

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_MARRS 3N-28HZ**

**MARRS 3N-28HZ**

**MARRS 3N-28HZ**

**Plan: MARRS 3N-28HZ (wp01)**

## **Standard Planning Report**

**26 April, 2011**





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Azimuths to True North

Magnetic North: 8.86°

Magnetic Field

Strength: 52939.4snT

Dip Angle: 66.74°

Date: 4/26/2011

Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83

Site: WELD\_MARRS 3N-28HZ

Well: MARRS 3N-28HZ

Wellbore: MARRS 3N-28HZ

Section:

SHL:

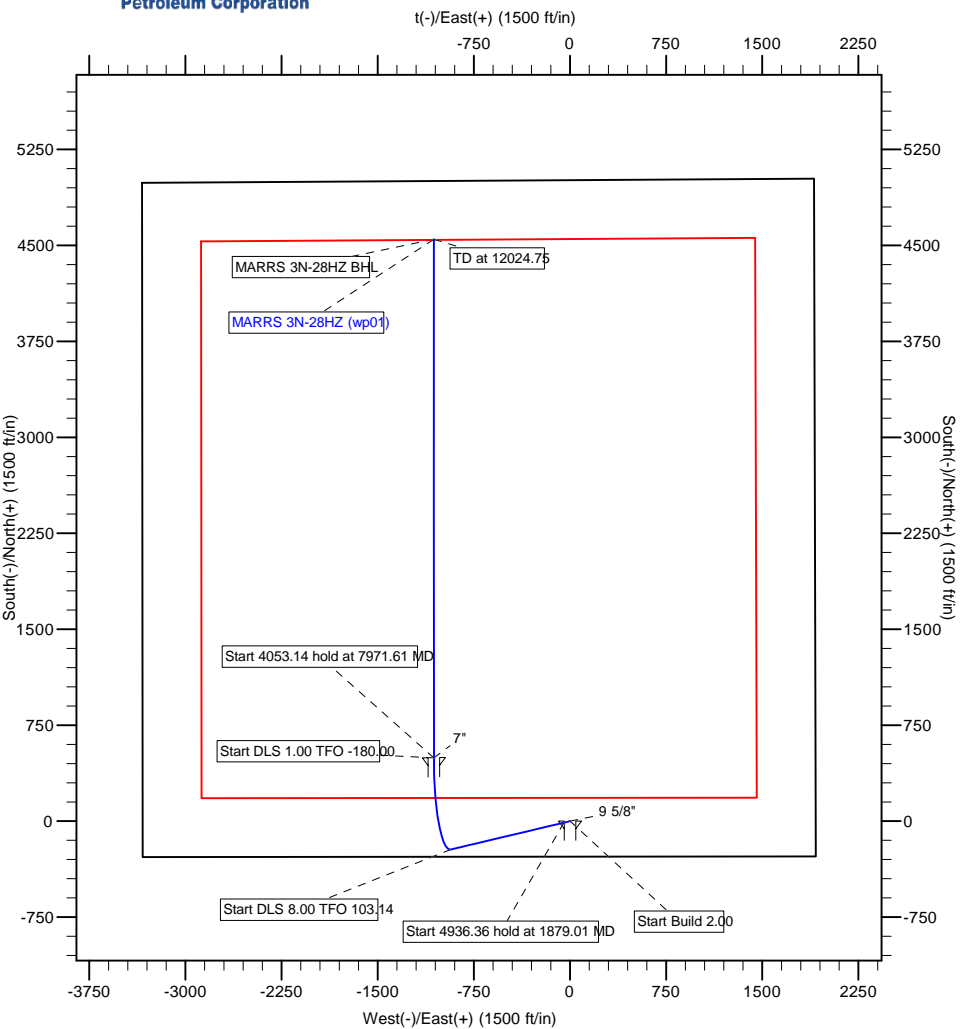
Design: MARRS 3N-28HZ (wp01)

Latitude: 40.015709

Longitude: -104.779562

GL: 5105.00

KB: 17° RKB + 5105' GL @ 5122.00ft



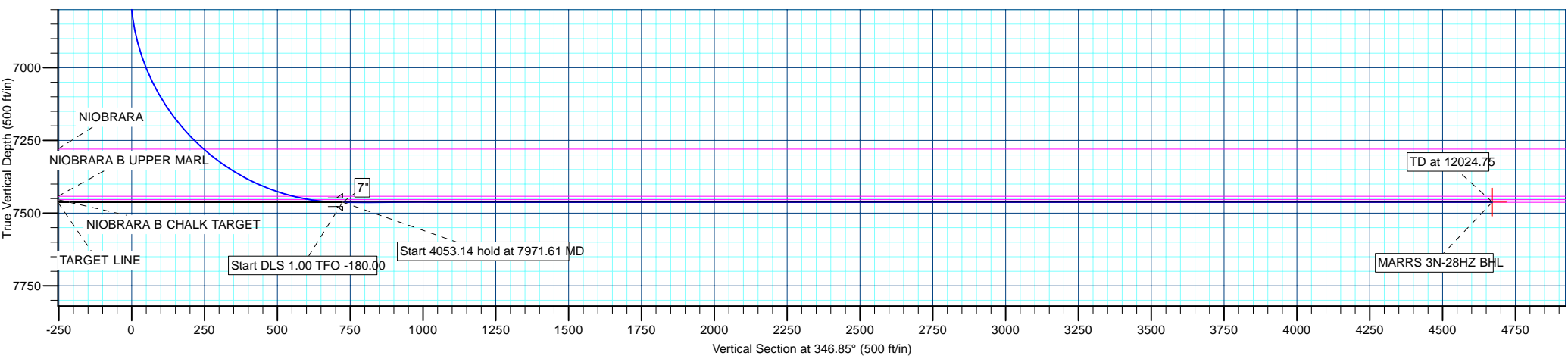
WELL DETAILS: MARRS 3N-28HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	5105.00 Latitude	Longitude	Slot
0.00	0.00	1249388.91	3201784.58	40.015709	-104.779562	

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	
1350.00	0.00	0.00	1350.00	0.00	0.00	0.00	0.00	0.00	
1879.01	10.58	256.63	1876.01	-11.26	-47.39	2.00	256.63	-0.18	
6815.37	10.58	256.63	6728.44	-220.80	-929.21	0.00	0.00	-3.61	
7971.02	90.02	0.00	7463.00	495.00	-1062.74	8.00	103.14	723.80	
7971.61	90.01	360.00	7463.00	495.59	-1062.74	1.00	-180.00	724.37	
12024.75	90.01	360.00	7462.00	4548.72	-1062.74	0.00	0.00	4671.22	MARRS 3N-28HZ BHL

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
MARRS 3N-28HZ BHL	7462.00	4548.72	-1062.74	40.028196	-104.783357	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3661.00	3694.87	PARKMAN
4816.00	4869.85	SUSSEX
7280.00	7442.73	NIOBRARA
7442.00	7795.48	NIOBRARA B UPPER MARL
7454.00	7856.18	NIOBRARA B CHALK TARGET
7463.00	7971.02	TARGET LINE

CASING DETAILS			
TVD	MD	Name	Size
1200.00	1200.00	9 5/8"	9-5/8
7463.00	7971.61	7"	7



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 3N-28HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Site:</b>	WELD_MARRS 3N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 3N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 3N-28HZ		
<b>Design:</b>	MARRS 3N-28HZ (wp01)		

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

Site		WELD_MARRS 3N-28HZ			
Site Position:		Northing:	1,249,388.91 ft	Latitude:	40.015709
From:	Lat/Long	Easting:	3,201,784.58 ft	Longitude:	-104.779562
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.47 °

Well	MARRS 3N-28HZ					
Well Position	+N-S	0.00 ft	Northing:	1,249,388.91 ft	Latitude:	40.015709
	+E-W	0.00 ft	Easting:	3,201,784.58 ft	Longitude:	-104.779562
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,105.00 ft

<b>Wellbore</b>	MARRS 3N-28HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/26/2011	8.86	66.74	52,939

<b>Design</b>	MARRS 3N-28HZ (wp01)				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	346.85	

<b>Plan Sections</b>										
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	
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,879.01	10.58	256.63	1,876.01	-11.26	-47.39	2.00	2.00	0.00	256.63	
6,815.37	10.58	256.63	6,728.44	-220.80	-929.21	0.00	0.00	0.00	0.00	
7,971.02	90.02	0.00	7,463.00	495.00	-1,062.74	8.00	6.87	8.94	103.14	
7,971.61	90.01	360.00	7,463.00	495.59	-1,062.74	1.00	-1.00	0.00	-180.00	
12,024.75	90.01	360.00	7,462.00	4,548.72	-1,062.74	0.00	0.00	0.00	0.00	MARRS 3N-28HZ E

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 3N-28HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Site:</b>	WELD_MARRS 3N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 3N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 3N-28HZ		
<b>Design:</b>	MARRS 3N-28HZ (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
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
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	1.00	256.63	1,400.00	-0.10	-0.42	0.00	2.00	2.00	0.00
1,500.00	3.00	256.63	1,499.93	-0.91	-3.82	-0.01	2.00	2.00	0.00
1,600.00	5.00	256.63	1,599.68	-2.52	-10.61	-0.04	2.00	2.00	0.00
1,700.00	7.00	256.63	1,699.13	-4.94	-20.78	-0.08	2.00	2.00	0.00
1,800.00	9.00	256.63	1,798.15	-8.15	-34.31	-0.13	2.00	2.00	0.00
1,879.01	10.58	256.63	1,876.01	-11.26	-47.39	-0.18	2.00	2.00	0.00
Start 4936.36 hold at 1879.01 MD									
1,900.00	10.58	256.63	1,896.64	-12.15	-51.13	-0.20	0.00	0.00	0.00
2,000.00	10.58	256.63	1,994.94	-16.40	-69.00	-0.27	0.00	0.00	0.00
2,100.00	10.58	256.63	2,093.24	-20.64	-86.86	-0.34	0.00	0.00	0.00
2,200.00	10.58	256.63	2,191.54	-24.89	-104.73	-0.41	0.00	0.00	0.00
2,300.00	10.58	256.63	2,289.84	-29.13	-122.59	-0.48	0.00	0.00	0.00
2,400.00	10.58	256.63	2,388.14	-33.37	-140.45	-0.54	0.00	0.00	0.00
2,500.00	10.58	256.63	2,486.44	-37.62	-158.32	-0.61	0.00	0.00	0.00
2,600.00	10.58	256.63	2,584.74	-41.86	-176.18	-0.68	0.00	0.00	0.00
2,700.00	10.58	256.63	2,683.04	-46.11	-194.05	-0.75	0.00	0.00	0.00
2,800.00	10.58	256.63	2,781.34	-50.35	-211.91	-0.82	0.00	0.00	0.00
2,900.00	10.58	256.63	2,879.64	-54.60	-229.77	-0.89	0.00	0.00	0.00
3,000.00	10.58	256.63	2,977.94	-58.84	-247.64	-0.96	0.00	0.00	0.00
3,100.00	10.58	256.63	3,076.24	-63.09	-265.50	-1.03	0.00	0.00	0.00
3,200.00	10.58	256.63	3,174.54	-67.33	-283.36	-1.10	0.00	0.00	0.00
3,300.00	10.58	256.63	3,272.84	-71.58	-301.23	-1.17	0.00	0.00	0.00
3,400.00	10.58	256.63	3,371.14	-75.82	-319.09	-1.24	0.00	0.00	0.00
3,500.00	10.58	256.63	3,469.44	-80.07	-336.96	-1.31	0.00	0.00	0.00
3,600.00	10.58	256.63	3,567.74	-84.31	-354.82	-1.38	0.00	0.00	0.00
3,694.87	10.58	256.63	3,661.00	-88.34	-371.77	-1.44	0.00	0.00	0.00
PARKMAN									
3,700.00	10.58	256.63	3,666.04	-88.56	-372.68	-1.45	0.00	0.00	0.00
3,800.00	10.58	256.63	3,764.34	-92.80	-390.55	-1.52	0.00	0.00	0.00
3,900.00	10.58	256.63	3,862.64	-97.05	-408.41	-1.58	0.00	0.00	0.00
4,000.00	10.58	256.63	3,960.94	-101.29	-426.27	-1.65	0.00	0.00	0.00
4,100.00	10.58	256.63	4,059.24	-105.54	-444.14	-1.72	0.00	0.00	0.00
4,200.00	10.58	256.63	4,157.54	-109.78	-462.00	-1.79	0.00	0.00	0.00
4,300.00	10.58	256.63	4,255.84	-114.03	-479.87	-1.86	0.00	0.00	0.00
4,400.00	10.58	256.63	4,354.14	-118.27	-497.73	-1.93	0.00	0.00	0.00
4,500.00	10.58	256.63	4,452.44	-122.52	-515.59	-2.00	0.00	0.00	0.00
4,600.00	10.58	256.63	4,550.74	-126.76	-533.46	-2.07	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 3N-28HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Site:</b>	WELD_MARRS 3N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 3N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 3N-28HZ		
<b>Design:</b>	MARRS 3N-28HZ (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)
4,700.00	10.58	256.63	4,649.04	-131.00	-551.32	-2.14	0.00	0.00	0.00
4,800.00	10.58	256.63	4,747.34	-135.25	-569.19	-2.21	0.00	0.00	0.00
4,869.85	10.58	256.63	4,816.00	-138.21	-581.66	-2.26	0.00	0.00	0.00
<b>SUSSEX</b>									
4,900.00	10.58	256.63	4,845.64	-139.49	-587.05	-2.28	0.00	0.00	0.00
5,000.00	10.58	256.63	4,943.94	-143.74	-604.91	-2.35	0.00	0.00	0.00
5,100.00	10.58	256.63	5,042.24	-147.98	-622.78	-2.42	0.00	0.00	0.00
5,200.00	10.58	256.63	5,140.54	-152.23	-640.64	-2.49	0.00	0.00	0.00
5,300.00	10.58	256.63	5,238.84	-156.47	-658.50	-2.55	0.00	0.00	0.00
5,400.00	10.58	256.63	5,337.14	-160.72	-676.37	-2.62	0.00	0.00	0.00
5,500.00	10.58	256.63	5,435.44	-164.96	-694.23	-2.69	0.00	0.00	0.00
5,600.00	10.58	256.63	5,533.74	-169.21	-712.10	-2.76	0.00	0.00	0.00
5,700.00	10.58	256.63	5,632.04	-173.45	-729.96	-2.83	0.00	0.00	0.00
5,800.00	10.58	256.63	5,730.34	-177.70	-747.82	-2.90	0.00	0.00	0.00
5,900.00	10.58	256.63	5,828.64	-181.94	-765.69	-2.97	0.00	0.00	0.00
6,000.00	10.58	256.63	5,926.94	-186.19	-783.55	-3.04	0.00	0.00	0.00
6,100.00	10.58	256.63	6,025.24	-190.43	-801.41	-3.11	0.00	0.00	0.00
6,200.00	10.58	256.63	6,123.54	-194.68	-819.28	-3.18	0.00	0.00	0.00
6,300.00	10.58	256.63	6,221.84	-198.92	-837.14	-3.25	0.00	0.00	0.00
6,400.00	10.58	256.63	6,320.14	-203.17	-855.01	-3.32	0.00	0.00	0.00
6,500.00	10.58	256.63	6,418.44	-207.41	-872.87	-3.39	0.00	0.00	0.00
6,600.00	10.58	256.63	6,516.74	-211.66	-890.73	-3.46	0.00	0.00	0.00
6,700.00	10.58	256.63	6,615.04	-215.90	-908.60	-3.53	0.00	0.00	0.00
6,800.00	10.58	256.63	6,713.34	-220.15	-926.46	-3.59	0.00	0.00	0.00
6,815.37	10.58	256.63	6,728.44	-220.80	-929.21	-3.61	0.00	0.00	0.00
<b>Start DLS 8.00 TFO 103.14</b>									
6,900.00	11.17	292.99	6,811.65	-219.39	-944.33	1.20	8.00	0.69	42.96
7,000.00	16.02	320.73	6,908.92	-204.90	-962.01	19.34	8.00	4.85	27.75
7,100.00	22.70	334.25	7,003.26	-176.80	-979.15	50.61	8.00	6.68	13.51
7,200.00	30.01	341.65	7,092.83	-135.62	-995.43	94.41	8.00	7.31	7.41
7,300.00	37.58	346.33	7,175.89	-82.17	-1,010.53	149.89	8.00	7.57	4.68
7,400.00	45.28	349.63	7,250.83	-17.49	-1,024.15	215.97	8.00	7.70	3.29
7,442.73	48.59	350.77	7,280.00	13.26	-1,029.46	247.13	8.00	7.76	2.68
<b>NIORARA</b>									
7,500.00	53.05	352.14	7,316.17	57.15	-1,036.03	291.36	8.00	7.78	2.38
7,600.00	60.86	354.18	7,370.67	140.32	-1,045.94	374.60	8.00	7.82	2.04
7,700.00	68.70	355.93	7,413.24	230.38	-1,053.68	464.06	8.00	7.84	1.75
7,795.48	76.21	357.44	7,442.00	321.20	-1,058.92	553.69	8.00	7.86	1.58
<b>NIORARA B UPPER MARL</b>									
7,800.00	76.56	357.51	7,443.06	325.59	-1,059.11	558.01	8.00	7.86	1.51
7,856.18	80.98	358.34	7,454.00	380.64	-1,061.10	612.07	8.00	7.87	1.49
<b>NIORARA B CHALK TARGET</b>									
7,900.00	84.43	358.98	7,459.56	424.09	-1,062.11	654.61	8.00	7.87	1.45
7,971.02	90.02	0.00	7,463.00	495.00	-1,062.74	723.80	8.00	7.87	1.43
<b>Start DLS 1.00 TFO -180.00 - TARGET LINE</b>									
7,971.61	90.01	360.00	7,463.00	495.59	-1,062.74	724.37	1.00	-1.00	0.00
<b>Start 4053.14 hold at 7971.61 MD - 7"</b>									
8,000.00	90.01	360.00	7,462.99	523.98	-1,062.74	752.02	0.00	0.00	0.00
8,100.00	90.01	360.00	7,462.97	623.98	-1,062.74	849.40	0.00	0.00	0.00
8,200.00	90.01	360.00	7,462.94	723.98	-1,062.74	946.78	0.00	0.00	0.00
8,300.00	90.01	360.00	7,462.92	823.98	-1,062.74	1,044.15	0.00	0.00	0.00
8,400.00	90.01	360.00	7,462.89	923.98	-1,062.74	1,141.53	0.00	0.00	0.00
8,500.00	90.01	360.00	7,462.87	1,023.98	-1,062.74	1,238.91	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 3N-28HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Site:</b>	WELD_MARRS 3N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 3N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 3N-28HZ		
<b>Design:</b>	MARRS 3N-28HZ (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)
8,600.00	90.01	360.00	7,462.84	1,123.98	-1,062.74	1,336.29	0.00	0.00	0.00
8,700.00	90.01	360.00	7,462.82	1,223.98	-1,062.74	1,433.66	0.00	0.00	0.00
8,800.00	90.01	360.00	7,462.80	1,323.98	-1,062.74	1,531.04	0.00	0.00	0.00
8,900.00	90.01	360.00	7,462.77	1,423.98	-1,062.74	1,628.42	0.00	0.00	0.00
9,000.00	90.01	360.00	7,462.75	1,523.98	-1,062.74	1,725.80	0.00	0.00	0.00
9,100.00	90.01	360.00	7,462.72	1,623.98	-1,062.74	1,823.17	0.00	0.00	0.00
9,200.00	90.01	360.00	7,462.70	1,723.98	-1,062.74	1,920.55	0.00	0.00	0.00
9,300.00	90.01	360.00	7,462.67	1,823.98	-1,062.74	2,017.93	0.00	0.00	0.00
9,400.00	90.01	360.00	7,462.65	1,923.98	-1,062.74	2,115.31	0.00	0.00	0.00
9,500.00	90.01	360.00	7,462.62	2,023.98	-1,062.74	2,212.68	0.00	0.00	0.00
9,600.00	90.01	360.00	7,462.60	2,123.98	-1,062.74	2,310.06	0.00	0.00	0.00
9,700.00	90.01	360.00	7,462.57	2,223.98	-1,062.74	2,407.44	0.00	0.00	0.00
9,800.00	90.01	360.00	7,462.55	2,323.98	-1,062.74	2,504.82	0.00	0.00	0.00
9,900.00	90.01	360.00	7,462.52	2,423.98	-1,062.74	2,602.19	0.00	0.00	0.00
10,000.00	90.01	360.00	7,462.50	2,523.98	-1,062.74	2,699.57	0.00	0.00	0.00
10,100.00	90.01	360.00	7,462.47	2,623.98	-1,062.74	2,796.95	0.00	0.00	0.00
10,200.00	90.01	360.00	7,462.45	2,723.98	-1,062.74	2,894.33	0.00	0.00	0.00
10,300.00	90.01	360.00	7,462.43	2,823.98	-1,062.74	2,991.70	0.00	0.00	0.00
10,400.00	90.01	360.00	7,462.40	2,923.98	-1,062.74	3,089.08	0.00	0.00	0.00
10,500.00	90.01	360.00	7,462.38	3,023.98	-1,062.74	3,186.46	0.00	0.00	0.00
10,600.00	90.01	360.00	7,462.35	3,123.98	-1,062.74	3,283.84	0.00	0.00	0.00
10,700.00	90.01	360.00	7,462.33	3,223.98	-1,062.74	3,381.22	0.00	0.00	0.00
10,800.00	90.01	360.00	7,462.30	3,323.98	-1,062.74	3,478.59	0.00	0.00	0.00
10,900.00	90.01	360.00	7,462.28	3,423.98	-1,062.74	3,575.97	0.00	0.00	0.00
11,000.00	90.01	360.00	7,462.25	3,523.98	-1,062.74	3,673.35	0.00	0.00	0.00
11,100.00	90.01	360.00	7,462.23	3,623.98	-1,062.74	3,770.73	0.00	0.00	0.00
11,200.00	90.01	360.00	7,462.20	3,723.98	-1,062.74	3,868.10	0.00	0.00	0.00
11,300.00	90.01	360.00	7,462.18	3,823.98	-1,062.74	3,965.48	0.00	0.00	0.00
11,400.00	90.01	360.00	7,462.15	3,923.98	-1,062.74	4,062.86	0.00	0.00	0.00
11,500.00	90.01	360.00	7,462.13	4,023.98	-1,062.74	4,160.24	0.00	0.00	0.00
11,600.00	90.01	360.00	7,462.10	4,123.98	-1,062.74	4,257.61	0.00	0.00	0.00
11,700.00	90.01	360.00	7,462.08	4,223.98	-1,062.74	4,354.99	0.00	0.00	0.00
11,800.00	90.01	360.00	7,462.06	4,323.98	-1,062.74	4,452.37	0.00	0.00	0.00
11,900.00	90.01	360.00	7,462.03	4,423.98	-1,062.74	4,549.75	0.00	0.00	0.00
12,000.00	90.01	360.00	7,462.01	4,523.98	-1,062.74	4,647.12	0.00	0.00	0.00
12,024.75	90.01	360.00	7,462.00	4,548.72	-1,062.74	4,671.22	0.00	0.00	0.00
TD at 12024.75 - MARRS 3N-28HZ 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									
MARRS 3N-28HZ BH	0.00	0.00	7,462.00	4,548.72	-1,062.74	1,253,928.85	3,200,684.92	40.028196	-104.783357
- plan hits target center									
- Point									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 3N-28HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5105' GL @ 5122.00ft
<b>Site:</b>	WELD_MARRS 3N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 3N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 3N-28HZ		
<b>Design:</b>	MARRS 3N-28HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,200.00	1,200.00	9 5/8"	9-5/8	12-1/4	
7,971.61	7,463.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,694.87	3,661.00	PARKMAN		0.00		
4,869.85	4,816.00	SUSSEX		0.00		
7,442.73	7,280.00	NIOBRARA		0.00		
7,795.48	7,442.00	NIOBRARA B UPPER MARL		0.00		
7,856.18	7,454.00	NIOBRARA B CHALK TARGET		0.00		
7,971.02	7,463.00	TARGET LINE		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,350.00	1,350.00	0.00	0.00	Start Build 2.00	
1,879.01	1,876.01	-11.26	-47.39	Start 4936.36 hold at 1879.01 MD	
6,815.37	6,728.44	-220.80	-929.21	Start DLS 8.00 TFO 103.14	
7,971.02	7,463.00	495.00	-1,062.74	Start DLS 1.00 TFO -180.00	
7,971.61	7,463.00	495.59	-1,062.74	Start 4053.14 hold at 7971.61 MD	
12,024.75	7,462.00	4,548.72	-1,062.74	TD at 12024.75	