



# **Noble Energy (Rockies)**

**Garfield County, CO (NAD 83)**

**Sec. 35-T7S-R95W (BM 35C PAD)**

**BM 35-22C**

**BM 35-22C**

**Plan: BM 35-22C Proposal 2.0**

## **Standard Proposal Report**

**13 February, 2010**



**HALLIBURTON**  
**Sperry Drilling Services**

Project: Garfield County, CO (NAD 83)  
Site: Sec. 35-T7S-R95W (BM 35C PAD)  
Well: BM 35-22C  
Wellbore: BM 35-22C  
Plan: BM 35-22C Proposal 2.0

Noble Energy (Rockies)

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00
750.00	5.00	160.00	749.37	-20.49	7.46	1.00	160.00	-20.49
1824.88	14.78	190.15	1807.52	-200.01	-0.70	1.00	43.39	-200.01
5696.66	14.78	190.15	5551.15	-1172.41	-174.71	0.00	0.00	-1172.41
7174.84	0.00	2.43	7013.00	-1359.07	-208.11	1.00	180.00	-1359.07
11274.84	0.00	2.43	11113.00	-1359.07	-208.11	0.00	2.43	-1359.07

WELL DETAILS: BM 35-22C

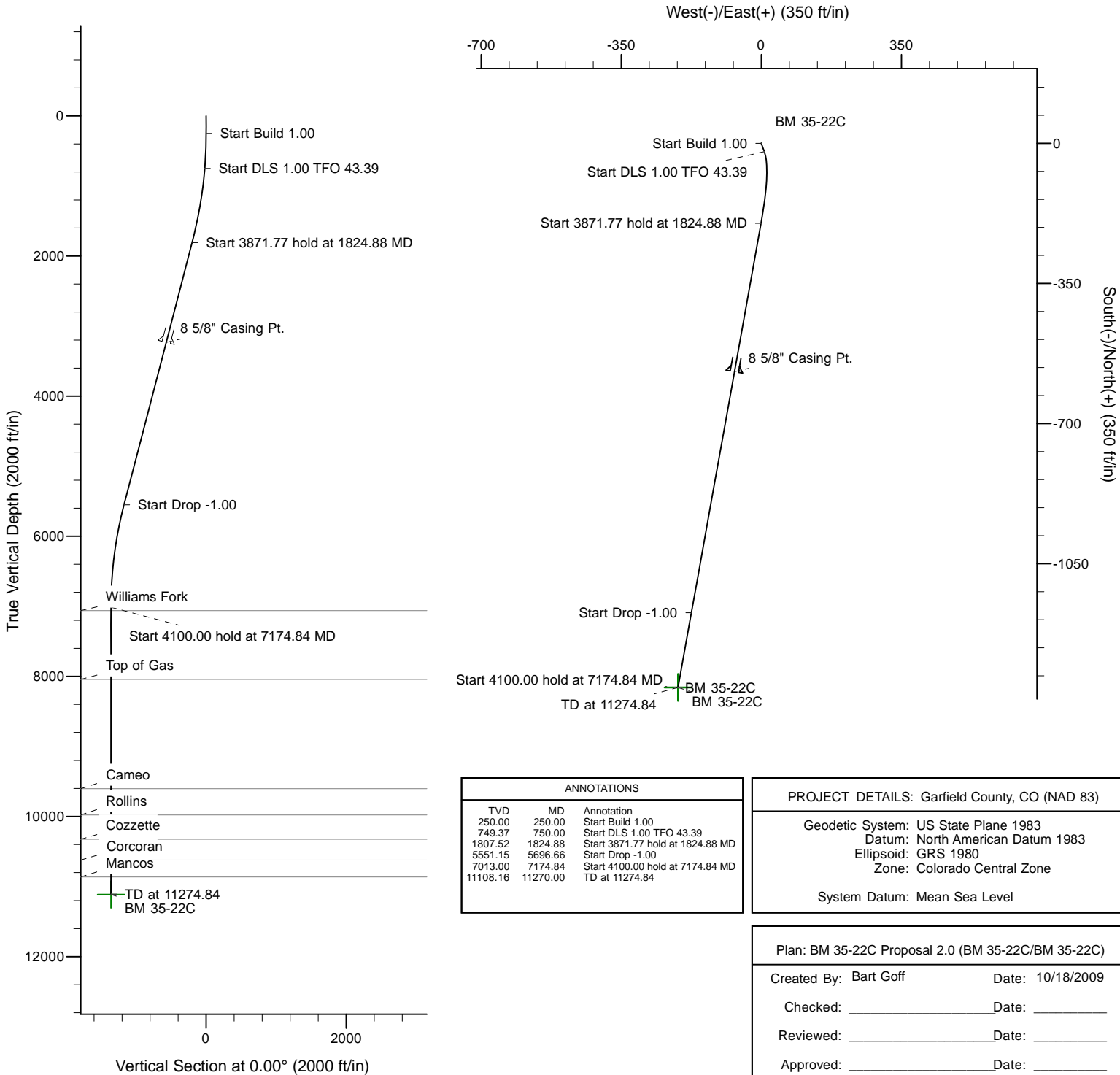
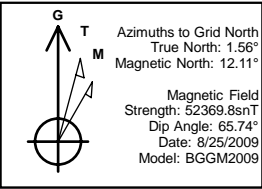
North	East	Ground Level	Latitude	Longitude
1579604.70	2303043.80	9233.00	39° 23' 55.672 N	107° 57' 59.822 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
7061.00	7222.84	Williams Fork
8043.00	8204.84	Top of Gas
9604.00	9765.84	Cameo
9977.00	10138.84	Rollins
10325.00	10486.84	Cozzette
10622.00	10783.84	Corcoran
10863.00	11024.84	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BM 35-22C	11113.00	-1359.07	-208.11	Point



ANNOTATIONS

TVD	MD	Annotation
250.00	250.00	Start Build 1.00
749.37	750.00	Start DLS 1.00 TFO 43.39
1807.52	1824.88	Start 3871.77 hold at 1824.88 MD
5551.15	5696.66	Start Drop -1.00
7013.00	7174.84	Start 4100.00 hold at 7174.84 MD
11108.16	11270.00	TD at 11274.84

PROJECT DETAILS: Garfield County, CO (NAD 83)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

System Datum: Mean Sea Level

Plan: BM 35-22C Proposal 2.0 (BM 35-22C/BM 35-22C)

Created By: Bart Goff Date: 10/18/2009  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-22C		
<b>Design:</b>	BM 35-22C Proposal 2.0		

<b>Project</b>	Garfield County, CO (NAD 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 Central Zone		Using geodetic scale factor

Site	Sec. 35-T7S-R95W (BM 35C PAD)				
Site Position:		Northing:	1,579,611.24 ft	Latitude:	39° 23' 55.737 N
From:	Map	Easting:	2,303,047.45 ft	Longitude:	107° 57' 59.778 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-1.56 °

Well	BM 35-22C					
Well Position	+N/-S	0.00 ft	Northing:	1,579,604.70 ft	Latitude:	39° 23' 55.672 N
	+E/-W	0.00 ft	Easting:	2,303,043.80 ft	Longitude:	107° 57' 59.822 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	9,233.00 ft

<b>Wellbore</b>	BM 35-22C				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2009	8/25/2009	10.56	65.74	52,370

<b>Design</b>	BM 35-22C Proposal 2.0			
<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	0.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVD System ft	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Tool Face (°)
0.00	0.00	0.00	0.00	-9,257.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	-9,007.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	5.00	160.00	749.37	-8,507.63	-20.49	7.46	1.00	1.00	0.00	160.00
1,824.88	14.78	190.15	1,807.52	-7,449.48	-200.01	-0.70	1.00	0.91	2.80	43.39
5,696.66	14.78	190.15	5,551.15	-3,705.85	-1,172.41	-174.71	0.00	0.00	0.00	0.00
7,174.84	0.00	2.43	7,013.00	-2,244.00	-1,359.07	-208.11	1.00	-1.00	0.00	180.00
11,274.84	0.00	2.43	11,113.00	1,856.00	-1,359.07	-208.11	0.00	0.00	0.00	0.00

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-22C		
<b>Design:</b>	BM 35-22C Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -9,257.00	Vert Section
0.00	0.00	0.00	0.00	-9,257.00	0.00	0.00	1,579,604.70	2,303,043.80	0.00	0.00
100.00	0.00	0.00	100.00	-9,157.00	0.00	0.00	1,579,604.70	2,303,043.80	0.00	0.00
200.00	0.00	0.00	200.00	-9,057.00	0.00	0.00	1,579,604.70	2,303,043.80	0.00	0.00
250.00	0.00	0.00	250.00	-9,007.00	0.00	0.00	1,579,604.70	2,303,043.80	0.00	0.00
<b>Start Build 1.00</b>										
300.00	0.50	160.00	300.00	-8,957.00	-0.21	0.07	1,579,604.50	2,303,043.87	1.00	-0.21
400.00	1.50	160.00	399.98	-8,857.02	-1.84	0.67	1,579,602.86	2,303,044.47	1.00	-1.84
500.00	2.50	160.00	499.92	-8,757.08	-5.12	1.87	1,579,599.58	2,303,045.67	1.00	-5.12
600.00	3.50	160.00	599.78	-8,657.22	-10.04	3.66	1,579,594.66	2,303,047.45	1.00	-10.04
700.00	4.50	160.00	699.54	-8,557.46	-16.60	6.04	1,579,588.10	2,303,049.84	1.00	-16.60
750.00	5.00	160.00	749.37	-8,507.63	-20.49	7.46	1,579,584.21	2,303,051.26	1.00	-20.49
<b>Start DLS 1.00 TFO 43.39</b>										
800.00	5.37	163.67	799.16	-8,457.84	-24.78	8.86	1,579,579.92	2,303,052.66	1.00	-24.78
900.00	6.18	169.62	898.65	-8,358.35	-34.57	11.15	1,579,570.13	2,303,054.95	1.00	-34.57
1,000.00	7.03	174.17	997.99	-8,259.01	-45.95	12.74	1,579,558.76	2,303,056.54	1.00	-45.95
1,100.00	7.92	177.73	1,097.14	-8,159.86	-58.92	13.63	1,579,545.79	2,303,057.43	1.00	-58.92
1,200.00	8.83	180.56	1,196.07	-8,060.93	-73.47	13.83	1,579,531.23	2,303,057.63	1.00	-73.47
1,300.00	9.76	182.87	1,294.76	-7,962.24	-89.60	13.33	1,579,515.10	2,303,057.13	1.00	-89.60
1,400.00	10.70	184.77	1,393.17	-7,863.83	-107.32	12.13	1,579,497.39	2,303,055.93	1.00	-107.32
1,500.00	11.65	186.37	1,491.28	-7,765.72	-126.60	10.24	1,579,478.11	2,303,054.04	1.00	-126.60
1,600.00	12.61	187.73	1,589.04	-7,667.96	-147.44	7.65	1,579,457.26	2,303,051.45	1.00	-147.44
1,700.00	13.57	188.90	1,686.44	-7,570.56	-169.85	4.37	1,579,434.86	2,303,048.17	1.00	-169.85
1,800.00	14.54	189.91	1,783.45	-7,473.55	-193.81	0.40	1,579,410.90	2,303,044.20	1.00	-193.81
1,824.88	14.78	190.15	1,807.52	-7,449.48	-200.01	-0.70	1,579,404.70	2,303,043.10	1.00	-200.01
<b>Start 3871.77 hold at 1824.88 MD</b>										
1,900.00	14.78	190.15	1,880.15	-7,376.85	-218.88	-4.08	1,579,385.84	2,303,039.72	0.00	-218.88
2,000.00	14.78	190.15	1,976.84	-7,280.16	-243.99	-8.57	1,579,360.72	2,303,035.23	0.00	-243.99
2,100.00	14.78	190.15	2,073.53	-7,183.47	-269.11	-13.06	1,579,335.61	2,303,030.74	0.00	-269.11
2,200.00	14.78	190.15	2,170.22	-7,086.78	-294.22	-17.56	1,579,310.49	2,303,026.24	0.00	-294.22
2,300.00	14.78	190.15	2,266.91	-6,990.09	-319.34	-22.05	1,579,285.38	2,303,021.75	0.00	-319.34
2,400.00	14.78	190.15	2,363.60	-6,893.40	-344.45	-26.55	1,579,260.27	2,303,017.25	0.00	-344.45
2,500.00	14.78	190.15	2,460.30	-6,796.70	-369.57	-31.04	1,579,235.15	2,303,012.76	0.00	-369.57
2,600.00	14.78	190.15	2,556.99	-6,700.01	-394.68	-35.54	1,579,210.04	2,303,008.27	0.00	-394.68
2,700.00	14.78	190.15	2,653.68	-6,603.32	-419.80	-40.03	1,579,184.93	2,303,003.77	0.00	-419.80
2,800.00	14.78	190.15	2,750.37	-6,506.63	-444.91	-44.52	1,579,159.81	2,302,999.28	0.00	-444.91
2,900.00	14.78	190.15	2,847.06	-6,409.94	-470.03	-49.02	1,579,134.70	2,302,994.78	0.00	-470.03
3,000.00	14.78	190.15	2,943.75	-6,313.25	-495.14	-53.51	1,579,109.58	2,302,990.29	0.00	-495.14
3,100.00	14.78	190.15	3,040.44	-6,216.56	-520.26	-58.01	1,579,084.47	2,302,985.80	0.00	-520.26
3,200.00	14.78	190.15	3,137.13	-6,119.87	-545.37	-62.50	1,579,059.36	2,302,981.30	0.00	-545.37
3,300.00	14.78	190.15	3,233.82	-6,023.18	-570.49	-67.00	1,579,034.24	2,302,976.81	0.00	-570.49
<b>8 5/8" Casing Pt.</b>										
3,400.00	14.78	190.15	3,330.51	-5,926.49	-595.60	-71.49	1,579,009.13	2,302,972.31	0.00	-595.60
3,500.00	14.78	190.15	3,427.20	-5,829.80	-620.72	-75.98	1,578,984.01	2,302,967.82	0.00	-620.72
3,600.00	14.78	190.15	3,523.89	-5,733.11	-645.83	-80.48	1,578,958.90	2,302,963.33	0.00	-645.83
3,700.00	14.78	190.15	3,620.58	-5,636.42	-670.95	-84.97	1,578,933.79	2,302,958.83	0.00	-670.95

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-22C		
<b>Design:</b>	BM 35-22C Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -5,539.73	Vert Section
3,800.00	14.78	190.15	3,717.27	-5,539.73	-696.06	-89.47	1,578,908.67	2,302,954.34	0.00	-696.06
3,900.00	14.78	190.15	3,813.96	-5,443.04	-721.18	-93.96	1,578,883.56	2,302,949.84	0.00	-721.18
4,000.00	14.78	190.15	3,910.65	-5,346.35	-746.29	-98.46	1,578,858.45	2,302,945.35	0.00	-746.29
4,100.00	14.78	190.15	4,007.34	-5,249.66	-771.41	-102.95	1,578,833.33	2,302,940.86	0.00	-771.41
4,200.00	14.78	190.15	4,104.03	-5,152.97	-796.52	-107.44	1,578,808.22	2,302,936.36	0.00	-796.52
4,300.00	14.78	190.15	4,200.72	-5,056.28	-821.64	-111.94	1,578,783.10	2,302,931.87	0.00	-821.64
4,400.00	14.78	190.15	4,297.41	-4,959.59	-846.75	-116.43	1,578,757.99	2,302,927.37	0.00	-846.75
4,500.00	14.78	190.15	4,394.10	-4,862.90	-871.87	-120.93	1,578,732.88	2,302,922.88	0.00	-871.87
4,600.00	14.78	190.15	4,490.79	-4,766.21	-896.98	-125.42	1,578,707.76	2,302,918.38	0.00	-896.98
4,700.00	14.78	190.15	4,587.48	-4,669.52	-922.10	-129.92	1,578,682.65	2,302,913.89	0.00	-922.10
4,800.00	14.78	190.15	4,684.17	-4,572.83	-947.21	-134.41	1,578,657.54	2,302,909.40	0.00	-947.21
4,900.00	14.78	190.15	4,780.86	-4,476.14	-972.33	-138.90	1,578,632.42	2,302,904.90	0.00	-972.33
5,000.00	14.78	190.15	4,877.56	-4,379.44	-997.44	-143.40	1,578,607.31	2,302,900.41	0.00	-997.44
5,100.00	14.78	190.15	4,974.25	-4,282.75	-1,022.56	-147.89	1,578,582.19	2,302,895.91	0.00	-1,022.56
5,200.00	14.78	190.15	5,070.94	-4,186.06	-1,047.67	-152.39	1,578,557.08	2,302,891.42	0.00	-1,047.67
5,300.00	14.78	190.15	5,167.63	-4,089.37	-1,072.79	-156.88	1,578,531.97	2,302,886.93	0.00	-1,072.79
5,400.00	14.78	190.15	5,264.32	-3,992.68	-1,097.90	-161.38	1,578,506.85	2,302,882.43	0.00	-1,097.90
5,500.00	14.78	190.15	5,361.01	-3,895.99	-1,123.02	-165.87	1,578,481.74	2,302,877.94	0.00	-1,123.02
5,600.00	14.78	190.15	5,457.70	-3,799.30	-1,148.13	-170.36	1,578,456.63	2,302,873.44	0.00	-1,148.13
5,696.66	14.78	190.15	5,551.15	-3,705.85	-1,172.41	-174.71	1,578,432.35	2,302,869.10	0.00	-1,172.41
Start Drop -1.00										
5,700.00	14.75	190.15	5,554.39	-3,702.61	-1,173.25	-174.86	1,578,431.51	2,302,868.95	1.00	-1,173.25
5,800.00	13.75	190.15	5,651.31	-3,605.69	-1,197.47	-179.19	1,578,407.29	2,302,864.62	1.00	-1,197.47
5,900.00	12.75	190.15	5,748.65	-3,508.35	-1,220.03	-183.23	1,578,384.73	2,302,860.58	1.00	-1,220.03
6,000.00	11.75	190.15	5,846.37	-3,410.63	-1,240.92	-186.97	1,578,363.85	2,302,856.84	1.00	-1,240.92
6,100.00	10.75	190.15	5,944.45	-3,312.55	-1,260.12	-190.40	1,578,344.65	2,302,853.41	1.00	-1,260.12
6,200.00	9.75	190.15	6,042.85	-3,214.15	-1,277.63	-193.54	1,578,327.13	2,302,850.27	1.00	-1,277.63
6,300.00	8.75	190.15	6,141.55	-3,115.45	-1,293.45	-196.37	1,578,311.31	2,302,847.44	1.00	-1,293.45
6,400.00	7.75	190.15	6,240.51	-3,016.49	-1,307.57	-198.90	1,578,297.19	2,302,844.91	1.00	-1,307.57
6,500.00	6.75	190.15	6,339.71	-2,917.29	-1,319.99	-201.12	1,578,284.77	2,302,842.69	1.00	-1,319.99
6,600.00	5.75	190.15	6,439.12	-2,817.88	-1,330.71	-203.04	1,578,274.06	2,302,840.78	1.00	-1,330.71
6,700.00	4.75	190.15	6,538.70	-2,718.30	-1,339.71	-204.65	1,578,265.06	2,302,839.16	1.00	-1,339.71
6,800.00	3.75	190.15	6,638.42	-2,618.58	-1,347.00	-205.95	1,578,257.77	2,302,837.86	1.00	-1,347.00
6,900.00	2.75	190.15	6,738.26	-2,518.74	-1,352.58	-206.95	1,578,252.19	2,302,836.86	1.00	-1,352.58
7,000.00	1.75	190.15	6,838.18	-2,418.82	-1,356.44	-207.64	1,578,248.33	2,302,836.17	1.00	-1,356.44
7,100.00	0.75	190.15	6,938.16	-2,318.84	-1,358.59	-208.02	1,578,246.18	2,302,835.79	1.00	-1,358.59
7,174.84	0.00	2.43	7,013.00	-2,244.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	1.00	-1,359.07
Start 4100.00 hold at 7174.84 MD										
7,200.00	0.00	2.43	7,038.16	-2,218.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,222.84	0.00	2.43	7,061.00	-2,196.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
Williams Fork										
7,300.00	0.00	2.43	7,138.16	-2,118.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,400.00	0.00	2.43	7,238.16	-2,018.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,500.00	0.00	2.43	7,338.16	-1,918.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,600.00	0.00	2.43	7,438.16	-1,818.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-22C		
<b>Design:</b>	BM 35-22C Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -1,718.84	Vert Section
7,700.00	0.00	2.43	7,538.16	-1,718.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,800.00	0.00	2.43	7,638.16	-1,618.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
7,900.00	0.00	2.43	7,738.16	-1,518.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,000.00	0.00	2.43	7,838.16	-1,418.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,100.00	0.00	2.43	7,938.16	-1,318.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,200.00	0.00	2.43	8,038.16	-1,218.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,204.84	0.00	2.43	8,043.00	-1,214.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Top of Gas</b>										
8,300.00	0.00	2.43	8,138.16	-1,118.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,400.00	0.00	2.43	8,238.16	-1,018.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,500.00	0.00	2.43	8,338.16	-918.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,600.00	0.00	2.43	8,438.16	-818.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,700.00	0.00	2.43	8,538.16	-718.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,800.00	0.00	2.43	8,638.16	-618.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
8,900.00	0.00	2.43	8,738.16	-518.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,000.00	0.00	2.43	8,838.16	-418.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,100.00	0.00	2.43	8,938.16	-318.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,200.00	0.00	2.43	9,038.16	-218.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,300.00	0.00	2.43	9,138.16	-118.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,400.00	0.00	2.43	9,238.16	-18.84	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,500.00	0.00	2.43	9,338.16	81.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,600.00	0.00	2.43	9,438.16	181.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,700.00	0.00	2.43	9,538.16	281.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,765.84	0.00	2.43	9,604.00	347.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Cameo</b>										
9,800.00	0.00	2.43	9,638.16	381.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
9,900.00	0.00	2.43	9,738.16	481.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,000.00	0.00	2.43	9,838.16	581.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,100.00	0.00	2.43	9,938.16	681.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,138.84	0.00	2.43	9,977.00	720.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Rollins</b>										
10,200.00	0.00	2.43	10,038.16	781.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,300.00	0.00	2.43	10,138.16	881.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,400.00	0.00	2.43	10,238.16	981.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,486.84	0.00	2.43	10,325.00	1,068.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Cozzette</b>										
10,500.00	0.00	2.43	10,338.16	1,081.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,600.00	0.00	2.43	10,438.16	1,181.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,700.00	0.00	2.43	10,538.16	1,281.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,783.84	0.00	2.43	10,622.00	1,365.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Corcoran</b>										
10,800.00	0.00	2.43	10,638.16	1,381.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
10,900.00	0.00	2.43	10,738.16	1,481.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
11,000.00	0.00	2.43	10,838.16	1,581.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-22C		
<b>Design:</b>	BM 35-22C Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS 1,606.00	Vert Section
11,024.84	0.00	2.43	10,863.00	1,606.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>Mancos</b>										
11,100.00	0.00	2.43	10,938.16	1,681.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
11,200.00	0.00	2.43	11,038.16	1,781.16	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
11,274.84	0.00	2.43	11,113.00	1,856.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70	0.00	-1,359.07
<b>TD at 11274.84 - BM 35-22C</b>										

Targets								
Target Name								
- hit/miss target		Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)
BM 35-22C		0.00	2.43	11,113.00	-1,359.07	-208.11	1,578,245.70	2,302,835.70
- plan hits target center								
- Point								

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
3,300.00	3,233.82	8 5/8" Casing Pt.	8-5/8	11	

Formations							
Measured Depth (ft)	Vertical Depth (ft)	Vertical Depth SS ft	Name	Lithology	Dip (°)	Dip Direction (°)	
10,138.84	9,977.00		Rollins				
10,486.84	10,325.00		Cozzette				
11,024.84	10,863.00		Mancos				
8,204.84	8,043.00		Top of Gas				
10,783.84	10,622.00		Corcoran				
7,222.84	7,061.00		Williams Fork				
9,765.84	9,604.00		Cameo				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.00	250.00	0.00	0.00	Start Build 1.00
750.00	749.37	-20.49	7.46	Start DLS 1.00 TFO 43.39
1,824.88	1,807.52	-200.01	-0.70	Start 3871.77 hold at 1824.88 MD
5,696.66	5,551.15	-1,172.41	-174.71	Start Drop -1.00
7,174.84	7,013.00	-1,359.07	-208.11	Start 4100.00 hold at 7174.84 MD
11,274.84	11,113.00	-1,359.07	-208.11	TD at 11274.84

# Sperry Drilling

## Anticollision Summary Report

<b>Company:</b>	Noble Energy (Rockies)	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Reference Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	BM 35-22C	<b>Database:</b>	.Sperry EDM .16 PRD
<b>Reference Design:</b>	BM 35-22C Proposal 2.0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	BM 35-22C Proposal 2.0		
<b>Filter type:</b>	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
<b>Interpolation Method:</b>	MD Interval 100.00ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,327.48ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	2/13/2010		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	11,274.38	BM 35-22C Proposal 2.0 (BM 35-22C)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec. 35-T7S-R95W (BM 35C PAD)						
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	200.00	203.00	29.99	29.36	47.817 CC	
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	300.00	303.00	30.13	29.07	28.321 ES	
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	700.00	702.54	43.69	40.88	15.546 SF	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	200.00	200.00	53.45	52.82	86.153 CC, ES	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	700.00	692.43	95.37	92.53	33.570 SF	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	200.00	200.00	38.74	38.12	62.442 CC	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	200.00	200.00	38.74	38.12	62.440 ES	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	700.00	696.91	70.12	67.31	24.918 SF	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	200.00	200.00	24.43	23.81	39.380 CC	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	300.00	300.04	24.53	23.48	23.434 ES	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	700.00	700.07	44.75	42.00	16.322 SF	
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	300.00	303.12	5.28	4.19	4.837 CC, ES, SF	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	200.00	200.00	14.95	14.33	24.098 CC, ES	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	1,700.00	1,694.39	51.58	42.45	5.652 SF	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	200.00	200.00	7.43	6.81	11.978 CC, ES	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	2,100.00	2,093.52	32.20	19.20	2.477 SF	
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	200.00	200.00	60.77	60.15	97.953 CC, ES	
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	700.00	690.49	99.89	97.05	35.171 SF	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	200.00	200.00	46.06	44.52	29.802 CC	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	300.00	299.38	46.90	44.27	17.807 ES	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	500.00	497.57	56.68	52.87	14.879 SF	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	200.00	200.00	60.06	59.44	96.814 CC	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	300.00	299.65	60.35	59.30	57.479 ES	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	900.00	890.17	111.60	107.69	28.531 SF	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	200.00	200.00	52.54	51.92	84.695 CC, ES	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	900.00	892.65	97.82	93.82	24.412 SF	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	461.93	466.00	41.29	39.54	23.492 CC, ES	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	700.00	699.28	56.07	53.16	19.239 SF	
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	200.00	200.00	22.56	21.93	36.358 CC	
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	300.00	300.00	22.70	21.64	21.473 ES	
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	1,000.00	1,000.90	47.31	43.01	10.989 SF	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	360.35	360.55	14.74	13.46	11.507 CC	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	400.00	400.21	14.81	13.38	10.299 ES	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	600.00	599.67	19.86	17.49	8.356 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

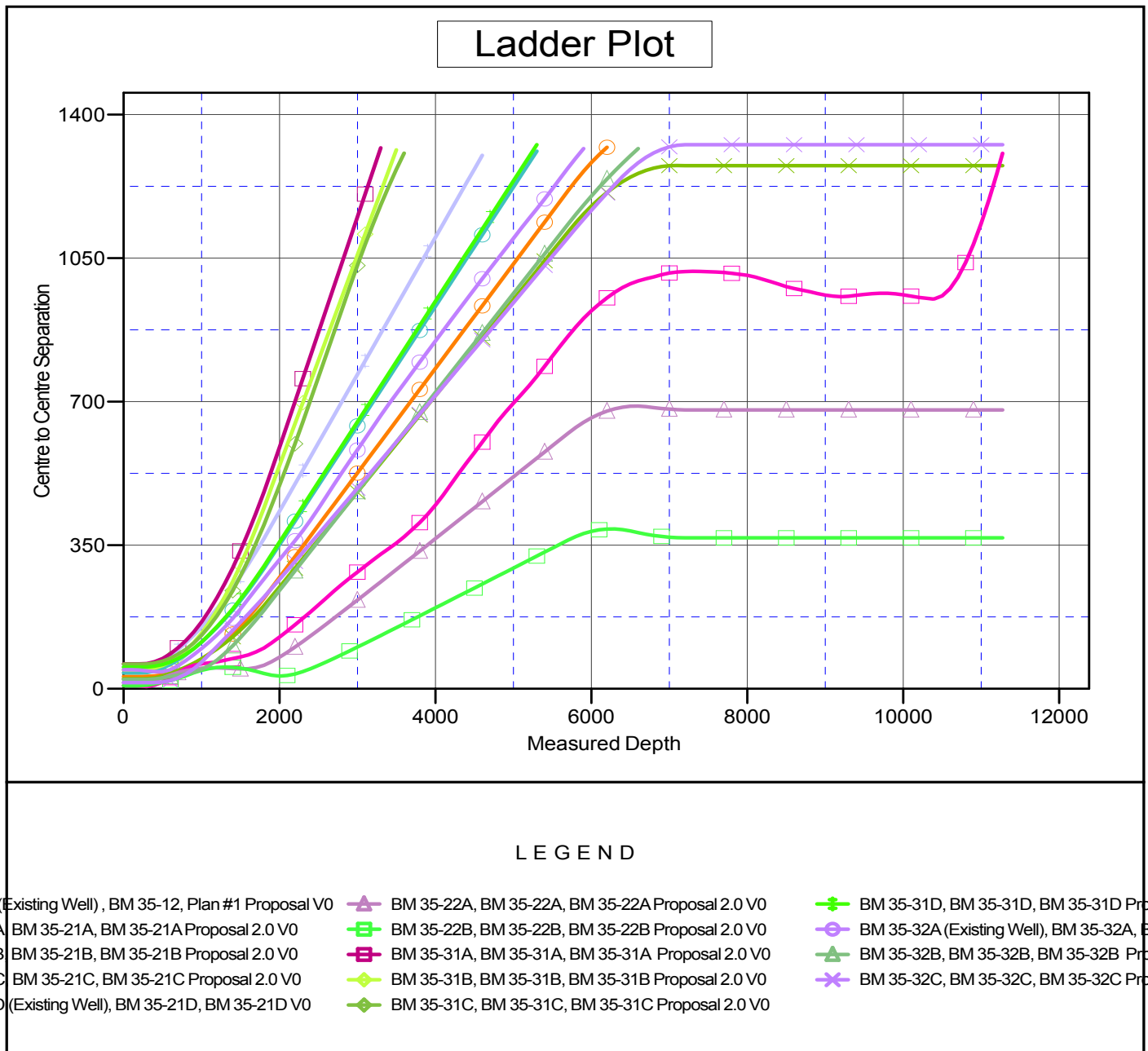
# Sperry Drilling

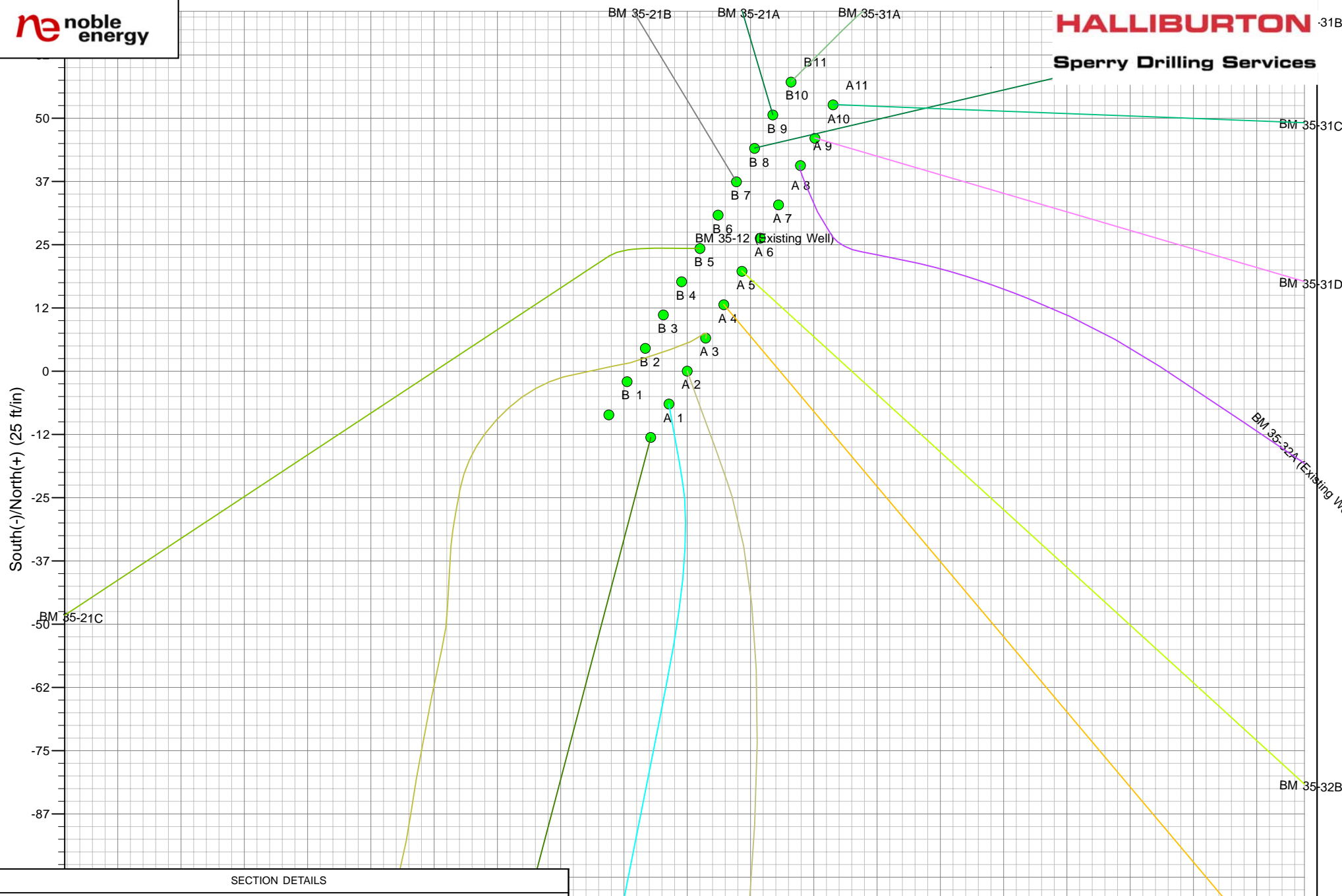
## Anticollision Summary Report

<b>Company:</b>	Noble Energy (Rockies)	<b>Local Co-ordinate Reference:</b>	Well BM 35-22C
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>TVD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Reference Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>MD Reference:</b>	24 @ 9257.00ft (24' KB 9233 Pad Ele.)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	BM 35-22C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	BM 35-22C	<b>Database:</b>	.Sperry EDM .16 PRD
<b>Reference Design:</b>	BM 35-22C Proposal 2.0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 24 @ 9257.00ft (24' KB 9233 Pad Ele.)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: BM 35-22C  
 Coordinate System is US State Plane 1983, Colorado Central Zone  
 Grid Convergence at Surface is: -1.56°





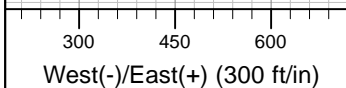
**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	750.00	5.00	160.00	749.37	-20.49	7.46	1.00	160.00	-20.49	
4	1824.88	14.78	190.15	1807.52	-200.01	-0.70	1.00	43.39	-200.01	
5	5696.66	14.78	190.15	5551.15	-1172.41	-174.71	0.00	0.00	-1172.41	
6	7174.84	0.00	2.43	7013.00	-1359.07	-208.11	1.00	180.00	-1359.07	
7	11274.84	0.00	2.43	1113.00	-1359.07	-208.11	0.00	0.00	-1359.07	BM 35-22C

BM 35-22B BM 35-22C

West(-)/East(+) (25 ft/in)

**Project: Garfield County, CO (NAD 83)**  
**Site: Sec. 35-T7S-R95W (BM 35C PAD)**  
**Well: BM 35-22C**  
**Wellbore: BM 35-22C**  
**Plan: BM 35-22C Proposal 2.0 (BM 35-22C/BM 35-22C)**



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	750.00	5.00	160.00	749.37	-20.49	7.46	1.00	160.00	-20.49	
4	1824.88	14.78	190.15	1807.52	-200.01	-0.70	1.00	43.39	-200.01	
5	5966.66	14.78	190.15	5551.15	-1172.41	-174.71	0.00	0.00	-1172.41	
6	7174.84	0.00	2.43	7013.00	-1359.07	-208.11	1.00	180.00	-1359.07	
7	71274.84	0.00	2.43	7113.00	-1359.07	-208.11	0.00	0.00	-1359.07	BM 35-22C

**Project:** Garfield County, CO (NAD 83)  
**Site:** Sec. 35-T7S-R95W (BM 35C PAD)  
**Well:** BM 35-22C  
**Wellbore:** BM 35-22C  
**Plan:** BM 35-22C Proposal 2.0 (BM 35-22C/BM 35-22C)