

DRILTECH MWD SURVEY REPORT



Company:
Well:
Location:
Rig:

EOG Resources, Inc.
Hawk 35 Fed #10H
Lea County, NM
H&P 415

Job Number: 2015-062-EODT-NM
Vertical Section Plane: 2.78
WELL API #: 30-025-42413
Tie Into: Surface

Calculation Method

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')
Tie In	Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	MWD	200.00	1.20	9.40	200	199.99	2.08	2.07	N 0.34	E 2.09	9.40	0.60
2	MWD	324.00	0.90	5.20	124	323.96	4.34	4.32	N 0.64	E 4.36	8.46	0.25
3	MWD	510.00	1.10	19.20	186	509.94	7.52	7.46	N 1.36	E 7.58	10.35	0.17
4	MWD	694.00	1.40	48.60	184	693.89	10.78	10.61	N 3.63	E 11.22	18.88	0.38
5	MWD	879.00	1.20	46.70	185	878.85	13.75	13.44	N 6.73	E 15.03	26.62	0.11
6	MWD	974.00	1.10	44.90	95	973.83	15.14	14.76	N 8.10	E 16.84	28.76	0.11
7	MWD	1166.00	0.70	27.00	192	1165.80	17.58	17.11	N 9.93	E 19.79	30.14	0.25
8	MWD	1271.00	1.10	52.60	105	1270.79	18.81	18.30	N 11.03	E 21.36	31.07	0.53
9	MWD	1363.00	1.60	129.10	92	1362.77	18.62	18.02	N 12.73	E 22.06	35.22	1.87
10	MWD	1457.00	1.90	81.60	94	1456.73	18.14	17.42	N 15.29	E 23.18	41.26	1.53
11	MWD	1551.00	2.10	77.60	94	1550.67	18.90	18.02	N 18.51	E 25.83	45.76	0.26
12	MWD	1646.00	2.10	77.90	95	1645.61	19.80	18.76	N 21.91	E 28.84	49.43	0.01
13	MWD	1740.00	2.10	80.80	94	1739.55	20.60	19.40	N 25.29	E 31.88	52.52	0.11
14	MWD	1835.00	2.10	80.80	95	1834.48	21.32	19.95	N 28.73	E 34.98	55.22	0.00
15	MWD	2023.00	1.90	80.20	188	2022.37	22.72	21.03	N 35.20	E 41.01	59.14	0.11
16	MWD	2118.00	1.90	77.20	95	2117.32	23.48	21.65	N 38.29	E 43.99	60.51	0.10
17	MWD	2212.00	1.90	68.10	94	2211.27	24.55	22.58	N 41.26	E 47.03	61.31	0.32
18	MWD	2307.00	1.80	63.20	95	2306.22	25.95	23.84	N 44.05	E 50.09	61.58	0.20
19	MWD	2402.00	1.90	73.00	95	2401.17	27.22	24.97	N 46.89	E 53.12	61.96	0.35
20	MWD	2496.00	1.90	86.90	94	2495.12	27.90	25.51	N 49.93	E 56.07	62.94	0.49
21	MWD	2590.00	1.90	81.50	94	2589.06	28.37	25.83	N 53.03	E 58.98	64.03	0.19
22	MWD	2685.00	1.90	84.30	95	2684.01	28.91	26.21	N 56.15	E 61.97	64.98	0.10
23	MWD	2779.00	1.90	86.20	94	2777.96	29.32	26.47	N 59.26	E 64.90	65.93	0.07
24	MWD	2873.00	1.90	82.00	94	2871.91	29.79	26.79	N 62.36	E 67.87	66.75	0.15
25	MWD	2968.00	2.10	77.40	95	2966.85	30.54	27.39	N 65.62	E 71.10	67.34	0.27
26	MWD	3062.00	1.80	79.00	94	3060.80	31.35	28.05	N 68.75	E 74.25	67.80	0.32
27	MWD	3157.00	1.90	80.20	95	3155.75	32.05	28.60	N 71.76	E 77.25	68.27	0.11
28	MWD	3251.00	2.10	72.00	94	3249.69	33.00	29.40	N 74.94	E 80.50	68.58	0.37
29	MWD	3346.00	2.10	71.10	95	3344.63	34.26	30.50	N 78.24	E 83.97	68.70	0.03
30	MWD	3440.00	1.90	71.80	94	3438.57	35.45	31.55	N 81.35	E 87.25	68.80	0.21

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Calculation Method

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')
								N/S (ft)	E/W (ft)			
31	MWD	3628.00	2.60	111.20	188	3626.43	35.22	30.98	N 88.28	E 93.56	70.67	0.88
32	MWD	3723.00	2.50	100.30	95	3721.34	34.27	29.83	N 92.33	E 97.03	72.10	0.52
33	MWD	3818.00	2.10	103.60	95	3816.26	33.67	29.05	N 96.06	E 100.36	73.18	0.44
34	MWD	3912.00	1.90	103.40	94	3910.20	33.06	28.28	N 99.25	E 103.20	74.10	0.21
35	MWD	4007.00	1.90	109.60	95	4005.15	32.32	27.39	N 102.27	E 105.87	75.01	0.22
36	MWD	4101.00	1.80	109.80	94	4099.10	31.43	26.37	N 105.12	E 108.38	75.92	0.11
37	MWD	4196.00	1.40	102.70	95	4194.07	30.80	25.60	N 107.66	E 110.66	76.62	0.47
38	MWD	4290.00	1.40	106.40	94	4288.04	30.33	25.03	N 109.88	E 112.70	77.17	0.10
39	MWD	4384.00	1.40	106.40	94	4382.01	29.79	24.38	N 112.09	E 114.71	77.73	0.00
40	MWD	4478.00	1.60	96.00	94	4475.98	29.44	23.92	N 114.49	E 116.96	78.20	0.36
41	MWD	4573.00	1.90	103.10	95	4570.93	29.09	23.42	N 117.35	E 119.66	78.71	0.39
42	MWD	4667.00	1.90	106.10	94	4664.88	28.45	22.64	N 120.36	E 122.47	79.35	0.11
43	MWD	4762.00	1.90	103.80	95	4759.83	27.78	21.82	N 123.40	E 125.32	79.97	0.08
44	MWD	4951.00	2.80	121.20	189	4948.67	24.99	18.69	N 130.39	E 131.73	81.84	0.60
45	MWD	5088.00	2.80	112.20	137	5085.51	22.28	15.69	N 136.35	E 137.25	83.44	0.32
46	MWD	5210.00	2.60	111.20	122	5207.37	20.42	13.56	N 141.69	E 142.34	84.53	0.17
47	MWD	5304.00	2.60	111.70	94	5301.28	19.05	12.00	N 145.66	E 146.16	85.29	0.02
48	MWD	5398.00	2.50	112.40	94	5395.18	17.67	10.43	N 149.54	E 149.90	86.01	0.11
49	MWD	5493.00	2.60	110.50	95	5490.09	16.32	8.89	N 153.47	E 153.73	86.69	0.14
50	MWD	5588.00	2.50	110.50	95	5584.99	15.04	7.41	N 157.43	E 157.61	87.31	0.11
51	MWD	5682.00	2.60	111.70	94	5678.90	13.72	5.90	N 161.33	E 161.44	87.90	0.12
52	MWD	5776.00	2.50	109.90	94	5772.81	12.43	4.42	N 165.24	E 165.30	88.47	0.14
53	MWD	5871.00	2.50	108.90	95	5867.72	11.24	3.04	N 169.15	E 169.18	88.97	0.05
54	MWD	5965.00	2.60	108.00	94	5961.62	10.11	1.72	N 173.12	E 173.13	89.43	0.11
55	MWD	6059.00	2.50	108.40	94	6055.53	9.00	0.41	N 177.09	E 177.09	89.87	0.11
56	MWD	6154.00	2.50	108.70	95	6150.44	7.87	0.91	S 181.02	E 181.02	90.29	0.01
57	MWD	6248.00	2.30	108.40	94	6244.36	6.80	2.16	S 184.75	E 184.76	90.67	0.21
58	MWD	6343.00	2.30	105.20	95	6339.28	5.88	3.26	S 188.40	E 188.43	90.99	0.14
59	MWD	6438.00	2.30	103.40	95	6434.21	5.12	4.20	S 192.09	E 192.14	91.25	0.08
60	MWD	6532.00	2.30	105.00	94	6528.13	4.37	5.13	S 195.75	E 195.82	91.50	0.07
61	MWD	6626.00	2.10	104.30	94	6622.06	3.63	6.04	S 199.24	E 199.33	91.74	0.21
62	MWD	6721.00	2.30	107.50	95	6716.99	2.80	7.05	S 202.75	E 202.87	91.99	0.25
63	MWD	6816.00	2.30	104.50	95	6811.91	1.92	8.10	S 206.41	E 206.57	92.25	0.13

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64	MWD	6910.00	2.30	101.80	94	6905.84	1.25	8.95	S 210.08 E	210.27	92.44	0.12
65	MWD	7004.00	2.10	101.10	94	6999.77	0.70	9.67	S 213.62 E	213.84	92.59	0.21
66	MWD	7098.00	2.30	102.60	94	7093.70	0.13	10.41	S 217.15 E	217.40	92.75	0.22
67	MWD	7193.00	2.30	103.40	95	7188.62	-0.55	11.27	S 220.86 E	221.15	92.92	0.03
68	MWD	7288.00	2.10	100.40	95	7283.55	-1.13	12.03	S 224.43 E	224.75	93.07	0.24
69	MWD	7382.00	2.10	97.60	94	7377.49	-1.50	12.57	S 227.83 E	228.18	93.16	0.11
70	MWD	7477.00	2.10	96.00	95	7472.43	-1.75	12.98	S 231.29 E	231.65	93.21	0.06
71	MWD	7571.00	2.10	92.20	94	7566.36	-1.82	13.22	S 234.72 E	235.09	93.22	0.15
72	MWD	7666.00	2.10	96.80	95	7661.30	-1.93	13.50	S 238.19 E	238.57	93.24	0.18
73	MWD	7760.00	1.90	94.80	94	7755.24	-2.10	13.83	S 241.45 E	241.85	93.28	0.23
74	MWD	7855.00	1.80	90.10	95	7850.19	-2.09	13.97	S 244.51 E	244.91	93.27	0.19
75	MWD	7949.00	1.60	87.10	94	7944.15	-1.89	13.90	S 247.30 E	247.69	93.22	0.23
76	MWD	8044.00	1.80	85.50	95	8039.11	-1.57	13.72	S 250.11 E	250.49	93.14	0.22
77	MWD	8138.00	1.80	89.20	94	8133.06	-1.29	13.58	S 253.06 E	253.42	93.07	0.12
78	MWD	8232.00	1.80	93.40	94	8227.02	-1.22	13.65	S 256.01 E	256.37	93.05	0.14
79	MWD	8327.00	1.60	100.30	95	8321.97	-1.41	13.97	S 258.80 E	259.18	93.09	0.30
80	MWD	8421.00	1.20	101.80	94	8415.95	-1.73	14.41	S 261.06 E	261.46	93.16	0.43
81	MWD	8515.00	1.20	98.30	94	8509.92	-1.98	14.75	S 263.00 E	263.41	93.21	0.08
82	MWD	8610.00	1.10	90.20	95	8604.91	-2.04	14.90	S 264.89 E	265.31	93.22	0.20
83	MWD	8704.00	1.10	85.30	94	8698.89	-1.88	14.83	S 266.69 E	267.11	93.18	0.10
84	MWD	8744.00	1.10	75.00	40	8738.88	-1.71	14.70	S 267.45 E	267.85	93.15	0.49
85	MWD	8806.00	0.90	35.40	62	8800.87	-1.12	14.15	S 268.30 E	268.68	93.02	1.13
86	MWD	8853.00	5.60	355.70	47	8847.79	1.47	11.56	S 268.35 E	268.59	92.47	10.51
87	MWD	8901.00	10.90	353.20	48	8895.27	8.27	4.71	S 267.63 E	267.67	91.01	11.06
88	MWD	8948.00	16.40	355.90	47	8940.93	19.25	6.33	N 266.63 E	266.71	88.64	11.78
89	MWD	8995.00	19.00	2.00	47	8985.70	33.49	20.59	N 266.42 E	267.22	85.58	6.79
90	MWD	9042.00	23.80	6.20	47	9029.45	50.62	37.68	N 267.72 E	270.35	81.99	10.71
91	MWD	9090.00	28.20	3.10	48	9072.59	71.64	58.64	N 269.38 E	275.69	77.72	9.59
92	MWD	9137.00	31.80	2.40	47	9113.28	95.14	82.11	N 270.50 E	282.68	73.11	7.70
93	MWD	9184.00	35.20	3.10	47	9152.47	121.07	108.02	N 271.75 E	292.43	68.32	7.28
94	MWD	9231.00	38.50	2.50	47	9190.07	149.26	136.17	N 273.12 E	305.18	63.50	7.06
95	MWD	9279.00	42.90	0.80	48	9226.46	180.54	167.45	N 274.00 E	321.11	58.57	9.45
96	MWD	9326.00	47.50	0.80	47	9259.57	213.86	200.79	N 274.46 E	340.07	53.81	9.79

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97	MWD	9373.00	52.80	2.70	47	9289.67	249.92	236.83	N 275.59	E 363.37	49.32	11.69
98	MWD	9420.00	57.90	2.00	47	9316.39	288.57	275.45	N 277.17	E 390.76	45.18	10.92
99	MWD	9467.00	60.70	0.60	47	9340.38	328.97	315.85	N 278.08	E 420.82	41.36	6.48
100	MWD	9514.00	63.30	0.10	47	9362.44	370.42	357.34	N 278.33	E 452.95	37.91	5.61
101	MWD	9562.00	69.30	0.60	48	9381.73	414.32	401.28	N 278.60	E 488.51	34.77	12.54
102	MWD	9609.00	75.80	0.60	47	9395.82	459.10	446.09	N 279.07	E 526.19	32.03	13.83
103	MWD	9656.00	80.10	1.50	47	9405.63	505.03	492.03	N 279.91	E 566.08	29.64	9.34
104	MWD	9703.00	81.60	1.70	47	9413.10	551.42	538.41	N 281.21	E 607.43	27.58	3.22
105	MWD	9751.00	83.40	1.70	48	9419.36	599.00	585.98	N 282.62	E 650.57	25.75	3.75
106	MWD	9798.00	86.60	2.40	47	9423.46	645.81	632.77	N 284.30	E 693.70	24.19	6.97
107	MWD	9878.00	91.30	3.10	80	9424.93	725.77	712.64	N 288.13	E 768.68	22.01	5.94
108	MWD	9972.00	89.60	1.50	94	9424.19	819.76	806.55	N 291.91	E 857.75	19.90	2.48
109	MWD	10066.00	91.00	1.80	94	9423.70	913.74	900.51	N 294.61	E 947.48	18.12	1.52
110	MWD	10161.00	89.70	0.80	95	9423.12	1008.70	995.48	N 296.77	E 1038.77	16.60	1.73
111	MWD	10254.00	88.70	0.10	93	9424.41	1101.61	1088.47	N 297.50	E 1128.39	15.29	1.31
112	MWD	10350.00	88.20	0.60	96	9427.01	1197.49	1184.43	N 298.08	E 1221.36	14.13	0.74
113	MWD	10444.00	90.10	1.10	94	9428.40	1291.42	1278.40	N 299.48	E 1313.01	13.18	2.09
114	MWD	10538.00	89.90	359.50	94	9428.40	1385.33	1372.40	N 299.97	E 1404.80	12.33	1.72
115	MWD	10632.00	88.50	359.00	94	9429.72	1479.14	1466.38	N 298.74	E 1496.50	11.52	1.58
116	MWD	10727.00	88.70	358.70	95	9432.04	1573.89	1561.33	N 296.83	E 1589.30	10.76	0.38
117	MWD	10821.00	88.70	358.70	94	9434.17	1667.63	1655.28	N 294.70	E 1681.31	10.09	0.00
118	MWD	10916.00	88.20	359.20	95	9436.74	1762.38	1750.23	N 292.96	E 1774.58	9.50	0.74
119	MWD	11011.00	89.60	359.40	95	9438.56	1857.19	1845.20	N 291.80	E 1868.13	8.99	1.49
120	MWD	11105.00	90.80	0.40	94	9438.24	1951.06	1939.20	N 291.64	E 1961.01	8.55	1.66
121	MWD	11199.00	90.80	0.40	94	9436.92	2044.97	2033.19	N 292.29	E 2054.09	8.18	0.00
122	MWD	11293.00	91.00	0.60	94	9435.45	2138.89	2127.17	N 293.11	E 2147.27	7.85	0.30
123	MWD	11388.00	90.30	359.50	95	9434.37	2233.77	2222.17	N 293.20	E 2241.42	7.52	1.37
124	MWD	11482.00	89.90	359.70	94	9434.21	2327.63	2316.16	N 292.54	E 2334.56	7.20	0.48
125	MWD	11577.00	89.40	359.50	95	9434.79	2422.48	2411.16	N 291.88	E 2428.76	6.90	0.57
126	MWD	11671.00	89.00	359.90	94	9436.10	2516.33	2505.15	N 291.38	E 2522.04	6.63	0.60
127	MWD	11766.00	89.60	359.90	95	9437.26	2611.20	2600.14	N 291.22	E 2616.40	6.39	0.63
128	MWD	11860.00	89.00	359.90	94	9438.41	2705.08	2694.13	N 291.05	E 2709.81	6.17	0.64
129	MWD	11955.00	89.40	0.20	95	9439.73	2799.96	2789.12	N 291.14	E 2804.28	5.96	0.53

Surface

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								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
130	MWD	12050.00	88.70	359.90	95	9441.31	2894.84	2884.11	N	291.22	E	2898.77	5.77	0.80
131	MWD	12144.00	90.10	0.80	94	9442.29	2988.75	2978.10	N	291.79	E	2992.36	5.60	1.77
132	MWD	12238.00	91.70	1.30	94	9440.82	3082.69	3072.07	N	293.52	E	3086.06	5.46	1.78
133	MWD	12333.00	90.40	359.70	95	9439.08	3177.59	3167.04	N	294.35	E	3180.69	5.31	2.17
134	MWD	12428.00	90.10	359.50	95	9438.66	3272.45	3262.04	N	293.68	E	3275.23	5.14	0.38
135	MWD	12522.00	89.40	358.70	94	9439.07	3366.25	3356.03	N	292.21	E	3368.72	4.98	1.13
136	MWD	12617.00	90.80	359.50	95	9438.91	3461.05	3451.01	N	290.71	E	3463.23	4.82	1.70
137	MWD	12711.00	91.10	0.10	94	9437.35	3554.91	3545.00	N	290.39	E	3556.87	4.68	0.71
138	MWD	12806.00	89.90	359.50	95	9436.52	3649.78	3639.99	N	290.05	E	3651.53	4.56	1.41
139	MWD	12901.00	89.60	359.40	95	9436.93	3744.61	3734.99	N	289.14	E	3746.16	4.43	0.33
140	MWD	12994.00	90.40	359.90	93	9436.93	3837.47	3827.98	N	288.57	E	3838.84	4.31	1.01
141	MWD	13089.00	90.60	359.40	95	9436.10	3932.33	3922.98	N	287.99	E	3933.53	4.20	0.57
142	MWD	13183.00	90.40	359.00	94	9435.28	4026.14	4016.96	N	286.68	E	4027.18	4.08	0.48
143	MWD	13277.00	88.50	357.60	94	9436.19	4119.84	4110.91	N	283.89	E	4120.70	3.95	2.51
144	MWD	13372.00	89.20	357.40	95	9438.09	4214.42	4205.80	N	279.75	E	4215.10	3.81	0.77
145	MWD	13466.00	90.60	358.30	94	9438.26	4308.07	4299.73	N	276.22	E	4308.60	3.68	1.77
146	MWD	13560.00	89.90	357.60	94	9437.85	4401.73	4393.67	N	272.86	E	4402.13	3.55	1.05
147	MWD	13655.00	89.70	357.80	95	9438.18	4496.36	4488.59	N	269.05	E	4496.65	3.43	0.30
148	MWD	13749.00	90.60	359.90	94	9437.93	4590.13	4582.57	N	267.16	E	4590.35	3.34	2.43
149	MWD	13844.00	91.70	0.40	95	9436.03	4685.01	4677.55	N	267.41	E	4685.18	3.27	1.27
150	MWD	13938.00	89.20	0.20	94	9435.29	4778.91	4771.53	N	267.90	E	4779.05	3.21	2.67
151	MWD	14033.00	88.90	0.80	95	9436.86	4873.82	4866.52	N	268.73	E	4873.93	3.16	0.71
152	MWD	14127.00	91.50	1.80	94	9436.53	4967.78	4960.48	N	270.86	E	4967.87	3.13	2.96
153	MWD	14221.00	91.10	0.40	94	9434.40	5061.72	5054.44	N	272.67	E	5061.79	3.09	1.55
154	MWD	14316.00	91.30	0.40	95	9432.41	5156.61	5149.42	N	273.33	E	5156.66	3.04	0.21
155	MWD	14410.00	90.80	0.20	94	9430.69	5250.51	5243.40	N	273.82	E	5250.54	2.99	0.57
156	MWD	14505.00	90.10	0.80	95	9429.94	5345.43	5338.39	N	274.65	E	5345.45	2.95	0.97

