



Noble Energy (Rockies)

Garfield County, CO (NAD 83)

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

BM 35-21B

BM 35-21B

Plan: BM 35-21B 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 35-21B
 Wellbore: BM 35-21B
 Plan: BM 35-21B 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
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
409.88	2.77	328.84	409.81	3.83	-2.31	1.50	328.84	3.83
6900.86	2.77	328.84	6893.19	272.59	-164.79	0.00	0.00	272.59
7085.75	0.00	2.43	7078.00	276.41	-167.11	1.50	180.00	276.41
11185.75	0.00	2.43	11178.00	276.41	-167.11	0.00	0.00	276.41

WELL DETAILS: BM 35-21B

Ground Level:	9233.00
Northing	1579642.20
Easting	2303053.50
Latitude	39° 23' 56.045 N
Longitude	107° 57' 59.712 W

WELLBORE TARGET DETAILS

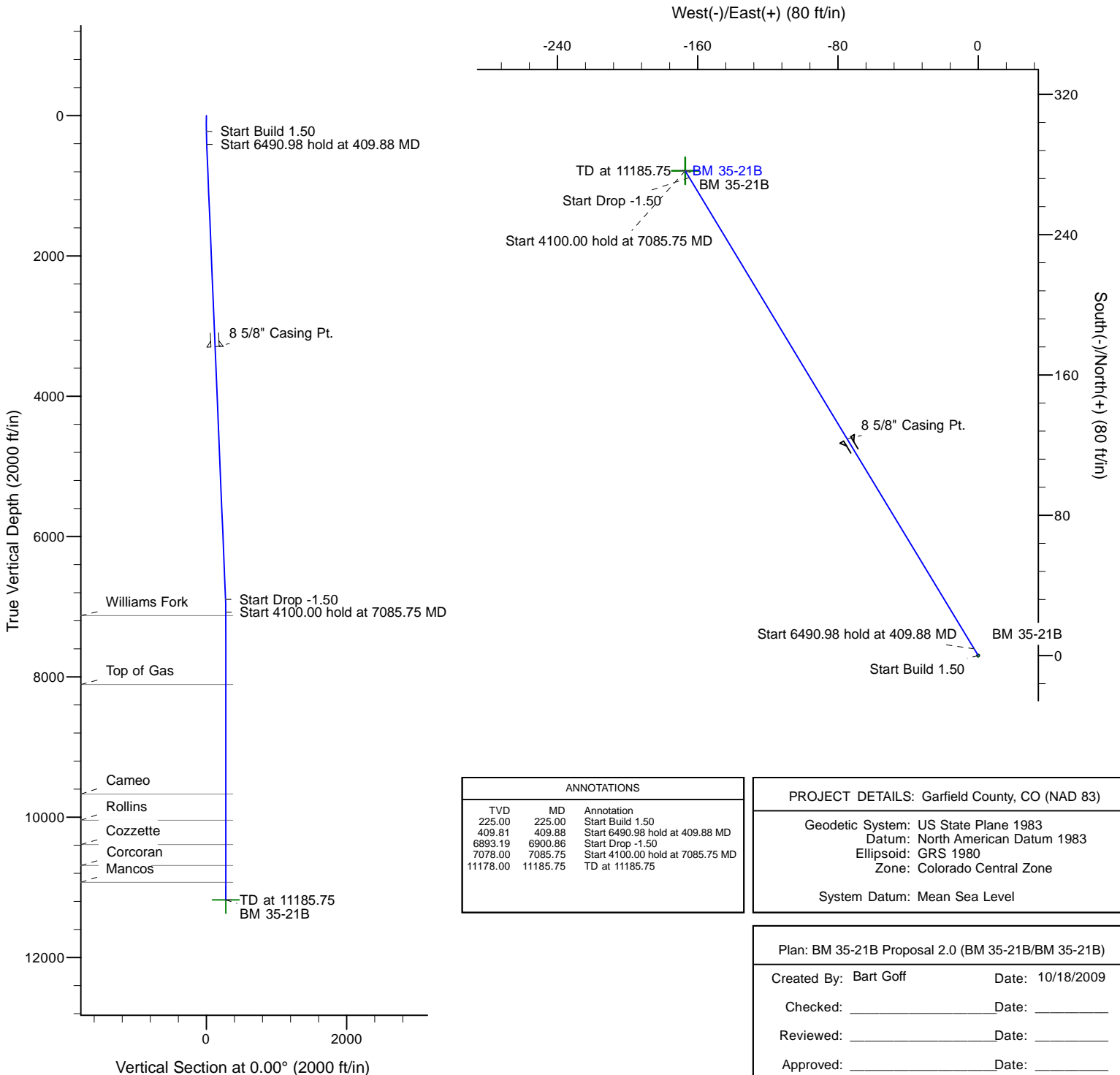
Name	TVD	+N/-S	+E/-W	Shape Point
BM 35-21B	11178.00	276.41	-167.11	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
7126.00	7133.75	Williams Fork
8108.00	8115.75	Top of Gas
9669.00	9676.75	Cameo
10042.00	10049.75	Rollins
10390.00	10397.75	Cozzette
10687.00	10694.75	Corcoran
10928.00	10935.75	Mancos



Azimuths to Grid North
 True North: 1.56°
 Magnetic North: 12.11°
 Magnetic Field
 Strength: 52369.8snT
 Dip Angle: 65.74°
 Date: 8/25/2009
 Model: BGGM2009



ANNOTATIONS

TVD	MD	Annotation
225.00	225.00	Start Build 1.50
409.81	409.88	Start 6490.98 hold at 409.88 MD
6893.19	6900.86	Start Drop -1.50
7078.00	7085.75	Start 4100.00 hold at 7085.75 MD
11178.00	11185.75	TD at 11185.75

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 35-21B Proposal 2.0 (BM 35-21B/BM 35-21B)

Created By: Bart Goff Date: 10/18/2009

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-21B
Company:	Noble Energy (Rockies)	TVD Reference:	RKB - 24' @ 9257.00ft
Project:	Garfield County, CO (NAD 83)	MD Reference:	RKB - 24' @ 9257.00ft
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-21B		
Design:	BM 35-21B Proposal 2.0		

Project	Garfield County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 35-21B					
Well Position	+N/-S	0.00 ft	Northing:	1,579,642.20 ft	Latitude:	39° 23' 56.045 N
	+E/-W	0.00 ft	Easting:	2,303,053.50 ft	Longitude:	107° 57' 59.712 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	9,257.00 ft	Ground Level:	9,233.00 ft

Wellbore	BM 35-21B				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	BGGM2009	8/25/2009	10.56	65.74	52,370

Design	BM 35-21B Proposal 2.0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	0.00

Plan Sections											
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	
225.00	0.00	0.00	225.00	-9,032.00	0.00	0.00	0.00	0.00	0.00	0.00	
409.88	2.77	328.84	409.81	-8,847.19	3.83	-2.31	1.50	1.50	0.00	328.84	
6,900.86	2.77	328.84	6,893.19	-2,363.81	272.59	-164.79	0.00	0.00	0.00	0.00	
7,085.75	0.00	2.43	7,078.00	-2,179.00	276.41	-167.11	1.50	-1.50	0.00	180.00	
11,185.75	0.00	2.43	11,178.00	1,921.00	276.41	-167.11	0.00	0.00	0.00	0.00	

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-21B
Company:	Noble Energy (Rockies)	TVD Reference:	RKB - 24' @ 9257.00ft
Project:	Garfield County, CO (NAD 83)	MD Reference:	RKB - 24' @ 9257.00ft
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-21B		
Design:	BM 35-21B 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	1,579,642.20	2,303,053.50	0.00	0.00	
100.00	0.00	0.00	100.00	-9,157.00	0.00	0.00	1,579,642.20	2,303,053.50	0.00	0.00	
200.00	0.00	0.00	200.00	-9,057.00	0.00	0.00	1,579,642.20	2,303,053.50	0.00	0.00	
225.00	0.00	0.00	225.00	-9,032.00	0.00	0.00	1,579,642.20	2,303,053.50	0.00	0.00	
Start Build 1.50											
300.00	1.13	328.84	300.00	-8,957.00	0.63	-0.38	1,579,642.83	2,303,053.12	1.50	0.63	
400.00	2.63	328.84	399.94	-8,857.06	3.43	-2.07	1,579,645.63	2,303,051.43	1.50	3.43	
409.88	2.77	328.84	409.81	-8,847.19	3.83	-2.31	1,579,646.03	2,303,051.19	1.50	3.83	
Start 6490.98 hold at 409.88 MD											
500.00	2.77	328.84	499.82	-8,757.18	7.56	-4.57	1,579,649.76	2,303,048.93	0.00	7.56	
600.00	2.77	328.84	599.71	-8,657.29	11.70	-7.07	1,579,653.90	2,303,046.43	0.00	11.70	
700.00	2.77	328.84	699.59	-8,557.41	15.84	-9.58	1,579,658.04	2,303,043.92	0.00	15.84	
800.00	2.77	328.84	799.47	-8,457.53	19.98	-12.08	1,579,662.18	2,303,041.42	0.00	19.98	
900.00	2.77	328.84	899.35	-8,357.65	24.12	-14.58	1,579,666.32	2,303,038.92	0.00	24.12	
1,000.00	2.77	328.84	999.24	-8,257.76	28.26	-17.09	1,579,670.46	2,303,036.41	0.00	28.26	
1,100.00	2.77	328.84	1,099.12	-8,157.88	32.40	-19.59	1,579,674.60	2,303,033.91	0.00	32.40	
1,200.00	2.77	328.84	1,199.00	-8,058.00	36.54	-22.09	1,579,678.74	2,303,031.41	0.00	36.54	
1,300.00	2.77	328.84	1,298.89	-7,958.11	40.68	-24.60	1,579,682.88	2,303,028.91	0.00	40.68	
1,400.00	2.77	328.84	1,398.77	-7,858.23	44.82	-27.10	1,579,687.02	2,303,026.40	0.00	44.82	
1,500.00	2.77	328.84	1,498.65	-7,758.35	48.96	-29.60	1,579,691.16	2,303,023.90	0.00	48.96	
1,600.00	2.77	328.84	1,598.53	-7,658.47	53.10	-32.10	1,579,695.30	2,303,021.40	0.00	53.10	
1,700.00	2.77	328.84	1,698.42	-7,558.58	57.25	-34.61	1,579,699.44	2,303,018.89	0.00	57.25	
1,800.00	2.77	328.84	1,798.30	-7,458.70	61.39	-37.11	1,579,703.58	2,303,016.39	0.00	61.39	
1,900.00	2.77	328.84	1,898.18	-7,358.82	65.53	-39.61	1,579,707.72	2,303,013.89	0.00	65.53	
2,000.00	2.77	328.84	1,998.07	-7,258.93	69.67	-42.12	1,579,711.86	2,303,011.38	0.00	69.67	
2,100.00	2.77	328.84	2,097.95	-7,159.05	73.81	-44.62	1,579,716.00	2,303,008.88	0.00	73.81	
2,200.00	2.77	328.84	2,197.83	-7,059.17	77.95	-47.12	1,579,720.14	2,303,006.38	0.00	77.95	
2,300.00	2.77	328.84	2,297.71	-6,959.29	82.09	-49.63	1,579,724.28	2,303,003.88	0.00	82.09	
2,400.00	2.77	328.84	2,397.60	-6,859.40	86.23	-52.13	1,579,728.42	2,303,001.37	0.00	86.23	
2,500.00	2.77	328.84	2,497.48	-6,759.52	90.37	-54.63	1,579,732.56	2,302,998.87	0.00	90.37	
2,600.00	2.77	328.84	2,597.36	-6,659.64	94.51	-57.14	1,579,736.70	2,302,996.37	0.00	94.51	
2,700.00	2.77	328.84	2,697.25	-6,559.75	98.65	-59.64	1,579,740.85	2,302,993.86	0.00	98.65	
2,800.00	2.77	328.84	2,797.13	-6,459.87	102.79	-62.14	1,579,744.99	2,302,991.36	0.00	102.79	
2,900.00	2.77	328.84	2,897.01	-6,359.99	106.93	-64.65	1,579,749.13	2,302,988.86	0.00	106.93	
3,000.00	2.77	328.84	2,996.89	-6,260.11	111.07	-67.15	1,579,753.27	2,302,986.35	0.00	111.07	
3,100.00	2.77	328.84	3,096.78	-6,160.22	115.21	-69.65	1,579,757.41	2,302,983.85	0.00	115.21	
3,200.00	2.77	328.84	3,196.66	-6,060.34	119.35	-72.16	1,579,761.55	2,302,981.35	0.00	119.35	
3,300.00	2.77	328.84	3,296.54	-5,960.46	123.49	-74.66	1,579,765.69	2,302,978.85	0.00	123.49	
8 5/8" Casing Pt.											
3,400.00	2.77	328.84	3,396.43	-5,860.57	127.63	-77.16	1,579,769.83	2,302,976.34	0.00	127.63	
3,500.00	2.77	328.84	3,496.31	-5,760.69	131.77	-79.66	1,579,773.97	2,302,973.84	0.00	131.77	
3,600.00	2.77	328.84	3,596.19	-5,660.81	135.91	-82.17	1,579,778.11	2,302,971.34	0.00	135.91	
3,700.00	2.77	328.84	3,696.07	-5,560.93	140.05	-84.67	1,579,782.25	2,302,968.83	0.00	140.05	
3,800.00	2.77	328.84	3,795.96	-5,461.04	144.20	-87.17	1,579,786.39	2,302,966.33	0.00	144.20	
3,900.00	2.77	328.84	3,895.84	-5,361.16	148.34	-89.68	1,579,790.53	2,302,963.83	0.00	148.34	

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Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-21B		
Design:	BM 35-21B 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	Vert Section	-5,261.28
4,000.00	2.77	328.84	3,995.72	-5,261.28	152.48	-92.18	1,579,794.67	2,302,961.32	0.00	152.48	
4,100.00	2.77	328.84	4,095.61	-5,161.39	156.62	-94.68	1,579,798.81	2,302,958.82	0.00	156.62	
4,200.00	2.77	328.84	4,195.49	-5,061.51	160.76	-97.19	1,579,802.95	2,302,956.32	0.00	160.76	
4,300.00	2.77	328.84	4,295.37	-4,961.63	164.90	-99.69	1,579,807.09	2,302,953.81	0.00	164.90	
4,400.00	2.77	328.84	4,395.25	-4,861.75	169.04	-102.19	1,579,811.23	2,302,951.31	0.00	169.04	
4,500.00	2.77	328.84	4,495.14	-4,761.86	173.18	-104.70	1,579,815.37	2,302,948.81	0.00	173.18	
4,600.00	2.77	328.84	4,595.02	-4,661.98	177.32	-107.20	1,579,819.51	2,302,946.31	0.00	177.32	
4,700.00	2.77	328.84	4,694.90	-4,562.10	181.46	-109.70	1,579,823.65	2,302,943.80	0.00	181.46	
4,800.00	2.77	328.84	4,794.79	-4,462.21	185.60	-112.21	1,579,827.79	2,302,941.30	0.00	185.60	
4,900.00	2.77	328.84	4,894.67	-4,362.33	189.74	-114.71	1,579,831.93	2,302,938.80	0.00	189.74	
5,000.00	2.77	328.84	4,994.55	-4,262.45	193.88	-117.21	1,579,836.07	2,302,936.29	0.00	193.88	
5,100.00	2.77	328.84	5,094.43	-4,162.57	198.02	-119.72	1,579,840.21	2,302,933.79	0.00	198.02	
5,200.00	2.77	328.84	5,194.32	-4,062.68	202.16	-122.22	1,579,844.35	2,302,931.29	0.00	202.16	
5,300.00	2.77	328.84	5,294.20	-3,962.80	206.30	-124.72	1,579,848.49	2,302,928.78	0.00	206.30	
5,400.00	2.77	328.84	5,394.08	-3,862.92	210.44	-127.23	1,579,852.63	2,302,926.28	0.00	210.44	
5,500.00	2.77	328.84	5,493.97	-3,763.03	214.58	-129.73	1,579,856.77	2,302,923.78	0.00	214.58	
5,600.00	2.77	328.84	5,593.85	-3,663.15	218.72	-132.23	1,579,860.91	2,302,921.28	0.00	218.72	
5,700.00	2.77	328.84	5,693.73	-3,563.27	222.86	-134.73	1,579,865.05	2,302,918.77	0.00	222.86	
5,800.00	2.77	328.84	5,793.62	-3,463.38	227.00	-137.24	1,579,869.19	2,302,916.27	0.00	227.00	
5,900.00	2.77	328.84	5,893.50	-3,363.50	231.15	-139.74	1,579,873.33	2,302,913.77	0.00	231.15	
6,000.00	2.77	328.84	5,993.38	-3,263.62	235.29	-142.24	1,579,877.47	2,302,911.26	0.00	235.29	
6,100.00	2.77	328.84	6,093.26	-3,163.74	239.43	-144.75	1,579,881.61	2,302,908.76	0.00	239.43	
6,200.00	2.77	328.84	6,193.15	-3,063.85	243.57	-147.25	1,579,885.75	2,302,906.26	0.00	243.57	
6,300.00	2.77	328.84	6,293.03	-2,963.97	247.71	-149.75	1,579,889.89	2,302,903.75	0.00	247.71	
6,400.00	2.77	328.84	6,392.91	-2,864.09	251.85	-152.26	1,579,894.03	2,302,901.25	0.00	251.85	
6,500.00	2.77	328.84	6,492.80	-2,764.20	255.99	-154.76	1,579,898.18	2,302,898.75	0.00	255.99	
6,600.00	2.77	328.84	6,592.68	-2,664.32	260.13	-157.26	1,579,902.32	2,302,896.25	0.00	260.13	
6,700.00	2.77	328.84	6,692.56	-2,564.44	264.27	-159.77	1,579,906.46	2,302,893.74	0.00	264.27	
6,800.00	2.77	328.84	6,792.44	-2,464.56	268.41	-162.27	1,579,910.60	2,302,891.24	0.00	268.41	
6,900.00	2.77	328.84	6,892.33	-2,364.67	272.55	-164.77	1,579,914.74	2,302,888.74	0.00	272.55	
6,900.86	2.77	328.84	6,893.19	-2,363.81	272.59	-164.79	1,579,914.77	2,302,888.71	0.00	272.59	
Start Drop -1.50											
7,000.00	1.29	328.84	6,992.26	-2,264.74	275.59	-166.61	1,579,917.78	2,302,886.90	1.50	275.59	
7,085.75	0.00	2.43	7,078.00	-2,179.00	276.41	-167.11	1,579,918.60	2,302,886.40	1.50	276.41	
Start 4100.00 hold at 7085.75 MD											
7,100.00	0.00	2.43	7,092.25	-2,164.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,133.75	0.00	2.43	7,126.00	-2,131.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Williams Fork											
7,200.00	0.00	2.43	7,192.25	-2,064.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,300.00	0.00	2.43	7,292.25	-1,964.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,400.00	0.00	2.43	7,392.25	-1,864.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,500.00	0.00	2.43	7,492.25	-1,764.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,600.00	0.00	2.43	7,592.25	-1,664.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,700.00	0.00	2.43	7,692.25	-1,564.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
7,800.00	0.00	2.43	7,792.25	-1,464.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	

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Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-21B		
Design:	BM 35-21B 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	Vert Section	
7,900.00	0.00	2.43	7,892.25	-1,364.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,000.00	0.00	2.43	7,992.25	-1,264.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,100.00	0.00	2.43	8,092.25	-1,164.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,115.75	0.00	2.43	8,108.00	-1,149.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Top of Gas											
8,200.00	0.00	2.43	8,192.25	-1,064.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,300.00	0.00	2.43	8,292.25	-964.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,400.00	0.00	2.43	8,392.25	-864.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,500.00	0.00	2.43	8,492.25	-764.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,600.00	0.00	2.43	8,592.25	-664.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,700.00	0.00	2.43	8,692.25	-564.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,800.00	0.00	2.43	8,792.25	-464.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
8,900.00	0.00	2.43	8,892.25	-364.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,000.00	0.00	2.43	8,992.25	-264.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,100.00	0.00	2.43	9,092.25	-164.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,200.00	0.00	2.43	9,192.25	-64.75	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,300.00	0.00	2.43	9,292.25	35.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,400.00	0.00	2.43	9,392.25	135.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,500.00	0.00	2.43	9,492.25	235.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,600.00	0.00	2.43	9,592.25	335.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,676.75	0.00	2.43	9,669.00	412.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Cameo											
9,700.00	0.00	2.43	9,692.25	435.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,800.00	0.00	2.43	9,792.25	535.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
9,900.00	0.00	2.43	9,892.25	635.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,000.00	0.00	2.43	9,992.25	735.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,049.75	0.00	2.43	10,042.00	785.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Rollins											
10,100.00	0.00	2.43	10,092.25	835.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,200.00	0.00	2.43	10,192.25	935.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,300.00	0.00	2.43	10,292.25	1,035.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,397.75	0.00	2.43	10,390.00	1,133.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Cozette											
10,400.00	0.00	2.43	10,392.25	1,135.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,500.00	0.00	2.43	10,492.25	1,235.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,600.00	0.00	2.43	10,592.25	1,335.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,694.75	0.00	2.43	10,687.00	1,430.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Corcoran											
10,700.00	0.00	2.43	10,692.25	1,435.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,800.00	0.00	2.43	10,792.25	1,535.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,900.00	0.00	2.43	10,892.25	1,635.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
10,935.75	0.00	2.43	10,928.00	1,671.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
Mancos											
11,000.00	0.00	2.43	10,992.25	1,735.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
11,100.00	0.00	2.43	11,092.25	1,835.25	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-21B
Company:	Noble Energy (Rockies)	TVD Reference:	RKB - 24' @ 9257.00ft
Project:	Garfield County, CO (NAD 83)	MD Reference:	RKB - 24' @ 9257.00ft
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-21B		
Design:	BM 35-21B 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 1,921.00	Vert Section	
11,185.75	0.00	2.43	11,178.00	1,921.00	276.41	-167.11	1,579,918.60	2,302,886.40	0.00	276.41	
TD at 11185.75 - BM 35-21B											

Targets								
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
BM 35-21B	0.00	2.43	11,178.00	276.41	-167.11	1,579,918.60	2,302,886.40	
- hit/miss target								
- Shape								
- plan hits target center								
- Point								

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
3,300.00	3,296.54	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 (°)	
10,935.75	10,928.00		Mancos				
7,133.75	7,126.00		Williams Fork				
8,115.75	8,108.00		Top of Gas				
10,694.75	10,687.00		Corcoran				
9,676.75	9,669.00		Cameo				
10,397.75	10,390.00		Cozzette				
10,049.75	10,042.00		Rollins				

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	Start Build 1.50	
409.88	409.81	3.83	-2.31	Start 6490.98 hold at 409.88 MD	
6,900.86	6,893.19	272.59	-164.79	Start Drop -1.50	
7,085.75	7,078.00	276.41	-167.11	Start 4100.00 hold at 7085.75 MD	
11,185.75	11,178.00	276.41	-167.11	TD at 11185.75	

Sperry Drilling

Anticollision Summary Report

Company:	Noble Energy (Rockies)	Local Co-ordinate Reference:	Well BM 35-21B
Project:	Garfield County, CO (NAD 83)	TVD Reference:	RKB - 24' @ 9257.00ft
Reference Site:	Sec. 35-T7S-R95W (BM 35C PAD)	MD Reference:	RKB - 24' @ 9257.00ft
Site Error:	0.00ft	North Reference:	Grid
Reference Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	BM 35-21B	Database:	.Sperry EDM .16 PRD
Reference Design:	BM 35-21B Proposal 2.0	Offset TVD Reference:	Offset Datum

Reference	BM 35-21B Proposal 2.0		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,318.57ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	2/13/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,185.75	BM 35-21B Proposal 2.0 (BM 35-21B)	MWD	MWD - Standard

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Summary						
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	12.19	11.56	19.431	CC, ES
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	10,000.00	9,995.25	335.07	290.48	7.516	SF
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	200.00	200.00	15.04	14.42	24.239	CC, ES
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	11,185.75	11,204.22	304.20	253.80	6.036	SF
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	200.00	200.00	15.04	14.42	24.239	CC, ES
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	11,185.75	11,166.39	398.69	349.68	8.133	SF
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	111.75	114.76	30.55	30.28	112.579	CC, ES
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	10,300.00	10,245.00	731.47	686.43	16.243	SF
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	200.00	200.00	53.35	52.73	86.000	CC, ES
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	11,185.75	11,178.85	994.49	945.46	20.282	SF
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	200.00	200.00	45.97	45.35	74.100	CC, ES
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	11,185.75	11,205.65	1,306.88	1,257.40	26.410	SF
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	200.00	200.00	38.74	38.12	62.442	CC
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	202.91	202.91	38.74	38.10	61.153	ES
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	600.00	594.85	64.08	61.70	26.909	SF
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	200.00	200.00	22.47	21.85	36.217	CC
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	300.00	299.57	22.82	21.75	21.408	ES
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	500.00	497.96	29.37	27.39	14.882	SF
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	200.00	200.00	7.52	5.97	4.864	CC
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	300.00	299.84	8.18	5.53	3.087	ES, SF
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	248.97	248.97	24.38	23.54	29.029	CC
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	300.00	299.75	24.58	23.52	23.159	ES
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	500.00	497.95	32.61	30.66	16.713	SF
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	200.00	200.00	17.73	17.11	28.575	CC, ES
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	400.00	398.96	22.87	21.38	15.271	SF
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	184.87	187.88	12.81	12.26	23.000	CC
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	200.00	202.98	12.83	12.20	20.614	ES
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	400.00	402.21	20.19	18.65	13.107	SF
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	200.00	200.00	17.74	17.11	28.589	CC, ES
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	500.00	499.82	25.89	23.91	13.111	SF
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	200.00	200.00	24.43	23.81	39.380	CC, ES
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	400.00	398.46	31.92	30.42	21.286	SF

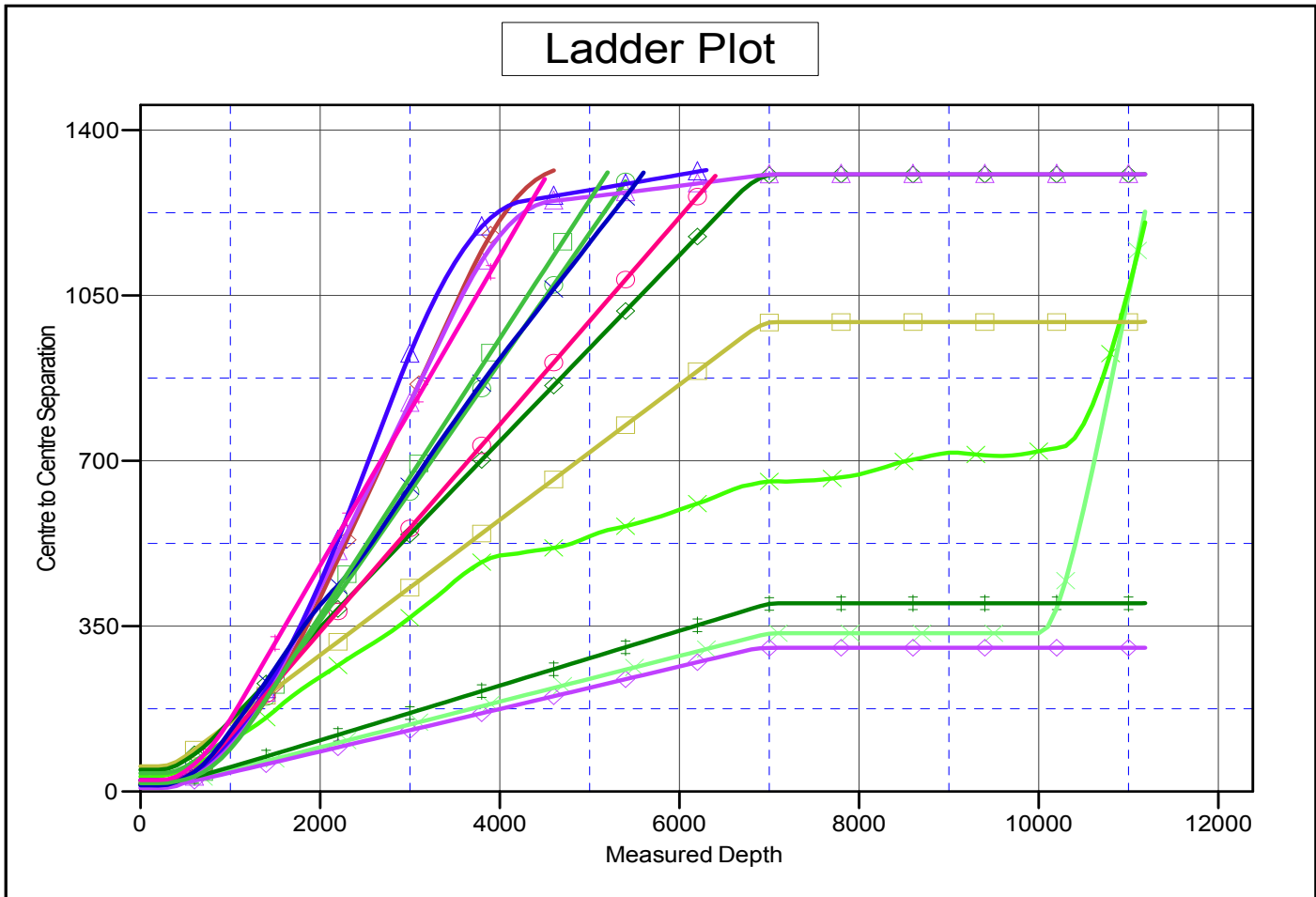
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Sperry Drilling

Anticollision Summary Report

Company:	Noble Energy (Rockies)	Local Co-ordinate Reference:	Well BM 35-21B
Project:	Garfield County, CO (NAD 83)	TVD Reference:	RKB - 24' @ 9257.00ft
Reference Site:	Sec. 35-T7S-R95W (BM 35C PAD)	MD Reference:	RKB - 24' @ 9257.00ft
Site Error:	0.00ft	North Reference:	Grid
Reference Well:	BM 35-21B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	BM 35-21B	Database:	.Sperry EDM .16 PRD
Reference Design:	BM 35-21B Proposal 2.0	Offset TVD Reference:	Offset Datum

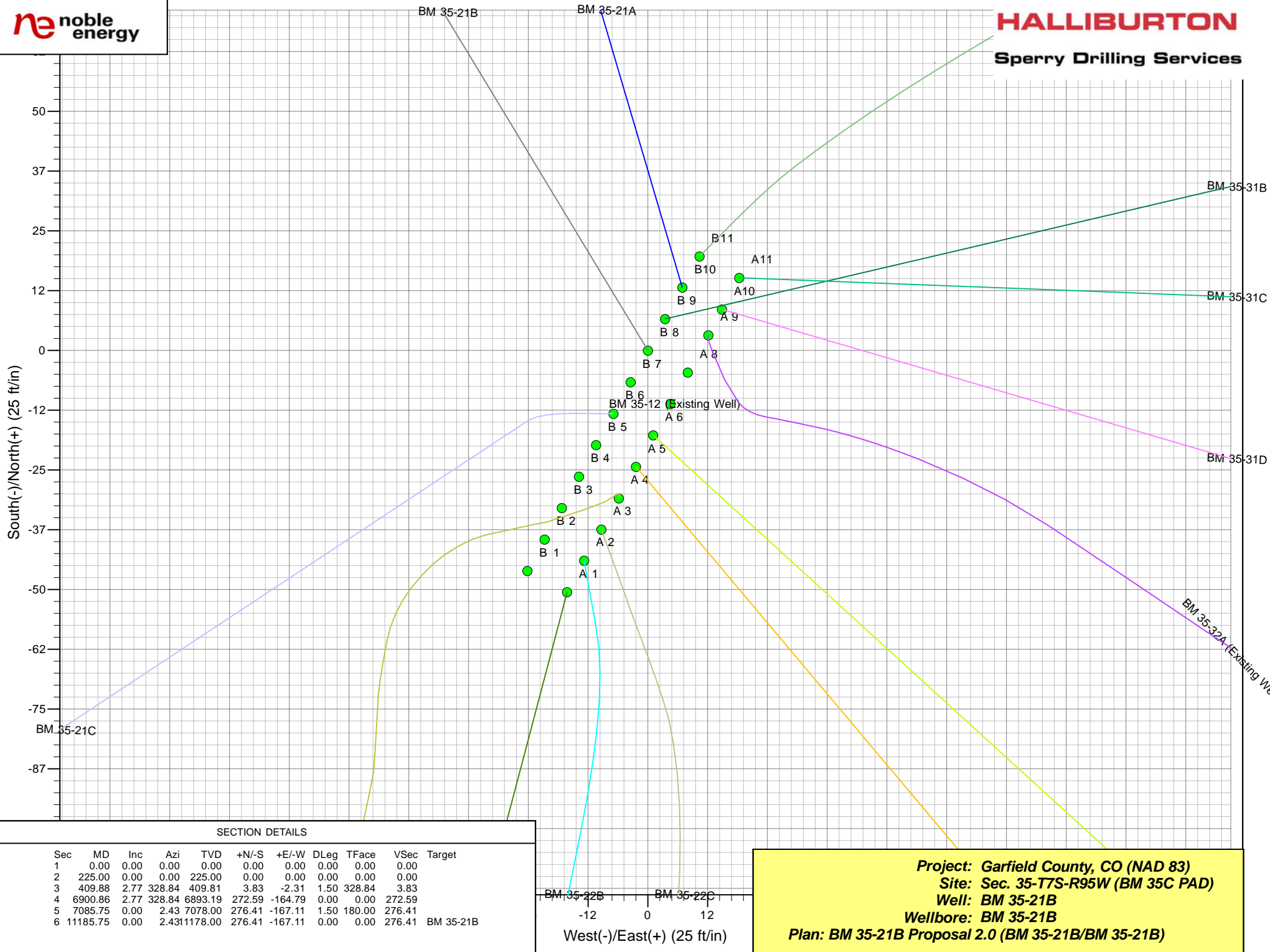
<p>Reference Depths are relative to RKB - 24' @ 9257.00ft</p> <p>Offset Depths are relative to Offset Datum</p> <p>Central Meridian is 105° 30' 0.000 W °</p>	<p>Coordinates are relative to: BM 35-21B</p> <p>Coordinate System is US State Plane 1983, Colorado Central Zone</p> <p>Grid Convergence at Surface is: -1.56°</p>
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LEGEND

- | | | |
|--|---|--|
| (Existing Well), BM 35-12, Plan #1 Proposal V0
A BM 35-21A, BM 35-21A Proposal 2.0 V0
C BM 35-21C, BM 35-21C Proposal 2.0 V0
D (Existing Well), BM 35-21D, BM 35-21D V0
A BM 35-22A, BM 35-22A Proposal 2.0 V0 | ◆ BM 35-22B, BM 35-22B, BM 35-22B Proposal 2.0 V0
○ BM 35-22C, BM 35-22C, BM 35-22C Proposal 2.0 V0
◆ BM 35-31A, BM 35-31A, BM 35-31A Proposal 2.0 V0
▲ BM 35-31B, BM 35-31B, BM 35-31B Proposal 2.0 V0
▲ BM 35-31C, BM 35-31C, BM 35-31C Proposal 2.0 V0 | ○ BM 35-31D, BM 35-31D, BM 35-31D Prop
✕ BM 35-32A (Existing Well), BM 35-32A, BM
□ BM 35-32B, BM 35-32B, BM 35-32B Prop
✕ BM 35-32C, BM 35-32C, BM 35-32C Prop |
|--|---|--|

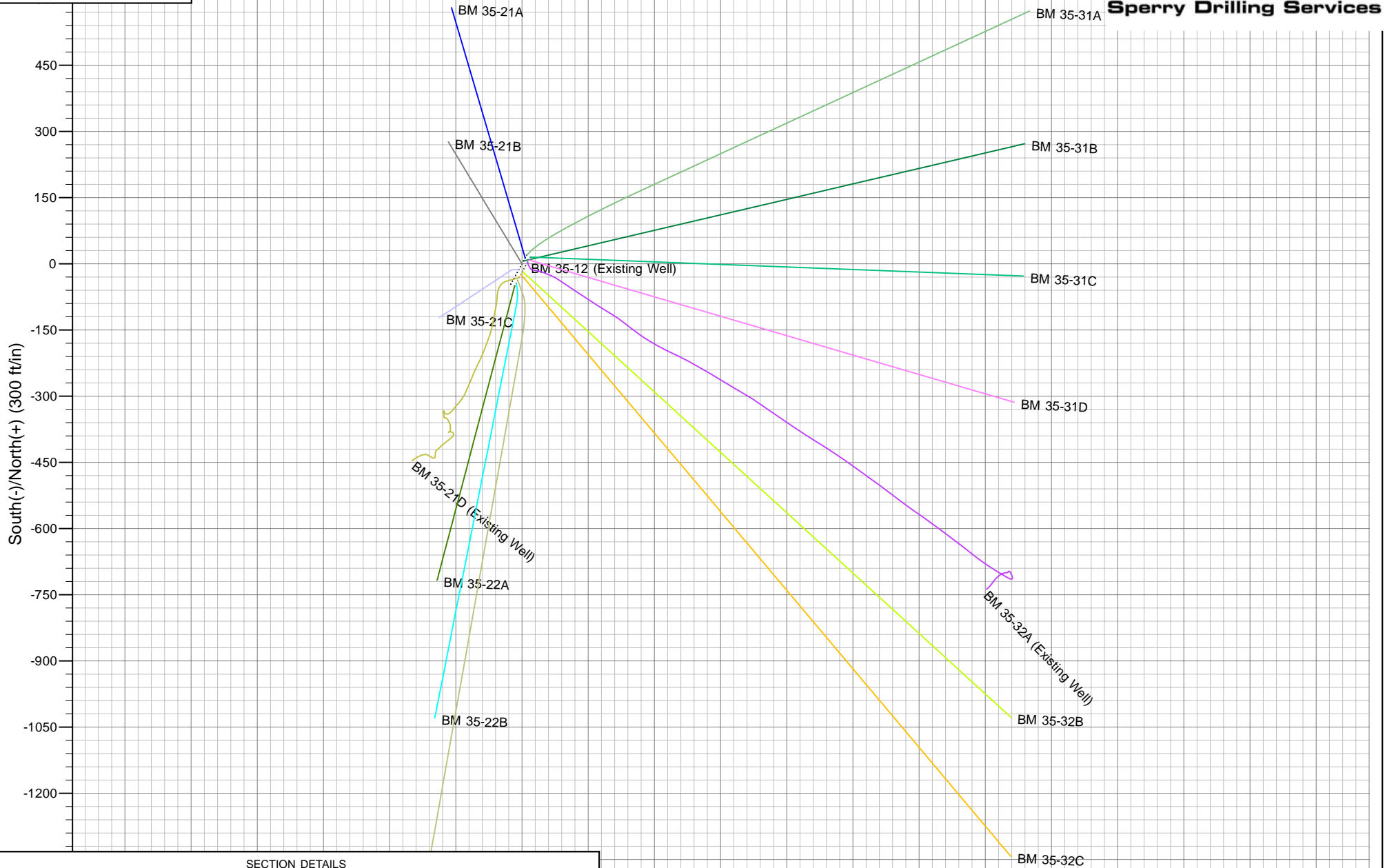
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



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	225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	
3	409.88	2.77	328.84	409.81	3.83	-2.31	1.50	328.84	3.83	
4	6900.86	2.77	328.84	6893.19	272.59	-164.79	0.00	0.00	272.59	
5	7085.75	0.00	2.43	7078.00	276.41	-167.11	1.50	180.00	276.41	
6	11185.75	0.00	2.43	11178.00	276.41	-167.11	0.00	0.00	276.41	BM 35-21B

Project: Garfield County, CO (NAD 83)
Site: Sec. 35-T7S-R95W (BM 35C PAD)
Well: BM 35-21B
Wellbore: BM 35-21B
Plan: BM 35-21B Proposal 2.0 (BM 35-21B/BM 35-21B)



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	225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	
3	409.88	2.77	328.84	409.81	3.83	-2.31	1.50	328.84	3.83	
4	6900.86	2.77	328.84	6893.19	272.59	-164.79	0.00	0.00	272.59	
5	7085.75	0.00	2.43	7078.00	276.41	-167.11	1.50	180.00	276.41	
6	11185.75	0.00	2.43	11178.00	276.41	-167.11	0.00	0.00	276.41	BM 35-21B

300 450 600
West(-)/East(+) (300 ft/in)

Project: Garfield County, CO (NAD 83)
Site: Sec. 35-T7S-R95W (BM 35C PAD)
Well: BM 35-21B
Wellbore: BM 35-21B
Plan: BM 35-21B Proposal 2.0 (BM 35-21B/BM 35-21B)