

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_MARRS 28C-28HZ

MARRS 28C-28HZ

MARRS 28C-28HZ

Plan: MARRS 28C-28HZ (wp01)

Standard Planning Report

27 April, 2011

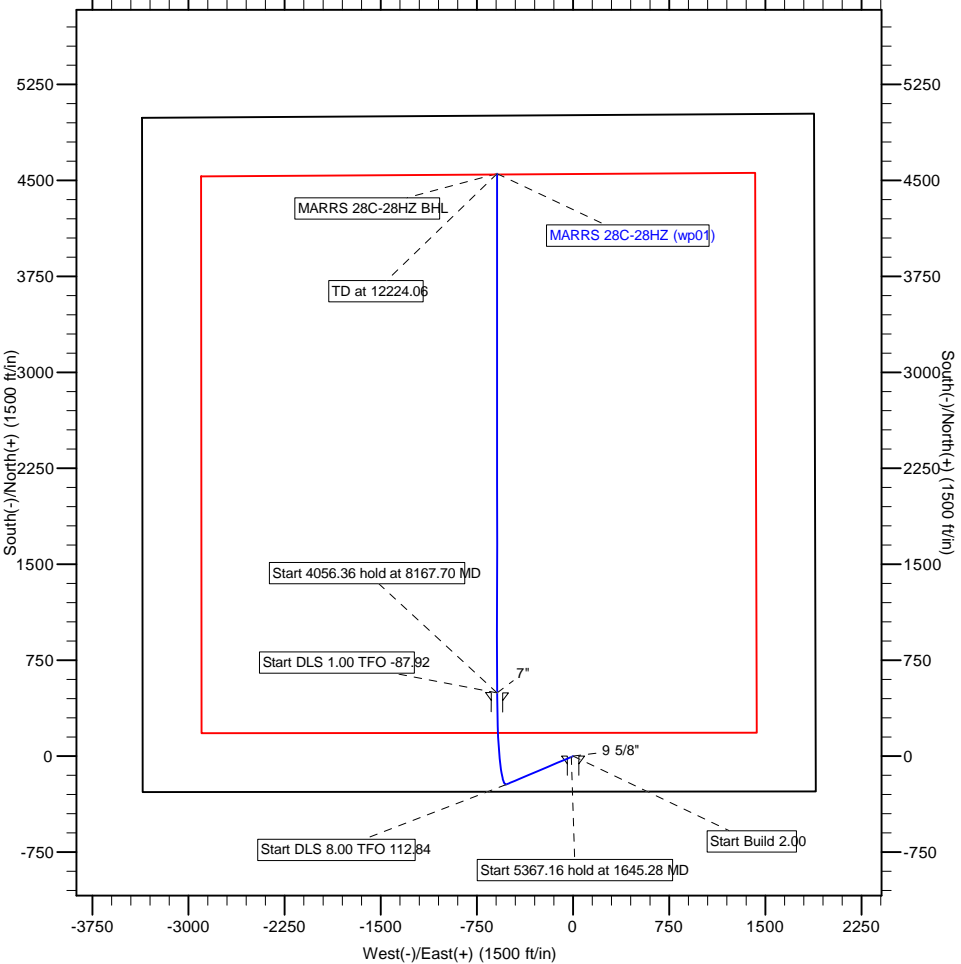


Weatherford®

t(-)/East(+) (1500 ft/in)
-750 0 750 1500 2250

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 28C-28HZ
Well: MARRS 28C-28HZ
Wellbore: MARRS 28C-28HZ
Section:
SHL:
Design: MARRS 28C-28HZ (wp01)
Latitude: 40.015709
Longitude: -104.779476
GL: 5105.00
KB: 17' RKB + 5105' GL @ 5122.00ft



WELL DETAILS: MARRS 28C-28HZ

+N-S	+E-W	Northing	Ground Level: Easting	5105.00 Latitude	40.015709 Longitude	Slot
0.00	0.00	1249389.11	3201808.67		-104.779476	

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	
1645.28	5.91	247.06	1644.76	-5.93	-14.00	2.00	247.06	-4.07	
7012.44	5.91	247.06	6983.43	-221.16	-522.56	0.00	0.00	-151.80	
8166.70	90.04	0.01	7725.00	494.99	-593.12	8.00	112.84	567.47	
8167.70	90.04	360.00	7725.00	495.99	-593.12	1.00	-87.93	568.46	
12224.06	90.04	360.00	7722.00	4552.35	-593.12	0.00	0.00	4590.83	MARRS 28C-28HZ BHL

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

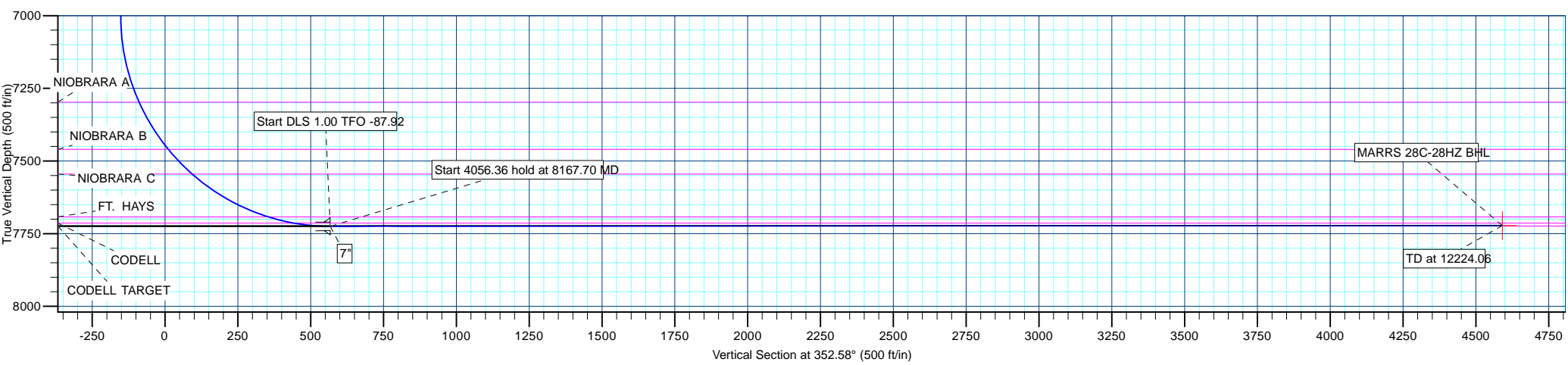
Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape
MARRS 28C-28HZ BHL	7722.00	4552.35	-593.12	40.028206	-104.781594	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3679.00	3690.38	PARKMAN
4834.00	4851.54	SUSSEX
7298.00	7336.76	NIOBRARA A
7460.00	7527.75	NIOBRARA B
7545.00	7645.89	NIOBRARA C
7692.00	7947.42	FT. HAYS
7714.00	8040.20	CODELL
7724.00	8128.23	CODELL TARGET

CASING DETAILS

TVD	MD	Name	Size
1200.00	1200.00	9 5/8"	9-5/8
7725.00	8166.70	7"	7



Database:	edm5000p	Local Co-ordinate Reference:	Well MARRS 28C-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5105' GL @ 5122.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5105' GL @ 5122.00ft
Site:	WELD_MARRS 28C-28HZ	North Reference:	True
Well:	MARRS 28C-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	MARRS 28C-28HZ		
Design:	MARRS 28C-28HZ (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_MARRS 28C-28HZ				
Site Position:		Northing:	1,249,389.11 ft	Latitude:	40.015709
From:	Lat/Long	Easting:	3,201,808.67 ft	Longitude:	-104.779476
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.47 °

Well	MARRS 28C-28HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,249,389.11 ft	Latitude:	40.015709
	+E/-W	0.00 ft	Easting:	3,201,808.67 ft	Longitude:	-104.779476
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,105.00 ft

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

Design	MARRS 28C-28HZ (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	352.58

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	
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,645.28	5.91	247.06	1,644.76	-5.93	-14.00	2.00	2.00	0.00	247.06	
7,012.44	5.91	247.06	6,983.43	-221.16	-522.56	0.00	0.00	0.00	0.00	
8,166.70	90.04	0.01	7,725.00	494.99	-593.12	8.00	7.29	9.79	112.84	
8,167.70	90.04	360.00	7,725.00	495.99	-593.12	1.00	0.04	-1.00	-87.93	
12,224.06	90.04	360.00	7,722.00	4,552.35	-593.12	0.00	0.00	0.00	0.00	MARRS 28C-28HZ

Database:	edm5000p	Local Co-ordinate Reference:	Well MARRS 28C-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5105' GL @ 5122.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5105' GL @ 5122.00ft
Site:	WELD_MARRS 28C-28HZ	North Reference:	True
Well:	MARRS 28C-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	MARRS 28C-28HZ		
Design:	MARRS 28C-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	247.06	1,400.00	-0.17	-0.40	-0.12	2.00	2.00	0.00
1,500.00	3.00	247.06	1,499.93	-1.53	-3.62	-1.05	2.00	2.00	0.00
1,600.00	5.00	247.06	1,599.68	-4.25	-10.04	-2.92	2.00	2.00	0.00
1,645.28	5.91	247.06	1,644.76	-5.93	-14.00	-4.07	2.00	2.00	0.00
Start 5367.16 hold at 1645.28 MD									
1,700.00	5.91	247.06	1,699.19	-8.12	-19.19	-5.57	0.00	0.00	0.00
1,800.00	5.91	247.06	1,798.66	-12.13	-28.66	-8.33	0.00	0.00	0.00
1,900.00	5.91	247.06	1,898.13	-16.14	-38.14	-11.08	0.00	0.00	0.00
2,000.00	5.91	247.06	1,997.59	-20.15	-47.61	-13.83	0.00	0.00	0.00
2,100.00	5.91	247.06	2,097.06	-24.16	-57.09	-16.58	0.00	0.00	0.00
2,200.00	5.91	247.06	2,196.53	-28.17	-66.56	-19.34	0.00	0.00	0.00
2,300.00	5.91	247.06	2,296.00	-32.18	-76.04	-22.09	0.00	0.00	0.00
2,400.00	5.91	247.06	2,395.47	-36.19	-85.51	-24.84	0.00	0.00	0.00
2,500.00	5.91	247.06	2,494.94	-40.20	-94.99	-27.59	0.00	0.00	0.00
2,600.00	5.91	247.06	2,594.41	-44.21	-104.46	-30.35	0.00	0.00	0.00
2,700.00	5.91	247.06	2,693.88	-48.22	-113.94	-33.10	0.00	0.00	0.00
2,800.00	5.91	247.06	2,793.35	-52.23	-123.42	-35.85	0.00	0.00	0.00
2,900.00	5.91	247.06	2,892.82	-56.24	-132.89	-38.60	0.00	0.00	0.00
3,000.00	5.91	247.06	2,992.29	-60.25	-142.37	-41.36	0.00	0.00	0.00
3,100.00	5.91	247.06	3,091.76	-64.26	-151.84	-44.11	0.00	0.00	0.00
3,200.00	5.91	247.06	3,191.23	-68.27	-161.32	-46.86	0.00	0.00	0.00
3,300.00	5.91	247.06	3,290.70	-72.28	-170.79	-49.61	0.00	0.00	0.00
3,400.00	5.91	247.06	3,390.16	-76.30	-180.27	-52.37	0.00	0.00	0.00
3,500.00	5.91	247.06	3,489.63	-80.31	-189.74	-55.12	0.00	0.00	0.00
3,600.00	5.91	247.06	3,589.10	-84.32	-199.22	-57.87	0.00	0.00	0.00
3,690.38	5.91	247.06	3,679.00	-87.94	-207.78	-60.36	0.00	0.00	0.00
PARKMAN									
3,700.00	5.91	247.06	3,688.57	-88.33	-208.69	-60.62	0.00	0.00	0.00
3,800.00	5.91	247.06	3,788.04	-92.34	-218.17	-63.38	0.00	0.00	0.00
3,900.00	5.91	247.06	3,887.51	-96.35	-227.64	-66.13	0.00	0.00	0.00
4,000.00	5.91	247.06	3,986.98	-100.36	-237.12	-68.88	0.00	0.00	0.00
4,100.00	5.91	247.06	4,086.45	-104.37	-246.59	-71.63	0.00	0.00	0.00
4,200.00	5.91	247.06	4,185.92	-108.38	-256.07	-74.39	0.00	0.00	0.00
4,300.00	5.91	247.06	4,285.39	-112.39	-265.54	-77.14	0.00	0.00	0.00
4,400.00	5.91	247.06	4,384.86	-116.40	-275.02	-79.89	0.00	0.00	0.00
4,500.00	5.91	247.06	4,484.33	-120.41	-284.50	-82.64	0.00	0.00	0.00
4,600.00	5.91	247.06	4,583.80	-124.42	-293.97	-85.40	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5105' GL @ 5122.00ft
Site:	WELD_MARRS 28C-28HZ	North Reference:	True
Well:	MARRS 28C-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	MARRS 28C-28HZ		
Design:	MARRS 28C-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	5.91	247.06	4,683.27	-128.43	-303.45	-88.15	0.00	0.00	0.00
4,800.00	5.91	247.06	4,782.73	-132.44	-312.92	-90.90	0.00	0.00	0.00
4,851.54	5.91	247.06	4,834.00	-134.51	-317.80	-92.32	0.00	0.00	0.00
SUSSEX									
4,900.00	5.91	247.06	4,882.20	-136.45	-322.40	-93.65	0.00	0.00	0.00
5,000.00	5.91	247.06	4,981.67	-140.46	-331.87	-96.41	0.00	0.00	0.00
5,100.00	5.91	247.06	5,081.14	-144.47	-341.35	-99.16	0.00	0.00	0.00
5,200.00	5.91	247.06	5,180.61	-148.48	-350.82	-101.91	0.00	0.00	0.00
5,300.00	5.91	247.06	5,280.08	-152.49	-360.30	-104.66	0.00	0.00	0.00
5,400.00	5.91	247.06	5,379.55	-156.50	-369.77	-107.42	0.00	0.00	0.00
5,500.00	5.91	247.06	5,479.02	-160.51	-379.25	-110.17	0.00	0.00	0.00
5,600.00	5.91	247.06	5,578.49	-164.52	-388.72	-112.92	0.00	0.00	0.00
5,700.00	5.91	247.06	5,677.96	-168.53	-398.20	-115.67	0.00	0.00	0.00
5,800.00	5.91	247.06	5,777.43	-172.54	-407.67	-118.43	0.00	0.00	0.00
5,900.00	5.91	247.06	5,876.90	-176.55	-417.15	-121.18	0.00	0.00	0.00
6,000.00	5.91	247.06	5,976.37	-180.56	-426.63	-123.93	0.00	0.00	0.00
6,100.00	5.91	247.06	6,075.84	-184.57	-436.10	-126.68	0.00	0.00	0.00
6,200.00	5.91	247.06	6,175.30	-188.58	-445.58	-129.44	0.00	0.00	0.00
6,300.00	5.91	247.06	6,274.77	-192.59	-455.05	-132.19	0.00	0.00	0.00
6,400.00	5.91	247.06	6,374.24	-196.60	-464.53	-134.94	0.00	0.00	0.00
6,500.00	5.91	247.06	6,473.71	-200.61	-474.00	-137.69	0.00	0.00	0.00
6,600.00	5.91	247.06	6,573.18	-204.62	-483.48	-140.45	0.00	0.00	0.00
6,700.00	5.91	247.06	6,672.65	-208.63	-492.95	-143.20	0.00	0.00	0.00
6,800.00	5.91	247.06	6,772.12	-212.64	-502.43	-145.95	0.00	0.00	0.00
6,900.00	5.91	247.06	6,871.59	-216.65	-511.90	-148.70	0.00	0.00	0.00
7,000.00	5.91	247.06	6,971.06	-220.67	-521.38	-151.46	0.00	0.00	0.00
7,012.44	5.91	247.06	6,983.43	-221.16	-522.56	-151.80	0.00	0.00	0.00
Start DLS 8.00 TFO 112.84									
7,100.00	7.19	310.97	7,070.52	-219.33	-530.85	-148.90	8.00	1.47	72.99
7,200.00	13.80	337.20	7,168.85	-204.20	-540.22	-132.69	8.00	6.62	26.23
7,300.00	21.38	345.92	7,264.12	-175.48	-549.29	-103.04	8.00	7.57	8.73
7,336.76	24.23	347.79	7,298.00	-161.60	-552.51	-88.86	8.00	7.76	5.07
NIORARA A									
7,400.00	29.17	350.18	7,354.48	-133.71	-557.89	-60.51	8.00	7.82	3.79
7,500.00	37.05	352.76	7,438.18	-79.72	-565.86	-5.95	8.00	7.88	2.58
7,527.75	39.24	353.31	7,460.00	-62.71	-567.94	11.19	8.00	7.91	1.99
NIORARA B									
7,600.00	44.97	354.53	7,513.58	-14.56	-573.03	59.60	8.00	7.92	1.69
7,645.89	48.61	355.19	7,545.00	18.75	-576.02	93.01	8.00	7.93	1.43
NIORARA C									
7,700.00	52.90	355.88	7,579.22	60.52	-579.28	134.85	8.00	7.94	1.27
7,800.00	60.85	356.96	7,633.83	144.03	-584.47	218.34	8.00	7.95	1.09
7,900.00	68.81	357.89	7,676.33	234.37	-588.51	308.44	8.00	7.96	0.93
7,947.42	72.58	358.29	7,692.00	279.09	-590.00	352.98	8.00	7.96	0.85
FT. HAYS									
8,000.00	76.77	358.72	7,705.89	329.78	-591.32	403.41	8.00	7.96	0.82
8,040.20	79.97	359.04	7,714.00	369.14	-592.09	442.54	8.00	7.96	0.79
CODELL									
8,100.00	84.73	359.50	7,721.96	428.38	-592.84	501.39	8.00	7.96	0.77
8,128.23	86.98	359.72	7,724.00	456.54	-593.03	529.33	8.00	7.96	0.76
CODELL TARGET									
8,166.70	90.04	0.01	7,725.00	494.99	-593.12	567.47	8.00	7.96	0.76
Start DLS 1.00 TFO -87.92 - 7"									

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5105' GL @ 5122.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5105' GL @ 5122.00ft
Site:	WELD_MARRS 28C-28HZ	North Reference:	True
Well:	MARRS 28C-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	MARRS 28C-28HZ		
Design:	MARRS 28C-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)
8,167.70	90.04	360.00	7,725.00	495.99	-593.12	568.46	1.00	0.05	-1.00
Start 4056.36 hold at 8167.70 MD									
8,200.00	90.04	360.00	7,724.98	528.29	-593.12	600.49	0.00	0.00	0.00
8,300.00	90.04	360.00	7,724.90	628.29	-593.12	699.65	0.00	0.00	0.00
8,400.00	90.04	360.00	7,724.83	728.29	-593.12	798.81	0.00	0.00	0.00
8,500.00	90.04	360.00	7,724.75	828.29	-593.12	897.98	0.00	0.00	0.00
8,600.00	90.04	360.00	7,724.68	928.29	-593.12	997.14	0.00	0.00	0.00
8,700.00	90.04	360.00	7,724.61	1,028.29	-593.12	1,096.30	0.00	0.00	0.00
8,800.00	90.04	360.00	7,724.53	1,128.29	-593.12	1,195.46	0.00	0.00	0.00
8,900.00	90.04	360.00	7,724.46	1,228.29	-593.12	1,294.62	0.00	0.00	0.00
9,000.00	90.04	360.00	7,724.38	1,328.29	-593.12	1,393.79	0.00	0.00	0.00
9,100.00	90.04	360.00	7,724.31	1,428.29	-593.12	1,492.95	0.00	0.00	0.00
9,200.00	90.04	360.00	7,724.24	1,528.29	-593.12	1,592.11	0.00	0.00	0.00
9,300.00	90.04	360.00	7,724.16	1,628.29	-593.12	1,691.27	0.00	0.00	0.00
9,400.00	90.04	360.00	7,724.09	1,728.29	-593.12	1,790.43	0.00	0.00	0.00
9,500.00	90.04	360.00	7,724.01	1,828.29	-593.12	1,889.60	0.00	0.00	0.00
9,600.00	90.04	360.00	7,723.94	1,928.29	-593.12	1,988.76	0.00	0.00	0.00
9,700.00	90.04	360.00	7,723.87	2,028.29	-593.12	2,087.92	0.00	0.00	0.00
9,800.00	90.04	360.00	7,723.79	2,128.29	-593.12	2,187.08	0.00	0.00	0.00
9,900.00	90.04	360.00	7,723.72	2,228.29	-593.12	2,286.24	0.00	0.00	0.00
10,000.00	90.04	360.00	7,723.64	2,328.29	-593.12	2,385.40	0.00	0.00	0.00
10,100.00	90.04	360.00	7,723.57	2,428.29	-593.12	2,484.57	0.00	0.00	0.00
10,200.00	90.04	360.00	7,723.50	2,528.29	-593.12	2,583.73	0.00	0.00	0.00
10,300.00	90.04	360.00	7,723.42	2,628.29	-593.12	2,682.89	0.00	0.00	0.00
10,400.00	90.04	360.00	7,723.35	2,728.29	-593.12	2,782.05	0.00	0.00	0.00
10,500.00	90.04	360.00	7,723.27	2,828.29	-593.12	2,881.21	0.00	0.00	0.00
10,600.00	90.04	360.00	7,723.20	2,928.29	-593.12	2,980.38	0.00	0.00	0.00
10,700.00	90.04	360.00	7,723.13	3,028.29	-593.12	3,079.54	0.00	0.00	0.00
10,800.00	90.04	360.00	7,723.05	3,128.29	-593.12	3,178.70	0.00	0.00	0.00
10,900.00	90.04	360.00	7,722.98	3,228.29	-593.12	3,277.86	0.00	0.00	0.00
11,000.00	90.04	360.00	7,722.91	3,328.29	-593.12	3,377.02	0.00	0.00	0.00
11,100.00	90.04	360.00	7,722.83	3,428.29	-593.12	3,476.19	0.00	0.00	0.00
11,200.00	90.04	360.00	7,722.76	3,528.29	-593.12	3,575.35	0.00	0.00	0.00
11,300.00	90.04	360.00	7,722.68	3,628.29	-593.12	3,674.51	0.00	0.00	0.00
11,400.00	90.04	360.00	7,722.61	3,728.29	-593.12	3,773.67	0.00	0.00	0.00
11,500.00	90.04	360.00	7,722.54	3,828.29	-593.12	3,872.83	0.00	0.00	0.00
11,600.00	90.04	360.00	7,722.46	3,928.29	-593.12	3,971.99	0.00	0.00	0.00
11,700.00	90.04	360.00	7,722.39	4,028.29	-593.12	4,071.16	0.00	0.00	0.00
11,800.00	90.04	360.00	7,722.31	4,128.29	-593.12	4,170.32	0.00	0.00	0.00
11,900.00	90.04	360.00	7,722.24	4,228.29	-593.12	4,269.48	0.00	0.00	0.00
12,000.00	90.04	360.00	7,722.17	4,328.29	-593.12	4,368.64	0.00	0.00	0.00
12,100.00	90.04	360.00	7,722.09	4,428.29	-593.12	4,467.80	0.00	0.00	0.00
12,200.00	90.04	360.00	7,722.02	4,528.29	-593.12	4,566.97	0.00	0.00	0.00
12,224.06	90.04	360.00	7,722.00	4,552.35	-593.12	4,590.82	0.00	0.00	0.00
TD at 12224.06 - MARRS 28C-28HZ BHL									

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

Design Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MARRS 28C-28HZ Bl		0.00	0.00	7,722.00	4,552.35	-593.12	1,253,936.49	3,201,178.58	40.028206	-104.781594
	- plan hits target center									
	- Point									

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	
8,166.70	7,725.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,690.38	3,679.00	PARKMAN		0.00		
4,851.54	4,834.00	SUSSEX		0.00		
7,336.76	7,298.00	NIOBRARA A		0.00		
7,527.75	7,460.00	NIOBRARA B		0.00		
7,645.89	7,545.00	NIOBRARA C		0.00		
7,947.42	7,692.00	FT. HAYS		0.00		
8,040.20	7,714.00	CODELL		0.00		
8,128.23	7,724.00	CODELL TARGET		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,350.00	1,350.00	0.00	0.00	Start Build 2.00	
1,645.28	1,644.76	-5.93	-14.00	Start 5367.16 hold at 1645.28 MD	
7,012.44	6,983.43	-221.16	-522.56	Start DLS 8.00 TFO 112.84	
8,166.70	7,725.00	494.99	-593.12	Start DLS 1.00 TFO -87.92	
8,167.70	7,725.00	495.99	-593.12	Start 4056.36 hold at 8167.70 MD	
12,224.06	7,722.00	4,552.35	-593.12	TD at 12224.06	