



Scientific Drilling Keeper Gyro Survey

SUR: L-35-11s-33e, 1980/S & 660/W
BHL: L-35-11s-33e, 1817/S & 869/W
API # 30-025-01017

Company: Paladin	Date: 10/27/2003	Time: 09:30:10	Page: 1
Field: Unknown	Co-ordinate(NE) Reference:	Well: STATE BTC #3, True North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: STATE BTC #3	Section (VS) Reference:	Well (0.00N,0.00E,127.95Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Start Date:

Company: Engineer:
Tool: Tied-to:

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.54	326.14	100.00	0.39	-0.26	-0.45	0.54	0.54	0.00	326.14	0.47	Keeper
200.00	0.21	341.26	200.00	0.96	-0.58	-1.05	0.34	-0.33	15.12	328.59	1.12	Keeper
300.00	0.21	340.99	300.00	1.30	-0.70	-1.36	0.00	0.00	-0.27	331.67	1.48	Keeper
400.00	0.23	316.61	399.99	1.62	-0.90	-1.71	0.09	0.02	-24.38	330.97	1.86	Keeper
500.00	0.15	279.75	499.99	1.79	-1.17	-2.02	0.14	-0.08	-36.86	326.90	2.14	Keeper
600.00	0.12	290.51	599.99	1.85	-1.39	-2.24	0.04	-0.03	10.76	322.98	2.32	Keeper
700.00	0.30	214.48	699.99	1.67	-1.64	-2.32	0.29	0.18	-76.03	315.51	2.34	Keeper
800.00	0.26	232.94	799.99	1.32	-1.97	-2.36	0.10	-0.04	18.46	303.77	2.37	Keeper
900.00	0.35	227.04	899.99	0.97	-2.37	-2.47	0.10	0.09	-5.90	292.27	2.57	Keeper
1000.00	0.34	232.76	999.99	0.58	-2.83	-2.59	0.04	-0.01	5.72	281.66	2.89	Keeper
1100.00	0.34	234.77	1099.99	0.23	-3.31	-2.76	0.01	0.00	2.01	274.04	3.32	Keeper
1200.00	0.51	259.02	1199.98	-0.02	-3.99	-3.13	0.24	0.17	24.25	269.69	3.99	Keeper
1300.00	0.50	267.67	1299.98	-0.12	-4.86	-3.76	0.08	-0.01	8.65	268.54	4.87	Keeper
1400.00	0.59	269.50	1399.98	-0.15	-5.82	-4.50	0.09	0.09	1.83	268.56	5.82	Keeper
1500.00	0.59	269.52	1499.97	-0.16	-6.85	-5.30	0.00	0.00	0.02	268.70	6.85	Keeper
1600.00	0.58	267.20	1599.97	-0.18	-7.87	-6.09	0.03	-0.01	-2.32	268.66	7.87	Keeper
1700.00	0.61	263.92	1699.96	-0.27	-8.90	-6.86	0.05	0.03	-3.28	268.29	8.90	Keeper
1800.00	0.66	256.11	1799.95	-0.46	-9.99	-7.59	0.10	-0.05	-7.81	267.36	10.00	Keeper
1900.00	0.57	254.35	1899.95	-0.73	-11.03	-8.24	-0.09	-0.09	-1.76	266.20	11.05	Keeper
2000.00	0.40	266.97	1999.94	-0.89	-11.85	-8.80	0.20	-0.17	12.62	265.73	11.89	Keeper
2100.00	0.51	272.65	2099.94	-0.88	-12.65	-9.43	0.12	0.11	5.68	266.01	12.68	Keeper
2200.00	0.38	260.01	2199.94	-0.92	-13.42	-10.02	0.16	-0.13	-12.64	266.08	13.45	Keeper
2300.00	0.39	275.96	2299.94	-0.94	-14.08	-10.53	0.11	0.01	15.95	266.17	14.12	Keeper
2400.00	0.33	251.09	2399.93	-1.00	-14.69	-10.97	0.17	-0.06	-24.87	266.11	14.73	Keeper
2500.00	0.29	256.19	2499.93	-1.15	-15.21	-11.29	0.05	-0.04	5.10	265.66	15.26	Keeper
2600.00	0.15	180.70	2599.93	-1.35	-15.46	-11.36	0.29	-0.14	-75.49	265.03	15.52	Keeper
2700.00	0.30	155.12	2699.93	-1.71	-15.35	-11.05	0.18	0.15	-25.58	263.63	15.45	Keeper
2800.00	0.33	174.61	2799.93	-2.24	-15.21	-10.62	0.11	0.03	19.49	261.63	15.38	Keeper
2900.00	0.25	195.91	2899.93	-2.73	-15.25	-10.34	0.13	-0.08	21.30	259.83	15.49	Keeper
3000.00	0.26	187.61	2999.93	-3.17	-15.34	-10.15	0.04	0.01	-8.30	258.33	15.66	Keeper
3100.00	0.24	162.94	3099.93	-3.59	-15.31	-9.86	0.11	-0.02	-24.67	256.78	15.72	Keeper
3200.00	0.08	98.72	3199.93	-3.81	-15.18	-9.63	0.22	-0.16	-64.22	255.92	15.65	Keeper
3300.00	0.13	82.21	3299.93	-3.80	-14.99	-9.49	0.06	0.05	-16.51	255.78	15.49	Keeper
3400.00	0.18	100.72	3399.93	-3.81	-14.73	-9.27	0.07	0.05	18.51	255.48	15.21	Keeper
3500.00	0.21	17.89	3499.93	-3.67	-14.52	-9.19	0.26	0.03	-82.83	255.82	14.97	Keeper
3600.00	0.20	23.20	3599.93	-3.33	-14.39	-9.30	0.02	-0.01	5.31	256.96	14.77	Keeper
3700.00	0.23	344.94	3699.92	-2.98	-14.37	-9.50	0.14	0.03	-38.25	258.29	14.68	Keeper
3800.00	0.24	23.65	3799.92	-2.59	-14.34	-9.72	0.16	0.01	38.74	259.75	14.58	Keeper
3900.00	0.27	3.08	3899.92	-2.17	-14.25	-9.90	0.10	0.03	-20.57	261.35	14.41	Keeper
4000.00	0.26	356.49	3999.92	-1.71	-14.25	-10.19	0.03	-0.01	-6.59	263.17	14.35	Keeper
4100.00	0.19	3.52	4099.92	-1.31	-14.25	-10.43	0.08	-0.07	7.03	264.73	14.31	Keeper
4200.00	0.47	314.77	4199.92	-0.86	-14.53	-10.93	0.37	0.28	-48.75	266.62	14.58	Keeper
4300.00	2.95	128.04	4299.88	-2.16	-12.80	-8.76	3.42	2.48	173.27	260.44	12.98	Keeper
4400.00	6.09	131.38	4399.56	-7.25	-6.79	-0.89	3.15	3.14	3.34	223.12	9.93	Keeper
4500.00	8.48	141.93	4498.75	-16.56	1.74	11.56	2.73	2.39	10.55	174.00	16.65	Keeper
4600.00	8.38	140.16	4597.67	-27.96	10.96	25.83	0.28	-0.10	-1.77	158.61	30.03	Keeper
4700.00	9.09	125.53	4696.52	-38.15	22.05	40.85	2.33	0.71	-14.63	149.97	44.07	Keeper
4800.00	9.49	126.56	4795.21	-47.65	35.10	56.98	0.43	0.40	1.03	143.62	59.18	Keeper

Scientific Drilling

Keeper Gyro Survey

Company: Paladin	Date: 10/27/2003	Time: 09:30:10	Page: 2
Field: Unknown	Co-ordinate(NE) Reference:	Well: STATE BTC #3, True North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: STATE BTC #3	Section (VS) Reference:	Well (0.00N,0.00E,127.95Azi)	
Wellpath: 1	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	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	
4900.00	10.22	138.36	4893.74	-59.19	47.62	73.95	2.14	0.73	11.80	141.18	75.97	Keeper
5000.00	10.27	145.86	4992.15	-73.20	58.52	91.16	1.33	0.05	7.50	141.36	93.72	Keeper
5100.00	8.77	144.51	5090.77	-86.79	67.95	106.95	1.52	-1.50	-1.35	141.94	110.22	Keeper
5200.00	8.42	140.46	5189.65	-98.64	77.04	121.41	0.70	-0.35	-4.05	142.01	125.16	Keeper
5300.00	8.25	138.44	5288.59	-109.66	86.46	135.61	0.34	-0.17	-2.02	141.75	139.64	Keeper
5400.00	9.68	139.23	5387.37	-121.39	96.71	150.91	1.44	1.43	0.79	141.46	155.20	Keeper
5500.00	8.84	139.21	5486.06	-133.58	107.22	166.69	0.84	-0.84	-0.02	141.25	171.28	Keeper
5600.00	8.27	139.60	5584.95	-144.87	116.90	181.27	0.57	-0.57	0.39	141.10	186.15	Keeper
5700.00	7.58	139.84	5684.00	-155.39	125.81	194.77	0.69	-0.69	0.24	141.00	199.94	Keeper
5800.00	4.82	135.06	5783.40	-163.40	133.04	205.39	2.81	-2.76	-4.78	140.85	210.71	Keeper
5900.00	1.66	122.04	5883.23	-167.15	137.23	211.00	3.22	-3.16	-13.02	140.61	216.27	Keeper
6000.00	0.20	21.36	5983.22	-167.75	138.52	212.39	1.71	-1.46	-100.68	140.45	217.55	Keeper
6100.00	0.17	33.99	6083.22	-167.47	138.67	212.33	0.05	-0.03	12.63	140.37	217.43	Keeper
6200.00	0.15	59.55	6183.22	-167.28	138.87	212.37	0.07	-0.02	25.56	140.30	217.41	Keeper
6300.00	0.20	104.26	6283.22	-167.26	139.15	212.58	0.14	0.05	44.71	140.24	217.57	Keeper
6400.00	0.17	114.73	6383.22	-167.36	139.45	212.88	0.05	-0.03	10.47	140.20	217.84	Keeper
6500.00	0.18	119.01	6483.21	-167.50	139.72	213.18	0.02	0.01	4.28	140.17	218.12	Keeper
6600.00	0.18	119.07	6583.21	-167.65	140.00	213.49	0.00	0.00	0.06	140.14	218.42	Keeper
6700.00	0.11	37.91	6683.21	-167.65	140.19	213.65	0.20	-0.07	-81.16	140.10	218.54	Keeper
6800.00	0.17	339.01	6783.21	-167.44	140.20	213.52	0.15	0.06	-58.90	140.06	218.38	Keeper
6900.00	0.19	306.04	6883.21	-167.20	140.01	213.23	0.10	0.02	-32.97	140.06	218.08	Keeper
7000.00	0.28	297.96	6983.21	-166.99	139.66	212.82	0.10	0.09	-8.08	140.09	217.70	Keeper
7100.00	0.28	320.77	7083.21	-166.69	139.29	212.34	0.11	0.00	22.81	140.12	217.22	Keeper
7200.00	0.26	331.94	7183.21	-166.30	139.03	211.90	0.06	-0.02	11.17	140.10	216.76	Keeper
7300.00	0.16	115.24	7283.21	-166.16	139.05	211.83	0.40	-0.10	143.30	140.07	216.66	Keeper
7400.00	0.56	100.77	7383.21	-166.31	139.66	212.40	0.41	0.40	-14.47	139.98	217.17	Keeper
7500.00	0.99	96.00	7483.20	-166.49	141.00	213.57	0.43	0.43	-4.77	139.74	218.17	Keeper
7600.00	1.24	84.91	7583.18	-166.48	142.93	215.09	0.33	0.25	-11.09	139.35	219.42	Keeper
7700.00	1.31	82.17	7683.15	-166.23	145.14	216.68	0.09	0.07	-2.74	138.87	220.68	Keeper
7800.00	1.34	59.40	7783.13	-165.48	147.28	217.90	0.52	0.03	-22.77	138.33	221.53	Keeper
7900.00	1.28	67.22	7883.10	-164.45	149.32	218.88	0.19	-0.06	7.82	137.76	222.13	Keeper
8000.00	1.15	77.77	7983.08	-163.81	151.33	220.07	0.26	-0.13	10.55	137.27	223.01	Keeper
8100.00	0.99	85.35	8083.06	-163.52	153.17	221.34	0.21	-0.16	7.58	136.87	224.06	Keeper
8200.00	0.97	97.83	8183.05	-163.57	154.87	222.71	0.21	-0.02	12.48	136.56	225.26	Keeper
8300.00	0.99	95.85	8283.03	-163.77	156.57	224.18	0.04	0.02	-1.98	136.29	226.57	Keeper
8400.00	0.94	93.78	8383.02	-163.91	158.25	225.59	0.06	-0.05	-2.07	136.01	227.84	Keeper
8500.00	0.71	92.60	8483.01	-164.00	159.68	226.77	0.23	-0.23	-1.18	135.76	228.90	Keeper
8600.00	0.63	95.28	8583.00	-164.08	160.85	227.74	0.09	-0.08	2.68	135.57	229.77	Keeper
8700.00	0.47	61.31	8683.00	-163.93	161.76	228.36	0.36	-0.16	-33.97	135.38	230.30	Keeper
8800.00	0.60	73.89	8782.99	-163.59	162.62	228.83	0.17	0.13	12.58	135.17	230.66	Keeper
8900.00	0.67	73.11	8882.99	-163.27	163.68	229.48	0.07	0.07	-0.78	134.93	231.19	Keeper
9000.00	0.63	73.02	8982.98	-162.94	164.77	230.13	0.04	-0.04	-0.09	134.68	231.73	Keeper
9100.00	0.59	82.95	9082.98	-162.72	165.81	230.81	0.11	-0.04	9.93	134.46	232.31	Keeper
9200.00	0.75	94.39	9182.97	-162.70	166.97	231.72	0.21	0.16	11.44	134.26	233.13	Keeper
9300.00	0.79	98.79	9282.96	-162.86	168.30	232.87	0.07	0.04	4.40	134.06	234.20	Keeper
9400.00	0.71	110.83	9382.95	-163.19	169.56	234.06	0.18	-0.08	12.04	133.90	235.33	Keeper
9500.00	0.84	102.44	9482.94	-163.56	170.86	235.32	0.17	0.13	-8.39	133.75	236.53	Keeper
9600.00	0.82	112.47	9582.93	-164.00	172.23	236.67	0.15	-0.02	10.03	133.60	237.82	Keeper
9700.00	0.71	102.24	9682.92	-164.40	173.50	237.92	0.17	-0.11	-10.23	133.46	239.02	Keeper
9800.00	0.70	90.52	9782.91	-164.54	174.72	238.96	0.14	-0.01	-11.72	133.28	240.00	Keeper
9900.00	0.69	97.31	9882.91	-164.62	175.93	239.96	0.08	-0.01	6.79	133.10	240.93	Keeper
10000.00	0.83	90.27	9982.90	-164.70	177.25	241.05	0.17	0.14	-7.04	132.90	241.96	Keeper

Scientific Drilling

Keeper Gyro Survey

Company: Paladin
 Field: Unknown
 Site: Lea County, NM
 Well: STATE BTC #3
 Wellpath: 1

Date: 10/27/2003 Time: 09:30:10 Page: 3
 Co-ordinate(NE) Reference: Well: STATE BTC #3, True North
 Vertical (TVD) Reference: SITE 0.0
 Section (VS) Reference: Well (0.00N,0.00E,127.95Azi)
 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	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	
10100.00	1.00	90.10	10082.89	-164.70	178.84	242.32	0.17	0.17	-0.17	132.64	243.13	Keeper
10200.00	1.52	75.31	10182.86	-164.37	181.00	243.81	0.61	0.52	-14.79	132.24	244.50	Keeper
10300.00	2.29	77.30	10282.81	-163.59	184.23	245.88	0.77	0.77	1.99	131.60	246.38	Keeper
10400.00	2.24	78.54	10382.73	-162.77	188.10	248.42	0.07	-0.05	1.24	130.87	248.74	Keeper
10500.00	2.39	78.13	10482.65	-161.95	192.05	251.04	0.15	0.15	-0.41	130.14	251.22	Keeper
10600.00	2.12	90.38	10582.57	-161.53	195.94	253.85	0.55	-0.27	12.25	129.50	253.94	Keeper
10700.00	1.94	91.70	10682.51	-161.60	199.48	256.68	0.19	-0.18	1.32	129.01	256.72	Keeper
10800.00	1.72	95.10	10782.45	-161.78	202.67	259.30	0.25	-0.22	3.40	128.60	259.32	Keeper
10900.00	1.75	100.56	10882.41	-162.19	205.67	261.92	0.17	0.03	5.46	128.26	261.93	Keeper
10986.00	2.11	96.63	10968.36	-162.62	208.53	264.44	0.45	0.42	-4.57	127.95	264.44	Keeper



Field: Unknown
Site: Lea County, NM
Well: STATE BTC #3
Wellpath: 1

Paladin

