

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CHRISTNER 8-66-5-3H

CHRISTNER 8-66-5-3H

CHRISTNER 8-66-5-3H

Plan: CHRISTNER 8-66-5-3H (wp01)

Standard Planning Report

05 May, 2011





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Azimuths to True North

Magnetic North: 8.93°

Magnetic Field

Strength: 53290.6snT

Dip Angle: 67.29°

Date: 5/4/2011

Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83

Site: WELD CHRISTNER 8-66-5-3H

Well: CHRISTNER 8-66-5-3H

Wellbore: CHRISTNER 8-66-5-3H

Section: SHL:

Design: CHRISTNER 8-66-5-3H (wp01)

Latitude: 40.695658

Longitude: -104.805250

GL: 5192.00

KB: 25' RKB + 5192' GL @ 5217.00ft

WELL DETAILS: CHRISTNER 8-66-5-3H						
+N/-S	+E/-W	Northing	Ground Level: Easting	5192.00 Latitude	Longitude	Slot
0.00	0.00	1497026.32	3192649.20	40.695658	-104.805250	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
CHRISTNER 8-66-5-3H BHL	7294.00	-4083.34	-252.10	40.684450	-104.806159	Point

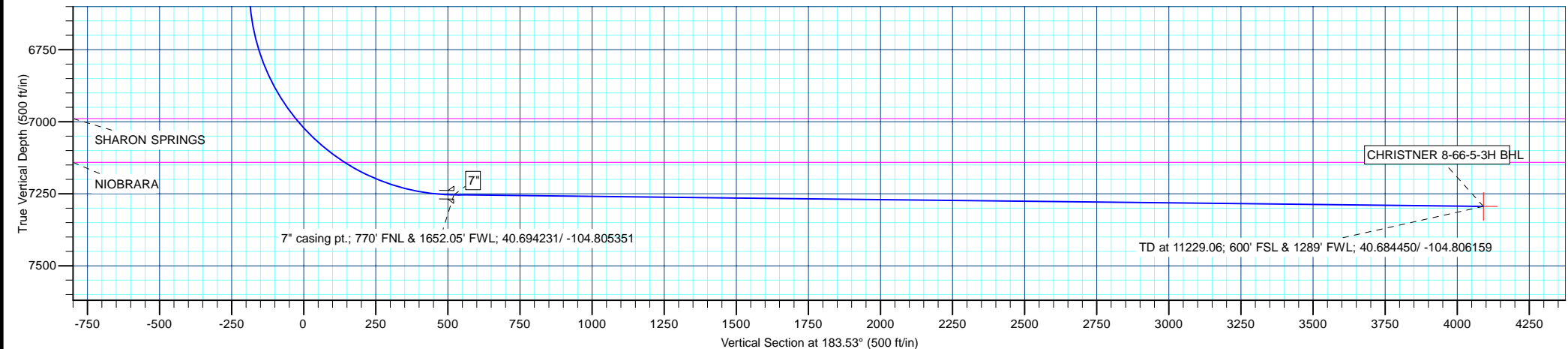
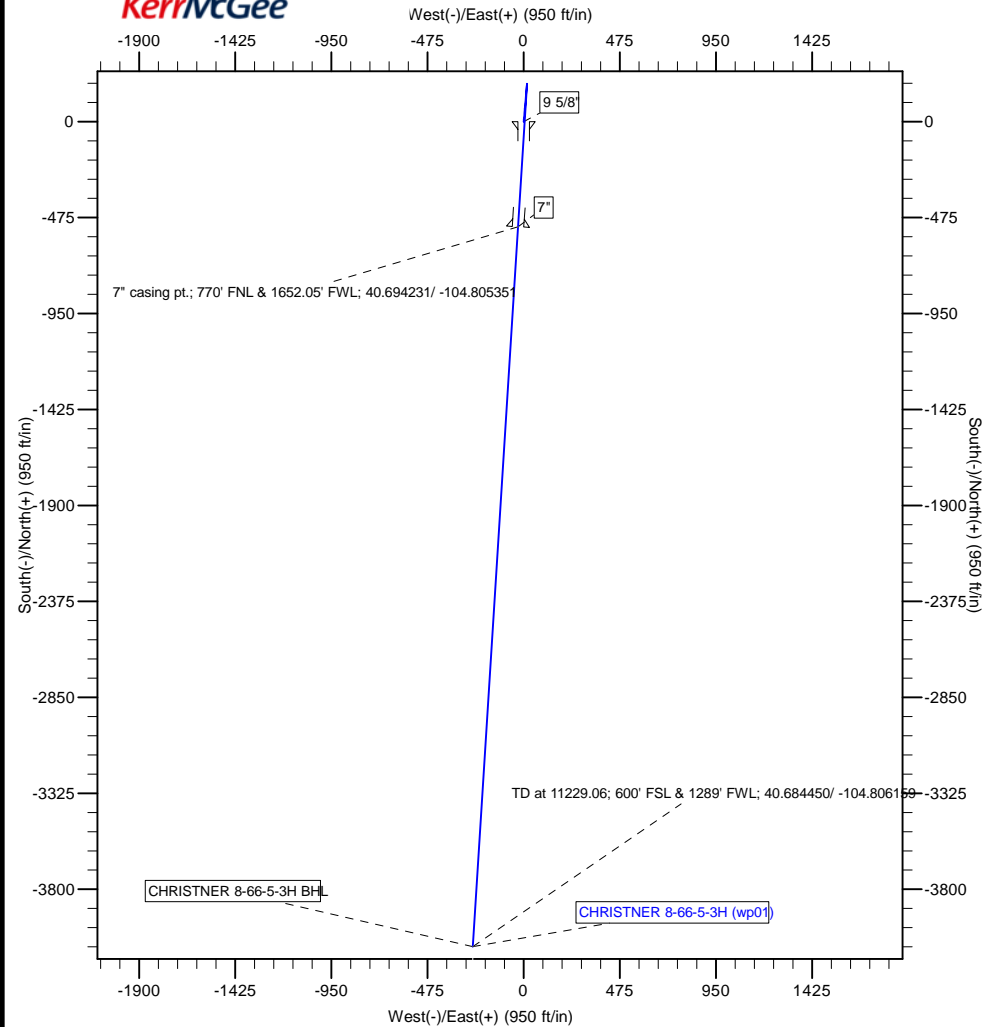
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1090.00	0.00	0.00	1090.00	0.00	0.00	0.00	0.00	0.00	
1189.89	2.00	4.85	1189.87	1.74	0.15	2.00	4.85	-1.74	
6516.14	2.00	4.85	6512.88	186.75	15.83	0.00	0.00	-187.37	
7658.45	89.39	183.59	7254.00	-520.00	-27.95	8.00	178.74	520.73	
7661.52	89.36	183.60	7254.03	-523.07	-28.14	1.00	162.03	523.81	
11229.06	89.36	183.60	7294.00	-4083.34	-252.10	0.00	0.00	4091.12	CHRISTNER 8-66-5-3H BHL

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
788.00	788.00	FOX HILLS
3832.00	3833.63	PARKMAN
4597.00	4599.09	SUSSEX
5023.00	5025.35	SHANNON
6989.00	7029.17	SHARON SPRINGS
7141.00	7258.22	NIOBRARA

CASING DETAILS			
TVD	MD	Name	Size
940.00	940.00	9 5/8"	9-5/8
7254.00	7658.45	7"	7



Weatherford®



Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_CHRISTNER 8-66-5-3H			
Site Position:		Northing:	1,497,026.34 ft	Latitude:	40.695658
From:	Lat/Long	Easting:	3,192,649.20 ft	Longitude:	-104.805250
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.45 °

Well	CHRISTNER 8-66-5-3H					
Well Position	+N/-S	-0.01 ft	Northing:	1,497,026.33 ft	Latitude:	40.695658
	+E/-W	0.00 ft	Easting:	3,192,649.20 ft	Longitude:	-104.805250
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,192.00 ft

Wellbore	CHRISTNER 8-66-5-3H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/4/2011	8.93	67.29	53,291

Design	CHRISTNER 8-66-5-3H (wp01)				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	183.53	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,090.00	0.00	0.00	1,090.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,189.89	2.00	4.85	1,189.87	1.74	0.15	2.00	2.00	0.00	4.85	
6,516.14	2.00	4.85	6,512.88	186.75	15.83	0.00	0.00	0.00	0.00	
7,658.45	89.39	183.59	7,254.00	-520.00	-27.95	8.00	7.65	15.65	178.74	
7,661.52	89.36	183.60	7,254.03	-523.07	-28.14	1.00	-0.95	0.31	162.03	
11,229.06	89.36	183.60	7,294.00	-4,083.34	-252.10	0.00	0.00	0.00	0.00	CHRISTNER 8-66-5-3H

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
788.00	0.00	0.00	788.00	0.00	0.00	0.00	0.00	0.00	0.00
FOX HILLS									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
940.00	0.00	0.00	940.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,090.00	0.00	0.00	1,090.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.20	4.85	1,100.00	0.02	0.00	-0.02	2.00	2.00	0.00
1,189.89	2.00	4.85	1,189.87	1.74	0.15	-1.74	2.00	2.00	0.00
1,200.00	2.00	4.85	1,199.97	2.09	0.18	-2.09	0.00	0.00	0.00
1,300.00	2.00	4.85	1,299.91	5.56	0.47	-5.58	0.00	0.00	0.00
1,400.00	2.00	4.85	1,399.85	9.03	0.77	-9.06	0.00	0.00	0.00
1,500.00	2.00	4.85	1,499.79	12.51	1.06	-12.55	0.00	0.00	0.00
1,600.00	2.00	4.85	1,599.73	15.98	1.35	-16.03	0.00	0.00	0.00
1,700.00	2.00	4.85	1,699.67	19.45	1.65	-19.52	0.00	0.00	0.00
1,800.00	2.00	4.85	1,799.61	22.93	1.94	-23.00	0.00	0.00	0.00
1,900.00	2.00	4.85	1,899.55	26.40	2.24	-26.49	0.00	0.00	0.00
2,000.00	2.00	4.85	1,999.49	29.88	2.53	-29.97	0.00	0.00	0.00
2,100.00	2.00	4.85	2,099.43	33.35	2.83	-33.46	0.00	0.00	0.00
2,200.00	2.00	4.85	2,199.37	36.82	3.12	-36.94	0.00	0.00	0.00
2,300.00	2.00	4.85	2,299.31	40.30	3.42	-40.43	0.00	0.00	0.00
2,400.00	2.00	4.85	2,399.24	43.77	3.71	-43.92	0.00	0.00	0.00
2,500.00	2.00	4.85	2,499.18	47.24	4.00	-47.40	0.00	0.00	0.00
2,600.00	2.00	4.85	2,599.12	50.72	4.30	-50.89	0.00	0.00	0.00
2,700.00	2.00	4.85	2,699.06	54.19	4.59	-54.37	0.00	0.00	0.00
2,800.00	2.00	4.85	2,799.00	57.66	4.89	-57.86	0.00	0.00	0.00
2,900.00	2.00	4.85	2,898.94	61.14	5.18	-61.34	0.00	0.00	0.00
3,000.00	2.00	4.85	2,998.88	64.61	5.48	-64.83	0.00	0.00	0.00
3,100.00	2.00	4.85	3,098.82	68.09	5.77	-68.31	0.00	0.00	0.00
3,200.00	2.00	4.85	3,198.76	71.56	6.07	-71.80	0.00	0.00	0.00
3,300.00	2.00	4.85	3,298.70	75.03	6.36	-75.28	0.00	0.00	0.00
3,400.00	2.00	4.85	3,398.64	78.51	6.65	-78.77	0.00	0.00	0.00
3,500.00	2.00	4.85	3,498.58	81.98	6.95	-82.25	0.00	0.00	0.00
3,600.00	2.00	4.85	3,598.51	85.45	7.24	-85.74	0.00	0.00	0.00
3,700.00	2.00	4.85	3,698.45	88.93	7.54	-89.22	0.00	0.00	0.00
3,800.00	2.00	4.85	3,798.39	92.40	7.83	-92.71	0.00	0.00	0.00
3,833.63	2.00	4.85	3,832.00	93.57	7.93	-93.88	0.00	0.00	0.00
PARKMAN									
3,900.00	2.00	4.85	3,898.33	95.87	8.13	-96.19	0.00	0.00	0.00
4,000.00	2.00	4.85	3,998.27	99.35	8.42	-99.68	0.00	0.00	0.00
4,100.00	2.00	4.85	4,098.21	102.82	8.72	-103.16	0.00	0.00	0.00
4,200.00	2.00	4.85	4,198.15	106.30	9.01	-106.65	0.00	0.00	0.00
4,300.00	2.00	4.85	4,298.09	109.77	9.30	-110.13	0.00	0.00	0.00
4,400.00	2.00	4.85	4,398.03	113.24	9.60	-113.62	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	2.00	4.85	4,497.97	116.72	9.89	-117.10	0.00	0.00	0.00
4,599.09	2.00	4.85	4,597.00	120.16	10.19	-120.56	0.00	0.00	0.00
SUSSEX									
4,600.00	2.00	4.85	4,597.91	120.19	10.19	-120.59	0.00	0.00	0.00
4,700.00	2.00	4.85	4,697.85	123.66	10.48	-124.07	0.00	0.00	0.00
4,800.00	2.00	4.85	4,797.79	127.14	10.78	-127.56	0.00	0.00	0.00
4,900.00	2.00	4.85	4,897.72	130.61	11.07	-131.04	0.00	0.00	0.00
5,000.00	2.00	4.85	4,997.66	134.08	11.37	-134.53	0.00	0.00	0.00
5,025.35	2.00	4.85	5,023.00	134.96	11.44	-135.41	0.00	0.00	0.00
SHANNON									
5,100.00	2.00	4.85	5,097.60	137.56	11.66	-138.02	0.00	0.00	0.00
5,200.00	2.00	4.85	5,197.54	141.03	11.95	-141.50	0.00	0.00	0.00
5,300.00	2.00	4.85	5,297.48	144.51	12.25	-144.99	0.00	0.00	0.00
5,400.00	2.00	4.85	5,397.42	147.98	12.54	-148.47	0.00	0.00	0.00
5,500.00	2.00	4.85	5,497.36	151.45	12.84	-151.96	0.00	0.00	0.00
5,600.00	2.00	4.85	5,597.30	154.93	13.13	-155.44	0.00	0.00	0.00
5,700.00	2.00	4.85	5,697.24	158.40	13.43	-158.93	0.00	0.00	0.00
5,800.00	2.00	4.85	5,797.18	161.87	13.72	-162.41	0.00	0.00	0.00
5,900.00	2.00	4.85	5,897.12	165.35	14.02	-165.90	0.00	0.00	0.00
6,000.00	2.00	4.85	5,997.06	168.82	14.31	-169.38	0.00	0.00	0.00
6,100.00	2.00	4.85	6,097.00	172.29	14.60	-172.87	0.00	0.00	0.00
6,200.00	2.00	4.85	6,196.93	175.77	14.90	-176.35	0.00	0.00	0.00
6,300.00	2.00	4.85	6,296.87	179.24	15.19	-179.84	0.00	0.00	0.00
6,400.00	2.00	4.85	6,396.81	182.72	15.49	-183.32	0.00	0.00	0.00
6,500.00	2.00	4.85	6,496.75	186.19	15.78	-186.81	0.00	0.00	0.00
6,516.14	2.00	4.85	6,512.88	186.75	15.83	-187.37	0.00	0.00	0.00
6,600.00	4.71	183.06	6,596.67	184.76	15.77	-185.39	8.00	3.24	212.52
6,700.00	12.71	183.40	6,695.44	169.66	14.90	-170.25	8.00	8.00	0.34
6,800.00	20.71	183.47	6,791.14	140.98	13.17	-141.52	8.00	8.00	0.08
6,900.00	28.71	183.51	6,881.90	99.28	10.62	-99.75	8.00	8.00	0.04
7,000.00	36.71	183.53	6,965.98	45.39	7.31	-45.75	8.00	8.00	0.02
7,029.17	39.05	183.54	6,989.00	27.51	6.20	-27.84	8.00	8.00	0.02
SHARON SPRINGS									
7,100.00	44.71	183.55	7,041.72	-19.66	3.28	19.42	8.00	8.00	0.01
7,200.00	52.71	183.56	7,107.65	-94.59	-1.37	94.50	8.00	8.00	0.01
7,258.23	57.37	183.56	7,141.00	-142.21	-4.33	142.20	8.00	8.00	0.01
NIOBRARA									
7,300.00	60.71	183.57	7,162.49	-177.96	-6.56	178.02	8.00	8.00	0.01
7,400.00	68.71	183.57	7,205.17	-268.13	-12.18	268.37	8.00	8.00	0.01
7,500.00	76.71	183.58	7,234.86	-363.34	-18.13	363.77	8.00	8.00	0.01
7,600.00	84.71	183.59	7,250.99	-461.76	-24.30	462.38	8.00	8.00	0.01
7,658.45	89.39	183.59	7,254.00	-520.00	-27.95	520.74	8.00	8.00	0.01
7" casing pt.; 770' FNL & 1652.05' FWL; 40.694231/ -104.805351 - 7"									
7,661.52	89.36	183.60	7,254.03	-523.07	-28.14	523.81	1.00	-0.95	0.31
7,700.00	89.36	183.60	7,254.46	-561.47	-30.56	562.28	0.00	0.00	0.00
7,800.00	89.36	183.60	7,255.59	-661.26	-36.84	662.28	0.00	0.00	0.00
7,900.00	89.36	183.60	7,256.71	-761.06	-43.11	762.27	0.00	0.00	0.00
8,000.00	89.36	183.60	7,257.83	-860.86	-49.39	862.26	0.00	0.00	0.00
8,100.00	89.36	183.60	7,258.95	-960.65	-55.67	962.26	0.00	0.00	0.00
8,200.00	89.36	183.60	7,260.07	-1,060.45	-61.95	1,062.25	0.00	0.00	0.00
8,300.00	89.36	183.60	7,261.19	-1,160.25	-68.22	1,162.25	0.00	0.00	0.00
8,400.00	89.36	183.60	7,262.31	-1,260.04	-74.50	1,262.24	0.00	0.00	0.00
8,500.00	89.36	183.60	7,263.43	-1,359.84	-80.78	1,362.23	0.00	0.00	0.00
8,600.00	89.36	183.60	7,264.55	-1,459.64	-87.06	1,462.23	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.00	89.36	183.60	7,265.67	-1,559.43	-93.34	1,562.22	0.00	0.00	0.00
8,800.00	89.36	183.60	7,266.79	-1,659.23	-99.61	1,662.21	0.00	0.00	0.00
8,900.00	89.36	183.60	7,267.91	-1,759.02	-105.89	1,762.21	0.00	0.00	0.00
9,000.00	89.36	183.60	7,269.03	-1,858.82	-112.17	1,862.20	0.00	0.00	0.00
9,100.00	89.36	183.60	7,270.15	-1,958.62	-118.45	1,962.19	0.00	0.00	0.00
9,200.00	89.36	183.60	7,271.27	-2,058.41	-124.72	2,062.19	0.00	0.00	0.00
9,300.00	89.36	183.60	7,272.39	-2,158.21	-131.00	2,162.18	0.00	0.00	0.00
9,400.00	89.36	183.60	7,273.51	-2,258.01	-137.28	2,262.18	0.00	0.00	0.00
9,500.00	89.36	183.60	7,274.63	-2,357.80	-143.56	2,362.17	0.00	0.00	0.00
9,600.00	89.36	183.60	7,275.75	-2,457.60	-149.84	2,462.16	0.00	0.00	0.00
9,700.00	89.36	183.60	7,276.87	-2,557.40	-156.11	2,562.16	0.00	0.00	0.00
9,800.00	89.36	183.60	7,277.99	-2,657.19	-162.39	2,662.15	0.00	0.00	0.00
9,900.00	89.36	183.60	7,279.11	-2,756.99	-168.67	2,762.14	0.00	0.00	0.00
10,000.00	89.36	183.60	7,280.23	-2,856.79	-174.95	2,862.14	0.00	0.00	0.00
10,100.00	89.36	183.60	7,281.35	-2,956.58	-181.22	2,962.13	0.00	0.00	0.00
10,200.00	89.36	183.60	7,282.47	-3,056.38	-187.50	3,062.12	0.00	0.00	0.00
10,300.00	89.36	183.60	7,283.59	-3,156.18	-193.78	3,162.12	0.00	0.00	0.00
10,400.00	89.36	183.60	7,284.71	-3,255.97	-200.06	3,262.11	0.00	0.00	0.00
10,500.00	89.36	183.60	7,285.83	-3,355.77	-206.34	3,362.11	0.00	0.00	0.00
10,600.00	89.36	183.60	7,286.95	-3,455.56	-212.61	3,462.10	0.00	0.00	0.00
10,700.00	89.36	183.60	7,288.07	-3,555.36	-218.89	3,562.09	0.00	0.00	0.00
10,800.00	89.36	183.60	7,289.19	-3,655.16	-225.17	3,662.09	0.00	0.00	0.00
10,900.00	89.36	183.60	7,290.31	-3,754.95	-231.45	3,762.08	0.00	0.00	0.00
11,000.00	89.36	183.60	7,291.43	-3,854.75	-237.72	3,862.07	0.00	0.00	0.00
11,100.00	89.36	183.60	7,292.55	-3,954.55	-244.00	3,962.07	0.00	0.00	0.00
11,200.00	89.36	183.60	7,293.67	-4,054.34	-250.28	4,062.06	0.00	0.00	0.00
11,229.06	89.36	183.60	7,294.00	-4,083.34	-252.10	4,091.12	0.00	0.00	0.00
CHRISTNER 8-66-5-3H BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
CHRISTNER 8-66-5-3H	0.00	0.00	7,294.00	-4,083.34	-252.10	1,492,941.14	3,192,429.10	40.684450	-104.806159
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
940.00	940.00	9 5/8"	9-5/8	12-1/4	
7,658.45	7,254.00	7"	7	8-3/4	

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
788.00	788.00	FOX HILLS		0.00		
3,833.63	3,832.00	PARKMAN		0.00		
4,599.09	4,597.00	SUSSEX		0.00		
5,025.35	5,023.00	SHANNON		0.00		
7,029.17	6,989.00	SHARON SPRINGS		0.00		
7,258.23	7,141.00	NIOBRARA		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,658.45	7,254.00	-520.00	-27.95	7" casing pt.; 770' FNL & 1652.05' FWL; 40.694231/ -104.805351	
11,229.06	7,294.00	-4,083.34	-252.10	TD at 11229.06; 600' FSL & 1289' FWL; 40.684450/ -104.806159	

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CHRISTNER 8-66-5-3H

CHRISTNER 8-66-5-3H

CHRISTNER 8-66-5-3H

Plan: CHRISTNER 8-66-5-3H (wp01)

Standard Planning Report - Geographic

05 May, 2011



Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_CHRISTNER 8-66-5-3H			
Site Position:		Northing:	1,497,026.34 ft	Latitude:	40.695658
From:	Lat/Long	Easting:	3,192,649.20 ft	Longitude:	-104.805250
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.45 °

Well		CHRISTNER 8-66-5-3H				
Well Position	+N-S	0.00 ft	Northing:	1,497,026.33 ft	Latitude:	40.695658
	+E-W	0.00 ft	Easting:	3,192,649.20 ft	Longitude:	-104.805250
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,192.00 ft

Wellbore	CHRISTNER 8-66-5-3H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/4/2011	8.93	67.29	53,291

Design	CHRISTNER 8-66-5-3H (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	183.53

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,090.00	0.00	0.00	1,090.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,189.89	2.00	4.85	1,189.87	1.74	0.15	2.00	2.00	0.00	4.85	
6,516.14	2.00	4.85	6,512.88	186.75	15.83	0.00	0.00	0.00	0.00	
7,658.45	89.39	183.59	7,254.00	-520.00	-27.95	8.00	7.65	15.65	178.74	
7,661.52	89.36	183.60	7,254.03	-523.07	-28.14	1.00	-0.95	0.31	162.03	
11,229.06	89.36	183.60	7,294.00	-4,083.34	-252.10	0.00	0.00	0.00	0.00	CHRISTNER 8-66-5-3H

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
100.00	0.00	0.00	100.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
200.00	0.00	0.00	200.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
300.00	0.00	0.00	300.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
400.00	0.00	0.00	400.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
500.00	0.00	0.00	500.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
600.00	0.00	0.00	600.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
700.00	0.00	0.00	700.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
788.00	0.00	0.00	788.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
FOX HILLS									
800.00	0.00	0.00	800.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
900.00	0.00	0.00	900.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
940.00	0.00	0.00	940.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
9 5/8"									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
1,090.00	0.00	0.00	1,090.00	0.00	0.00	1,497,026.33	3,192,649.20	40.695658	-104.805250
1,100.00	0.20	4.85	1,100.00	0.02	0.00	1,497,026.35	3,192,649.21	40.695658	-104.805250
1,189.89	2.00	4.85	1,189.87	1.74	0.15	1,497,028.06	3,192,649.34	40.695663	-104.805250
1,200.00	2.00	4.85	1,199.97	2.09	0.18	1,497,028.42	3,192,649.36	40.695664	-104.805250
1,300.00	2.00	4.85	1,299.91	5.56	0.47	1,497,031.89	3,192,649.63	40.695673	-104.805249
1,400.00	2.00	4.85	1,399.85	9.03	0.77	1,497,035.37	3,192,649.90	40.695683	-104.805248
1,500.00	2.00	4.85	1,499.79	12.51	1.06	1,497,038.84	3,192,650.17	40.695692	-104.805246
1,600.00	2.00	4.85	1,599.73	15.98	1.35	1,497,042.32	3,192,650.43	40.695702	-104.805245
1,700.00	2.00	4.85	1,699.67	19.45	1.65	1,497,045.79	3,192,650.70	40.695711	-104.805244
1,800.00	2.00	4.85	1,799.61	22.93	1.94	1,497,049.27	3,192,650.97	40.695721	-104.805243
1,900.00	2.00	4.85	1,899.55	26.40	2.24	1,497,052.75	3,192,651.24	40.695731	-104.805242
2,000.00	2.00	4.85	1,999.49	29.88	2.53	1,497,056.22	3,192,651.50	40.695740	-104.805241
2,100.00	2.00	4.85	2,099.43	33.35	2.83	1,497,059.70	3,192,651.77	40.695750	-104.805240
2,200.00	2.00	4.85	2,199.37	36.82	3.12	1,497,063.17	3,192,652.04	40.695759	-104.805239
2,300.00	2.00	4.85	2,299.31	40.30	3.42	1,497,066.65	3,192,652.30	40.695769	-104.805238
2,400.00	2.00	4.85	2,399.24	43.77	3.71	1,497,070.13	3,192,652.57	40.695778	-104.805237
2,500.00	2.00	4.85	2,499.18	47.24	4.00	1,497,073.60	3,192,652.84	40.695788	-104.805236
2,600.00	2.00	4.85	2,599.12	50.72	4.30	1,497,077.08	3,192,653.11	40.695797	-104.805235
2,700.00	2.00	4.85	2,699.06	54.19	4.59	1,497,080.55	3,192,653.37	40.695807	-104.805234
2,800.00	2.00	4.85	2,799.00	57.66	4.89	1,497,084.03	3,192,653.64	40.695816	-104.805233
2,900.00	2.00	4.85	2,898.94	61.14	5.18	1,497,087.50	3,192,653.91	40.695826	-104.805232
3,000.00	2.00	4.85	2,998.88	64.61	5.48	1,497,090.98	3,192,654.17	40.695835	-104.805231
3,100.00	2.00	4.85	3,098.82	68.09	5.77	1,497,094.46	3,192,654.44	40.695845	-104.805229
3,200.00	2.00	4.85	3,198.76	71.56	6.07	1,497,097.93	3,192,654.71	40.695854	-104.805228
3,300.00	2.00	4.85	3,298.70	75.03	6.36	1,497,101.41	3,192,654.98	40.695864	-104.805227
3,400.00	2.00	4.85	3,398.64	78.51	6.65	1,497,104.88	3,192,655.24	40.695874	-104.805226
3,500.00	2.00	4.85	3,498.58	81.98	6.95	1,497,108.36	3,192,655.51	40.695883	-104.805225
3,600.00	2.00	4.85	3,598.51	85.45	7.24	1,497,111.84	3,192,655.78	40.695893	-104.805224
3,700.00	2.00	4.85	3,698.45	88.93	7.54	1,497,115.31	3,192,656.05	40.695902	-104.805223
3,800.00	2.00	4.85	3,798.39	92.40	7.83	1,497,118.79	3,192,656.31	40.695912	-104.805222
3,833.63	2.00	4.85	3,832.00	93.57	7.93	1,497,119.96	3,192,656.40	40.695915	-104.805222
PARKMAN									
3,900.00	2.00	4.85	3,898.33	95.87	8.13	1,497,122.26	3,192,656.58	40.695921	-104.805221
4,000.00	2.00	4.85	3,998.27	99.35	8.42	1,497,125.74	3,192,656.85	40.695931	-104.805220
4,100.00	2.00	4.85	4,098.21	102.82	8.72	1,497,129.21	3,192,657.11	40.695940	-104.805219
4,200.00	2.00	4.85	4,198.15	106.30	9.01	1,497,132.69	3,192,657.38	40.695950	-104.805218
4,300.00	2.00	4.85	4,298.09	109.77	9.30	1,497,136.17	3,192,657.65	40.695959	-104.805217
4,400.00	2.00	4.85	4,398.03	113.24	9.60	1,497,139.64	3,192,657.92	40.695969	-104.805216
4,500.00	2.00	4.85	4,497.97	116.72	9.89	1,497,143.12	3,192,658.18	40.695978	-104.805215

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
4,599.09	2.00	4.85	4,597.00	120.16	10.19	1,497,146.56	3,192,658.45	40.695988	-104.805214	
SUSSEX										
4,600.00	2.00	4.85	4,597.91	120.19	10.19	1,497,146.59	3,192,658.45	40.695988	-104.805214	
4,700.00	2.00	4.85	4,697.85	123.66	10.48	1,497,150.07	3,192,658.72	40.695998	-104.805212	
4,800.00	2.00	4.85	4,797.79	127.14	10.78	1,497,153.55	3,192,658.98	40.696007	-104.805211	
4,900.00	2.00	4.85	4,897.72	130.61	11.07	1,497,157.02	3,192,659.25	40.696017	-104.805210	
5,000.00	2.00	4.85	4,997.66	134.08	11.37	1,497,160.50	3,192,659.52	40.696026	-104.805209	
5,025.35	2.00	4.85	5,023.00	134.96	11.44	1,497,161.38	3,192,659.59	40.696029	-104.805209	
SHANNON										
5,100.00	2.00	4.85	5,097.60	137.56	11.66	1,497,163.97	3,192,659.79	40.696036	-104.805208	
5,200.00	2.00	4.85	5,197.54	141.03	11.95	1,497,167.45	3,192,660.05	40.696045	-104.805207	
5,300.00	2.00	4.85	5,297.48	144.51	12.25	1,497,170.92	3,192,660.32	40.696055	-104.805206	
5,400.00	2.00	4.85	5,397.42	147.98	12.54	1,497,174.40	3,192,660.59	40.696064	-104.805205	
5,500.00	2.00	4.85	5,497.36	151.45	12.84	1,497,177.88	3,192,660.86	40.696074	-104.805204	
5,600.00	2.00	4.85	5,597.30	154.93	13.13	1,497,181.35	3,192,661.12	40.696083	-104.805203	
5,700.00	2.00	4.85	5,697.24	158.40	13.43	1,497,184.83	3,192,661.39	40.696093	-104.805202	
5,800.00	2.00	4.85	5,797.18	161.87	13.72	1,497,188.30	3,192,661.66	40.696102	-104.805201	
5,900.00	2.00	4.85	5,897.12	165.35	14.02	1,497,191.78	3,192,661.92	40.696112	-104.805200	
6,000.00	2.00	4.85	5,997.06	168.82	14.31	1,497,195.26	3,192,662.19	40.696121	-104.805199	
6,100.00	2.00	4.85	6,097.00	172.29	14.60	1,497,198.73	3,192,662.46	40.696131	-104.805198	
6,200.00	2.00	4.85	6,196.93	175.77	14.90	1,497,202.21	3,192,662.73	40.696141	-104.805197	
6,300.00	2.00	4.85	6,296.87	179.24	15.19	1,497,205.68	3,192,662.99	40.696150	-104.805195	
6,400.00	2.00	4.85	6,396.81	182.72	15.49	1,497,209.16	3,192,663.26	40.696160	-104.805194	
6,500.00	2.00	4.85	6,496.75	186.19	15.78	1,497,212.63	3,192,663.53	40.696169	-104.805193	
6,516.14	2.00	4.85	6,512.88	186.75	15.83	1,497,213.20	3,192,663.57	40.696171	-104.805193	
6,600.00	4.71	183.06	6,596.67	184.76	15.77	1,497,211.21	3,192,663.53	40.696165	-104.805193	
6,700.00	12.71	183.40	6,695.44	169.66	14.90	1,497,196.10	3,192,662.77	40.696124	-104.805197	
6,800.00	20.71	183.47	6,791.14	140.98	13.17	1,497,167.40	3,192,661.27	40.696045	-104.805203	
6,900.00	28.71	183.51	6,881.90	99.28	10.62	1,497,125.69	3,192,659.05	40.695931	-104.805212	
7,000.00	36.71	183.53	6,965.98	45.39	7.31	1,497,071.77	3,192,656.15	40.695783	-104.805224	
7,029.17	39.05	183.54	6,989.00	27.51	6.20	1,497,053.89	3,192,655.19	40.695734	-104.805228	
SHARON SPRINGS										
7,100.00	44.71	183.55	7,041.72	-19.66	3.28	1,497,006.69	3,192,652.64	40.695604	-104.805238	
7,200.00	52.71	183.56	7,107.65	-94.59	-1.37	1,496,931.73	3,192,648.58	40.695398	-104.805255	
7,258.23	57.37	183.56	7,141.00	-142.21	-4.33	1,496,884.09	3,192,645.99	40.695268	-104.805266	
NIOBRARA										
7,300.00	60.71	183.57	7,162.49	-177.96	-6.56	1,496,848.32	3,192,644.04	40.695170	-104.805274	
7,400.00	68.71	183.57	7,205.17	-268.13	-12.18	1,496,758.12	3,192,639.12	40.694922	-104.805294	
7,500.00	76.71	183.58	7,234.86	-363.34	-18.13	1,496,662.85	3,192,633.92	40.694661	-104.805316	
7,600.00	84.71	183.59	7,250.99	-461.76	-24.30	1,496,564.39	3,192,628.52	40.694391	-104.805338	
7,658.45	89.39	183.59	7,254.00	-520.00	-27.95	1,496,506.12	3,192,625.33	40.694231	-104.805351	
7" casing pt.; 770' FNL & 1652.05' FWL; 40.694231/-104.805351 - 7"										
7,661.52	89.36	183.60	7,254.03	-523.07	-28.14	1,496,503.06	3,192,625.16	40.694222	-104.805352	
7,700.00	89.36	183.60	7,254.46	-561.47	-30.56	1,496,464.64	3,192,623.05	40.694117	-104.805360	
7,800.00	89.36	183.60	7,255.59	-661.26	-36.84	1,496,364.80	3,192,617.55	40.693843	-104.805383	
7,900.00	89.36	183.60	7,256.71	-761.06	-43.11	1,496,264.95	3,192,612.05	40.693569	-104.805406	
8,000.00	89.36	183.60	7,257.83	-860.86	-49.39	1,496,165.11	3,192,606.56	40.693295	-104.805428	
8,100.00	89.36	183.60	7,258.95	-960.65	-55.67	1,496,065.27	3,192,601.06	40.693021	-104.805451	
8,200.00	89.36	183.60	7,260.07	-1,060.45	-61.95	1,495,965.43	3,192,595.57	40.692747	-104.805474	
8,300.00	89.36	183.60	7,261.19	-1,160.25	-68.22	1,495,865.58	3,192,590.07	40.692473	-104.805496	
8,400.00	89.36	183.60	7,262.31	-1,260.04	-74.50	1,495,765.74	3,192,584.58	40.692200	-104.805519	
8,500.00	89.36	183.60	7,263.43	-1,359.84	-80.78	1,495,665.90	3,192,579.08	40.691926	-104.805542	
8,600.00	89.36	183.60	7,264.55	-1,459.64	-87.06	1,495,566.06	3,192,573.58	40.691652	-104.805564	
8,700.00	89.36	183.60	7,265.67	-1,559.43	-93.34	1,495,466.21	3,192,568.09	40.691378	-104.805587	

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
8,800.00	89.36	183.60	7,266.79	-1,659.23	-99.61	1,495,366.37	3,192,562.59	40.691104	-104.805609
8,900.00	89.36	183.60	7,267.91	-1,759.02	-105.89	1,495,266.53	3,192,557.10	40.690830	-104.805632
9,000.00	89.36	183.60	7,269.03	-1,858.82	-112.17	1,495,166.68	3,192,551.60	40.690556	-104.805655
9,100.00	89.36	183.60	7,270.15	-1,958.62	-118.45	1,495,066.84	3,192,546.11	40.690282	-104.805677
9,200.00	89.36	183.60	7,271.27	-2,058.41	-124.72	1,494,967.00	3,192,540.61	40.690008	-104.805700
9,300.00	89.36	183.60	7,272.39	-2,158.21	-131.00	1,494,867.16	3,192,535.12	40.689734	-104.805723
9,400.00	89.36	183.60	7,273.51	-2,258.01	-137.28	1,494,767.31	3,192,529.62	40.689460	-104.805745
9,500.00	89.36	183.60	7,274.63	-2,357.80	-143.56	1,494,667.47	3,192,524.12	40.689186	-104.805768
9,600.00	89.36	183.60	7,275.75	-2,457.60	-149.84	1,494,567.63	3,192,518.63	40.688912	-104.805791
9,700.00	89.36	183.60	7,276.87	-2,557.40	-156.11	1,494,467.79	3,192,513.13	40.688639	-104.805813
9,800.00	89.36	183.60	7,277.99	-2,657.19	-162.39	1,494,367.94	3,192,507.64	40.688365	-104.805836
9,900.00	89.36	183.60	7,279.11	-2,756.99	-168.67	1,494,268.10	3,192,502.14	40.688091	-104.805858
10,000.00	89.36	183.60	7,280.23	-2,856.79	-174.95	1,494,168.26	3,192,496.65	40.687817	-104.805881
10,100.00	89.36	183.60	7,281.35	-2,956.58	-181.22	1,494,068.42	3,192,491.15	40.687543	-104.805904
10,200.00	89.36	183.60	7,282.47	-3,056.38	-187.50	1,493,968.57	3,192,485.65	40.687269	-104.805926
10,300.00	89.36	183.60	7,283.59	-3,156.18	-193.78	1,493,868.73	3,192,480.16	40.686995	-104.805949
10,400.00	89.36	183.60	7,284.71	-3,255.97	-200.06	1,493,768.89	3,192,474.66	40.686721	-104.805972
10,500.00	89.36	183.60	7,285.83	-3,355.77	-206.34	1,493,669.05	3,192,469.17	40.686447	-104.805994
10,600.00	89.36	183.60	7,286.95	-3,455.56	-212.61	1,493,569.20	3,192,463.67	40.686173	-104.806017
10,700.00	89.36	183.60	7,288.07	-3,555.36	-218.89	1,493,469.36	3,192,458.18	40.685899	-104.806040
10,800.00	89.36	183.60	7,289.19	-3,655.16	-225.17	1,493,369.52	3,192,452.68	40.685625	-104.806062
10,900.00	89.36	183.60	7,290.31	-3,754.95	-231.45	1,493,269.68	3,192,447.18	40.685351	-104.806085
11,000.00	89.36	183.60	7,291.43	-3,854.75	-237.72	1,493,169.83	3,192,441.69	40.685078	-104.806107
11,100.00	89.36	183.60	7,292.55	-3,954.55	-244.00	1,493,069.99	3,192,436.19	40.684804	-104.806130
11,200.00	89.36	183.60	7,293.67	-4,054.34	-250.28	1,492,970.15	3,192,430.70	40.684530	-104.806153
11,229.06	89.36	183.60	7,294.00	-4,083.34	-252.10	1,492,941.14	3,192,429.10	40.684450	-104.806159

CHRISTNER 8-66-5-3H BHL

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
CHRISTNER 8-66-5-3H - plan hits target center - Point	0.00	0.00	7,294.00	-4,083.34	-252.10	1,492,941.14	3,192,429.10	40.684450	-104.806159

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
940.00	940.00	9 5/8"	9-5/8	12-1/4
7,658.45	7,254.00	7"	7	8-3/4

Database:	edm5000p	Local Co-ordinate Reference:	Well CHRISTNER 8-66-5-3H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25' RKB + 5192' GL @ 5217.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	25' RKB + 5192' GL @ 5217.00ft
Site:	WELD_CHRISTNER 8-66-5-3H	North Reference:	True
Well:	CHRISTNER 8-66-5-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHRISTNER 8-66-5-3H		
Design:	CHRISTNER 8-66-5-3H (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
788.00	788.00	FOX HILLS		0.00		
3,833.63	3,832.00	PARKMAN		0.00		
4,599.09	4,597.00	SUSSEX		0.00		
5,025.35	5,023.00	SHANNON		0.00		
7,029.17	6,989.00	SHARON SPRINGS		0.00		
7,258.23	7,141.00	NIOBRARA		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,658.45	7,254.00	-520.00	-27.95	7" casing pt.; 770' FNL & 1652.05' FWL; 40.694231/ -104.805351	
11,229.06	7,294.00	-4,083.34	-252.10	TD at 11229.06; 600' FSL & 1289' FWL; 40.684450/ -104.806159	