

30-045-32362

Schlumberger**Atlantic 1M Final Surveys**

Report Date: December 20, 2004	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: BP America, Inc.	Vertical Section Azimuth: 25.770°
Field: NM, San Juan County (NAD 83 WZ) 2004	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: BP 34-31N-10W (Atlantic 1M) / Atlantic 1M	TVD Reference Datum: RKB
Well: Atlantic 1M	TVD Reference Elevation: 6265.0 ft relative to MSL
Borehole: Original Hole	Sea Bed / Ground Level Elevation: 6251.000 ft relative to MSL
UWI/API#:	Magnetic Declination: 10.785°
Survey Name / Date: EOW10H / December 20, 2004	Total Field Strength: 51451.975 nT
Tort / AHD / DDI / ERD ratio: 54.941° / 899.89 ft / 4.702 / 0.122	Magnetic Dip: 63.719°
Grid Coordinate System: NAD83 New Mexico State Planes, Western Zone, US Feet	Declination Date: December 07, 2004
Location Lat/Long: N 36 51 24.000, W 107 52 24.000	Magnetic Declination Model: BGGM 2004
Location Grid N/E Y/X: N 2131152.757 ftUS, E 2711389.454 ftUS	North Reference: Grid North
Grid Convergence Angle: -0.02399261°	Total Corr Mag North -> Grid North: +10.809°
Grid Scale Factor: 0.99991682	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
Surface	0.00	0.00	198.31	0.00	0.00	0.00	0.00	0.00	2131152.76	2711389.45	N 36 51 24.000	W 107 52 24.000
9 5/8" Casing Point	252.00	0.58	198.31	252.00	-1.27	-1.21	-0.40	0.23	2131151.54	2711389.05	N 36 51 23.988	W 107 52 24.005
Begin SLB MWD Surveys	295.00	0.68	198.31	294.99	-1.74	-1.66	-0.55	0.23	2131151.10	2711388.90	N 36 51 23.984	W 107 52 24.007
	326.00	0.49	271.05	325.99	-1.97	-1.83	-0.74	2.29	2131150.92	2711388.71	N 36 51 23.982	W 107 52 24.009
	356.00	0.44	344.55	355.99	-1.94	-1.76	-0.90	1.86	2131151.04	2711388.55	N 36 51 23.983	W 107 52 24.011
Sit 1770/N 1780/W	387.00	0.94	3.99	386.99	-1.61	-1.35	-0.91	1.76	2131151.40	2711388.54	N 36 51 23.987	W 107 52 24.011
	417.00	1.83	4.64	416.98	-0.94	-0.63	-0.86	2.97	2131152.13	2711388.60	N 36 51 23.994	W 107 52 24.011
	448.00	2.29	4.50	447.96	0.10	0.48	-0.77	1.48	2131153.24	2711388.69	N 36 51 24.005	W 107 52 24.009
BHL 1090/N 2117/W	483.00	3.02	9.39	482.92	1.64	2.09	-0.56	2.18	2131154.84	2711388.89	N 36 51 24.021	W 107 52 24.007
	514.00	3.75	21.23	513.87	3.43	3.84	-0.06	3.25	2131156.60	2711389.39	N 36 51 24.038	W 107 52 24.001
	545.00	4.51	22.52	544.79	5.66	5.91	0.77	2.47	2131158.67	2711390.22	N 36 51 24.058	W 107 52 23.991
	577.00	5.28	27.66	576.67	8.38	8.38	1.94	2.77	2131161.13	2711391.39	N 36 51 24.083	W 107 52 23.976
	640.00	6.98	30.11	639.31	15.10	14.26	5.20	2.73	2131167.01	2711394.66	N 36 51 24.141	W 107 52 23.936
	703.00	8.52	28.45	701.73	23.58	21.67	9.35	2.47	2131174.43	2711398.80	N 36 51 24.214	W 107 52 23.885
	767.00	10.09	26.65	764.89	33.92	30.85	14.12	2.49	2131183.60	2711403.57	N 36 51 24.305	W 107 52 23.826
	831.00	11.24	27.31	827.78	45.76	41.40	19.50	1.81	2131194.16	2711408.95	N 36 51 24.409	W 107 52 23.760
	894.00	12.44	27.30	889.44	58.68	52.89	25.43	1.90	2131205.64	2711414.88	N 36 51 24.523	W 107 52 23.687
	955.00	13.41	25.60	948.89	72.32	65.11	31.50	1.71	2131217.86	2711420.95	N 36 51 24.644	W 107 52 23.613
	1019.00	14.70	25.71	1010.98	87.87	79.12	38.23	2.02	2131231.87	2711427.68	N 36 51 24.782	W 107 52 23.530
	1082.00	15.85	27.45	1071.75	104.46	93.95	45.66	1.96	2131246.70	2711435.11	N 36 51 24.929	W 107 52 23.439
	1145.00	16.85	27.77	1132.20	122.19	109.67	53.88	1.59	2131262.42	2711443.33	N 36 51 25.085	W 107 52 23.338
	1209.00	18.12	26.73	1193.24	141.41	126.77	62.68	2.04	2131279.51	2711452.13	N 36 51 25.254	W 107 52 23.229
	1273.00	18.92	24.75	1253.93	161.73	145.08	71.50	1.59	2131297.82	2711460.95	N 36 51 25.435	W 107 52 23.121
	1337.00	18.98	23.62	1314.46	182.51	164.04	80.01	0.58	2131316.78	2711469.46	N 36 51 25.622	W 107 52 23.016
	1401.00	19.74	23.73	1374.84	203.71	183.47	88.53	1.19	2131336.21	2711477.98	N 36 51 25.814	W 107 52 22.912
	1463.00	20.28	24.64	1433.10	224.92	202.82	97.23	1.01	2131355.56	2711486.67	N 36 51 26.006	W 107 52 22.805
	1526.00	20.80	23.98	1492.09	247.01	222.98	106.29	0.95	2131375.72	2711495.73	N 36 51 26.205	W 107 52 22.693
	1590.00	20.68	25.74	1551.95	269.67	243.54	115.81	1.21	2131396.28	2711505.26	N 36 51 26.409	W 107 52 22.576
	1653.00	21.00	29.65	1610.83	292.06	263.35	126.26	2.16	2131416.09	2711515.71	N 36 51 26.604	W 107 52 22.448
	1717.00	21.69	27.76	1670.44	315.32	283.79	137.45	1.52	2131436.52	2711526.89	N 36 51 26.807	W 107 52 22.310
	1781.00	21.60	27.74	1729.92	338.91	304.68	148.44	0.14	2131457.41	2711537.88	N 36 51 27.013	W 107 52 22.175
	1844.00	22.00	28.65	1788.42	362.29	325.30	159.49	0.83	2131478.03	2711548.93	N 36 51 27.217	W 107 52 22.039
	1908.00	22.34	28.25	1847.69	386.41	346.53	171.00	0.58	2131499.26	2711560.44	N 36 51 27.427	W 107 52 21.898
	1972.00	22.14	26.04	1906.93	410.62	368.08	182.05	1.34	2131520.81	2711571.49	N 36 51 27.640	W 107 52 21.762
	2036.00	22.94	25.87	1966.04	435.16	390.14	192.79	1.25	2131542.86	2711582.22	N 36 51 27.858	W 107 52 21.630
	2099.00	22.88	24.47	2024.07	459.68	412.33	203.22	0.87	2131565.06	2711592.65	N 36 51 28.078	W 107 52 21.502
	2160.00	22.54	24.68	2080.34	483.22	433.75	213.01	0.57	2131586.47	2711602.45	N 36 51 28.290	W 107 52 21.381
	2220.00	22.31	25.13	2135.80	506.11	454.51	222.65	0.48	2131607.23	2711612.08	N 36 51 28.495	W 107 52 21.263
	2285.00	22.42	25.69	2195.91	530.84	476.85	233.26	0.37	2131629.57	2711622.70	N 36 51 28.716	W 107 52 21.132
	2347.00	21.37	26.56	2253.44	553.96	497.61	243.44	1.77	2131650.33	2711632.87	N 36 51 28.921	W 107 52 21.007
	2409.00	21.00	26.89	2311.25	576.36	517.62	253.51	0.63	2131670.34	2711642.95	N 36 51 29.119	W 107 52 20.883
	2471.00	21.00	26.94	2369.13	598.58	537.44	263.57	0.03	2131690.15	2711653.00	N 36 51 29.315	W 107 52 20.760
	2533.00	20.63	25.16	2427.09	620.60	557.23	273.25	1.18	2131709.93	2711662.68	N 36 51 29.511	W 107 52 20.641
	2595.00	19.30	25.94	2485.36	641.77	576.33	282.37	2.19	2131729.03	2711671.80	N 36 51 29.700	W 107 52 20.528
	2689.00	18.39	27.37	2574.32	672.13	603.46	295.99	1.09	2131756.17	2711685.41	N 36 51 29.968	W 107 52 20.361
	2748.00	17.74	28.24	2630.41	690.41	619.65	304.52	1.19	2131772.35	2711693.95	N 36 51 30.128	W 107 52 20.256
	2810.00	17.20	27.66	2689.55	709.01	636.09	313.24	0.92	2131788.79	2711702.67	N 36 51 30.291	W 107 52 20.149
	2873.00	16.19	28.27	2749.89	727.10	652.07	321.73	1.63	2131804.78	2711711.15	N 36 51 30.449	W 107 52 20.045
	2936.00	14.93	28.83	2810.58	743.98	666.92	329.80	2.01	2131819.62	2711719.23	N 36 51 30.596	W 107 52 19.945
	2997.00	14.00	28.46	2869.65	759.19	680.29	337.11	1.53	2131832.99	2711726.53	N 36 51 30.728	W 107 52 19.856

	3058.00	13.63	29.49	2928.89	773.74	693.03	344.16	0.73	2131845.73	2711733.59	N 36 51 30.854	W 107 52 19.769
Last SLB MWD Survey	3120.00	13.94	30.37	2989.10	788.47	705.84	351.53	0.60	2131858.53	2711740.96	N 36 51 30.980	W 107 52 19.678
Begin Natural 1.0"/100" Drop	3120.01	13.94	30.37	2989.11	788.47	705.84	351.53	1.00	2131858.54	2711740.96	N 36 51 30.981	W 107 52 19.678
	3468.70	10.59	25.77	3329.80	862.40	770.95	386.71	1.00	2131923.64	2711776.13	N 36 51 31.624	W 107 52 19.246
7" Casing Point	3469.00	10.58	25.77	3330.09	862.46	771.00	386.73	3.00	2131923.69	2711776.15	N 36 51 31.625	W 107 52 19.245
	3821.70	0.00	25.77	3680.80	894.93	800.25	400.85	3.00	2131952.93	2711790.27	N 36 51 31.914	W 107 52 19.072
Client TD	7507.00	0.00	25.77	7366.09	894.93	800.25	400.85	0.00	2131952.93	2711790.27	N 36 51 31.914	W 107 52 19.072

Survey Type: Raw Proposal

Survey Error Model: SLB ISCWSA version 21 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)

0.00

3120.00

MD To (ft)

3120.00 1/100.00 ft SLB_MWD-STD

7507.00 1/100.00 ft SLB_BLIND