

Job Number: 10101003

State/Country: NEW MEXICO / USA

Company: EOG RESOURCES

Declination: 7.93

Lease/Well: LUCKY WOLF 31 FED COM # 1H

Grid: NORTH

Location: EDDY CO. N.M.

File name: C:\DOCUME~1\ADMINI~1\DESKTOP\WINSERVE\10003

Rig Name: MCVAY 4

Date/Time: 06-Apr-10 / 12:39

RKB: 18

Curve Name: Lucky Wolf 31 Fed Com #1H / Sidetrack

G.L. or M.S.L.: GL



Pathfinder Energy Services

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 265.52

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>CLOSURE Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>	<i>BUILD RATE Deg/100</i>
GYRO TIE IN										
5800.00	.80	20.05	5798.82	109.51	-5.42	-3.15	109.64	357.17	.00	.00
5840.00	4.84	232.36	5838.78	108.74	-6.66	-1.85	108.95	356.49	13.83	10.10
5872.00	8.18	232.83	5870.57	106.54	-9.55	1.19	106.97	354.88	10.44	10.44
5903.00	11.61	231.32	5901.10	103.26	-13.74	5.63	104.17	352.42	11.10	11.06
5935.00	14.95	233.99	5932.24	98.82	-19.59	11.81	100.74	348.78	10.61	10.44
5967.00	17.41	236.91	5962.97	93.78	-26.94	19.54	97.57	343.97	8.09	7.69
5999.00	19.96	237.81	5993.28	88.25	-35.58	28.58	95.15	338.04	8.02	7.97
6030.00	22.51	239.31	6022.18	82.40	-45.16	38.59	93.97	331.27	8.41	8.23
6062.00	25.06	241.37	6051.46	76.03	-56.38	50.27	94.65	323.44	8.38	7.97
6094.00	27.26	242.79	6080.18	69.43	-68.85	63.21	97.78	315.24	7.15	6.88
6126.00	29.55	242.62	6108.32	62.45	-82.37	77.24	103.37	307.17	7.16	7.16
6157.00	32.18	242.90	6134.93	55.17	-96.51	91.91	111.17	299.75	8.50	8.48
6189.00	34.29	243.51	6161.69	47.27	-112.17	108.13	121.72	292.85	6.68	6.59
6221.00	35.96	244.01	6187.87	39.13	-128.68	125.23	134.50	286.91	5.30	5.22
6252.00	38.43	243.53	6212.56	30.85	-145.49	142.64	148.72	281.97	8.02	7.97
6284.00	41.06	244.24	6237.16	21.84	-163.86	161.65	165.31	277.59	8.34	8.22
6316.00	42.84	245.10	6260.96	12.69	-183.20	181.64	183.64	273.96	5.85	5.56
6348.00	44.67	245.47	6284.07	3.44	-203.30	202.41	203.33	270.97	5.77	5.72
6380.00	47.66	245.90	6306.23	-6.06	-224.33	224.12	224.41	268.45	9.39	9.34
6411.00	50.74	245.59	6326.49	-15.70	-245.72	246.20	246.23	266.34	9.96	9.94
6443.00	52.32	245.71	6346.39	-26.03	-268.55	269.76	269.81	264.46	4.95	4.94
6475.00	54.69	245.21	6365.42	-36.71	-291.95	293.92	294.25	262.83	7.51	7.41
6507.00	57.51	244.24	6383.27	-48.06	-315.96	318.75	319.59	261.35	9.16	8.81
6538.00	59.26	243.82	6399.52	-59.62	-339.69	343.31	344.89	260.05	5.76	5.65

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100	BUILD RATE Deg/100
6570.00	61.73	244.35	6415.28	-71.78	-364.74	369.23	371.74	258.87	7.85	7.72
6602.00	64.81	244.86	6429.67	-84.04	-390.56	395.93	399.50	257.86	9.73	9.63
6634.00	68.91	245.24	6442.24	-96.45	-417.23	423.49	428.23	256.98	12.86	12.81
6673.00	72.19	243.82	6455.23	-112.26	-450.42	457.82	464.20	256.00	9.08	8.41
6704.00	75.45	243.91	6463.87	-125.38	-477.15	485.48	493.35	255.28	10.52	10.52
6736.00	80.37	243.73	6470.57	-139.18	-505.22	514.55	524.04	254.60	15.38	15.38
6768.00	83.98	243.82	6474.92	-153.18	-533.66	543.99	555.21	253.98	11.28	11.28
6833.00	85.03	244.17	6481.15	-181.55	-591.80	604.18	619.03	252.95	1.70	1.62
6863.00	85.56	244.79	6483.61	-194.43	-618.79	632.08	648.61	252.56	2.71	1.77
6895.00	87.05	244.96	6485.67	-207.99	-647.70	661.97	680.27	252.20	4.69	4.66
6958.00	89.43	245.27	6487.60	-234.49	-704.82	720.98	742.80	251.60	3.81	3.78
7021.00	90.31	246.94	6487.75	-260.00	-762.41	780.39	805.53	251.17	3.00	1.40
7085.00	92.24	248.71	6486.32	-284.15	-821.66	841.35	869.41	250.92	4.09	3.02
7116.00	92.77	251.73	6484.97	-294.63	-850.80	871.22	900.37	250.90	9.88	1.71
7148.00	94.53	253.45	6482.93	-304.19	-881.27	902.34	932.29	250.96	7.68	5.50
7211.00	97.17	255.43	6476.51	-321.00	-941.64	963.83	994.85	251.18	5.23	4.19
7275.00	97.96	257.88	6468.08	-335.64	-1003.36	1026.51	1058.01	251.50	3.99	1.23
7338.00	98.57	260.32	6459.02	-347.43	-1064.58	1088.46	1119.83	251.93	3.95	.97
7401.00	96.64	262.30	6450.69	-356.86	-1126.30	1150.73	1181.48	252.42	4.37	-3.06
7465.00	94.62	264.99	6444.41	-363.91	-1189.59	1214.38	1244.01	252.99	5.24	-3.16
7528.00	94.18	267.37	6439.57	-368.09	-1252.26	1277.19	1305.24	253.62	3.83	-.70
7592.00	94.26	267.67	6434.86	-370.85	-1316.03	1340.97	1367.28	254.26	.48	.12
7655.00	93.91	267.58	6430.38	-373.46	-1378.81	1403.77	1428.49	254.84	.57	-.56
7719.00	93.83	268.31	6426.06	-375.75	-1442.63	1467.57	1490.76	255.40	1.14	- 12
7782.00	92.59	269.27	6422.53	-377.08	-1505.51	1530.36	1552.01	255.94	2.49	-1.97
7845.00	91.63	270.21	6420.21	-377.36	-1568.47	1593.15	1613.22	256.47	2.13	-1.52
7909.00	91.80	270.22	6418.29	-377.12	-1632.44	1656.91	1675.43	256.99	.27	.27
7972.00	90.66	270.62	6416.94	-376.66	-1695.42	1719.66	1736.76	257.47	1.92	-1.81
8036.00	90.31	270.66	6416.40	-375.95	-1759.41	1783.40	1799.13	257.94	.55	-.55
8099.00	90.75	270.87	6415.82	-375.10	-1822.40	1846.14	1860.61	258.37	.77	.70
8163.00	91.01	271.71	6414.83	-373.66	-1886.38	1909.80	1923.03	258.80	1.37	.41
8226.00	91.45	272.28	6413.48	-371.47	-1949.33	1972.39	1984.41	259.21	1.14	.70
8290.00	91.54	272.27	6411.81	-368.93	-2013.25	2035.92	2046.78	259.62	.14	.14
8353.00	90.84	272.16	6410.50	-366.50	-2076.19	2098.48	2108.29	259.99	1.12	-1.11
8417.00	90.75	272.14	6409.61	-364.10	-2140.14	2162.04	2170.89	260.34	.14	-.14
8480.00	90.75	273.58	6408.79	-360.95	-2203.06	2224.52	2232.43	260.70	2.29	.00
8543.00	90.66	275.42	6408.01	-356.01	-2265.86	2286.74	2293.65	261.07	2.92	-.14
8607.00	90.84	276.08	6407.18	-349.60	-2329.53	2349.72	2355.61	261.47	1.07	.28
8670.00	91.28	276.51	6406.01	-342.69	-2392.14	2411.60	2416.56	261.85	.98	.70
8733.00	91.36	277.44	6404.56	-335.04	-2454.65	2473.32	2477.41	262.23	1.48	.13
8796.00	90.48	277.39	6403.55	-326.91	-2517.12	2534.96	2538.26	262.60	1.40	-1.40
8860.00	90.31	277.78	6403.11	-318.47	-2580.56	2597.55	2600.13	262.96	.66	-.27
8923.00	90.40	277.64	6402.72	-310.02	-2642.99	2659.13	2661.10	263.31	.26	.14
8987.00	90.57	278.06	6402.18	-301.27	-2706.38	2721.65	2723.10	263.65	.71	.27
9050.00	90.57	278.99	6401.55	-291.94	-2768.68	2783.03	2784.03	263.98	1.48	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100	BUILD RATE Deg/100
9113.00	90.84	278.80	6400.77	-282.20	-2830.92	2844.31	2844.95	264.31	.52	.43
9177.00	89.69	277.77	6400.48	-272.97	-2894.25	2906.73	2907.09	264.61	2.41	-1.80
9240.00	89.52	277.92	6400.91	-264.37	-2956.66	2968.28	2968.46	264.89	.36	-.27
9303.00	89.87	278.30	6401.25	-255.49	-3019.03	3029.76	3029.82	265.16	.82	.56
9367.00	90.22	278.64	6401.20	-246.06	-3082.33	3092.13	3092.14	265.44	.76	.55
9430.00	90.22	277.94	6400.96	-236.98	-3144.67	3153.57	3153.59	265.69	1.11	.00
9494.00	90.57	278.16	6400.51	-228.02	-3208.04	3216.05	3216.13	265.93	.65	.55
9557.00	90.57	277.82	6399.89	-219.26	-3270.42	3277.56	3277.76	266.16	.54	.00
9621.00	90.92	276.62	6399.05	-211.22	-3333.91	3340.22	3340.59	266.37	1.95	.55
9684.00	90.57	276.76	6398.24	-203.88	-3396.47	3402.02	3402.59	266.56	.60	-.56
9748.00	90.57	276.99	6397.60	-196.22	-3460.01	3464.77	3465.57	266.75	.36	.00
9811.00	90.13	277.13	6397.21	-188.47	-3522.53	3526.49	3527.57	266.94	.73	-.70
9874.00	89.87	277.22	6397.21	-180.60	-3585.04	3588.19	3589.59	267.12	.44	-.41
9938.00	90.40	277.76	6397.06	-172.26	-3648.49	3650.80	3652.56	267.30	1.18	.83
10001.00	89.69	276.45	6397.01	-164.47	-3711.01	3712.52	3714.65	267.46	2.37	-1.13
10064.00	89.69	275.86	6397.35	-157.72	-3773.64	3774.43	3776.94	267.61	.94	.00
10128.00	90.40	276.58	6397.30	-150.78	-3837.26	3837.32	3840.23	267.75	1.58	1.11
10191.00	90.92	276.52	6396.58	-143.60	-3899.85	3899.15	3902.49	267.89	.83	.83
10255.00	90.75	276.47	6395.65	-136.36	-3963.43	3961.97	3965.78	268.03	.28	-.27
10318.00	89.78	276.42	6395.35	-129.29	-4026.03	4023.83	4028.11	268.16	1.54	-1.54
10381.00	92.42	277.32	6394.15	-121.75	-4088.56	4085.58	4090.37	268.29	4.43	4.19
10445.00	94.00	278.12	6390.56	-113.17	-4151.88	4148.03	4153.42	268.44	2.77	2.47
10508.00	94.26	278.01	6386.02	-104.35	-4214.09	4209.37	4215.39	268.58	.45	.41
10571.00	94.88	278.52	6381.00	-95.33	-4276.24	4270.62	4277.30	268.72	1.27	.98
10666.00	94.88	277.88	6372.92	-81.82	-4369.93	4362.97	4370.70	268.93	.67	.00
10761.00	95.32	278.37	6364.48	-68.45	-4463.60	4455.31	4464.13	269.12	.69	.46
10825.00	95.14	277.97	6358.64	-59.39	-4526.69	4517.50	4527.08	269.25	.68	-.28
Projection to Bit										
10885.00	95.14	277.97	6353.27	-51.11	-4585.87	4575.85	4586.16	269.36	.00	.00