

A Gyrodata Directional Survey

for

EOG RESOURCES

Lease: Cambio 31 Well: No.1, 4-1/2" Drillpipe
Location: Greywolf #33, Lea County, New Mexico

Job Number: MD0104G_112

Run Date: 20 Jan 2004

Surveyor:

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.977083 deg. N Longitude: 103.451639 deg. W

Azimuth Correction:

Gyro: -0.48000 deg West to Grid North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location



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MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	N 0 0 E	0.00	0.00	0.0 0.0	0.00 N 0.00 E
0 - 10500 FT RATE GYROSCOPIC DROP MULTISHOT SURVEY RUN INSIDE 4-1/2" DRILLPIPE ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO GREYWOLF #33 R.K.B.							
96.34	0.30	304.11	N 55 54 W	0.32	96.34	0.3 304.1	0.14 N 0.21 W
189.53	0.36	333.14	N 26 52 W	0.19	189.53	0.8 314.7	0.54 N 0.55 W
282.72	0.32	349.29	N 10 43 W	0.11	282.72	1.3 325.5	1.06 N 0.73 W
375.91	0.18	301.99	N 58 1 W	0.26	375.91	1.7 327.1	1.40 N 0.91 W
469.10	0.32	306.95	N 53 3 W	0.15	469.09	2.1 322.8	1.63 N 1.24 W
562.29	0.37	310.58	N 49 25 W	0.06	562.28	2.6 319.8	1.99 N 1.68 W
655.48	0.27	347.61	N 12 23 W	0.24	655.47	3.1 320.8	2.40 N 1.96 W
748.67	0.28	303.49	N 56 31 W	0.22	748.66	3.5 321.3	2.73 N 2.19 W
841.86	0.43	306.07	N 53 56 W	0.16	841.85	4.1 319.0	3.06 N 2.66 W
935.05	0.49	312.46	N 47 32 W	0.09	935.04	4.8 317.6	3.53 N 3.23 W
1028.24	0.52	314.83	N 45 10 W	0.04	1028.22	5.6 317.0	4.10 N 3.82 W
1121.43	0.44	322.83	N 37 10 W	0.11	1121.41	6.4 317.2	4.68 N 4.34 W
1214.62	0.41	333.18	N 26 49 W	0.09	1214.60	7.1 318.2	5.26 N 4.70 W
1307.81	0.40	340.53	N 19 28 W	0.06	1307.78	7.7 319.8	5.87 N 4.96 W
1401.00	0.38	3.92	N 3 55 E	0.17	1400.97	8.2 322.1	6.48 N 5.05 W
1494.19	0.33	15.56	N 15 34 E	0.09	1494.16	8.6 324.9	7.04 N 4.96 W
1587.38	0.32	18.60	N 18 36 E	0.02	1587.35	8.9 327.6	7.55 N 4.80 W
1680.57	0.33	0.15	N 0 9 E	0.11	1680.54	9.3 329.7	8.07 N 4.72 W
1773.76	0.27	13.64	N 13 38 E	0.10	1773.73	9.7 331.4	8.55 N 4.66 W
1866.95	0.08	27.68	N 27 41 E	0.20	1866.92	9.9 332.5	8.82 N 4.58 W

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MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
1960.14	0.17	50.69	N 50 41 E	0.11	1960.11	10.0 333.6	8.96 N 4.45 W
2053.33	0.09	54.80	N 54 48 E	0.08	2053.30	10.1 334.8	9.10 N 4.28 W
2146.52	0.19	75.45	N 75 27 E	0.12	2146.48	10.0 336.1	9.18 N 4.06 W
2239.71	0.30	77.23	N 77 14 E	0.11	2239.67	10.0 338.4	9.27 N 3.67 W
2332.90	0.30	77.00	N 77 0 E	0.00	2332.86	9.9 341.2	9.38 N 3.20 W
2426.09	0.62	73.58	N 73 35 E	0.34	2426.05	9.9 345.5	9.58 N 2.48 W
2519.28	1.01	68.34	N 68 20 E	0.43	2519.23	10.1 352.9	10.02 N 1.24 W
2612.47	1.09	73.19	N 73 11 E	0.13	2612.40	10.6 2.0	10.58 N 0.37 E
2705.66	1.14	72.50	N 72 30 E	0.05	2705.58	11.3 10.7	11.12 N 2.10 E
2798.85	1.21	69.66	N 69 39 E	0.10	2798.75	12.4 18.4	11.74 N 3.91 E
2892.04	1.33	72.94	N 72 57 E	0.15	2891.91	13.7 25.3	12.40 N 5.87 E
2985.23	1.19	77.36	N 77 22 E	0.18	2985.08	15.1 31.3	12.93 N 7.85 E
3078.42	1.22	81.42	N 81 25 E	0.10	3078.25	16.5 36.3	13.29 N 9.78 E
3171.61	1.08	86.58	N 86 35 E	0.19	3171.42	17.8 40.8	13.49 N 11.64 E
3264.80	1.05	90.65	S 89 21 E	0.09	3264.60	19.0 44.6	13.53 N 13.36 E
3357.99	0.95	92.63	S 87 22 E	0.11	3357.77	20.2 48.0	13.49 N 14.98 E
3451.18	0.82	97.19	S 82 48 E	0.16	3450.95	21.2 50.8	13.37 N 16.42 E
3544.37	0.72	105.26	S 74 44 E	0.16	3544.13	22.0 53.3	13.13 N 17.64 E
3637.56	0.84	104.55	S 75 27 E	0.13	3637.31	22.8 55.8	12.80 N 18.86 E
3730.75	0.99	107.35	S 72 39 E	0.17	3730.49	23.8 58.6	12.39 N 20.29 E
3823.94	1.04	107.50	S 72 30 E	0.05	3823.67	24.9 61.5	11.90 N 21.87 E
3917.13	0.98	120.75	S 59 15 E	0.26	3916.84	25.9 64.3	11.23 N 23.37 E
4010.32	0.88	111.25	S 68 45 E	0.19	4010.02	26.9 66.8	10.57 N 24.71 E
4103.51	0.71	121.38	S 58 37 E	0.24	4103.20	27.7 68.8	10.01 N 25.87 E

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4196.70	0.71	113.15	S 66 51 E	0.11	4196.38	28.5 70.6	9.49 N 26.89 E
4289.89	0.70	116.32	S 63 41 E	0.04	4289.57	29.3 72.1	9.01 N 27.93 E
4383.08	0.64	122.75	S 57 15 E	0.10	4382.75	30.1 73.6	8.48 N 28.87 E
4476.27	0.51	107.85	S 72 9 E	0.21	4475.94	30.8 74.8	8.07 N 29.70 E
4569.46	0.53	116.01	S 63 59 E	0.08	4569.12	31.5 75.7	7.75 N 30.49 E
4662.65	0.41	119.77	S 60 14 E	0.13	4662.31	32.0 76.6	7.40 N 31.16 E
4755.84	0.48	117.24	S 62 45 E	0.08	4755.50	32.6 77.5	7.06 N 31.80 E
4849.03	0.47	115.07	S 64 56 E	0.02	4848.68	33.2 78.3	6.72 N 32.49 E
4942.22	0.56	109.07	S 70 56 E	0.12	4941.87	33.9 79.1	6.41 N 33.26 E
5035.41	0.62	110.67	S 69 20 E	0.07	5035.06	34.7 79.9	6.08 N 34.17 E
5128.60	0.57	114.69	S 65 19 E	0.07	5128.24	35.5 80.8	5.71 N 35.06 E
5221.79	0.53	115.86	S 64 8 E	0.05	5221.43	36.3 81.6	5.33 N 35.87 E
5314.98	0.55	112.40	S 67 36 E	0.04	5314.61	37.0 82.3	4.97 N 36.66 E
5408.17	0.75	117.32	S 62 41 E	0.23	5407.80	37.9 83.1	4.52 N 37.62 E
5501.36	0.83	117.57	S 62 26 E	0.08	5500.98	39.0 84.2	3.93 N 38.76 E
5594.55	1.02	120.80	S 59 12 E	0.21	5594.15	40.2 85.4	3.19 N 40.07 E
5687.74	1.19	122.62	S 57 23 E	0.18	5687.33	41.6 86.9	2.25 N 41.59 E
5780.93	1.06	123.93	S 56 4 E	0.14	5780.50	43.1 88.3	1.25 N 43.11 E
5874.12	1.05	125.77	S 54 14 E	0.04	5873.67	44.5 89.7	0.27 N 44.52 E
5967.31	1.14	127.88	S 52 7 E	0.11	5966.85	46.0 91.0	0.80 S 45.94 E
6060.50	1.07	129.06	S 50 56 E	0.08	6060.02	47.4 92.3	1.92 S 47.35 E
6153.69	0.78	138.70	S 41 18 E	0.35	6153.20	48.5 93.5	2.94 S 48.44 E
6246.88	0.63	142.00	S 38 0 E	0.17	6246.38	49.3 94.4	3.82 S 49.18 E
6340.07	0.58	136.51	S 43 29 E	0.08	6339.57	50.0 95.2	4.56 S 49.82 E

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6433.26	0.57	137.63	S 42 22 E	0.02	6432.75	50.7 95.9	5.25 S 50.45 E
6526.45	0.50	132.28	S 47 43 E	0.09	6525.94	51.4 96.5	5.86 S 51.07 E
6619.64	0.55	138.24	S 41 46 E	0.08	6619.12	52.1 97.1	6.47 S 51.66 E
6712.83	0.42	150.50	S 29 30 E	0.18	6712.31	52.6 97.8	7.10 S 52.13 E
6806.02	0.33	163.61	S 16 24 E	0.13	6805.50	52.9 98.3	7.66 S 52.38 E
6899.21	0.38	171.69	S 8 18 E	0.07	6898.69	53.1 98.9	8.23 S 52.50 E
6992.40	0.41	171.68	S 8 19 E	0.03	6991.87	53.3 99.6	8.87 S 52.59 E
7085.59	0.47	180.59	S 0 35 W	0.10	7085.06	53.5 100.3	9.58 S 52.64 E
7178.78	0.58	195.34	S 15 21 W	0.19	7178.25	53.5 101.2	10.42 S 52.51 E
7271.97	0.57	198.36	S 18 21 W	0.04	7271.43	53.4 102.2	11.31 S 52.24 E
7365.16	0.57	203.27	S 23 16 W	0.05	7364.62	53.3 103.2	12.18 S 51.91 E
7458.35	0.67	203.41	S 23 24 W	0.11	7457.80	53.1 104.3	13.10 S 51.51 E
7551.54	0.63	207.26	S 27 16 W	0.06	7550.99	53.0 105.4	14.06 S 51.06 E
7644.73	0.72	216.09	S 36 5 W	0.14	7644.17	52.7 106.5	14.99 S 50.47 E
7737.92	0.72	217.45	S 37 27 W	0.02	7737.35	52.3 107.7	15.93 S 49.77 E
7831.11	0.74	218.16	S 38 10 W	0.03	7830.53	51.9 109.0	16.87 S 49.05 E
7924.30	0.76	220.31	S 40 19 W	0.04	7923.72	51.5 110.3	17.82 S 48.27 E
8017.49	0.62	216.15	S 36 9 W	0.17	8016.90	51.1 111.5	18.70 S 47.57 E
8110.68	0.45	214.54	S 34 32 W	0.18	8110.09	50.9 112.4	19.41 S 47.07 E
8203.87	0.38	211.56	S 31 33 W	0.09	8203.27	50.8 113.2	19.97 S 46.70 E
8297.06	0.30	194.92	S 14 55 W	0.13	8296.46	50.8 113.8	20.46 S 46.48 E
8390.25	0.42	164.76	S 15 14 E	0.24	8389.65	51.0 114.3	21.03 S 46.51 E
8483.44	0.50	167.30	S 12 42 E	0.08	8482.84	51.5 115.0	21.75 S 46.69 E
8576.63	0.51	176.66	S 3 20 E	0.09	8576.02	52.0 115.7	22.56 S 46.80 E

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8669.82	0.52	186.06	S 6 4 W	0.09	8669.21	52.3 116.6	23.40 S 46.78 E
8763.01	0.51	186.54	S 6 33 W	0.02	8762.40	52.6 117.4	24.23 S 46.69 E
8856.20	0.50	186.08	S 6 5 W	0.01	8855.58	52.9 118.3	25.04 S 46.60 E
8949.39	0.54	186.04	S 6 2 W	0.05	8948.77	53.2 119.1	25.88 S 46.51 E
9042.58	0.63	186.77	S 6 46 W	0.10	9041.95	53.6 120.0	26.82 S 46.40 E
9135.77	0.64	185.01	S 5 0 W	0.03	9135.14	54.0 121.0	27.85 S 46.29 E
9228.96	0.54	193.33	S 13 20 W	0.14	9228.32	54.4 122.0	28.80 S 46.15 E
9322.15	0.51	196.89	S 16 53 W	0.05	9321.51	54.7 122.8	29.62 S 45.93 E
9415.34	0.47	191.07	S 11 4 W	0.07	9414.69	54.9 123.6	30.40 S 45.73 E
9508.53	0.42	192.26	S 12 16 W	0.06	9507.88	55.2 124.3	31.10 S 45.59 E
9601.72	0.45	191.12	S 11 7 W	0.04	9601.07	55.5 125.0	31.79 S 45.44 E
9694.91	0.53	193.81	S 13 49 W	0.09	9694.26	55.8 125.7	32.57 S 45.27 E
9788.10	0.54	200.80	S 20 48 W	0.07	9787.44	56.1 126.6	33.40 S 45.01 E
9881.29	0.61	206.40	S 26 24 W	0.10	9880.63	56.3 127.5	34.26 S 44.63 E
9974.48	0.57	213.48	S 33 29 W	0.09	9973.81	56.4 128.5	35.09 S 44.16 E
10067.67	0.61	217.57	S 37 34 W	0.07	10067.00	56.5 129.4	35.87 S 43.60 E
10160.86	0.63	228.58	S 48 35 W	0.13	10160.18	56.4 130.5	36.60 S 42.91 E
10254.05	0.75	236.09	S 56 5 W	0.17	10253.37	56.2 131.6	37.28 S 42.02 E
10347.24	0.76	237.88	S 57 53 W	0.03	10346.55	55.9 132.8	37.95 S 40.99 E
10440.43	0.82	237.37	S 57 22 W	0.07	10439.73	55.5 134.1	38.64 S 39.91 E
10533.62	0.83	234.00	S 54 0 W	0.05	10532.91	55.3 135.4	39.39 S 38.80 E
10626.81	0.83	232.44	S 52 26 W	0.02	10626.09	55.1 136.8	40.21 S 37.72 E
10720.00	0.87	236.36	S 56 22 W	0.08	10719.27	55.0 138.3	41.01 S 36.59 E

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EOG Resources

Lease: Cambio 31 Well: No.1, 4-1/2" Drillpipe

Location: Greywolf #33, Lea County, New Mexico

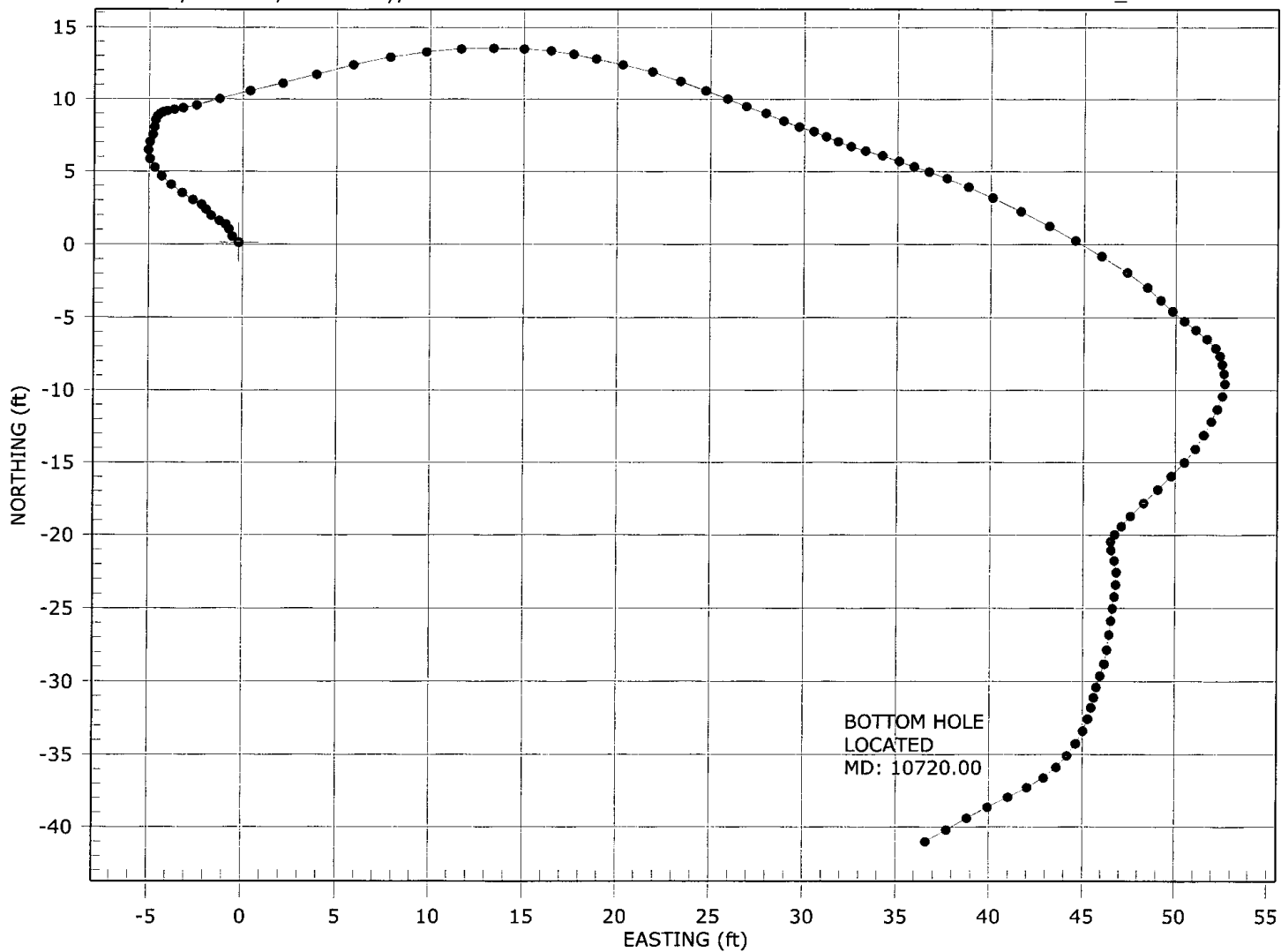
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Final Station Closure: Distance: 54.96 ft Az: 138.26 deg.

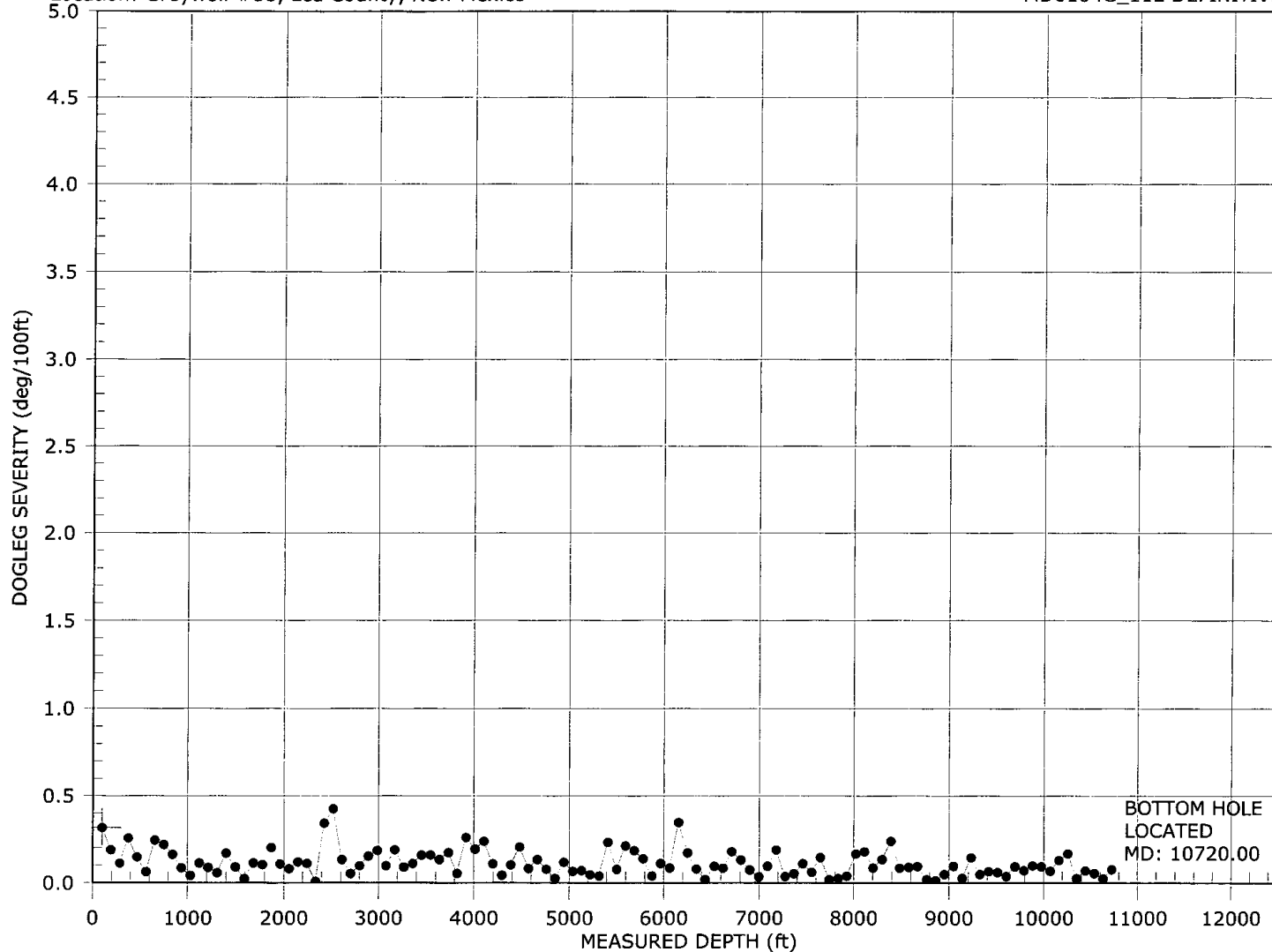
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Outrun
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Eog Resources
Well: Cambio 31 No.1 4-1/2" Drillpipe
Location: Greywolf #33, Lea County, New Mexico

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MD0104G_112 DEFINITIVE



Eog Resources

Well: Cambio 31 No.1 4-1/2" Drillpipe

Location: Greywolf #33, Lea County, New Mexico

Outrun

Gyrodata

MD0104G_112 DEFINITIVE

