DRILTECH MWD SURVEY REPORT

Company: EOG Resources, Inc.
Well: Thor 21 Fed Com #704H
Location: Lea Co., NM
Rig: H&P 415

Job Number: DM-2016-029-EODT-NM
Vertical Section Plane: 352.13
Well API Number: 30-025-42816
Tie Into: VES

Calculation Method: Minimum Curvature

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)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
Tie In	Surf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	Gyro	83.91	0.51	41.53	84	83.91	0.24	0.28 N	0.25 E	0.37	41.53	0.61	0.61	49.49
2	Gyro	179.85	0.78	67.59	96	179.84	0.68	0.85 N	1.13 E	1.42	53.22	0.41	0.28	27.16
3	Gyro	275.79	0.68	76.93	96	275.78	0.90	1.23 N	2.29 E	2.60	61.87	0.16	-0.10	9.74
4	Gyro	371.73	0.68	65.03	96	371.71	1.12	1.59 N	3.36 E	3.72	64.63	0.15	0.00	-12.40
5	Gyro	467.67	0.66	79.07	96	467.64	1.32	1.94 N	4.42 E	4.83	66.31	0.17	-0.02	14.63
6	Gyro	563.61	0.55	80.13	96	563.58	1.36	2.12 N	5.42 E	5.82	68.60	0.12	-0.11	1.10
7	Gyro	659.55	0.56	112.34	96	659.51	1.14	2.02 N	6.31 E	6.62	72.20	0.32	0.01	33.57
8	Gyro	755.49	0.69	79.02	96	755.45	0.94	1.96 N	7.31 E	7.56	75.01	0.40	0.14	-34.73
9	Gyro	851.43	0.93	56.57	96	851.38	1.30	2.50 N	8.52 E	8.88	73.68	0.41	0.25	-23.40
10	Gyro	926.43	0.96	64.76	75	926.37	1.75	3.10 N	9.60 E	10.09	72.11	0.18	0.04	10.92
11	MWD	1066.00	1.10	300.20	140	1065.93	2.93	4.27 N	9.50 E	10.42	65.79	1.31	0.10	168.69
12	MWD	1160.00	1.90	271.70	94	1159.89	3.75	4.77 N	7.16 E	8.61	56.33	1.14	0.85	-30.32
13	MWD	1254.00	3.00	268.20	94	1253.81	4.26	4.74 N	3.15 E	5.69	33.57	1.18	1.17	-3.72
14	MWD	1344.00	4.60	266.80	90	1343.61	4.81	4.46 N	2.81 W	5.28	327.79	1.78	1.78	-1.56
15	MWD	1434.00	6.50	261.40	90	1433.18	5.04	3.50 N	11.45 W	11.98	287.00	2.19	2.11	-6.00
16	MWD	1523.00	7.60	259.80	89	1521.51	4.73	1.71 N	22.23 W	22.29	274.39	1.26	1.24	-1.80
17	MWD	1613.00	7.90	260.10	90	1610.68	4.27	0.41 S	34.18 W	34.18	269.31	0.34	0.33	0.33
18	MWD	1703.00	8.10	261.50	90	1699.81	3.98	2.41 S	46.54 W	46.60	267.03	0.31	0.22	1.56
19	MWD	1792.00	8.40	261.20	89	1787.89	3.81	4.33 S	59.17 W	59.33	265.81	0.34	0.34	-0.34
20	MWD	1882.00	8.60	265.10	90	1876.90	4.05	5.91 S	72.37 W	72.61	265.33	0.68	0.22	4.33
21	MWD	1972.00	8.80	265.20	90	1965.86	4.77	7.06 S	85.93 W	86.22	265.30	0.22	0.22	0.11
22	MWD	2062.00	9.00	268.70	90	2054.78	5.94	7.80 S	99.83 W	100.13	265.53	0.64	0.22	3.89
23	MWD	2152.00	8.60	262.90	90	2143.72	6.84	8.79 S	113.55 W	113.89	265.57	1.08	-0.44	-6.44
24	MWD	2241.00	8.30	257.70	89	2231.76	6.43	10.98 S	126.43 W	126.90	265.04	0.92	-0.34	-5.84
25	MWD	2331.00	8.10	255.90	90	2320.84	5.24	13.91 S	138.92 W	139.62	264.28	0.36	-0.22	-2.00
26	MWD	2420.00	8.30	255.70	89	2408.93	3.84	17.03 S	151.23 W	152.18	263.58	0.23	0.22	-0.22
27	MWD	2509.00	8.30	257.30	89	2497.00	2.58	20.02 S	163.72 W	164.94	263.03	0.26	0.00	1.80
28	MWD	2599.00	8.40	258.00	90	2586.04	1.56	22.82 S	176.49 W	177.96	262.63	0.16	0.11	0.78
29	MWD	2688.00	7.60	260.70	89	2674.18	0.95	25.12 S	188.65 W	190.32	262.41	0.99	-0.90	3.03
30	MWD	2778.00	7.40	259.40	90	2763.41	0.52	27.15 S	200.22 W	202.06	262.28	0.29	-0.22	-1.44
31	MWD	2868.00	7.00	259.40	90	2852.70	-0.02	29.23 S	211.31 W	213.32	262.13	0.44	-0.44	0.00
32	MWD	2958.00	7.20	260.30	90	2942.01	-0.46	31.18 S	222.26 W	224.44	262.01	0.25	0.22	1.00
33	MWD	3048.00	7.40	260.50	90	3031.28	-0.80	33.09 S	233.54 W	235.87	261.94	0.22	0.22	0.22
34	MWD	3137.00	7.40	261.90	89	3119.53	-0.99	34.84 S	244.86 W	247.33	261.90	0.20	0.00	1.57
35	MWD	3227.00	6.90	260.10	90	3208.83	-1.20	36.59 S	255.93 W	258.53	261.86	0.61	-0.56	-2.00
36	MWD	3317.00	6.50	259.10	90	3298.22	-1.66	38.48 S	266.26 W	269.02	261.78	0.46	-0.44	-1.11
37	MWD	3406.00	6.30	259.60	89	3386.66	-2.15	40.32 S	276.01 W	278.93	261.69	0.23	-0.22	0.56
38	MWD	3586.00	4.90	257.90	180	3565.80	-3.15	43.71 S	293.24 W	296.48	261.52	0.78	-0.78	-0.94
39	MWD	3675.00	4.00	255.90	89	3654.53	-3.77	45.27 S	299.96 W	303.36	261.42	1.03	-1.01	-2.25
40	MWD	3765.00	4.40	256.10	90	3744.29	-4.47	46.86 S	306.36 W	309.92	261.30	0.44	0.44	0.22
41	MWD	3855.00	4.60	254.90	90	3834.01	-5.29	48.63 S	313.20 W	316.95	261.17	0.25	0.22	-1.33
42	MWD	3944.00	5.50	262.20	89	3922.67	-5.73	50.14 S	320.87 W	324.76	261.12	1.24	1.01	8.20
43	MWD	4034.00	5.80	262.90	90	4012.23	-5.66	51.28 S	329.65 W	333.62	261.16	0.34	0.33	0.78
44	MWD	4124.00	5.80	262.40	90	4101.77	-5.58	52.45 S	338.67 W	342.71	261.20	0.06	0.00	-0.56
45	MWD	4213.00	5.50	262.20	89	4190.34	-5.55	53.62 S	347.36 W	351.47	261.22	0.34	-0.34	-0.22
46	MWD	4303.00	4.90	256.80	90	4279.97	-5.91	55.08 S	355.37 W	359.62	261.19	0.86	-0.67	-6.00
47	MWD	4392.00	4.20	249.90	89	4368.69	-6.95	57.07 S	362.13 W	366.60	261.04	1.00	-0.79	-7.75
48	MWD	4482.00	5.60	259.40	90	4458.36	-7.86	59.01 S	369.55 W	374.23	260.93	1.79	1.56	10.56
49	MWD	4572.00	5.80	255.00	90	4547.91	-8.63	61.00 S	378.25 W	383.14	260.84	0.53	0.22	-4.89
50	MWD	4662.00	5.80	251.70	90	4637.45	-10.02	63.60 S	386.96 W	392.16	260.67	0.37	0.00	-3.67
51	MWD	4752.00	5.50	251.50	90	4727.01	-11.64	66.40 S	395.37 W	400.91	260.47	0.33	-0.33	-0.22
52	MWD	4842.00	5.10	248.90	90	4816.63	-13.35	69.21 S	403.19 W	409.09	260.26	0.52	-0.44	-2.89
53	MWD	4931.00	5.50	255.00	89	4905.25	-14.78	71.74 S	411.00 W	417.22	260.10	0.78	0.45	6.85
54	MWD	5021.00	5.50	256.40	90	4994.83	-15.75	73.87 S	419.36 W	425.82	260.01	0.15	0.00	1.56
55	MWD	5111.00	5.60	252.40	90	5084.41	-16.92	76.21 S	427.74 W	434.48	259.90	0.44	0.11	-4.44
56	MWD	5201.00	5.80	254.30	90	5173.97	-18.28	78.77 S	436.30 W	443.36	259.77	0.31	0.22	2.11
57	MWD	5291.00	5.60	253.80	90	5263.52	-19.54	81.22 S	444.90 W	452.25	259.65	0.23	-0.22	-0.56
58	MWD	5380.00	5.60	254.70	89	5352.10	-20.73	83.58 S	453.26 W	460.90	259.55	0.10	0.00	1.01
59	MWD	5470.00	5.30	254.20	90	5441.69	-21.87	85.87 S	461.49 W	469.41	259.46	0.34	-0.33	-0.56
60	MWD	5560.00	5.30	250.10	90	5531.31	-23.31	88.42 S	469.40 W	477.66	259.33	0.42	0.00	-4.56
61	MWD	5650.00	5.50	251.90	90	5620.91	-24.94	91.17 S	477.41 W	486.04	259.19	0.29	0.22	2.00

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Company:	EOG Resources, Inc.	Job Number:	DM-2016-029-EODT-NM
Well:	Thor 21 Fed Com #704H	Vertical Section Plane:	352.13
Location:	Lea Co., NM	Well API Number:	30-025-42816
Rig:	H&P 415	Tie Into:	VES

Calculation Method: Minimum Curvature

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)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
62	MWD	5739.00	5.50	262.90	89	5709.50	-25.64	93.02 S	485.70 W	494.52	259.16	1.18	0.00	12.36
63	MWD	5829.00	5.50	268.20	90	5799.09	-25.13	93.69 S	494.29 W	503.09	259.27	0.56	0.00	5.89
64	MWD	5919.00	5.50	268.20	90	5888.67	-24.22	93.96 S	502.91 W	511.61	259.42	0.00	0.00	0.00
65	MWD	6008.00	5.50	268.60	89	5977.26	-23.29	94.20 S	511.44 W	520.04	259.56	0.04	0.00	0.45
66	MWD	6098.00	5.10	267.20	90	6066.88	-22.45	94.50 S	519.74 W	528.26	259.69	0.47	-0.44	-1.56
67	MWD	6188.00	5.10	265.40	90	6156.52	-21.86	95.02 S	527.73 W	536.21	259.79	0.18	0.00	-2.00
68	MWD	6277.00	5.10	264.00	89	6245.17	-21.51	95.75 S	535.60 W	544.09	259.86	0.14	0.00	-1.57
69	MWD	6367.00	4.90	265.20	90	6334.83	-21.17	96.49 S	543.41 W	551.91	259.93	0.25	-0.22	1.33
70	MWD	6457.00	4.90	265.10	90	6424.50	-20.77	97.14 S	551.07 W	559.57	260.00	0.01	0.00	-0.11
71	MWD	6547.00	5.10	262.60	90	6514.16	-20.54	97.98 S	558.87 W	567.39	260.06	0.33	0.22	-2.78
72	MWD	6636.00	4.80	262.10	89	6602.82	-20.51	99.00 S	566.48 W	575.07	260.09	0.34	-0.34	-0.56
73	MWD	6726.00	4.60	258.20	90	6692.52	-20.76	100.26 S	573.74 W	582.44	260.09	0.42	-0.22	-4.33
74	MWD	6816.00	4.90	254.20	90	6782.21	-21.53	102.04 S	580.97 W	589.87	260.04	0.50	0.33	-4.44
75	MWD	6906.00	4.60	252.90	90	6871.90	-22.64	104.15 S	588.12 W	597.27	259.96	0.35	-0.33	-1.44
76	MWD	6995.00	4.40	252.60	89	6960.63	-23.78	106.22 S	594.79 W	604.20	259.87	0.23	-0.22	-0.34
77	MWD	7085.00	4.20	250.50	90	7050.37	-25.02	108.36 S	601.19 W	610.88	259.78	0.28	-0.22	-2.33
78	MWD	7175.00	4.00	253.50	90	7140.14	-26.15	110.35 S	607.31 W	617.25	259.70	0.33	-0.22	3.33
79	MWD	7265.00	3.90	245.90	90	7229.93	-27.48	112.49 S	613.11 W	623.35	259.60	0.59	-0.11	-8.44
80	MWD	7354.00	3.90	246.20	89	7318.73	-29.15	114.95 S	618.64 W	629.23	259.47	0.02	0.00	0.34
81	MWD	7443.00	3.70	254.90	89	7407.53	-30.35	116.91 S	624.19 W	635.04	259.39	0.68	-0.22	9.78
82	MWD	7528.00	3.70	262.10	85	7492.35	-30.69	118.01 S	629.55 W	640.51	259.38	0.55	0.00	8.47
83	MWD	7618.00	4.60	252.40	90	7582.12	-31.30	119.50 S	635.87 W	647.00	259.36	1.26	1.00	-10.78
84	MWD	7707.00	3.00	227.30	89	7670.92	-33.24	122.16 S	640.98 W	652.52	259.21	2.55	-1.80	-28.20
85	MWD	7797.00	2.30	219.90	90	7760.83	-35.80	125.14 S	643.87 W	655.92	259.00	0.86	-0.78	-8.22
86	MWD	7887.00	1.40	225.90	90	7850.78	-37.66	127.29 S	645.82 W	658.24	258.85	1.02	-1.00	6.67
87	MWD	7977.00	1.40	187.90	90	7940.76	-39.37	129.14 S	646.76 W	659.53	258.71	1.01	0.00	-42.22
88	MWD	8067.00	1.40	193.50	90	8030.73	-41.45	131.30 S	647.17 W	660.35	258.53	0.15	0.00	6.22
89	MWD	8156.00	0.70	69.10	89	8119.72	-42.34	132.16 S	646.91 W	660.27	258.45	2.12	-0.79	-139.78
90	MWD	8246.00	0.90	29.90	90	8209.71	-41.66	131.36 S	646.05 W	659.26	258.51	0.63	0.22	-43.56
91	MWD	8336.00	0.40	104.70	90	8299.71	-41.22	130.82 S	645.39 W	658.52	258.54	0.98	-0.56	83.11
92	MWD	8426.00	0.00	324.30	90	8389.71	-41.34	130.90 S	645.09 W	658.23	258.53	0.44	-0.44	244.00
93	MWD	8516.00	0.50	133.00	90	8479.71	-41.64	131.17 S	644.80 W	658.01	258.50	0.56	0.56	-212.56
94	MWD	8606.00	0.90	174.70	90	8569.70	-42.66	132.14 S	644.45 W	657.85	258.41	0.69	0.44	46.33
95	MWD	8695.00	1.40	186.50	89	8658.68	-44.41	133.92 S	644.50 W	658.27	258.26	0.62	0.56	13.26
96	MWD	8785.00	1.60	187.70	90	8748.65	-46.68	136.26 S	644.80 W	659.04	258.07	0.22	0.22	1.33
97	MWD	8875.00	1.60	95.60	90	8838.63	-48.19	137.62 S	643.72 W	658.26	257.93	2.56	0.00	-102.33
98	MWD	8964.00	0.90	130.90	89	8927.61	-49.00	138.20 S	641.95 W	656.66	257.85	1.13	-0.79	39.66
99	MWD	9054.00	0.90	156.10	90	9017.60	-50.21	139.31 S	641.13 W	656.09	257.74	0.44	0.00	28.00
100	MWD	9144.00	1.20	157.70	90	9107.58	-51.80	140.83 S	640.49 W	655.79	257.60	0.33	0.33	1.78
101	MWD	9233.00	1.10	151.00	89	9196.56	-53.50	142.44 S	639.72 W	655.38	257.45	0.19	-0.11	-7.53
102	MWD	9323.00	0.40	268.70	90	9286.56	-54.27	143.20 S	639.61 W	655.45	257.38	1.48	-0.78	130.78
103	MWD	9413.00	1.20	268.00	90	9376.55	-54.14	143.24 S	640.87 W	656.68	257.40	0.89	0.89	-0.78
104	MWD	9503.00	1.20	254.00	90	9466.53	-54.18	143.53 S	642.72 W	658.55	257.41	0.32	0.00	-15.56
105	MWD	9592.00	1.10	244.50	89	9555.51	-54.57	144.16 S	644.38 W	660.31	257.39	0.24	-0.11	-10.67
106	MWD	9682.00	1.20	251.00	90	9645.49	-55.01	144.84 S	646.05 W	662.09	257.36	0.18	0.11	7.22
107	MWD	9772.00	0.50	231.70	90	9735.48	-55.39	145.39 S	647.25 W	663.38	257.34	0.83	-0.78	-21.44
108	MWD	9861.00	0.90	308.10	89	9824.48	-55.09	145.20 S	648.11 W	664.17	257.37	1.03	0.45	85.84
109	MWD	9951.00	1.20	276.10	90	9914.46	-54.35	144.66 S	649.60 W	665.51	257.45	0.72	0.33	-35.56
110	MWD	10040.00	1.40	290.40	89	10003.44	-53.61	144.18 S	651.55 W	667.31	257.52	0.43	0.22	16.07
111	MWD	10130.00	1.90	303.60	90	10093.40	-52.10	142.97 S	653.82 W	669.27	257.67	0.69	0.56	14.67
112	MWD	10220.00	1.20	270.90	90	10183.37	-50.97	142.13 S	656.01 W	671.23	257.77	1.22	-0.78	-36.33
113	MWD	10310.00	1.90	287.70	90	10273.34	-50.18	141.67 S	658.37 W	673.44	257.86	0.92	0.78	18.67
114	MWD	10400.00	1.90	297.20	90	10363.29	-48.68	140.53 S	661.12 W	675.89	258.00	0.35	0.00	10.56
115	MWD	10489.00	1.90	308.50	89	10452.24	-46.77	138.94 S	663.59 W	677.97	258.17	0.42	0.00	12.70
116	MWD	10579.00	1.20	267.50	90	10542.21	-45.60	138.05 S	665.69 W	679.86	258.28	1.41	-0.78	-45.56
117	MWD	10669.00	1.60	265.90	90	10632.18	-45.43	138.18 S	667.89 W	682.03	258.31	0.45	0.44	-1.78
118	MWD	10758.00	1.80	244.70	89	10721.14	-45.76	138.87 S	670.39 W	684.62	258.30	0.74	0.22	-23.82
119	MWD	10848.00	0.90	206.00	90	10811.12	-46.77	140.11 S	671.98 W	686.43	258.22	1.37	-1.00	-43.00
120	MWD	10938.00	0.70	193.20	90	10901.11	-47.87	141.28 S	672.42 W	687.10	258.13	0.30	-0.22	-14.22
121	MWD	11028.00	1.40	228.00	90	10991.09	-49.00	142.55 S	673.36 W	688.28	258.05	1.02	0.78	38.67
122	MWD	11117.00	1.80	231.00	89	11080.06	-50.34	144.15 S	675.25 W	690.47	257.95	0.46	0.45	3.37
123	MWD	11205.00	2.10	219.90	88	11168.01	-52.14	146.26 S	677.36 W	692.97	257.82	0.55	0.34	-12.61
124	MWD	11294.00	0.50	125.10	89	11256.99	-53.50	147.74 S	678.09 W	694.00	257.71	2.47	-1.80	-106.52
125	MWD	11384.00	2.10	81.20	90	11346.96	-53.74	147.71 S	676.14 W	692.08	257.68	1.97	1.78	-48.78
126	MWD	11473.00	1.90	77.90	89	11435.91	-53.60	147.15 S	673.08 W	688.98	257.67	0.26	-0.22	-3.71

DRILTECH MWD SURVEY REPORT

Company: EOG Resources, Inc.
Well: Thor 21 Fed Com #704H
Location: Lea Co., NM
Rig: H&P 415

Job Number: DM-2016-029-EODT-NM
Vertical Section Plane: 352.13
Well API Number: 30-025-42816
Tie Into: VES

Calculation Method: Minimum Curvature

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)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
127	MWD	11563.00	1.40	55.50	90	11525.87	-53.00	146.21 S	670.72 W	686.47	257.70	0.90	-0.56	-24.89
128	MWD	11653.00	1.60	25.50	90	11615.84	-51.46	144.46 S	669.27 W	684.68	257.82	0.89	0.22	-33.33
129	MWD	11743.00	1.90	17.40	90	11705.80	-49.06	141.90 S	668.28 W	683.18	258.01	0.43	0.33	-9.00
130	MWD	11833.00	1.80	10.20	90	11795.75	-46.36	139.09 S	667.59 W	681.92	258.23	0.28	-0.11	-8.00
131	MWD	11922.00	1.20	15.40	89	11884.72	-44.18	136.81 S	667.09 W	680.98	258.41	0.69	-0.67	5.84
132	MWD	11972.00	0.90	21.60	50	11934.72	-43.36	135.94 S	666.81 W	680.53	258.48	0.64	-0.60	12.40
133	MWD	12009.00	3.20	13.00	37	11971.69	-42.14	134.66 S	666.47 W	679.94	258.58	6.25	6.22	-23.24
134	MWD	12054.00	8.30	19.30	45	12016.45	-38.07	130.37 S	665.11 W	677.77	258.91	11.40	11.33	14.00
135	MWD	12099.00	14.40	10.90	45	12060.55	-29.88	121.80 S	662.98 W	674.08	259.59	14.01	13.56	-18.67
136	MWD	12144.00	22.20	8.80	45	12103.24	-16.41	107.89 S	660.62 W	669.37	260.72	17.39	17.33	-4.67
137	MWD	12189.00	31.00	7.90	45	12143.44	2.92	87.97 S	657.72 W	663.57	262.38	19.58	19.56	-2.00
138	MWD	12234.00	39.90	7.40	45	12180.06	28.05	62.12 S	654.26 W	657.20	264.58	19.79	19.78	-1.11
139	MWD	12279.00	45.40	8.10	45	12213.15	57.39	31.93 S	650.14 W	650.92	267.19	12.27	12.22	1.56
140	MWD	12323.00	49.10	8.40	44	12243.01	88.43	0.04 N	645.50 W	645.50	270.00	8.42	8.41	0.68
141	MWD	12368.00	54.90	7.50	45	12270.70	122.53	35.15 N	640.61 W	641.57	273.14	12.98	12.89	-2.00
142	MWD	12413.00	59.80	4.70	45	12294.98	159.29	72.81 N	636.61 W	640.76	276.52	12.08	10.89	-6.22
143	MWD	12457.00	62.50	1.70	44	12316.21	197.11	111.28 N	634.47 W	644.16	279.95	8.56	6.14	-6.82
144	MWD	12502.00	65.10	0.90	45	12336.07	236.96	151.64 N	633.56 W	651.46	283.46	5.99	5.78	-1.78
145	MWD	12547.00	72.00	1.90	45	12352.52	278.27	193.48 N	632.53 W	661.46	287.01	15.47	15.33	2.22
146	MWD	12592.00	81.60	2.10	45	12362.78	321.38	237.22 N	631.00 W	674.12	290.60	21.34	21.33	0.44
147	MWD	12637.00	91.00	0.30	45	12365.69	365.68	282.06 N	630.07 W	690.32	294.12	21.27	20.89	-4.00
148	MWD	12727.00	92.00	359.50	90	12363.33	454.82	372.03 N	630.22 W	731.84	300.55	1.42	1.11	399.11
149	MWD	12816.00	87.30	355.60	89	12363.87	543.38	460.90 N	634.02 W	783.85	306.02	6.86	-5.28	-4.38
150	MWD	12906.00	90.10	357.20	90	12365.91	633.09	550.69 N	639.67 W	844.06	310.72	3.58	3.11	1.78
151	MWD	12996.00	91.80	357.30	90	12364.42	722.72	640.57 N	643.99 W	908.33	314.85	1.89	1.89	0.11
152	MWD	13086.00	89.00	356.80	90	12363.79	812.37	730.44 N	648.62 W	976.86	318.40	3.16	-3.11	-0.56
153	MWD	13176.00	90.60	358.70	90	12364.11	901.93	820.36 N	652.15 W	1048.00	321.52	2.76	1.78	2.11
154	MWD	13266.00	91.00	0.50	90	12362.85	991.16	910.35 N	652.78 W	1120.21	324.36	2.05	0.44	-398.00
155	MWD	13355.00	89.20	1.40	89	12362.70	1079.10	999.33 N	651.31 W	1192.84	326.91	2.26	-2.02	1.01
156	MWD	13445.00	91.10	1.90	90	12362.46	1167.86	1089.29 N	648.72 W	1267.83	329.22	2.18	2.11	0.56
157	MWD	13535.00	90.80	0.70	90	12360.97	1256.69	1179.25 N	646.67 W	1344.93	331.26	1.37	-0.33	-1.33
158	MWD	13625.00	91.30	0.50	90	12359.32	1345.70	1269.23 N	645.73 W	1424.05	333.03	0.60	0.56	-0.22
159	MWD	13714.00	90.80	360.00	89	12357.69	1433.79	1358.22 N	645.34 W	1503.74	334.59	0.79	-0.56	403.93
160	MWD	13804.00	90.30	0.20	90	12356.82	1522.91	1448.21 N	645.19 W	1585.43	335.99	0.60	-0.56	-399.78
161	MWD	13894.00	91.10	358.90	90	12355.73	1612.15	1538.20 N	645.89 W	1668.30	337.22	1.70	0.89	398.56
162	MWD	13983.00	90.30	359.50	89	12354.64	1700.47	1627.18 N	647.14 W	1751.15	338.31	1.12	-0.90	0.67
163	MWD	14073.00	91.50	358.40	90	12353.22	1789.82	1717.15 N	648.78 W	1835.63	339.30	1.81	1.33	-1.22
164	MWD	14163.00	89.00	357.90	90	12352.83	1879.31	1807.10 N	651.69 W	1921.02	340.17	2.83	-2.78	-0.56
165	MWD	14253.00	91.50	0.50	90	12352.44	1968.61	1897.07 N	652.95 W	2006.30	341.01	4.01	2.78	-397.11
166	MWD	14343.00	91.00	0.50	90	12350.48	2057.63	1987.05 N	652.16 W	2091.33	341.83	0.56	-0.56	0.00
167	MWD	14432.00	90.30	359.60	89	12349.47	2145.78	2076.04 N	652.08 W	2176.04	342.56	1.28	-0.79	403.48
168	MWD	14522.00	91.50	358.60	90	12348.05	2235.10	2166.02 N	653.50 W	2262.45	343.21	1.74	1.33	-1.11
169	MWD	14612.00	90.40	358.70	90	12346.56	2324.50	2255.98 N	655.62 W	2349.31	343.80	1.23	-1.22	0.11
170	MWD	14702.00	91.10	357.90	90	12345.38	2413.97	2345.93 N	658.29 W	2436.54	344.33	1.18	0.78	-0.89
171	MWD	14792.00	91.80	358.40	90	12343.10	2503.44	2435.85 N	661.19 W	2524.00	344.81	0.96	0.78	0.56
172	MWD	14881.00	91.50	359.50	89	12340.54	2591.78	2524.80 N	662.82 W	2610.35	345.29	1.28	-0.34	1.24
173	MWD	14971.00	89.90	359.10	90	12339.44	2681.06	2614.78 N	663.92 W	2697.75	345.75	1.83	-1.78	-0.44
174	MWD	15061.00	90.80	358.90	90	12338.89	2770.41	2704.77 N	665.49 W	2785.43	346.18	1.02	1.00	-0.22
175	MWD	15151.00	93.10	358.40	90	12335.83	2859.77	2794.68 N	667.61 W	2873.32	346.56	2.62	2.56	-0.56
176	MWD	15240.00	92.40	359.30	89	12331.56	2948.06	2883.56 N	669.39 W	2960.24	346.93	1.28	-0.79	1.01
177	MWD	15330.00	92.90	0.70	90	12327.40	3037.11	2973.46 N	669.39 W	3047.88	347.31	1.65	0.56	-398.44
178	MWD	15420.00	90.80	0.70	90	12324.49	3126.06	3063.40 N	668.30 W	3135.45	347.69	2.33	-2.33	0.00
179	MWD	15510.00	92.60	0.70	90	12321.82	3215.01	3153.35 N	667.20 W	3223.16	348.05	2.00	2.00	0.00
180	MWD	15599.00	93.10	0.50	89	12317.40	3302.93	3242.24 N	666.27 W	3309.99	348.39	0.60	0.56	-0.22
181	MWD	15689.00	91.10	359.30	90	12314.10	3392.04	3332.17 N	666.42 W	3398.16	348.69	2.59	-2.22	398.67
182	MWD	15779.00	92.20	2.60	90	12311.51	3480.92	3422.11 N	664.93 W	3486.11	349.00	3.86	1.22	-396.33
183	MWD	15868.00	91.70	1.90	89	12308.48	3568.49	3510.99 N	661.44 W	3572.75	349.33	0.97	-0.56	-0.79
184	MWD	15958.00	90.40	1.90	90	12306.83	3657.16	3600.92 N	658.46 W	3660.63	349.64	1.44	-1.44	0.00
185	MWD	16047.00	92.20	1.60	89	12304.81	3744.89	3689.85 N	655.74 W	3747.67	349.92	2.05	2.02	-0.34
186	MWD	16137.00	93.60	1.20	90	12300.26	3833.60	3779.71 N	653.54 W	3835.79	350.19	1.62	1.56	-0.44
187	MWD	16227.00	92.20	0.20	90	12295.70	3922.47	3869.58 N	652.45 W	3924.20	350.43	1.91	-1.56	-1.11
188	MWD	16317.00	93.40	360.00	90	12291.31	4011.50	3959.47 N	652.29 W	4012.84	350.65	1.35	1.33	399.78
189	MWD	16406.00	93.30	0.30	89	12286.11	4099.47	4048.32 N	652.06 W	4100.50	350.85	0.35	-0.11	-404.16
190	MWD	16496.00	91.80	0.30	90	12282.10	4188.47	4138.23 N	651.59 W	4189.21	351.05	1.67	-1.67	0.00
191	MWD	16586.00	91.30	357.90	90	12279.67	4277.77	4228.18 N	653.00 W	4278.30	351.22	2.72	-0.56	397.33

DRILTECH MWD SURVEY REPORT

Company: EOG Resources, Inc.
Well: Thor 21 Fed Com #704H
Location: Lea Co., NM
Rig: H&P 415

Job Number: DM-2016-029-EODT-NM
Vertical Section Plane: 352.13
Well API Number: 30-025-42816
Tie Into: VES

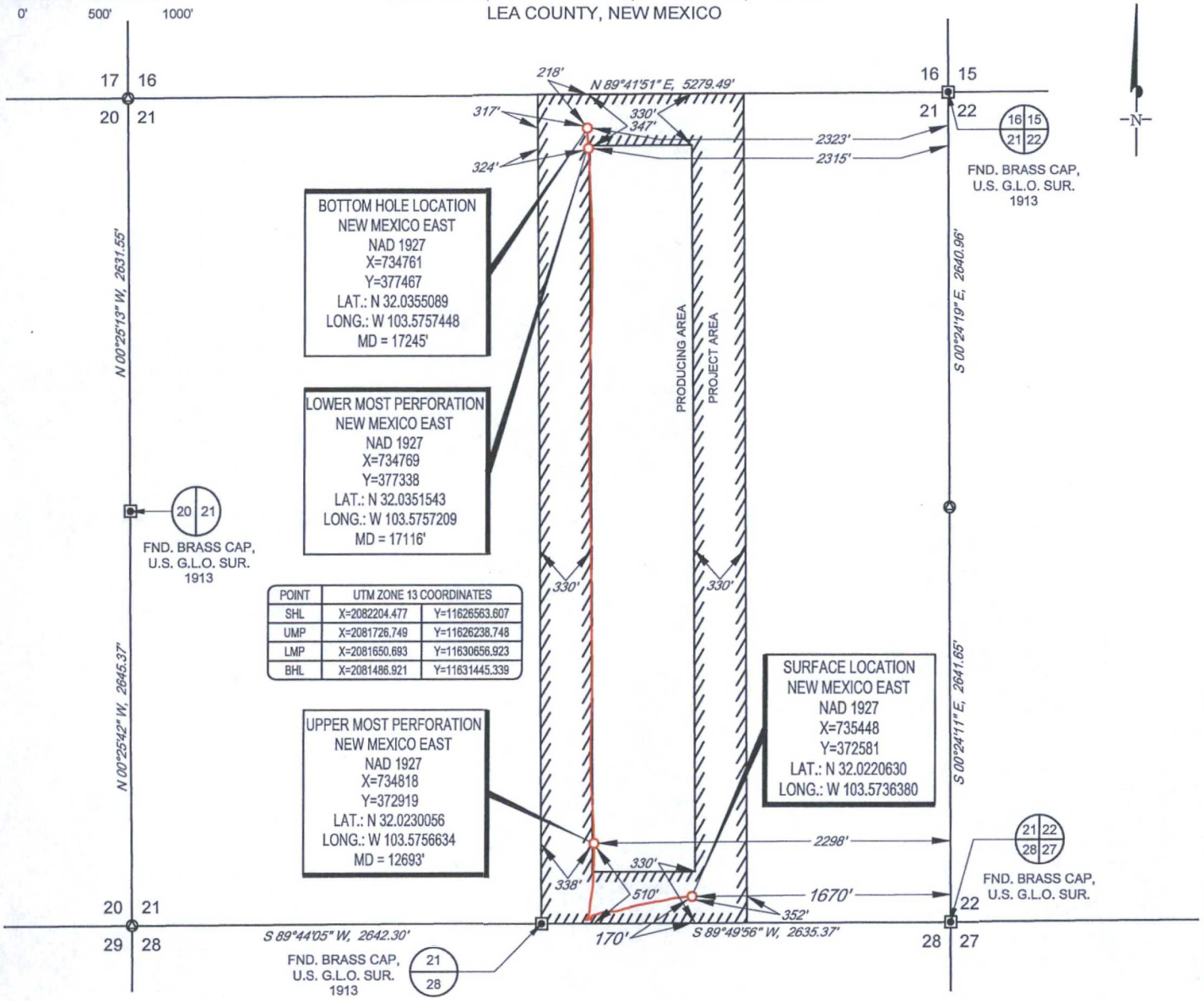
Calculation Method: Minimum Curvature

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)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
192	MWD	16676.00	92.70	357.50	90	12276.53	4367.28	4318.05 N	656.61 W	4367.68	351.35	1.62	1.56	-0.44
193	MWD	16765.00	92.20	356.50	89	12272.72	4455.88	4406.84 N	661.26 W	4456.18	351.47	1.26	-0.56	-1.12
194	MWD	16855.00	94.50	358.20	90	12267.46	4545.34	4496.58 N	665.42 W	4545.55	351.58	3.18	2.56	1.89
195	MWD	16945.00	90.80	357.20	90	12263.30	4634.81	4586.40 N	669.03 W	4634.94	351.70	4.26	-4.11	-1.11
196	MWD	17034.00	91.80	356.60	89	12261.28	4723.47	4675.24 N	673.84 W	4723.55	351.80	1.31	1.12	-0.67
197	MWD	17124.00	92.20	356.30	90	12258.14	4813.16	4765.02 N	679.41 W	4813.21	351.89	0.56	0.44	-0.33
198	PROJ	17246.00	92.20	356.30	122	12253.46	4934.75	4886.67 N	687.27 W	4934.77	351.99	0.00	0.00	0.00

SCALE: 1" = 1000'

0' 500' 1000'

SECTION 21, TOWNSHIP 26-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: THOR 21 FED COM #704H

SECTION 21 TWP 26-S RGE 33-E SURVEY N.M.P.M.

COUNTY LEA STATE NM ELEVATION 3257'

DESCRIPTION 170' FSL & 1670' FEL

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
JUNE 15, 2016

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eog resources, inc.

THOR 21 FED COM #704H AS-COMPLETED	REVISION:
DATE: 06/15/16	
FILE: AD_THOR21FEDCOM_704H	
DRAWN BY: A.C.C.	
SHEET : 1 OF 1	

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 1 1"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 19 27.
3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.