

Company: EL PASO PRODUCTION Field: COLORADO Site: RATON (C69) Well: WELL C-69 Wellpath: LATERAL	Date: 11/17/2004 Co-ordinate(NE) Reference: Well: WELL C-69, Grid North Vertical (TVD) Reference: RKB 7683.4 Section (VS) Reference: Well (0.00N,0.00E,42.94Azi) Survey Calculation Method: Minimum Curvature	Page: 1 Db: Sybase
--	--	---

Field: COLORADO

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1866)
Sys Datum: Mean Sea Level

Map Zone: Colorado, Southern Zone
Coordinate System: Well Centre
Geomagnetic Model: Wmm_2000

Site: RATON (C69)

SECTION 26, T34S-R66W

Site Position:	Northing: 143744.3857 ft	Latitude: 37 3 32.574 N	
From: Geographic	Easting: 2218088.2485 ft	Longitude: 104 45 9.592 W	
Position Uncertainty: 0.0 ft		North Reference: Grid	
Ground Level: 7678.4 ft		Grid Convergence: 1.86 deg	

Well: WELL C-69

Slot Name:

Well Position: +N/-S 0.0 ft	Northing: 143744.3857 ft	Latitude: 37 3 32.574 N	
+E/-W 0.0 ft	Easting: 2218088.2485 ft	Longitude: 104 45 9.592 W	
Position Uncertainty: 0.0 ft			

Wellpath: LATERAL

Drilled From: Surface
Tie-on Depth: 0.0 ft
Above System Datum: Mean Sea Level
Declination: 9.50 deg
Mag Dip Angle: 64.53 deg

Current Datum: RKB
Magnetic Data: 10/22/2004
Field Strength: 52177 nT
Vertical Section: Depth From (TVD) ft

Height 7683.4 ft

+N/-S ft

+E/-W ft

Direction deg

0.0

0.0

0.0

42.94

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	ClsD ft	ClsA deg	Tool
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00	TIE LINE
100.0	0.41	281.32	100.0	0.1	-0.4	-0.2	0.41	0.4	281.32	SDI Keeper
200.0	0.58	232.98	200.0	-0.2	-1.1	-0.9	0.43	1.1	261.55	SDI Keeper
300.0	0.87	144.37	300.0	-1.1	-1.1	-1.5	1.03	1.5	224.51	SDI Keeper
400.0	1.80	135.62	400.0	-2.8	0.5	-1.7	0.95	2.9	170.49	SDI Keeper
500.0	2.00	137.93	499.9	-5.2	2.7	-2.0	0.21	5.9	152.40	SDI Keeper
600.0	1.99	152.50	599.8	-8.1	4.7	-2.7	0.51	9.4	149.75	SDI Keeper
700.0	1.58	185.02	699.8	-11.0	5.4	-4.4	1.07	12.2	153.87	SDI Keeper
800.0	1.53	200.12	799.8	-13.6	4.8	-6.7	0.41	14.4	160.54	SDI Keeper
900.0	1.09	180.37	899.7	-15.8	4.3	-8.6	0.62	16.4	164.64	SDI Keeper
1000.0	0.67	216.11	999.7	-17.2	4.0	-9.9	0.67	17.7	166.95	SDI Keeper
1100.0	0.61	242.69	1099.7	-18.0	3.2	-11.0	0.30	18.2	169.96	SDI Keeper
1200.0	0.59	215.61	1199.7	-18.6	2.4	-12.0	0.28	18.8	172.64	SDI Keeper
1300.0	0.17	247.12	1299.7	-19.1	2.0	-12.6	0.45	19.2	174.11	SDI Keeper
1400.0	0.39	11.74	1399.7	-18.8	1.9	-12.5	0.51	18.9	174.23	SDI Keeper
1500.0	0.50	2.00	1499.7	-18.1	2.0	-11.9	0.13	18.2	173.72	SDI Keeper
1600.0	0.25	40.50	1599.7	-17.5	2.1	-11.3	0.34	17.6	173.00	SDI Keeper
1700.0	0.26	13.55	1699.7	-17.1	2.3	-10.9	0.12	17.2	172.20	SDI Keeper
1750.0	0.18	23.75	1749.7	-16.9	2.4	-10.7	0.18	17.1	171.92	SDI Keeper
1780.0	0.18	23.75	1779.7	-16.8	2.4	-10.6	0.00	17.0	171.75	SDI E-FIELD MWD
1835.0	19.15	51.99	1833.7	-11.1	9.6	-1.6	34.53	14.7	139.05	SDI E-FIELD MWD
1866.0	29.06	50.97	1861.9	-3.2	19.5	10.9	31.99	19.8	99.37	SDI E-FIELD MWD
1894.0	38.83	50.77	1885.1	6.6	31.6	26.4	34.90	32.3	78.16	SDI E-FIELD MWD
1925.0	49.67	51.88	1907.3	20.1	48.5	47.8	35.06	52.5	67.48	SDI E-FIELD MWD
1956.0	61.15	51.51	1924.9	35.9	68.5	73.0	37.05	77.3	62.33	SDI E-FIELD MWD
1988.0	72.48	51.59	1937.5	54.2	91.5	102.0	35.41	106.3	59.37	SDI E-FIELD MWD
2006.0	79.95	50.15	1941.7	65.2	105.0	119.3	42.22	123.6	58.17	SDI E-FIELD MWD
2024.0	83.67	48.00	1944.3	76.9	118.5	137.0	23.81	141.3	57.03	SDI E-FIELD MWD

Company: EL PASO PRODUCTION Field: COLORADO Site: RATON (C69) Well: WELL C-69 Wellpath: LATERAL	Date: 11/17/2004 Co-ordinate(NE) Reference: Well: WELL C-69, Grid North Vertical (TVD) Reference: RKB 7683.4 Section (VS) Reference: Well (0.00N,0.00E,42.94Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
--	---

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	ClsD ft	ClsA deg	Tool
2051.0	90.12	43.50	1945.8	95.7	137.8	163.9	29.11	167.8	55.23	SDI E-FIELD MWD
2082.0	90.00	42.36	1945.7	118.4	158.9	194.9	3.70	198.2	53.32	SDI E-FIELD MWD
2113.0	91.50	43.00	1945.3	141.2	179.9	225.9	5.26	228.7	51.89	SDI E-FIELD MWD
2146.0	93.06	40.67	1944.0	165.7	201.9	258.9	8.49	261.2	50.62	SDI E-FIELD MWD
2167.0	93.00	40.00	1942.9	181.7	215.5	279.8	3.20	281.9	49.86	SDI E-FIELD MWD
2176.0	93.22	40.51	1942.4	188.6	221.3	288.8	6.16	290.7	49.57	SDI E-FIELD MWD
2208.0	91.21	40.75	1941.2	212.8	242.1	320.7	6.33	322.4	48.68	SDI E-FIELD MWD
2238.0	91.93	40.34	1940.4	235.6	261.6	350.7	2.76	352.1	47.99	SDI E-FIELD MWD
2269.0	90.54	41.11	1939.7	259.1	281.8	381.7	5.13	382.8	47.41	SDI E-FIELD MWD
2300.0	89.26	41.51	1939.8	282.4	302.3	412.7	4.33	413.7	46.95	SDI E-FIELD MWD
2332.0	89.65	41.39	1940.1	306.4	323.5	444.6	1.28	445.5	46.56	SDI E-FIELD MWD
2363.0	88.01	41.65	1940.7	329.6	344.0	475.6	5.36	476.4	46.23	SDI E-FIELD MWD
2394.0	87.58	41.79	1941.9	352.7	364.6	506.6	1.46	507.3	45.95	SDI E-FIELD MWD
2425.0	88.18	42.12	1943.0	375.7	385.3	537.6	2.21	538.2	45.72	SDI E-FIELD MWD
2457.0	88.86	42.44	1943.9	399.4	406.9	569.6	2.35	570.1	45.53	SDI E-FIELD MWD
2473.0	89.36	42.27	1944.1	411.2	417.6	585.6	3.30	586.1	45.44	SDI E-FIELD MWD
2510.0	89.93	42.30	1944.3	438.6	442.5	622.6	1.54	623.1	45.26	SDI E-FIELD MWD
2521.0	89.97	42.25	1944.3	446.7	449.9	633.6	0.58	634.1	45.20	SDI E-FIELD MWD
2552.0	90.44	42.52	1944.2	469.6	470.8	664.6	1.75	665.0	45.07	SDI E-FIELD MWD
2582.0	92.32	42.51	1943.5	491.7	491.1	694.5	6.27	695.0	44.96	SDI E-FIELD MWD
2613.0	92.87	44.11	1942.1	514.3	512.3	725.5	5.45	725.9	44.89	SDI E-FIELD MWD
2643.0	93.84	42.96	1940.3	536.0	533.0	755.5	5.01	755.9	44.84	SDI E-FIELD MWD
2676.0	94.45	42.38	1938.0	560.2	555.3	788.4	2.55	788.8	44.75	SDI E-FIELD MWD
2703.0	91.04	40.65	1936.7	580.4	573.2	815.3	14.16	815.7	44.64	SDI E-FIELD MWD
2733.0	88.36	41.39	1936.8	603.0	592.8	845.3	9.27	845.6	44.51	SDI E-FIELD MWD
2763.0	88.92	41.50	1937.5	625.5	612.7	875.3	1.90	875.6	44.41	SDI E-FIELD MWD
2793.0	91.34	42.59	1937.5	647.8	632.8	905.3	8.85	905.5	44.33	SDI E-FIELD MWD
2806.0	92.12	42.74	1937.1	657.3	641.6	918.3	6.11	918.5	44.31	SDI E-FIELD MWD
2823.0	92.42	42.66	1936.4	669.8	653.1	935.3	1.83	935.5	44.28	SDI E-FIELD MWD
2853.0	90.50	42.43	1935.6	691.9	673.4	965.2	6.45	965.5	44.22	SDI E-FIELD MWD
2884.0	91.18	41.65	1935.2	714.9	694.1	996.2	3.34	996.5	44.16	SDI E-FIELD MWD
2912.0	89.46	41.09	1935.0	735.9	712.6	1024.2	6.46	1024.4	44.08	SDI E-FIELD MWD
2943.0	88.62	41.14	1935.6	759.3	733.0	1055.2	2.71	1055.4	43.99	SDI E-FIELD MWD
2973.0	89.93	39.65	1935.9	782.1	752.5	1085.2	6.61	1085.3	43.89	SDI E-FIELD MWD
3003.0	90.07	39.05	1935.9	805.3	771.5	1115.1	2.05	1115.2	43.77	SDI E-FIELD MWD
3033.0	90.07	38.23	1935.9	828.8	790.2	1145.0	2.73	1145.1	43.64	SDI E-FIELD MWD
3062.0	88.83	38.49	1936.2	851.5	808.2	1173.9	4.37	1174.0	43.51	SDI E-FIELD MWD
3092.0	89.83	38.49	1936.5	875.0	826.9	1203.8	3.33	1203.9	43.38	SDI E-FIELD MWD
3123.0	91.28	38.00	1936.2	899.3	846.1	1234.7	4.94	1234.8	43.25	SDI E-FIELD MWD
3152.0	91.31	38.75	1935.6	922.0	864.1	1263.6	2.59	1263.6	43.14	SDI E-FIELD MWD
3182.0	90.12	38.00	1935.2	945.6	882.7	1293.5	4.69	1293.5	43.03	SDI E-FIELD MWD
3213.0	89.59	37.08	1935.3	970.1	901.6	1324.4	3.42	1324.4	42.90	SDI E-FIELD MWD
3242.0	90.77	36.54	1935.2	993.4	919.0	1353.2	4.47	1353.2	42.77	SDI E-FIELD MWD
3273.0	91.78	36.47	1934.5	1018.3	937.4	1384.0	3.27	1384.1	42.63	SDI E-FIELD MWD
3290.0	92.09	36.59	1933.9	1031.9	947.5	1400.9	1.96	1400.9	42.56	SDI E-FIELD MWD
3302.0	92.15	36.52	1933.5	1041.6	954.7	1412.8	0.77	1412.9	42.51	SDI E-FIELD MWD
3317.0	92.76	36.49	1932.8	1053.6	963.6	1427.7	4.07	1427.8	42.44	SDI E-FIELD MWD
3331.0	93.53	36.07	1932.1	1064.9	971.8	1441.6	6.26	1441.7	42.38	SDI E-FIELD MWD
3361.0	94.82	35.86	1929.9	1089.1	989.4	1471.3	4.36	1471.4	42.25	SDI E-FIELD MWD
3393.0	94.82	36.00	1927.2	1114.9	1008.1	1503.0	0.44	1503.1	42.12	PROJECTED DEPTH