Schlumberger

Richardson 35-24D DMag Corrected Survey Report

Report Date:	February 26, 2007	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	Noble Energy, Inc.	**Vertical Section Azimuth:**	146.860°
Field:	CO, Garfield County (NAD 27 CZ) Noble Energy 2006	**Vertical Section Origin:**	N 0.000 ft, E 0.000 ft
Structure / Slot:	Noble 35-7S-96W (35M Pad) Nabors 457 / Richardson 35-24D	**TVD Reference Datum:**	RKB
Well:	Richardson 35-24D	**TVD Reference Elevation:**	5452.0 ft relative to MSL
Borehole:	Original Hole	**Sea Bed / Ground Level Elevation:**	5438.000 ft relative to MSL
UWI/API#:		**Magnetic Declination:**	10.954°
Survey Name / Date:	Richardson 35-24D DMag Corrected 22-Feb-07 / January 16, 2007	**Total Field Strength:**	52624.628 nT
Tort / AHD / DDI / ERD ratio:	39.820° / 416.39 ft / 4.221 / 0.070	**Magnetic Dip:**	65.784°
Grid Coordinate System:	NAD27 Colorado State Planes, Central Zone, US Feet	**Declination Date:**	February 22, 2007
Location Lat/Long:	N 39 23 16.110, W 108 4 45.942	**Magnetic Declination Model:**	BGGM 2006
Location Grid N/E Y/X:	N 576477.670 ftUS, E 1271044.260 ftUS	**North Reference:**	Grid North
Grid Convergence Angle:	-1.62681860°	**Total Corr Mag North -> Grid North:**	+12.581°
Grid Scale Factor:	0.99994841	**Local Coordinates Referenced To:**	Well Head

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	576477.67	1271044.26	N 39 23 16.110	W 108 4 45.942
	85.00	0.75	261.00	85.00	-0.23	-0.09	-0.55	0.88	576477.58	1271043.71	N 39 23 16.109	W 108 4 45.949
	177.00	1.00	123.00	176.99	0.26	-0.62	-0.47	1.78	576477.05	1271043.79	N 39 23 16.104	W 108 4 45.948
	269.00	2.00	138.00	268.96	2.58	-2.25	1.28	1.16	576475.42	1271045.54	N 39 23 16.089	W 108 4 45.925
	361.00	3.25	138.00	360.86	6.74	-5.38	4.10	1.36	576472.29	1271048.36	N 39 23 16.058	W 108 4 45.888
Begin SLB MWD Survey	454.00	4.51	136.66	453.65	12.95	-10.00	8.37	1.36	576467.67	1271052.63	N 39 23 16.014	W 108 4 45.832
	543.00	4.68	145.55	542.36	20.02	-15.54	12.83	0.82	576462.13	1271057.08	N 39 23 15.961	W 108 4 45.774
	634.00	6.01	143.66	632.96	28.49	-22.44	17.75	1.47	576455.23	1271062.01	N 39 23 15.894	W 108 4 45.708
	726.00	6.56	142.69	724.41	38.54	-30.50	23.79	0.61	576447.18	1271068.05	N 39 23 15.816	W 108 4 45.629
	818.00	6.52	144.91	815.81	49.00	-38.95	29.98	0.28	576438.72	1271074.23	N 39 23 15.734	W 108 4 45.547
	909.00	6.52	146.52	906.22	59.33	-47.49	35.80	0.20	576430.19	1271080.05	N 39 23 15.651	W 108 4 45.470
	1000.00	6.71	143.48	996.62	69.81	-56.07	41.81	0.44	576421.60	1271086.07	N 39 23 15.568	W 108 4 45.390
	1092.00	7.34	144.69	1087.93	81.04	-65.18	48.41	0.70	576412.49	1271092.66	N 39 23 15.480	W 108 4 45.303
	1186.00	8.48	145.53	1181.03	93.97	-75.80	55.80	1.22	576401.88	1271100.06	N 39 23 15.377	W 108 4 45.205
	1282.00	8.33	146.21	1276.00	108.00	-87.41	63.67	0.19	576390.26	1271107.93	N 39 23 15.265	W 108 4 45.100
	1378.00	7.85	149.04	1371.05	121.51	-98.81	70.91	0.65	576378.86	1271115.17	N 39 23 15.154	W 108 4 45.004
	1490.00	8.38	145.61	1481.92	137.31	-112.11	79.46	0.64	576365.57	1271123.71	N 39 23 15.025	W 108 4 44.890
.8 5/8" CSG	1550.00	8.97	146.06	1541.24	146.36	-119.60	84.54	0.99	576358.08	1271128.79	N 39 23 14.953	W 108 4 44.823
	1572.00	9.19	146.21	1562.96	149.83	-122.48	86.47	0.99	576355.20	1271130.73	N 39 23 14.925	W 108 4 44.797
	1667.00	9.16	144.11	1656.75	164.97	-134.91	95.13	0.35	576342.77	1271139.38	N 39 23 14.804	W 108 4 44.683
	1763.00	8.99	142.13	1751.54	180.08	-147.02	104.21	0.37	576330.65	1271148.46	N 39 23 14.687	W 108 4 44.563
	1858.00	8.82	141.52	1845.40	194.73	-158.58	113.30	0.20	576319.09	1271157.55	N 39 23 14.575	W 108 4 44.443
	1952.00	8.08	140.96	1938.38	208.47	-169.36	121.94	0.79	576308.32	1271166.20	N 39 23 14.471	W 108 4 44.329
	2048.00	7.61	139.26	2033.48	221.49	-179.41	130.34	0.55	576298.27	1271174.59	N 39 23 14.374	W 108 4 44.218
	2144.00	7.34	140.47	2128.66	233.88	-188.96	138.39	0.33	576288.72	1271182.65	N 39 23 14.282	W 108 4 44.112
	2240.00	6.89	138.89	2223.92	245.68	-198.03	146.08	0.51	576279.65	1271190.33	N 39 23 14.195	W 108 4 44.011
	2336.00	6.68	135.67	2319.25	256.86	-206.36	153.77	0.45	576271.32	1271198.02	N 39 23 14.115	W 108 4 43.910
	2432.00	5.90	137.58	2414.67	267.20	-214.00	161.00	0.84	576263.68	1271205.25	N 39 23 14.041	W 108 4 43.815
	2528.00	5.35	134.21	2510.21	276.44	-220.76	167.54	0.67	576256.92	1271211.79	N 39 23 13.976	W 108 4 43.730
	2623.00	6.86	139.24	2604.67	286.39	-228.15	174.42	1.68	576249.54	1271218.67	N 39 23 13.905	W 108 4 43.639
	2719.00	6.63	139.00	2700.01	297.56	-236.67	181.80	0.24	576241.01	1271226.05	N 39 23 13.823	W 108 4 43.542
	2813.00	5.66	141.04	2793.47	307.55	-244.37	188.27	1.06	576233.31	1271232.52	N 39 23 13.749	W 108 4 43.457
	2909.00	5.62	140.06	2889.00	316.92	-251.66	194.26	0.11	576226.03	1271238.51	N 39 23 13.679	W 108 4 43.378
	3005.00	4.15	142.05	2984.65	325.05	-258.00	199.42	1.54	576219.68	1271243.67	N 39 23 13.617	W 108 4 43.310
	3100.00	2.86	133.93	3079.47	330.79	-262.36	203.24	1.45	576215.33	1271247.49	N 39 23 13.575	W 108 4 43.260
	3197.00	1.88	145.86	3176.39	334.74	-265.35	205.88	1.13	576212.33	1271250.12	N 39 23 13.547	W 108 4 43.226
	3293.00	0.28	131.39	3272.37	336.54	-266.81	206.94	1.68	576210.87	1271251.18	N 39 23 13.533	W 108 4 43.212
	3388.00	0.29	154.82	3367.37	337.00	-267.18	207.21	0.12	576210.50	1271251.46	N 39 23 13.529	W 108 4 43.208
	3484.00	0.39	170.94	3463.36	337.54	-267.72	207.37	0.14	576209.96	1271251.62	N 39 23 13.524	W 108 4 43.206
	3579.00	1.00	206.37	3558.36	338.26	-268.79	207.05	0.76	576208.90	1271251.30	N 39 23 13.513	W 108 4 43.209
	3675.00	0.94	217.51	3654.34	338.94	-270.16	206.20	0.21	576207.52	1271250.45	N 39 23 13.499	W 108 4 43.220
	3770.00	1.70	221.64	3749.32	339.57	-271.83	204.79	0.81	576205.85	1271249.04	N 39 23 13.482	W 108 4 43.237
	3866.00	1.12	239.61	3845.29	339.90	-273.37	203.03	0.75	576204.31	1271247.28	N 39 23 13.467	W 108 4 43.259
	3962.00	0.36	265.64	3941.28	339.71	-273.87	201.92	0.85	576203.82	1271246.17	N 39 23 13.461	W 108 4 43.273
	4057.00	0.85	286.82	4036.27	339.02	-273.69	200.95	0.56	576204.00	1271245.20	N 39 23 13.463	W 108 4 43.285
	4153.00	1.02	248.76	4132.26	338.30	-273.79	199.47	0.66	576203.89	1271243.72	N 39 23 13.461	W 108 4 43.304
	4249.00	1.18	249.27	4228.24	337.91	-274.45	197.75	0.17	576203.23	1271242.00	N 39 23 13.454	W 108 4 43.326
	4345.00	1.57	242.46	4324.22	337.57	-275.41	195.66	0.44	576202.28	1271239.91	N 39 23 13.444	W 108 4 43.352

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
	4440.00	1.58	231.42	4419.18	337.57	-276.83	193.48	0.32	576200.86	1271237.73	N 39 23 13.430	W 108 4 43.379
	4536.00	1.61	238.60	4515.14	337.66	-278.35	191.30	0.21	576199.33	1271235.55	N 39 23 13.414	W 108 4 43.406
	4632.00	2.32	235.73	4611.09	337.65	-280.15	188.54	0.75	576197.53	1271232.79	N 39 23 13.396	W 108 4 43.441
	4728.00	1.81	258.40	4707.03	337.13	-281.55	185.45	0.99	576196.13	1271229.70	N 39 23 13.381	W 108 4 43.480
	4824.00	0.98	274.61	4803.00	336.08	-281.79	183.14	0.95	576195.90	1271227.39	N 39 23 13.378	W 108 4 43.509
	4920.00	1.51	263.51	4898.97	335.01	-281.87	181.07	0.60	576195.82	1271225.32	N 39 23 13.376	W 108 4 43.535
	5045.00	2.01	271.15	5023.91	333.03	-282.01	177.24	0.44	576195.68	1271221.49	N 39 23 13.374	W 108 4 43.584
	5143.00	1.71	253.46	5121.86	331.65	-282.39	174.12	0.66	576195.30	1271218.37	N 39 23 13.369	W 108 4 43.624
	5238.00	2.42	248.47	5216.80	330.84	-283.53	170.90	0.77	576194.16	1271215.15	N 39 23 13.357	W 108 4 43.664
	5333.00	2.14	251.90	5311.73	329.97	-284.82	167.35	0.33	576192.87	1271211.60	N 39 23 13.343	W 108 4 43.709
	5429.00	2.42	240.69	5407.65	329.37	-286.37	163.87	0.55	576191.32	1271208.13	N 39 23 13.327	W 108 4 43.753
	5523.00	2.71	242.79	5501.56	329.01	-288.35	160.17	0.32	576189.33	1271204.42	N 39 23 13.307	W 108 4 43.799
	5619.00	2.78	241.21	5597.45	328.60	-290.51	156.11	0.11	576187.17	1271200.36	N 39 23 13.284	W 108 4 43.850
	5715.00	2.91	240.83	5693.33	328.25	-292.82	151.94	0.14	576184.86	1271196.19	N 39 23 13.260	W 108 4 43.902
	5810.00	3.01	244.88	5788.20	327.74	-295.06	147.58	0.24	576182.63	1271191.83	N 39 23 13.237	W 108 4 43.957
Last SLB MWD Survey	5915.00	2.59	239.01	5893.08	327.27	-297.45	143.05	0.48	576180.24	1271187.30	N 39 23 13.212	W 108 4 44.014
Proj to TD	5975.00	2.59	239.01	5953.01	327.16	-298.84	140.72	0.00	576178.84	1271184.98	N 39 23 13.197	W 108 4 44.043

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-Stns	SLB_NSG+SSHOT-Depth Only	Original Hole -> Richardson 35-24D DMag Corrected 22-Feb-07
14.00	361.00	Act-Stns	SLB_NSG+SSHOT	Original Hole -> Richardson 35-24D DMag Corrected 22-Feb-07
361.00	5915.00	Act-Stns	SLB_MWD+DMAG	Original Hole -> Richardson 35-24D DMag Corrected 22-Feb-07
5915.00	5975.00	Act-Stns	SLB_BLIND+TREND	Original Hole -> Richardson 35-24D DMag Corrected 22-Feb-07

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