0.00	0.00
2,000.00	24.22	173.27	1,940.43	-389.05	45.89	-385.23	0.00	0.00	0.00
2,100.00	24.22	173.27	2,031.62	-429.80	50.69	-425.58	0.00	0.00	0.00
2,200.00	24.22	173.27	2,122.82	-470.54	55.50	-465.92	0.00	0.00	0.00
2,300.00	24.22	173.27	2,214.01	-511.29	60.30	-506.27	0.00	0.00	0.00
2,400.00	24.22	173.27	2,305.21	-552.03	65.11	-546.61	0.00	0.00	0.00
2,500.00	24.22	173.27	2,396.41	-592.78	69.91	-586.96	0.00	0.00	0.00
2,600.00	24.22	173.27	2,487.60	-633.52	74.72	-627.31	0.00	0.00	0.00
2,700.00	24.22	173.27	2,578.80	-674.27	79.52	-667.65	0.00	0.00	0.00
2,800.00	24.22	173.27	2,669.99	-715.01	84.33	-708.00	0.00	0.00	0.00
2,900.00	24.22	173.27	2,761.19	-755.76	89.14	-748.34	0.00	0.00	0.00
3,000.00	24.22	173.27	2,852.39	-796.50	93.94	-788.69	0.00	0.00	0.00
3,100.00	24.22	173.27	2,943.58	-837.25	98.75	-829.03	0.00	0.00	0.00
3,200.00	24.22	173.27	3,034.78	-877.99	103.55	-869.38	0.00	0.00	0.00
3,300.00	24.22	173.27	3,125.98	-918.74	108.36	-909.72	0.00	0.00	0.00
3,400.00	24.22	173.27	3,217.17	-959.48	113.16	-950.07	0.00	0.00	0.00
3,500.00	24.22	173.27	3,308.37	-1,000.23	117.97	-990.41	0.00	0.00	0.00
3,600.00	24.22	173.27	3,399.56	-1,040.97	122.77	-1,030.76	0.00	0.00	0.00
3,700.00	24.22	173.27	3,490.76	-1,081.72	127.58	-1,071.10	0.00	0.00	0.00
3,800.00	24.22	173.27	3,581.96	-1,122.47	132.39	-1,111.45	0.00	0.00	0.00
3,900.00	24.22	173.27	3,673.15	-1,163.21	137.19	-1,151.80	0.00	0.00	0.00
4,000.00	24.22	173.27	3,764.35	-1,203.96	142.00	-1,192.14	0.00	0.00	0.00
4,100.00	24.22	173.27	3,855.54	-1,244.70	146.80	-1,232.49	0.00	0.00	0.00
4,200.00	24.22	173.27	3,946.74	-1,285.45	151.61	-1,272.83	0.00	0.00	0.00
4,300.00	24.22	173.27	4,037.94	-1,326.19	156.41	-1,313.18	0.00	0.00	0.00
4,400.00	24.22	173.27	4,129.13	-1,366.94	161.22	-1,353.52	0.00	0.00	0.00
4,461.26	24.22	173.27	4,185.00	-1,391.90	164.16	-1,378.24	0.00	0.00	0.00
Parkman									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well YELLOWHAMMER 4C-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5080.00usft (Original Well Elev)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5080.00usft (Original Well Elev)
Site:	1N-68W-08 YELLOWHAMMER 12-8HZ Pad	North Reference:	True
Well:	YELLOWHAMMER 4C-8HZ	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)
4,500.00	24.22	173.27	4,220.33	-1,407.68	166.02	-1,393.87	0.00	0.00	0.00
4,600.00	24.22	173.27	4,311.52	-1,448.43	170.83	-1,434.21	0.00	0.00	0.00
4,700.00	24.22	173.27	4,402.72	-1,489.17	175.64	-1,474.56	0.00	0.00	0.00
4,800.00	24.22	173.27	4,493.92	-1,529.92	180.44	-1,514.90	0.00	0.00	0.00
4,900.00	24.22	173.27	4,585.11	-1,570.66	185.25	-1,555.25	0.00	0.00	0.00
4,930.58	24.22	173.27	4,613.00	-1,583.12	186.72	-1,567.59	0.00	0.00	0.00
Sussex									
5,000.00	24.22	173.27	4,676.31	-1,611.41	190.05	-1,595.59	0.00	0.00	0.00
5,100.00	24.22	173.27	4,767.51	-1,652.15	194.86	-1,635.94	0.00	0.00	0.00
5,200.00	24.22	173.27	4,858.70	-1,692.90	199.66	-1,676.29	0.00	0.00	0.00
5,281.32	24.22	173.27	4,932.86	-1,726.03	203.57	-1,709.09	0.00	0.00	0.00
5,300.00	23.94	173.27	4,949.92	-1,733.60	204.46	-1,716.59	1.50	-1.50	0.00
5,400.00	22.44	173.27	5,041.83	-1,772.71	209.08	-1,755.32	1.50	-1.50	0.00
5,500.00	20.94	173.27	5,134.75	-1,809.42	213.41	-1,791.66	1.50	-1.50	0.00
5,600.00	19.44	173.27	5,228.60	-1,843.70	217.45	-1,825.60	1.50	-1.50	0.00
5,700.00	17.94	173.27	5,323.32	-1,875.52	221.20	-1,857.12	1.50	-1.50	0.00
5,800.00	16.44	173.27	5,418.85	-1,904.88	224.66	-1,886.18	1.50	-1.50	0.00
5,900.00	14.94	173.27	5,515.12	-1,931.73	227.83	-1,912.78	1.50	-1.50	0.00
6,000.00	13.44	173.27	5,612.07	-1,956.08	230.70	-1,936.89	1.50	-1.50	0.00
6,100.00	11.94	173.27	5,709.62	-1,977.90	233.28	-1,958.49	1.50	-1.50	0.00
6,200.00	10.44	173.27	5,807.72	-1,997.18	235.55	-1,977.58	1.50	-1.50	0.00
6,300.00	8.94	173.27	5,906.29	-2,013.90	237.52	-1,994.13	1.50	-1.50	0.00
6,400.00	7.44	173.27	6,005.26	-2,028.05	239.19	-2,008.14	1.50	-1.50	0.00
6,500.00	5.94	173.27	6,104.58	-2,039.62	240.56	-2,019.60	1.50	-1.50	0.00
6,600.00	4.44	173.27	6,204.17	-2,048.61	241.62	-2,028.50	1.50	-1.50	0.00
6,700.00	2.94	173.27	6,303.96	-2,055.00	242.37	-2,034.83	1.50	-1.50	0.00
6,800.00	1.44	173.27	6,403.88	-2,058.80	242.82	-2,038.60	1.50	-1.50	0.00
6,896.13	0.00	0.00	6,500.00	-2,060.00	242.96	-2,039.78	1.50	-1.50	0.00
6,900.00	0.00	0.00	6,503.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,603.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,100.00	0.00	0.00	6,703.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,200.00	0.00	0.00	6,803.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,300.00	0.00	0.00	6,903.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,400.00	0.00	0.00	7,003.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,500.00	0.00	0.00	7,103.87	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,599.54	0.00	0.00	7,203.40	-2,060.00	242.96	-2,039.78	0.00	0.00	0.00
7,600.00	0.04	0.00	7,203.87	-2,060.00	242.96	-2,039.78	9.00	9.00	0.00
7,700.00	9.04	0.00	7,303.45	-2,052.09	242.96	-2,031.89	9.00	9.00	0.00
7,800.00	18.04	0.00	7,400.57	-2,028.70	242.96	-2,008.55	9.00	9.00	0.00
7,803.61	18.37	0.00	7,404.00	-2,027.57	242.96	-2,007.42	9.00	9.00	0.00
Sharon Springs									
7,847.34	22.30	0.00	7,445.00	-2,012.38	242.96	-1,992.26	9.00	9.00	0.00
Niobrara									
7,900.00	27.04	0.00	7,492.84	-1,990.40	242.96	-1,970.33	9.00	9.00	0.00
8,000.00	36.04	0.00	7,577.98	-1,938.14	242.96	-1,918.19	9.00	9.00	0.00
8,009.98	36.94	0.00	7,586.00	-1,932.21	242.96	-1,912.26	9.00	9.00	0.00
Nio B									
8,100.00	45.04	0.00	7,653.89	-1,873.21	242.96	-1,853.39	9.00	9.00	0.00
8,150.32	49.57	0.00	7,688.00	-1,836.24	242.96	-1,816.50	9.00	9.00	0.00
Nio C									
8,200.00	54.04	0.00	7,718.71	-1,797.20	242.96	-1,777.54	9.00	9.00	0.00
8,300.00	63.04	0.00	7,770.85	-1,711.99	242.96	-1,692.51	9.00	9.00	0.00
8,393.58	71.46	0.00	7,807.00	-1,625.76	242.96	-1,606.47	9.00	9.00	0.00

Corporate Planning Report

Database: PLANNING
Company: US ROCKIES WATTENBERG PLANNING
Project: WELD-NAD83-UTMFT13N
Site: 1N-68W-08 YELLOWHAMMER 12-8HZ Pad
Well: YELLOWHAMMER 4C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well YELLOWHAMMER 4C-8HZ
TVD Reference: RKB @ 5080.00usft (Original Well Elev)
MD Reference: RKB @ 5080.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
Fort Hayes									
8,400.00	72.04	0.00	7,809.01	-1,619.66	242.96	-1,600.39	9.00	9.00	0.00
8,470.54	78.39	0.00	7,827.00	-1,551.49	242.96	-1,532.36	9.00	9.00	0.00
Codell									
8,500.00	81.04	0.00	7,832.26	-1,522.51	242.96	-1,503.44	9.00	9.00	0.00
8,600.00	90.04	0.00	7,840.02	-1,422.92	242.96	-1,404.05	9.00	9.00	0.00
8,602.76	90.29	0.00	7,840.02	-1,420.16	242.96	-1,401.30	8.99	8.99	0.00
Top of Production - YELLOWHAMMER 4C-8HZ_PHL									
8,700.00	90.29	0.00	7,839.52	-1,322.92	242.96	-1,304.27	0.00	0.00	0.00
8,800.00	90.29	0.00	7,839.02	-1,222.92	242.96	-1,204.48	0.00	0.00	0.00
8,900.00	90.29	0.00	7,838.51	-1,122.92	242.96	-1,104.70	0.00	0.00	0.00
9,000.00	90.29	0.00	7,838.01	-1,022.92	242.96	-1,004.91	0.00	0.00	0.00
9,100.00	90.29	0.00	7,837.50	-922.92	242.96	-905.12	0.00	0.00	0.00
9,200.00	90.29	0.00	7,836.99	-822.92	242.96	-805.34	0.00	0.00	0.00
9,300.00	90.29	0.00	7,836.49	-722.92	242.96	-705.55	0.00	0.00	0.00
9,400.00	90.29	0.00	7,835.98	-622.93	242.96	-605.77	0.00	0.00	0.00
9,500.00	90.29	0.00	7,835.47	-522.93	242.96	-505.98	0.00	0.00	0.00
9,600.00	90.29	0.00	7,834.97	-422.93	242.96	-406.19	0.00	0.00	0.00
9,700.00	90.29	0.00	7,834.46	-322.93	242.96	-306.41	0.00	0.00	0.00
9,800.00	90.29	0.00	7,833.96	-222.93	242.96	-206.62	0.00	0.00	0.00
9,900.00	90.29	0.00	7,833.45	-122.93	242.96	-106.84	0.00	0.00	0.00
10,000.00	90.29	0.00	7,832.94	-22.93	242.96	-7.05	0.00	0.00	0.00
10,100.00	90.29	0.00	7,832.44	77.07	242.96	92.74	0.00	0.00	0.00
10,200.00	90.29	0.00	7,831.93	177.06	242.96	192.52	0.00	0.00	0.00
10,300.00	90.29	0.00	7,831.43	277.06	242.96	292.31	0.00	0.00	0.00
10,400.00	90.29	0.00	7,830.92	377.06	242.96	392.09	0.00	0.00	0.00
10,500.00	90.29	0.00	7,830.41	477.06	242.96	491.88	0.00	0.00	0.00
10,600.00	90.29	0.00	7,829.91	577.06	242.96	591.67	0.00	0.00	0.00
10,700.00	90.29	0.00	7,829.40	677.06	242.96	691.45	0.00	0.00	0.00
10,800.00	90.29	0.00	7,828.90	777.06	242.96	791.24	0.00	0.00	0.00
10,900.00	90.29	0.00	7,828.39	877.06	242.96	891.03	0.00	0.00	0.00
11,000.00	90.29	0.00	7,827.88	977.05	242.96	990.81	0.00	0.00	0.00
11,100.00	90.29	0.00	7,827.38	1,077.05	242.96	1,090.60	0.00	0.00	0.00
11,200.00	90.29	0.00	7,826.87	1,177.05	242.96	1,190.38	0.00	0.00	0.00
11,300.00	90.29	0.00	7,826.36	1,277.05	242.96	1,290.17	0.00	0.00	0.00
11,400.00	90.29	0.00	7,825.86	1,377.05	242.96	1,389.96	0.00	0.00	0.00
11,500.00	90.29	0.00	7,825.35	1,477.05	242.96	1,489.74	0.00	0.00	0.00
11,600.00	90.29	0.00	7,824.85	1,577.05	242.96	1,589.53	0.00	0.00	0.00
11,700.00	90.29	0.00	7,824.34	1,677.04	242.96	1,689.31	0.00	0.00	0.00
11,800.00	90.29	0.00	7,823.83	1,777.04	242.96	1,789.10	0.00	0.00	0.00
11,900.00	90.29	0.00	7,823.33	1,877.04	242.96	1,888.89	0.00	0.00	0.00
12,000.00	90.29	0.00	7,822.82	1,977.04	242.96	1,988.67	0.00	0.00	0.00
12,100.00	90.29	0.00	7,822.32	2,077.04	242.96	2,088.46	0.00	0.00	0.00
12,200.00	90.29	0.00	7,821.81	2,177.04	242.96	2,188.24	0.00	0.00	0.00
12,300.00	90.29	0.00	7,821.30	2,277.04	242.96	2,288.03	0.00	0.00	0.00
12,400.00	90.29	0.00	7,820.80	2,377.04	242.96	2,387.82	0.00	0.00	0.00
12,500.00	90.29	0.00	7,820.29	2,477.03	242.96	2,487.60	0.00	0.00	0.00
12,600.00	90.29	0.00	7,819.78	2,577.03	242.96	2,587.39	0.00	0.00	0.00
12,700.00	90.29	0.00	7,819.28	2,677.03	242.96	2,687.18	0.00	0.00	0.00
12,800.00	90.29	0.00	7,818.77	2,777.03	242.96	2,786.96	0.00	0.00	0.00
12,900.00	90.29	0.00	7,818.27	2,877.03	242.96	2,886.75	0.00	0.00	0.00
13,000.00	90.29	0.00	7,817.76	2,977.03	242.96	2,986.53	0.00	0.00	0.00
13,100.00	90.29	0.00	7,817.25	3,077.03	242.96	3,086.32	0.00	0.00	0.00

Corporate Planning Report

Database: PLANNING
Company: US ROCKIES WATTENBERG PLANNING
Project: WELD-NAD83-UTMFT13N
Site: 1N-68W-08 YELLOWHAMMER 12-8HZ Pad
Well: YELLOWHAMMER 4C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well YELLOWHAMMER 4C-8HZ
TVD Reference: RKB @ 5080.00usft (Original Well Elev)
MD Reference: RKB @ 5080.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	90.29	0.00	7,816.75	3,177.03	242.96	3,186.11	0.00	0.00	0.00	
13,300.00	90.29	0.00	7,816.24	3,277.02	242.96	3,285.89	0.00	0.00	0.00	
13,400.00	90.29	0.00	7,815.74	3,377.02	242.96	3,385.68	0.00	0.00	0.00	
13,500.00	90.29	0.00	7,815.23	3,477.02	242.96	3,485.46	0.00	0.00	0.00	
13,600.00	90.29	0.00	7,814.72	3,577.02	242.96	3,585.25	0.00	0.00	0.00	
13,700.00	90.29	0.00	7,814.22	3,677.02	242.96	3,685.04	0.00	0.00	0.00	
13,742.82	90.29	0.00	7,814.00	3,719.84	242.96	3,727.76	0.00	0.00	0.00	
YELLOWHAMMER 4C-8HZ_PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
YELLOWHAMMER 4C	0.00	0.00	7,814.00	3,719.84	242.96	14,553,267.97	1,630,767.00	40.072863	-105.034494	
- plan hits target center										
- Point										
YELLOWHAMMER 4C	0.00	0.00	7,840.02	-1,420.16	242.96	14,548,127.98	1,630,764.95	40.058748	-105.034494	
- plan hits target center										
- Point										

Casing Points									
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (")	Hole Diameter (")			
1,523.46	1,500.00	9 5/8"			9-5/8	13-1/2			
8,602.76	7,840.02	Top of Production			5-1/2	8-1/2			

Formations									
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)				
1,023.27	1,018.00	Fox Hills							
4,461.26	4,185.00	Parkman							
4,930.58	4,613.00	Sussex							
7,803.61	7,404.00	Sharon Springs							
7,847.34	7,445.00	Niobrara							
8,009.98	7,586.00	Nio B							
8,150.32	7,688.00	Nio C							
8,393.58	7,807.00	Fort Hayes							
8,470.54	7,827.00	Codell							