

Noble Energy (Rockies)

Garfield County, CO

Sec. 35-T7S-R95W (SGV 35D2 PAD)

BM 26-14C - A 1

Wellbore #1

Plan: Plan #1 Proposal

Sperry Drilling Services

Proposal Report

20 October, 2009

Well Coordinates: 579,196.83 N, 1,301,242.99 E (39° 23' 51.28" N, 107° 58' 22.39" W)

Ground Level: 8,846.00 ft

Local Coordinate Origin:

Centered on Well BM 26-14C - Slot A 1

Viewing Datum:

RKB - 24' @ 8870.00ft

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Plan Report for BM 26-14C - Plan #1 Proposal

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)	Toolface Azimuth (°)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kickoff at 225.00ft										
300.00	1.50	12.00	299.99	0.96	0.20	0.96	2.00	2.00	0.00	12.00
400.00	3.50	12.00	399.89	5.23	1.11	5.23	2.00	2.00	0.00	0.00
500.00	5.50	12.00	499.58	12.90	2.74	12.90	2.00	2.00	0.00	0.00
600.00	7.50	12.00	598.93	23.97	5.10	23.97	2.00	2.00	0.00	0.00
685.00	9.20	12.00	683.03	36.05	7.66	36.05	2.00	2.00	0.00	0.00
Build Rate = 2.00°/100ft										
700.00	9.50	12.00	697.83	38.43	8.17	38.43	2.00	2.00	0.00	0.00
800.00	11.50	12.00	796.15	56.25	11.96	56.25	2.00	2.00	0.00	0.00
900.00	13.50	12.00	893.77	77.42	16.46	77.42	2.00	2.00	0.00	0.00
1,000.00	15.50	12.00	990.58	101.91	21.66	101.91	2.00	2.00	0.00	0.00
1,100.00	17.50	12.00	1,086.46	129.69	27.57	129.69	2.00	2.00	0.00	0.00
1,150.00	18.50	12.00	1,134.01	144.81	30.78	144.81	2.00	2.00	0.00	0.00
End Build at 1150.00ft										
1,200.00	18.58	13.55	1,181.42	160.31	34.30	160.31	1.00	0.16	3.10	81.31
1,300.00	18.78	16.61	1,276.15	191.23	42.63	191.23	1.00	0.20	3.06	79.84
1,358.11	18.92	18.36	1,331.14	209.14	48.27	209.14	1.00	0.24	3.00	76.95
1,400.00	18.92	18.36	1,370.77	222.03	52.55	222.03	0.00	0.00	0.00	0.00
1,500.00	18.92	18.36	1,465.36	252.81	62.76	252.81	0.00	0.00	0.00	0.00
1,600.00	18.92	18.36	1,559.96	283.59	72.97	283.59	0.00	0.00	0.00	0.00
1,700.00	18.92	18.36	1,654.56	314.37	83.19	314.37	0.00	0.00	0.00	0.00
1,800.00	18.92	18.36	1,749.15	345.15	93.40	345.15	0.00	0.00	0.00	0.00
1,900.00	18.92	18.36	1,843.75	375.92	103.61	375.92	0.00	0.00	0.00	0.00
2,000.00	18.92	18.36	1,938.34	406.70	113.82	406.70	0.00	0.00	0.00	0.00
2,100.00	18.92	18.36	2,032.94	437.48	124.04	437.48	0.00	0.00	0.00	0.00
2,200.00	18.92	18.36	2,127.53	468.26	134.25	468.26	0.00	0.00	0.00	0.00
2,300.00	18.92	18.36	2,222.13	499.04	144.46	499.04	0.00	0.00	0.00	0.00
2,380.00	18.92	18.36	2,297.81	523.66	152.63	523.66	0.00	0.00	0.00	0.00
8 5/8" Casing Pt.										
2,400.00	18.92	18.36	2,316.73	529.82	154.67	529.82	0.00	0.00	0.00	0.00
2,500.00	18.92	18.36	2,411.32	560.60	164.88	560.60	0.00	0.00	0.00	0.00
2,600.00	18.92	18.36	2,505.92	591.38	175.10	591.38	0.00	0.00	0.00	0.00
2,700.00	18.92	18.36	2,600.51	622.16	185.31	622.16	0.00	0.00	0.00	0.00
2,800.00	18.92	18.36	2,695.11	652.93	195.52	652.93	0.00	0.00	0.00	0.00
2,900.00	18.92	18.36	2,789.71	683.71	205.73	683.71	0.00	0.00	0.00	0.00
3,000.00	18.92	18.36	2,884.30	714.49	215.95	714.49	0.00	0.00	0.00	0.00
3,100.00	18.92	18.36	2,978.90	745.27	226.16	745.27	0.00	0.00	0.00	0.00
3,200.00	18.92	18.36	3,073.49	776.05	236.37	776.05	0.00	0.00	0.00	0.00
3,300.00	18.92	18.36	3,168.09	806.83	246.58	806.83	0.00	0.00	0.00	0.00
3,400.00	18.92	18.36	3,262.68	837.61	256.79	837.61	0.00	0.00	0.00	0.00
3,470.00	18.92	18.36	3,328.90	859.15	263.94	859.15	0.00	0.00	0.00	0.00
18.92 Inclination										
3,500.00	18.92	18.36	3,357.28	868.39	267.01	868.39	0.00	0.00	0.00	0.00
3,600.00	18.92	18.36	3,451.88	899.17	277.22	899.17	0.00	0.00	0.00	0.00
3,700.00	18.92	18.36	3,546.47	929.95	287.43	929.95	0.00	0.00	0.00	0.00
3,800.00	18.92	18.36	3,641.07	960.72	297.64	960.72	0.00	0.00	0.00	0.00
3,900.00	18.92	18.36	3,735.66	991.50	307.85	991.50	0.00	0.00	0.00	0.00
4,000.00	18.92	18.36	3,830.26	1,022.28	318.07	1,022.28	0.00	0.00	0.00	0.00
4,100.00	18.92	18.36	3,924.86	1,053.06	328.28	1,053.06	0.00	0.00	0.00	0.00
4,200.00	18.92	18.36	4,019.45	1,083.84	338.49	1,083.84	0.00	0.00	0.00	0.00
4,300.00	18.92	18.36	4,114.05	1,114.62	348.70	1,114.62	0.00	0.00	0.00	0.00
4,400.00	18.92	18.36	4,208.64	1,145.40	358.92	1,145.40	0.00	0.00	0.00	0.00
4,500.00	18.92	18.36	4,303.24	1,176.18	369.13	1,176.18	0.00	0.00	0.00	0.00
4,600.00	18.92	18.36	4,397.83	1,206.96	379.34	1,206.96	0.00	0.00	0.00	0.00

Plan Report for BM 26-14C - Plan #1 Proposal

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)	Toolface Azimuth (°)
4,700.00	18.92	18.36	4,492.43	1,237.73	389.55	1,237.73	0.00	0.00	0.00	0.00
4,800.00	18.92	18.36	4,587.03	1,268.51	399.76	1,268.51	0.00	0.00	0.00	0.00
4,900.00	18.92	18.36	4,681.62	1,299.29	409.98	1,299.29	0.00	0.00	0.00	0.00
5,000.00	18.92	18.36	4,776.22	1,330.07	420.19	1,330.07	0.00	0.00	0.00	0.00
5,100.00	18.92	18.36	4,870.81	1,360.85	430.40	1,360.85	0.00	0.00	0.00	0.00
5,200.00	18.92	18.36	4,965.41	1,391.63	440.61	1,391.63	0.00	0.00	0.00	0.00
5,300.00	18.92	18.36	5,060.01	1,422.41	450.83	1,422.41	0.00	0.00	0.00	0.00
5,400.00	18.92	18.36	5,154.60	1,453.19	461.04	1,453.19	0.00	0.00	0.00	0.00
5,500.00	18.92	18.36	5,249.20	1,483.97	471.25	1,483.97	0.00	0.00	0.00	0.00
5,600.00	18.92	18.36	5,343.79	1,514.74	481.46	1,514.74	0.00	0.00	0.00	0.00
5,700.00	18.92	18.36	5,438.39	1,545.52	491.67	1,545.52	0.00	0.00	0.00	0.00
5,800.00	18.92	18.36	5,532.98	1,576.30	501.89	1,576.30	0.00	0.00	0.00	0.00
5,814.09	18.92	18.36	5,546.31	1,580.64	503.33	1,580.64	0.00	0.00	0.00	0.00
Begin Drop at 5814.09ft										
5,900.00	17.63	18.36	5,627.89	1,606.21	511.81	1,606.21	1.50	-1.50	0.00	180.00
6,000.00	16.13	18.36	5,723.57	1,633.78	520.96	1,633.78	1.50	-1.50	0.00	180.00
6,100.00	14.63	18.36	5,819.99	1,658.95	529.31	1,658.95	1.50	-1.50	0.00	180.00
6,200.00	13.13	18.36	5,917.06	1,681.73	536.87	1,681.73	1.50	-1.50	0.00	-180.00
6,300.00	11.63	18.36	6,014.73	1,702.08	543.62	1,702.08	1.50	-1.50	0.00	180.00
6,400.00	10.13	18.36	6,112.93	1,720.00	549.56	1,720.00	1.50	-1.50	0.00	-180.00
6,440.00	9.53	18.36	6,152.34	1,726.49	551.72	1,726.49	1.50	-1.50	0.00	-180.00
Drop Rate = 1.50°/100ft										
6,500.00	8.63	18.36	6,211.59	1,735.48	554.70	1,735.48	1.50	-1.50	0.00	180.00
6,600.00	7.13	18.36	6,310.64	1,748.50	559.02	1,748.50	1.50	-1.50	0.00	180.00
6,700.00	5.63	18.36	6,410.02	1,759.05	562.52	1,759.05	1.50	-1.50	0.00	180.00
6,800.00	4.13	18.36	6,509.65	1,767.13	565.20	1,767.13	1.50	-1.50	0.00	180.00
6,900.00	2.63	18.36	6,609.48	1,772.73	567.06	1,772.73	1.50	-1.50	0.00	180.00
7,000.00	1.13	18.36	6,709.42	1,775.85	568.09	1,775.85	1.50	-1.50	0.00	180.00
7,075.19	0.01	18.36	6,784.61	1,776.56	568.33	1,776.56	1.50	-1.50	0.00	-180.00
BM 26-14C Plan #1 Zone Tgt										
7,075.58	0.00	360.00	6,785.00	1,776.56	568.33	1,776.56	1.50	-1.50	0.00	-180.00
End Drop at 7075.58ft - Williams Fork - BM 26-14C Plan #1 Driller's Tgt										
7,100.00	0.02	243.43	6,809.42	1,776.56	568.33	1,776.56	0.08	0.08	0.00	243.43
7,200.00	0.10	243.43	6,909.42	1,776.51	568.23	1,776.51	0.08	0.08	0.00	0.00
7,300.00	0.18	243.43	7,009.42	1,776.40	568.02	1,776.40	0.08	0.08	0.00	0.00
7,400.00	0.26	243.43	7,109.41	1,776.23	567.67	1,776.23	0.08	0.08	0.00	0.00
7,500.00	0.34	243.43	7,209.41	1,776.00	567.21	1,776.00	0.08	0.08	0.00	0.00
7,600.00	0.42	243.43	7,309.41	1,775.70	566.61	1,775.70	0.08	0.08	0.00	0.00
7,700.00	0.50	243.43	7,409.41	1,775.34	565.90	1,775.34	0.08	0.08	0.00	0.00
7,800.00	0.58	243.43	7,509.40	1,774.92	565.05	1,774.92	0.08	0.08	0.00	0.00
7,900.00	0.66	243.43	7,609.40	1,774.44	564.09	1,774.44	0.08	0.08	0.00	0.00
8,000.00	0.74	243.43	7,709.39	1,773.89	562.99	1,773.89	0.08	0.08	0.00	0.00
8,057.62	0.79	243.43	7,767.00	1,773.55	562.31	1,773.55	0.08	0.08	0.00	0.00
Top of Gas										
8,100.00	0.82	243.43	7,809.38	1,773.28	561.78	1,773.28	0.08	0.08	0.00	0.00
8,200.00	0.90	243.43	7,909.37	1,772.61	560.44	1,772.61	0.08	0.08	0.00	0.00
8,300.00	0.98	243.43	8,009.36	1,771.88	558.97	1,771.88	0.08	0.08	0.00	0.00
8,400.00	1.06	243.43	8,109.34	1,771.08	557.38	1,771.08	0.08	0.08	0.00	0.00
8,500.00	1.14	243.43	8,209.32	1,770.22	555.66	1,770.22	0.08	0.08	0.00	0.00
8,600.00	1.22	243.43	8,309.30	1,769.30	553.82	1,769.30	0.08	0.08	0.00	0.00
8,700.00	1.30	243.43	8,409.28	1,768.32	551.85	1,768.32	0.08	0.08	0.00	0.00
8,800.00	1.38	243.43	8,509.25	1,767.28	549.76	1,767.28	0.08	0.08	0.00	0.00
8,900.00	1.46	243.43	8,609.22	1,766.17	547.55	1,766.17	0.08	0.08	0.00	0.00
9,000.00	1.54	243.43	8,709.18	1,765.00	545.21	1,765.00	0.08	0.08	0.00	0.00
9,051.53	1.58	243.43	8,760.70	1,764.37	543.95	1,764.37	0.08	0.08	0.00	0.00
9,100.00	1.54	243.43	8,809.15	1,763.78	542.77	1,763.78	0.08	-0.08	0.00	-180.00
9,200.00	1.47	243.43	8,909.11	1,762.60	540.42	1,762.60	0.08	-0.08	0.00	180.00
9,300.00	1.39	243.43	9,009.08	1,761.49	538.19	1,761.49	0.08	-0.08	0.00	-180.00
9,400.00	1.32	243.43	9,109.05	1,760.43	536.08	1,760.43	0.08	-0.08	0.00	180.00

Plan Report for BM 26-14C - Plan #1 Proposal

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)	Toolface Azimuth (°)
9,500.00	1.24	243.43	9,209.03	1,759.43	534.08	1,759.43	0.08	-0.08	0.00	180.00
9,600.00	1.16	243.43	9,309.01	1,758.50	532.21	1,758.50	0.08	-0.08	0.00	180.00
9,619.00	1.15	243.43	9,328.00	1,758.32	531.86	1,758.32	0.08	-0.08	0.00	-180.00
Cameo										
9,700.00	1.09	243.43	9,408.99	1,757.62	530.45	1,757.62	0.08	-0.08	0.00	180.00
9,800.00	1.01	243.43	9,508.97	1,756.80	528.81	1,756.80	0.08	-0.08	0.00	-180.00
9,900.00	0.93	243.43	9,608.96	1,756.04	527.29	1,756.04	0.08	-0.08	0.00	180.00
9,992.06	0.86	243.43	9,701.00	1,755.39	526.00	1,755.39	0.08	-0.08	0.00	-180.00
Rollins										
10,000.00	0.86	243.43	9,708.94	1,755.34	525.89	1,755.34	0.08	-0.08	0.00	180.00
10,100.00	0.78	243.43	9,808.93	1,754.70	524.61	1,754.70	0.08	-0.08	0.00	180.00
10,200.00	0.71	243.43	9,908.92	1,754.12	523.45	1,754.12	0.08	-0.08	0.00	180.00
10,300.00	0.63	243.43	10,008.92	1,753.60	522.41	1,753.60	0.08	-0.08	0.00	180.00
10,340.08	0.60	243.43	10,049.00	1,753.40	522.02	1,753.40	0.08	-0.08	0.00	180.00
Cozzette										
10,400.00	0.55	243.43	10,108.91	1,753.13	521.48	1,753.13	0.08	-0.08	0.00	-180.00
10,500.00	0.48	243.43	10,208.91	1,752.73	520.68	1,752.73	0.08	-0.08	0.00	-180.00
10,600.00	0.40	243.43	10,308.91	1,752.39	519.99	1,752.39	0.08	-0.08	0.00	180.00
10,637.10	0.37	243.43	10,346.00	1,752.27	519.77	1,752.27	0.08	-0.08	0.00	-180.00
Corcora										
10,700.00	0.33	243.43	10,408.90	1,752.10	519.42	1,752.10	0.08	-0.08	0.00	180.00
10,800.00	0.25	243.43	10,508.90	1,751.88	518.97	1,751.88	0.08	-0.08	0.00	180.00
10,878.10	0.19	243.43	10,587.00	1,751.74	518.70	1,751.74	0.08	-0.08	0.00	-180.00
Mancos										
10,900.00	0.17	243.43	10,608.90	1,751.71	518.64	1,751.71	0.08	-0.08	0.00	180.00
11,000.00	0.10	243.43	10,708.90	1,751.61	518.43	1,751.61	0.08	-0.08	0.00	180.00
11,128.10	0.00	360.00	10,837.00	1,751.56	518.33	1,751.56	0.08	-0.08	0.00	180.00

BM 26-14C Plan #1 BH Tgt

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
225.00	225.00	0.00	0.00	Kickoff at 225.00ft
685.00	683.03	36.05	7.66	Build Rate = 2.00°/100ft
1,150.00	1,134.01	144.81	30.78	End Build at 1150.00ft
3,470.00	3,328.90	859.15	263.94	18.92 Inclination
5,814.09	5,546.31	1,580.64	503.33	Begin Drop at 5814.09ft
6,440.00	6,152.34	1,726.49	551.72	Drop Rate = 1.50°/100ft
7,075.58	6,785.00	1,776.56	568.33	End Drop at 7075.58ft
11,128.10	10,837.00	1,751.56	518.33	Total Depth = 11128.10ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,127.96	Plan #1 Proposal	MWD

Plan Report for BM 26-14C - Plan #1 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,380.00	2,297.81	8 5/8" Casing Pt.	8-5/8	11

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,075.58	6,785.00	Williams Fork		0.00	
8,057.62	7,767.00	Top of Gas		0.00	
9,619.00	9,328.00	Cameo		0.00	
9,992.06	9,701.00	Rollins		0.00	
10,340.08	10,049.00	Cozzette		0.00	
10,637.10	10,346.00	Corcora		0.00	
10,878.10	10,587.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
BM 26-14C Plan #1 Zone Tgt	6,785.00	1,751.56	518.33	Rectangle
BM 26-14C Plan #1 Driller's Tgt	6,785.00	1,776.56	568.33	Rectangle
BM 26-14C Plan #1 BH Tgt	10,837.00	1,751.56	518.33	Point

**North Reference Sheet for Sec. 35-T7S-R95W (SGV 35D2 PAD) - BM 26-14C -
Wellbore #1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB - 24' @ 8870.00ft. Northing and Easting are relative to BM 26-14C - Slot A 1

Coordinate System is US State Plane 1927 (Exact solution), Colorado Central 502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 39° 45' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 0.99994927

Grid Coordinates of Well: 579,196.83 ft N, 1,301,242.99 ft E

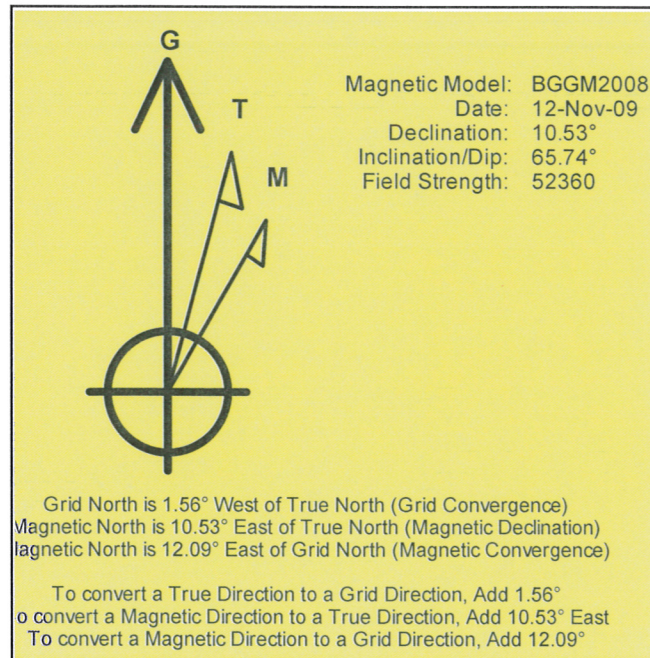
Geographical Coordinates of Well: 39° 23' 51.28" N, 107° 58' 22.39" W

Grid Convergence at Surface is: -1.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,128.10ft

the Bottom Hole Displacement is 1,826.64ft in the Direction of 16.48° (Grid).

Magnetic Convergence at surface is: -12.09° (12 November 2009, , BGGM2008)



Project: Garfield County, CO
Site: Sec. 35-T7S-R95W (SGV 35D2 PAD)
Well: BM 26-14C
Wellbore: Wellbore #1
Plan: Plan #1 Proposal

Noble Energy (Rockies)

HALLIBURTON

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
1150.00	18.50	12.00	1134.01	144.81	30.78	2.00	12.00	144.81
1358.11	18.92	18.36	1331.14	209.14	48.27	1.00	81.31	209.14
5814.09	18.92	18.36	5546.31	1580.64	503.32	0.00	0.00	1580.64
7075.58	0.00	360.00	6785.00	1776.56	568.33	1.50	180.00	1776.56
9051.53	1.58	243.43	8760.70	1764.37	543.95	0.08	243.43	1764.37
11128.10	0.00	360.00	10837.00	1751.56	518.33	0.08	180.00	1751.56

BM 26-14C Plan #1 Driller's Tgt

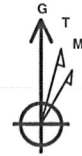
BM 26-14C Plan #1 BH Tgt

WELL DETAILS: BM 26-14C

North	East	Ground Level	Latitude	Longitude	A 1
579196.83	1301242.99	8846.00	39° 23' 51.275 N	107° 58' 22.387 W	

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BM 26-14C Plan #1 Driller's Tgt	6785.00	1776.56	568.33	Rectangle (Sides: L25.00 W25.00)
BM 26-14C Plan #1 Zone Tgt	6785.00	1751.56	518.33	Rectangle (Sides: L100.00 W200.00)
BM 26-14C Plan #1 BH Tgt	10837.00	1751.56	518.33	Point



Azimuths to Grid North
True North: 1.56°
Magnetic North: 12.09°
Magnetic Field
Strength: 52360.2nT
Dip Angle: 65.74°
Date: 11/12/2009
Model: BGGM2008

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6785.00	7075.58	Williams Fork
7767.00	8057.62	Top of Gas
9328.00	9619.00	Cameo
9701.00	9992.06	Rollins
10049.00	10340.08	Cozzette
10346.00	10637.10	Corcora
10587.00	10878.10	Mancos

