

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_MARRS 2N-28HZ**

**MARRS 2N-28HZ**

**MARRS 2N-28HZ**

**Plan: MARRS 2N-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:

WELL:

Wellbore:

Section:

SHL:

Design:

Latitude:

Longitude:

GL:

KB:

COLORADO NORTHERN ZONE - 83

WELD\_MARRS 2N-28HZ

MARRS 2N-28HZ

MARRS 2N-28HZ

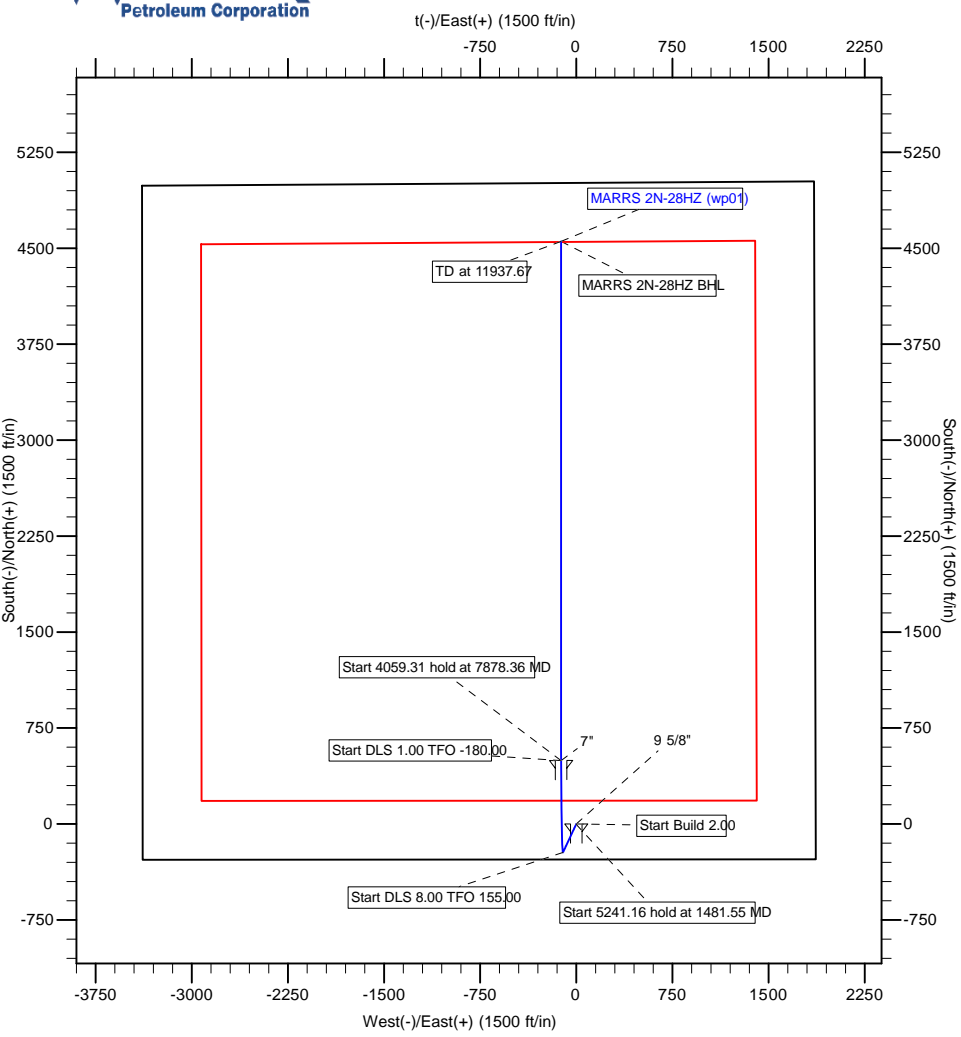
MARRS 2N-28HZ (wp01)

40.015708

-104.779390

5105.00

17° RKB + 5105° GL @ 5122.00ft



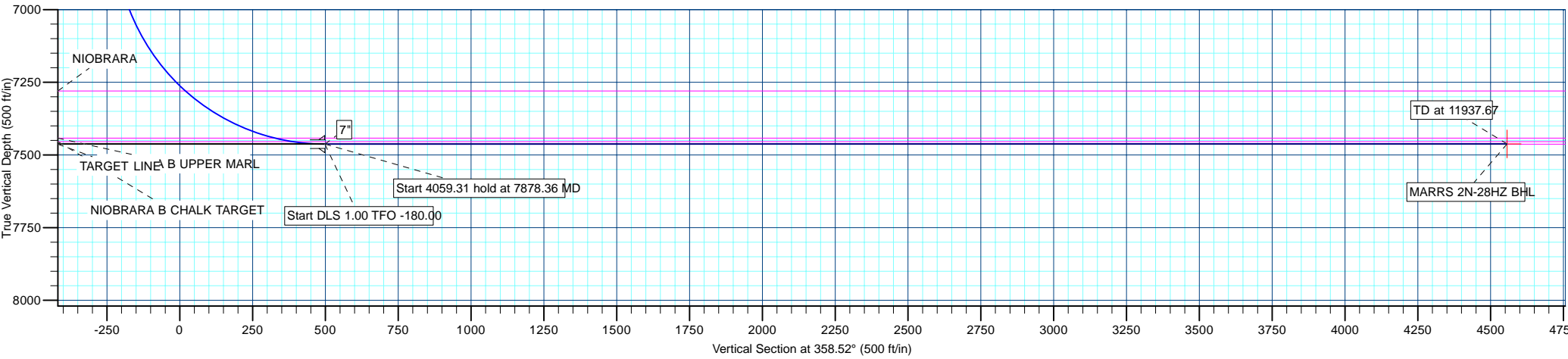
WELL DETAILS: MARRS 2N-28HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	5105.00 Latitude	Longitude	Slot
0.00	0.00	1249388.94	3201832.76	40.015708	-104.779390	

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	
1481.55	2.63	204.98	1481.50	-2.74	-1.28	2.00	204.98	-2.70	
6722.71	2.63	204.98	6717.14	-220.83	-102.86	0.00	0.00	-218.10	
7877.77	90.02	360.00	7463.00	495.00	-117.34	8.00	155.00	497.86	
7878.36	90.01	360.00	7463.00	495.59	-117.34	1.00	-180.00	498.45	
11937.67	90.01	360.00	7462.00	4554.90	-117.34	0.00	0.00	4556.41	MARRS 2N-28HZ BHL

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
MARRS 2N-28HZ BHL	7462.00	4554.90	-117.34	40.028212	-104.779809	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3661.00	3663.35	PARKMAN
4816.00	4819.56	SUSSEX
7280.00	7353.91	NIOBRARA
7442.00	7703.64	NIOBRARA B UPPER MARL
7454.00	7763.85	NIOBRARA B CHALK TARGET
7463.00	7877.26	TARGET LINE

CASING DETAILS			
TVD	MD	Name	Size
1200.00	1200.00	9 5/8"	9-5/8
7463.00	7877.77	7"	7



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 2N-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 2N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 2N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 2N-28HZ		
<b>Design:</b>	MARRS 2N-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 2N-28HZ			
Site Position: From:	Lat/Long	Northing:	1,249,388.94 ft	Latitude:	40.015708
		Easting:	3,201,832.76 ft	Longitude:	-104.779390
		Position Uncertainty:	0.00 ft	Slot Radius:	0 "

Well	MARRS 2N-28HZ					
Well Position	+N-S	0.00 ft	Northing:	1,249,388.94 ft	Latitude:	40.015708
	+E-W	0.00 ft	Easting:	3,201,832.76 ft	Longitude:	-104.779390
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,105.00 ft

<b>Wellbore</b>	MARRS 2N-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 2N-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	358.52

<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	
1,481.55	2.63	204.98	1,481.50	-2.74	-1.28	2.00	2.00	0.00	204.98	
6,722.71	2.63	204.98	6,717.14	-220.83	-102.86	0.00	0.00	0.00	0.00	
7,877.77	90.02	360.00	7,463.00	495.00	-117.34	8.00	7.57	13.42	155.00	
7,878.36	90.01	360.00	7,463.00	495.59	-117.34	1.00	-1.00	0.00	-180.00	
11,937.67	90.01	360.00	7,462.00	4,554.90	-117.34	0.00	0.00	0.00	0.00	MARRS 2N-28HZ E

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 2N-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 2N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 2N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 2N-28HZ		
<b>Design:</b>	MARRS 2N-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	204.98	1,400.00	-0.40	-0.18	-0.39	2.00	2.00	0.00
1,481.55	2.63	204.98	1,481.50	-2.74	-1.28	-2.70	2.00	2.00	0.00
Start 5241.16 hold at 1481.55 MD									
1,500.00	2.63	204.98	1,499.93	-3.51	-1.63	-3.46	0.00	0.00	0.00
1,600.00	2.63	204.98	1,599.83	-7.67	-3.57	-7.57	0.00	0.00	0.00
1,700.00	2.63	204.98	1,699.72	-11.83	-5.51	-11.68	0.00	0.00	0.00
1,800.00	2.63	204.98	1,799.62	-15.99	-7.45	-15.79	0.00	0.00	0.00
1,900.00	2.63	204.98	1,899.51	-20.15	-9.39	-19.90	0.00	0.00	0.00
2,000.00	2.63	204.98	1,999.41	-24.31	-11.32	-24.01	0.00	0.00	0.00
2,100.00	2.63	204.98	2,099.30	-28.47	-13.26	-28.12	0.00	0.00	0.00
2,200.00	2.63	204.98	2,199.20	-32.63	-15.20	-32.23	0.00	0.00	0.00
2,300.00	2.63	204.98	2,299.09	-36.79	-17.14	-36.34	0.00	0.00	0.00
2,400.00	2.63	204.98	2,398.99	-40.95	-19.08	-40.45	0.00	0.00	0.00
2,500.00	2.63	204.98	2,498.88	-45.12	-21.01	-44.56	0.00	0.00	0.00
2,600.00	2.63	204.98	2,598.77	-49.28	-22.95	-48.67	0.00	0.00	0.00
2,700.00	2.63	204.98	2,698.67	-53.44	-24.89	-52.78	0.00	0.00	0.00
2,800.00	2.63	204.98	2,798.56	-57.60	-26.83	-56.89	0.00	0.00	0.00
2,900.00	2.63	204.98	2,898.46	-61.76	-28.77	-61.00	0.00	0.00	0.00
3,000.00	2.63	204.98	2,998.35	-65.92	-30.71	-65.11	0.00	0.00	0.00
3,100.00	2.63	204.98	3,098.25	-70.08	-32.64	-69.22	0.00	0.00	0.00
3,200.00	2.63	204.98	3,198.14	-74.24	-34.58	-73.33	0.00	0.00	0.00
3,300.00	2.63	204.98	3,298.04	-78.40	-36.52	-77.44	0.00	0.00	0.00
3,400.00	2.63	204.98	3,397.93	-82.57	-38.46	-81.55	0.00	0.00	0.00
3,500.00	2.63	204.98	3,497.83	-86.73	-40.40	-85.66	0.00	0.00	0.00
3,600.00	2.63	204.98	3,597.72	-90.89	-42.33	-89.77	0.00	0.00	0.00
3,663.35	2.63	204.98	3,661.00	-93.52	-43.56	-92.37	0.00	0.00	0.00
PARKMAN									
3,700.00	2.63	204.98	3,697.62	-95.05	-44.27	-93.88	0.00	0.00	0.00
3,800.00	2.63	204.98	3,797.51	-99.21	-46.21	-97.99	0.00	0.00	0.00
3,900.00	2.63	204.98	3,897.40	-103.37	-48.15	-102.10	0.00	0.00	0.00
4,000.00	2.63	204.98	3,997.30	-107.53	-50.09	-106.21	0.00	0.00	0.00
4,100.00	2.63	204.98	4,097.19	-111.69	-52.03	-110.32	0.00	0.00	0.00
4,200.00	2.63	204.98	4,197.09	-115.85	-53.96	-114.43	0.00	0.00	0.00
4,300.00	2.63	204.98	4,296.98	-120.02	-55.90	-118.54	0.00	0.00	0.00
4,400.00	2.63	204.98	4,396.88	-124.18	-57.84	-122.65	0.00	0.00	0.00
4,500.00	2.63	204.98	4,496.77	-128.34	-59.78	-126.76	0.00	0.00	0.00
4,600.00	2.63	204.98	4,596.67	-132.50	-61.72	-130.87	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 2N-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 2N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 2N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 2N-28HZ		
<b>Design:</b>	MARRS 2N-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	2.63	204.98	4,696.56	-136.66	-63.66	-134.98	0.00	0.00	0.00
4,800.00	2.63	204.98	4,796.46	-140.82	-65.59	-139.09	0.00	0.00	0.00
4,819.57	2.63	204.98	4,816.00	-141.64	-65.97	-139.89	0.00	0.00	0.00
<b>SUSSEX</b>									
4,900.00	2.63	204.98	4,896.35	-144.98	-67.53	-143.20	0.00	0.00	0.00
5,000.00	2.63	204.98	4,996.25	-149.14	-69.47	-147.30	0.00	0.00	0.00
5,100.00	2.63	204.98	5,096.14	-153.30	-71.41	-151.41	0.00	0.00	0.00
5,200.00	2.63	204.98	5,196.03	-157.47	-73.35	-155.52	0.00	0.00	0.00
5,300.00	2.63	204.98	5,295.93	-161.63	-75.28	-159.63	0.00	0.00	0.00
5,400.00	2.63	204.98	5,395.82	-165.79	-77.22	-163.74	0.00	0.00	0.00
5,500.00	2.63	204.98	5,495.72	-169.95	-79.16	-167.85	0.00	0.00	0.00
5,600.00	2.63	204.98	5,595.61	-174.11	-81.10	-171.96	0.00	0.00	0.00
5,700.00	2.63	204.98	5,695.51	-178.27	-83.04	-176.07	0.00	0.00	0.00
5,800.00	2.63	204.98	5,795.40	-182.43	-84.98	-180.18	0.00	0.00	0.00
5,900.00	2.63	204.98	5,895.30	-186.59	-86.91	-184.29	0.00	0.00	0.00
6,000.00	2.63	204.98	5,995.19	-190.75	-88.85	-188.40	0.00	0.00	0.00
6,100.00	2.63	204.98	6,095.09	-194.92	-90.79	-192.51	0.00	0.00	0.00
6,200.00	2.63	204.98	6,194.98	-199.08	-92.73	-196.62	0.00	0.00	0.00
6,300.00	2.63	204.98	6,294.87	-203.24	-94.67	-200.73	0.00	0.00	0.00
6,400.00	2.63	204.98	6,394.77	-207.40	-96.60	-204.84	0.00	0.00	0.00
6,500.00	2.63	204.98	6,494.66	-211.56	-98.54	-208.95	0.00	0.00	0.00
6,600.00	2.63	204.98	6,594.56	-215.72	-100.48	-213.06	0.00	0.00	0.00
6,700.00	2.63	204.98	6,694.45	-219.88	-102.42	-217.17	0.00	0.00	0.00
6,722.71	2.63	204.98	6,717.14	-220.83	-102.86	-218.10	0.00	0.00	0.00
<b>Start DLS 8.00 TFO 155.00</b>									
6,800.00	3.96	343.71	6,794.37	-219.87	-104.36	-217.11	8.00	1.72	179.51
6,900.00	11.85	354.69	6,893.35	-206.32	-106.28	-203.51	8.00	7.89	10.98
7,000.00	19.83	356.92	6,989.47	-179.11	-108.14	-176.27	8.00	7.98	2.22
7,100.00	27.82	357.89	7,080.88	-138.80	-109.92	-135.92	8.00	7.99	0.98
7,200.00	35.81	358.46	7,165.79	-86.15	-111.57	-83.24	8.00	7.99	0.57
7,300.00	43.81	358.84	7,242.54	-22.19	-113.05	-19.27	8.00	8.00	0.38
7,353.91	48.12	359.00	7,280.00	16.55	-113.78	19.47	8.00	8.00	0.30
<b>NIORARA</b>									
7,400.00	51.81	359.12	7,309.65	51.83	-114.36	54.76	8.00	8.00	0.27
7,500.00	59.80	359.35	7,365.80	134.47	-115.45	137.40	8.00	8.00	0.23
7,600.00	67.80	359.55	7,409.91	224.12	-116.30	227.04	8.00	8.00	0.19
7,700.00	75.80	359.72	7,441.12	319.04	-116.91	321.94	8.00	8.00	0.17
7,703.64	76.09	359.72	7,442.00	322.57	-116.93	325.48	8.00	8.00	0.16
<b>NIORARA B UPPER MARL</b>									
7,763.85	80.91	359.82	7,454.00	381.56	-117.16	384.45	8.00	8.00	0.16
<b>NIORARA B CHALK TARGET</b>									
7,800.00	83.80	359.88	7,458.81	417.38	-117.25	420.26	8.00	8.00	0.16
7,877.26	89.98	360.00	7,463.00	494.48	-117.34	497.34	8.00	8.00	0.16
<b>TARGET LINE</b>									
7,877.77	90.02	360.00	7,463.00	495.00	-117.34	497.85	8.00	8.00	0.16
<b>Start DLS 1.00 TFO -180.00 - 7"</b>									
7,878.36	90.01	360.00	7,463.00	495.59	-117.34	498.45	0.96	-0.96	0.00
<b>Start 4059.31 hold at 7878.36 MD</b>									
7,900.00	90.01	360.00	7,462.99	517.23	-117.34	520.08	0.00	0.00	0.00
8,000.00	90.01	360.00	7,462.97	617.23	-117.34	620.04	0.00	0.00	0.00
8,100.00	90.01	360.00	7,462.95	717.23	-117.34	720.01	0.00	0.00	0.00
8,200.00	90.01	360.00	7,462.92	817.23	-117.34	819.98	0.00	0.00	0.00
8,300.00	90.01	360.00	7,462.90	917.23	-117.34	919.94	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 2N-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 2N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 2N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 2N-28HZ		
<b>Design:</b>	MARRS 2N-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)
8,400.00	90.01	360.00	7,462.87	1,017.23	-117.34	1,019.91	0.00	0.00	0.00
8,500.00	90.01	360.00	7,462.85	1,117.23	-117.34	1,119.88	0.00	0.00	0.00
8,600.00	90.01	360.00	7,462.82	1,217.23	-117.34	1,219.84	0.00	0.00	0.00
8,700.00	90.01	360.00	7,462.80	1,317.23	-117.34	1,319.81	0.00	0.00	0.00
8,800.00	90.01	360.00	7,462.77	1,417.23	-117.34	1,419.78	0.00	0.00	0.00
8,900.00	90.01	360.00	7,462.75	1,517.23	-117.34	1,519.75	0.00	0.00	0.00
9,000.00	90.01	360.00	7,462.72	1,617.23	-117.34	1,619.71	0.00	0.00	0.00
9,100.00	90.01	360.00	7,462.70	1,717.23	-117.34	1,719.68	0.00	0.00	0.00
9,200.00	90.01	360.00	7,462.67	1,817.23	-117.34	1,819.65	0.00	0.00	0.00
9,300.00	90.01	360.00	7,462.65	1,917.23	-117.34	1,919.61	0.00	0.00	0.00
9,400.00	90.01	360.00	7,462.63	2,017.23	-117.34	2,019.58	0.00	0.00	0.00
9,500.00	90.01	360.00	7,462.60	2,117.23	-117.34	2,119.55	0.00	0.00	0.00
9,600.00	90.01	360.00	7,462.58	2,217.23	-117.34	2,219.51	0.00	0.00	0.00
9,700.00	90.01	360.00	7,462.55	2,317.23	-117.34	2,319.48	0.00	0.00	0.00
9,800.00	90.01	360.00	7,462.53	2,417.23	-117.34	2,419.45	0.00	0.00	0.00
9,900.00	90.01	360.00	7,462.50	2,517.23	-117.34	2,519.41	0.00	0.00	0.00
10,000.00	90.01	360.00	7,462.48	2,617.23	-117.34	2,619.38	0.00	0.00	0.00
10,100.00	90.01	360.00	7,462.45	2,717.23	-117.34	2,719.35	0.00	0.00	0.00
10,200.00	90.01	360.00	7,462.43	2,817.23	-117.34	2,819.31	0.00	0.00	0.00
10,300.00	90.01	360.00	7,462.40	2,917.23	-117.34	2,919.28	0.00	0.00	0.00
10,400.00	90.01	360.00	7,462.38	3,017.23	-117.34	3,019.25	0.00	0.00	0.00
10,500.00	90.01	360.00	7,462.35	3,117.23	-117.34	3,119.21	0.00	0.00	0.00
10,600.00	90.01	360.00	7,462.33	3,217.23	-117.34	3,219.18	0.00	0.00	0.00
10,700.00	90.01	360.00	7,462.31	3,317.23	-117.34	3,319.15	0.00	0.00	0.00
10,800.00	90.01	360.00	7,462.28	3,417.23	-117.34	3,419.12	0.00	0.00	0.00
10,900.00	90.01	360.00	7,462.26	3,517.23	-117.34	3,519.08	0.00	0.00	0.00
11,000.00	90.01	360.00	7,462.23	3,617.23	-117.34	3,619.05	0.00	0.00	0.00
11,100.00	90.01	360.00	7,462.21	3,717.23	-117.34	3,719.02	0.00	0.00	0.00
11,200.00	90.01	360.00	7,462.18	3,817.23	-117.34	3,818.98	0.00	0.00	0.00
11,300.00	90.01	360.00	7,462.16	3,917.23	-117.34	3,918.95	0.00	0.00	0.00
11,400.00	90.01	360.00	7,462.13	4,017.23	-117.34	4,018.92	0.00	0.00	0.00
11,500.00	90.01	360.00	7,462.11	4,117.23	-117.34	4,118.88	0.00	0.00	0.00
11,600.00	90.01	360.00	7,462.08	4,217.23	-117.34	4,218.85	0.00	0.00	0.00
11,700.00	90.01	360.00	7,462.06	4,317.23	-117.34	4,318.82	0.00	0.00	0.00
11,800.00	90.01	360.00	7,462.03	4,417.23	-117.34	4,418.78	0.00	0.00	0.00
11,900.00	90.01	360.00	7,462.01	4,517.23	-117.34	4,518.75	0.00	0.00	0.00
11,937.67	90.01	360.00	7,462.00	4,554.90	-117.34	4,556.41	0.00	0.00	0.00
MARRS 2N-28HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MARRS 2N-28HZ BH	0.00	0.00	7,462.00	4,554.90	-117.34	1,253,942.73	3,201,678.41	40.028212	-104.779809
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well MARRS 2N-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 2N-28HZ	<b>North Reference:</b>	True
<b>Well:</b>	MARRS 2N-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	MARRS 2N-28HZ		
<b>Design:</b>	MARRS 2N-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	
7,877.77	7,463.00	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,663.35	3,661.00	PARKMAN		0.00	
4,819.57	4,816.00	SUSSEX		0.00	
7,353.91	7,280.00	NIOBRARA		0.00	
7,703.64	7,442.00	NIOBRARA B UPPER MARL		0.00	
7,763.85	7,454.00	NIOBRARA B CHALK TARGET		0.00	
7,877.26	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	
1,481.55	1,481.50	-2.74	-1.28	Start 5241.16 hold at 1481.55 MD	
6,722.71	6,717.14	-220.83	-102.86	Start DLS 8.00 TFO 155.00	
7,877.77	7,463.00	495.00	-117.34	Start DLS 1.00 TFO -180.00	
7,878.36	7,463.00	495.59	-117.34	Start 4059.31 hold at 7878.36 MD	
11,937.67	7,462.00	4,554.90	-117.34	TD at 11937.67	