



Cotner 35-14B DMag Corrected Final Survey Report

<p>Report Date: January 24, 2007 Client: Noble Energy, Inc. Field: CO, Garfield County (NAD 27 CZ) Noble Energy 2006 Structure / Slot: Noble 35-7S-96W (35M Pad) Nabors 457 / Cotner 35-14B Well: Cotner 35-14B Borehole: Original Hole UWI/API#: Survey Name / Date: Cotner 35-14B DMag Corrected 10-Jan-07 / January 10, 2007 Tort / AHD / DDI / ERD ratio: 83.528° / 1433.45 ft / 5.097 / 0.236 Grid Coordinate System: NAD27 Colorado State Planes, Central Zone, US Feet Location Lat/Long: N 39 23 15.975, W 108 4 46.048 Location Grid N/E Y/X: N 576464.210 ftUS, E 1271035.610 ftUS Grid Convergence Angle: -1.62683704° Grid Scale Factor: 0.99994840</p>	<p>Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 285.310° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 5452.0 ft relative to MSL Sea Bed / Ground Level Elevation: 5438.000 ft relative to MSL Magnetic Declination: 10.969° Total Field Strength: 52636.178 nT Magnetic Dip: 65.787° Declination Date: January 10, 2007 Magnetic Declination Model: BGGM 2006 North Reference: Grid North Total Corr Mag North -> Grid North: +12.596° Local Coordinates Referenced To: Well Head</p>
---	---

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576464.21	1271035.61	N 39 23 15.975	W 108 4 46.048
	77.00	0.50	320.00	77.00	0.28	0.26	-0.22	0.65	576464.47	1271035.39	N 39 23 15.977	W 108 4 46.051
	185.00	3.00	313.00	184.94	3.17	2.55	-2.59	2.32	576466.76	1271033.02	N 39 23 15.999	W 108 4 46.082
	277.00	3.25	326.00	276.80	7.28	6.35	-5.81	0.81	576470.56	1271029.81	N 39 23 16.036	W 108 4 46.124
Begin SLB DMag Surveys	381.00	3.99	349.01	380.60	11.11	12.35	-8.14	1.55	576476.56	1271027.47	N 39 23 16.095	W 108 4 46.156
	472.00	7.41	329.79	471.15	16.71	20.53	-11.70	4.25	576484.74	1271023.91	N 39 23 16.175	W 108 4 46.204
	580.00	12.10	313.74	577.57	31.64	34.38	-23.39	4.98	576498.59	1271012.22	N 39 23 16.308	W 108 4 46.358
	700.00	15.81	296.29	694.06	58.77	50.33	-47.15	4.64	576514.54	1270988.46	N 39 23 16.459	W 108 4 46.666
	819.00	18.67	287.01	807.73	93.74	63.09	-79.91	3.33	576527.30	1270955.70	N 39 23 16.576	W 108 4 47.088
	900.00	20.98	285.96	883.92	121.20	70.87	-106.26	2.89	576535.08	1270929.36	N 39 23 16.645	W 108 4 47.426
	991.00	23.54	285.32	968.13	155.67	80.15	-139.45	2.83	576544.36	1270896.17	N 39 23 16.728	W 108 4 47.852
	1113.00	27.09	284.70	1078.40	207.82	93.64	-189.84	2.92	576557.85	1270845.79	N 39 23 16.847	W 108 4 48.498
	1239.00	27.76	284.90	1190.24	265.85	108.47	-245.94	0.54	576572.67	1270789.68	N 39 23 16.978	W 108 4 49.218
	1333.00	28.26	285.95	1273.23	310.00	120.21	-288.50	0.75	576584.42	1270747.13	N 39 23 17.082	W 108 4 49.764
	1500.00	29.81	285.08	1419.24	391.05	141.88	-366.59	0.96	576606.08	1270669.04	N 39 23 17.274	W 108 4 50.766
.8 5/8" CSG	1550.00	29.33	284.58	1462.72	415.72	148.19	-390.44	1.09	576612.39	1270645.19	N 39 23 17.329	W 108 4 51.072
	1676.00	28.12	283.24	1573.22	476.25	162.76	-449.22	1.09	576626.96	1270586.42	N 39 23 17.457	W 108 4 51.826
	1772.00	27.47	282.74	1658.14	520.98	172.82	-492.83	0.72	576637.03	1270542.80	N 39 23 17.544	W 108 4 52.385
	1889.00	28.57	286.42	1761.43	575.91	186.69	-546.00	1.75	576650.89	1270489.64	N 39 23 17.666	W 108 4 53.066
	2028.00	27.87	287.85	1883.91	641.60	206.04	-608.80	0.70	576670.24	1270426.84	N 39 23 17.840	W 108 4 53.873
	2123.00	27.14	287.99	1968.17	685.43	219.54	-650.55	0.77	576683.74	1270385.10	N 39 23 17.961	W 108 4 54.409
	2219.00	26.83	287.70	2053.72	728.95	232.89	-692.01	0.35	576697.09	1270343.63	N 39 23 18.082	W 108 4 54.942
	2315.00	25.77	287.83	2139.78	771.44	245.86	-732.52	1.11	576710.06	1270303.13	N 39 23 18.198	W 108 4 55.463
	2411.00	24.85	287.52	2226.57	812.45	258.33	-771.62	0.97	576722.52	1270264.03	N 39 23 18.311	W 108 4 55.965
	2506.00	25.09	286.18	2312.69	852.54	269.95	-810.00	0.65	576734.14	1270225.65	N 39 23 18.415	W 108 4 56.458
	2602.00	23.67	284.88	2400.13	892.16	280.57	-848.18	1.58	576744.77	1270187.48	N 39 23 18.509	W 108 4 56.948
	2698.00	22.97	283.79	2488.28	930.16	289.98	-884.99	0.86	576754.18	1270150.66	N 39 23 18.591	W 108 4 57.420
	2793.00	23.47	287.34	2575.59	967.59	300.04	-921.06	1.56	576764.24	1270114.60	N 39 23 18.681	W 108 4 57.882
	2889.00	22.48	286.63	2663.98	1005.05	310.99	-956.89	1.07	576775.19	1270078.77	N 39 23 18.779	W 108 4 58.343
	2985.00	21.23	285.45	2753.07	1040.78	320.88	-991.23	1.38	576785.07	1270044.43	N 39 23 18.867	W 108 4 58.783
	3081.00	19.76	283.07	2843.00	1074.38	329.18	-1023.80	1.76	576793.37	1270011.87	N 39 23 18.940	W 108 4 59.201
	3176.00	19.22	281.54	2932.55	1106.03	335.94	-1054.76	0.78	576800.13	1269980.91	N 39 23 18.998	W 108 4 59.598
	3272.00	17.81	279.02	3023.58	1136.39	341.40	-1084.74	1.69	576805.59	1269950.92	N 39 23 19.043	W 108 4 59.981
	3367.00	16.44	278.10	3114.37	1164.17	345.57	-1112.40	1.47	576809.76	1269923.27	N 39 23 19.077	W 108 5 0.335
	3464.00	15.32	275.92	3207.67	1190.43	348.83	-1138.74	1.31	576813.02	1269896.93	N 39 23 19.101	W 108 5 0.672
	3560.00	14.65	282.47	3300.41	1215.07	352.76	-1163.21	1.90	576816.95	1269872.46	N 39 23 19.133	W 108 5 0.984
	3655.00	13.99	281.93	3392.46	1238.53	357.72	-1186.17	0.71	576821.92	1269849.50	N 39 23 19.176	W 108 5 1.279
	3751.00	13.42	281.74	3485.72	1261.24	362.39	-1208.43	0.60	576826.58	1269827.24	N 39 23 19.216	W 108 5 1.564
	3846.00	10.97	278.40	3578.57	1281.21	365.95	-1228.17	2.68	576830.14	1269807.50	N 39 23 19.246	W 108 5 1.816
	3942.00	10.43	276.44	3672.91	1296.87	368.26	-1245.84	0.68	576832.45	1269789.83	N 39 23 19.263	W 108 5 2.042
	4037.00	8.32	275.71	3766.63	1314.14	369.91	-1261.23	2.22	576834.10	1269774.45	N 39 23 19.275	W 108 5 2.239
	4133.00	6.35	273.46	3861.84	1326.19	370.92	-1273.44	2.07	576835.11	1269762.24	N 39 23 19.282	W 108 5 2.394
	4229.00	4.17	280.18	3957.43	1334.86	371.86	-1282.18	2.36	576836.05	1269753.50	N 39 23 19.289	W 108 5 2.506
	4325.00	2.07	279.54	4053.28	1340.06	372.76	-1287.32	2.19	576836.95	1269748.36	N 39 23 19.296	W 108 5 2.572
	4484.00	0.80	325.03	4212.23	1343.77	374.15	-1290.79	1.01	576838.34	1269744.89	N 39 23 19.309	W 108 5 2.617
	4580.00	1.35	279.45	4308.22	1345.42	374.89	-1292.29	1.02	576839.08	1269743.39	N 39 23 19.316	W 108 5 2.636
	4772.00	1.20	253.22	4500.17	1349.37	374.68	-1296.45	0.31	576838.87	1269739.23	N 39 23 19.313	W 108 5 2.689
	4899.00	1.56	254.57	4627.14	1351.98	373.83	-1299.39	0.28	576838.02	1269736.29	N 39 23 19.303	W 108 5 2.726
	5154.00	2.03	240.48	4882.01	1358.17	370.68	-1306.66	0.25	576834.87	1269729.02	N 39 23 19.270	W 108 5 2.817
	5345.00	3.19	240.60	5072.81	1364.34	366.41	-1314.24	0.61	576830.60	1269721.44	N 39 23 19.226	W 108 5 2.912
	5536.00	3.87	242.93	5263.45	1372.88	360.87	-1324.61	0.36	576825.06	1269711.07	N 39 23 19.168	W 108 5 3.042
	5727.00	4.03	241.27	5453.99	1382.47	354.71	-1336.23	0.10	576818.90	1269699.45	N 39 23 19.104	W 108 5 3.188

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
	5919.00	1.70	265.26	5645.75	1389.99	351.23	-1344.99	1.34	576815.42	1269690.69	N 39 23 19.067	W 108 5 3.298
	6109.00	1.99	267.73	5835.65	1395.79	350.86	-1351.09	0.16	576815.05	1269684.59	N 39 23 19.062	W 108 5 3.376
Last DMag Surveys	6302.00	2.33	228.58	6028.52	1401.13	348.14	-1357.38	0.77	576812.33	1269678.30	N 39 23 19.033	W 108 5 3.455
Proj TD	6352.00	2.32	218.56	6078.48	1402.09	346.67	-1358.78	0.81	576810.86	1269676.91	N 39 23 19.018	W 108 5 3.472

Survey Type: Definitive Survey

Survey Error Model: SLB ISCWSA version 24 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type	Borehole -> Survey
0.00	14.00	Act-Sins	SLB_NSG+MSHOT-Depth Only	Original Hole -> Cotner 35-14B DMag Corrected 10-Jan-07
14.00	277.00	Act-Sins	SLB_NSG+MSHOT	Original Hole -> Cotner 35-14B DMag Corrected 10-Jan-07
277.00	6302.00	Act-Sins	SLB_MWD+DMAG	Original Hole -> Cotner 35-14B DMag Corrected 10-Jan-07
6302.00	6352.00	Act-Sins	SLB_BLIND+TREND	Original Hole -> Cotner 35-14B DMag Corrected 10-Jan-07

**Italicized stations are NOT used in position calculations.*