



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Thor 21 Fed Com

#703H

OH

Survey: Driltech MWD #1

EOG PVA

29 April, 2016



EOG Resources, Inc.

EOG PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Site:	Thor 21 Fed Com	MD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Thor 21 Fed Com		
Site Position:		Northing:	372,581.00 usft
From:	Map	Easting:	735,478.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 19.428 N
		Longitude:	103° 34' 24.750 W
		Grid Convergence:	0.40 °

Well		#703H				
Well Position	+N/-S	0.0 usft	Northing:	372,581.00 usft	Latitude:	32° 1' 19.428 N
	+E/-W	0.0 usft	Easting:	735,478.00 usft	Longitude:	103° 34' 24.750 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,256.0 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/4/2016	7.07	59.89	47,942

Design		OH		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.78

Survey Program		Date 4/26/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
196.0	17,160.0	Driltech MWD #1 (OH)	MWD	MWD - Standard



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
196.0	1.40	131.80	196.0	-1.6	1.8	0.71	0.71	0.00	0.0	0.0	
256.0	1.80	120.20	256.0	-2.6	3.1	0.85	0.67	-19.33	0.0	0.0	
313.0	1.40	126.90	312.9	-3.4	4.5	0.77	-0.70	11.75	0.0	0.0	
411.0	1.10	109.20	410.9	-4.5	6.3	0.50	-0.31	-18.06	0.0	0.0	
505.0	1.10	112.10	504.9	-5.1	8.0	0.06	0.00	3.09	0.0	0.0	
599.0	1.20	98.10	598.9	-5.6	9.8	0.32	0.11	-14.89	0.0	0.0	
693.0	0.70	103.20	692.9	-5.8	11.4	0.54	-0.53	5.43	0.0	0.0	
787.0	1.20	138.70	786.9	-6.7	12.6	0.80	0.53	37.77	0.0	0.0	
895.0	1.10	101.90	894.8	-7.8	14.3	0.68	-0.09	-34.07	0.0	0.0	
971.0	1.40	107.60	970.8	-8.2	15.9	0.43	0.39	7.50	0.0	0.0	
1,064.0	1.60	168.20	1,063.8	-9.8	17.3	1.64	0.22	65.16	0.0	0.0	
1,252.0	2.50	216.40	1,251.7	-15.7	15.4	0.99	0.48	25.64	0.0	0.0	
1,342.0	2.30	211.60	1,341.6	-18.8	13.3	0.31	-0.22	-5.33	0.0	0.0	
1,432.0	2.60	205.50	1,431.5	-22.2	11.4	0.44	0.33	-6.78	0.0	0.0	
1,521.0	2.50	202.80	1,520.4	-25.8	9.8	0.18	-0.11	-3.03	0.0	0.0	
1,611.0	2.30	207.80	1,610.3	-29.2	8.2	0.32	-0.22	5.56	0.0	0.0	
1,701.0	2.50	199.90	1,700.3	-32.6	6.7	0.43	0.22	-8.78	0.0	0.0	
1,791.0	2.30	207.90	1,790.2	-36.1	5.2	0.43	-0.22	8.89	0.0	0.0	
1,881.0	2.60	202.30	1,880.1	-39.6	3.6	0.43	0.33	-6.22	0.0	0.0	
1,970.0	2.60	202.70	1,969.0	-43.3	2.0	0.02	0.00	0.45	0.0	0.0	
2,060.0	2.10	205.70	2,058.9	-46.7	0.5	0.57	-0.56	3.33	0.0	0.0	
2,150.0	2.10	200.70	2,148.9	-49.7	-0.8	0.20	0.00	-5.56	0.0	0.0	
2,240.0	2.60	196.20	2,238.8	-53.2	-1.9	0.59	0.56	-5.00	0.0	0.0	
2,329.0	2.30	203.40	2,327.7	-56.8	-3.2	0.48	-0.34	8.09	0.0	0.0	
2,419.0	2.50	196.00	2,417.6	-60.3	-4.5	0.41	0.22	-8.22	0.0	0.0	
2,509.0	2.10	198.40	2,507.6	-63.8	-5.5	0.46	-0.44	2.67	0.0	0.0	



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Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
2,599.0	2.50	189.00	2,597.5	-67.3	-6.3	0.61	0.44	-10.44	0.0	0.0	
2,688.0	2.50	193.30	2,686.4	-71.1	-7.1	0.21	0.00	4.83	0.0	0.0	
2,778.0	2.60	190.00	2,776.3	-75.0	-7.9	0.20	0.11	-3.67	0.0	0.0	
2,867.0	3.00	190.50	2,865.2	-79.3	-8.7	0.45	0.45	0.56	0.0	0.0	
2,957.0	2.80	196.00	2,955.1	-83.7	-9.7	0.38	-0.22	6.11	0.0	0.0	
3,047.0	3.00	192.80	3,045.0	-88.1	-10.8	0.29	0.22	-3.56	0.0	0.0	
3,137.0	3.20	184.00	3,134.9	-92.9	-11.5	0.57	0.22	-9.78	0.0	0.0	
3,226.0	3.90	192.50	3,223.7	-98.4	-12.4	0.98	0.79	9.55	0.0	0.0	
3,316.0	3.90	191.60	3,313.5	-104.3	-13.6	0.07	0.00	-1.00	0.0	0.0	
3,406.0	3.90	186.80	3,403.3	-110.4	-14.6	0.36	0.00	-5.33	0.0	0.0	
3,496.0	3.50	189.50	3,493.1	-116.1	-15.4	0.48	-0.44	3.00	0.0	0.0	
3,586.0	3.30	186.00	3,582.9	-121.4	-16.2	0.32	-0.22	-3.89	0.0	0.0	
3,675.0	2.80	173.80	3,671.8	-126.1	-16.2	0.92	-0.56	-13.71	0.0	0.0	
3,765.0	1.80	154.90	3,761.7	-129.6	-15.4	1.38	-1.11	-21.00	0.0	0.0	
3,944.0	1.60	71.90	3,940.7	-131.4	-11.8	1.26	-0.11	-46.37	-1.1	0.2	
4,034.0	1.60	63.60	4,030.6	-130.4	-9.5	0.26	0.00	-9.22	-2.1	0.0	
4,124.0	1.60	57.10	4,120.6	-129.2	-7.3	0.20	0.00	-7.22	-3.0	-0.1	
4,214.0	1.40	52.20	4,210.6	-127.8	-5.4	0.26	-0.22	-5.44	-3.8	0.0	
4,303.0	1.80	75.80	4,299.5	-126.8	-3.2	0.86	0.45	26.52	-4.4	1.7	
4,393.0	1.80	76.10	4,389.5	-126.1	-0.4	0.01	0.00	0.33	-5.7	1.5	
4,483.0	2.10	83.30	4,479.4	-125.6	2.6	0.43	0.33	8.00	-7.0	2.0	
4,573.0	2.10	102.50	4,569.4	-125.8	5.8	0.78	0.00	21.33	-7.9	3.8	
4,663.0	2.30	115.50	4,659.3	-126.9	9.1	0.60	0.22	14.44	-9.2	4.7	
4,752.0	1.20	120.90	4,748.3	-128.1	11.5	1.25	-1.24	6.07	-10.5	4.4	
4,842.0	0.50	115.00	4,838.3	-128.8	12.7	0.78	-0.78	-6.56	-11.2	2.1	
4,932.0	0.70	96.50	4,928.3	-129.0	13.6	0.31	0.22	-20.56	-10.8	-2.5	
5,021.0	0.00	49.20	5,017.3	-129.1	14.1	0.79	-0.79	0.00	4.3	-9.6	



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5,111.0	0.40	118.10	5,107.3	-129.2	14.4	0.44	0.44	0.00	-9.8	-0.5	
5,201.0	0.50	49.70	5,197.3	-129.1	15.0	0.57	0.11	-76.00	-2.1	-9.1	
5,290.0	0.70	65.40	5,286.2	-128.6	15.8	0.29	0.22	17.64	-3.9	-8.0	
5,380.0	0.90	31.80	5,376.2	-127.8	16.6	0.56	0.22	-37.33	1.3	-8.2	
5,470.0	1.20	37.60	5,466.2	-126.5	17.6	0.35	0.33	6.44	0.2	-7.5	
5,559.0	1.40	28.50	5,555.2	-124.8	18.7	0.32	0.22	-10.22	0.6	-6.5	
5,649.0	1.10	19.20	5,645.2	-123.0	19.5	0.40	-0.33	-10.33	0.7	-5.4	
5,739.0	1.20	13.50	5,735.2	-121.3	20.0	0.17	0.11	-6.33	0.2	-4.3	
5,828.0	1.10	6.00	5,824.1	-119.5	20.3	0.20	-0.11	-8.43	-0.9	-4.2	
5,918.0	1.20	345.90	5,914.1	-117.7	20.1	0.46	0.11	-22.33	-1.2	-4.6	
6,008.0	0.70	329.20	6,004.1	-116.3	19.6	0.63	-0.56	-18.56	-1.3	-5.0	
6,098.0	0.90	290.20	6,094.1	-115.6	18.7	0.63	0.22	-43.33	1.0	-5.0	
6,277.0	0.50	262.40	6,273.1	-115.2	16.6	0.29	-0.22	-15.53	1.2	-4.6	
6,367.0	0.40	267.00	6,363.1	-115.3	15.9	0.12	-0.11	5.11	0.1	-4.7	
6,457.0	0.50	318.30	6,453.1	-115.0	15.3	0.44	0.11	57.00	-4.2	-2.8	
6,547.0	0.50	307.60	6,543.1	-114.5	14.7	0.10	0.00	-11.89	-4.4	-3.6	
6,637.0	0.90	232.20	6,633.1	-114.7	13.9	1.01	0.44	-83.78	1.6	-5.5	
6,726.0	1.20	248.20	6,722.1	-115.5	12.5	0.47	0.34	17.98	-1.6	-5.5	
6,816.0	0.90	229.00	6,812.0	-116.3	11.0	0.51	-0.33	-21.33	-1.3	-6.1	
6,906.0	1.10	236.60	6,902.0	-117.2	9.8	0.27	0.22	8.44	-3.7	-5.7	
6,995.0	0.50	226.00	6,991.0	-118.0	8.8	0.69	-0.67	-11.91	-3.8	-6.5	
7,085.0	1.40	216.00	7,081.0	-119.1	7.9	1.01	1.00	-11.11	-4.1	-7.1	
7,177.0	0.50	268.80	7,173.0	-120.0	6.8	1.27	-0.98	57.39	-9.2	-0.2	
7,267.0	0.70	354.50	7,263.0	-119.5	6.4	0.92	0.22	95.22	-1.4	9.5	
7,356.0	0.50	335.20	7,352.0	-118.6	6.1	0.32	-0.22	-21.69	-5.4	8.4	
7,446.0	0.50	307.80	7,442.0	-118.0	5.7	0.26	0.00	-30.44	-9.4	4.8	
7,536.0	0.50	310.60	7,532.0	-117.5	5.1	0.03	0.00	3.11	-9.9	5.2	



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7,625.0	0.50	325.60	7,621.0	-116.9	4.5	0.15	0.00	16.85	-9.0	7.7
7,715.0	0.20	287.90	7,711.0	-116.6	4.2	0.40	-0.33	-41.89	-12.3	0.4
7,805.0	0.50	277.20	7,801.0	-116.5	3.6	0.34	0.33	-11.89	-12.7	-2.0
7,895.0	0.50	256.60	7,891.0	-116.5	2.9	0.20	0.00	-22.89	-12.0	-6.4
7,984.0	0.70	229.90	7,980.0	-117.0	2.1	0.38	0.22	-30.00	-8.7	-11.3
8,074.0	0.50	257.00	8,070.0	-117.4	1.3	0.38	-0.22	30.11	-13.8	-5.9
8,164.0	0.50	207.20	8,160.0	-117.8	0.7	0.47	0.00	-55.33	-5.1	-14.6
8,253.0	0.70	206.70	8,249.0	-118.7	0.3	0.22	0.22	-0.56	-5.9	-14.6
8,343.0	1.10	212.50	8,338.9	-119.9	-0.4	0.46	0.44	6.44	-8.7	-13.9
8,433.0	1.20	221.70	8,428.9	-121.3	-1.5	0.23	0.11	10.22	-12.6	-12.2
8,522.0	1.10	226.20	8,517.9	-122.6	-2.8	0.15	-0.11	5.06	-15.3	-11.1
8,612.0	1.40	226.60	8,607.9	-124.0	-4.2	0.33	0.33	0.44	-17.4	-11.0
8,702.0	2.10	230.40	8,697.8	-125.8	-6.2	0.79	0.78	4.22	-20.8	-9.7
8,792.0	1.90	195.80	8,787.8	-128.3	-7.9	1.34	-0.22	-38.44	-14.4	-20.8
8,971.0	1.80	75.90	8,966.7	-130.4	-6.0	1.79	-0.06	-66.98	23.9	-4.7
9,061.0	1.40	80.00	9,056.7	-129.9	-3.6	0.46	-0.44	4.56	21.0	-6.3
9,150.0	1.10	73.60	9,145.7	-129.5	-1.7	0.37	-0.34	-7.19	19.6	-4.1
9,240.0	1.10	75.20	9,235.7	-129.0	0.0	0.03	0.00	1.78	17.8	-4.6
9,330.0	0.50	22.80	9,325.7	-128.4	1.0	0.99	-0.67	-58.22	13.6	10.6
9,419.0	0.70	319.70	9,414.7	-127.6	0.8	0.73	0.22	-70.90	-4.0	16.5
9,508.0	0.50	282.80	9,503.7	-127.1	0.1	0.48	-0.22	-41.46	-14.0	10.5
9,598.0	0.50	15.50	9,593.7	-126.7	-0.2	0.80	0.00	103.00	10.8	13.8
9,688.0	0.70	23.70	9,683.6	-125.8	0.1	0.24	0.22	9.11	11.7	12.2
9,777.0	0.40	73.10	9,772.6	-125.2	0.6	0.60	-0.34	55.51	16.2	-0.5
9,867.0	0.50	265.60	9,862.6	-125.1	0.5	0.99	0.11	-186.11	-15.8	3.9
9,957.0	1.10	261.90	9,952.6	-125.3	-0.7	0.67	0.67	-4.11	-17.3	2.9
10,046.0	1.60	247.30	10,041.6	-125.9	-2.7	0.68	0.56	-16.40	-19.5	-1.8



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10,136.0	0.20	292.50	10,131.6	-126.3	-4.0	1.63	-1.56	50.22	-16.1	13.5	
10,226.0	0.20	38.10	10,221.6	-126.1	-4.1	0.35	0.00	117.33	17.2	12.0	
10,316.0	0.50	56.40	10,311.6	-125.8	-3.6	0.35	0.33	20.33	19.6	6.0	
10,405.0	0.40	88.40	10,400.6	-125.6	-3.0	0.30	-0.11	35.96	19.1	-5.0	
10,495.0	0.40	44.50	10,490.6	-125.3	-2.5	0.33	0.00	-48.78	16.7	9.4	
10,585.0	0.70	7.50	10,580.6	-124.6	-2.2	0.50	0.33	-41.11	6.9	17.4	
10,674.0	1.10	37.60	10,669.6	-123.3	-1.6	0.68	0.45	33.82	13.4	11.9	
10,764.0	0.70	29.70	10,759.6	-122.2	-0.8	0.46	-0.44	-8.78	10.2	13.5	
10,854.0	0.90	34.80	10,849.6	-121.1	-0.1	0.24	0.22	5.67	10.1	12.6	
10,944.0	0.90	18.40	10,939.5	-119.9	0.5	0.29	0.00	-18.22	4.8	14.7	
11,033.0	1.20	22.50	11,028.5	-118.4	1.1	0.35	0.34	4.61	4.2	14.4	
11,123.0	1.80	22.80	11,118.5	-116.2	2.0	0.67	0.67	0.33	1.9	14.4	
11,152.0	1.90	34.30	11,147.5	-115.4	2.5	1.32	0.34	39.66	3.8	13.8	
11,296.0	1.60	16.50	11,291.4	-111.5	4.4	0.43	-0.21	-12.36	-4.9	13.6	
11,386.0	1.40	336.10	11,381.4	-109.3	4.3	1.17	-0.22	-44.89	-14.6	6.4	
11,476.0	1.40	310.90	11,471.4	-107.5	3.0	0.68	0.00	-28.00	-18.0	-0.9	
11,565.0	1.60	320.80	11,560.3	-105.9	1.4	0.37	0.22	11.12	-20.2	2.4	
11,655.0	1.20	312.20	11,650.3	-104.2	-0.1	0.50	-0.44	-9.56	-22.5	-0.9	
11,745.0	1.40	312.40	11,740.3	-102.9	-1.6	0.22	0.22	0.22	-24.6	-0.8	
11,835.0	1.10	288.40	11,830.3	-101.9	-3.2	0.66	-0.33	-26.67	-24.0	-11.1	
11,925.0	0.70	294.10	11,920.2	-101.4	-4.6	0.45	-0.44	6.33	-26.4	-8.6	
11,969.0	0.50	301.30	11,964.2	-101.2	-5.0	0.48	-0.45	16.36	-27.7	-5.2	
12,013.0	0.90	356.70	12,008.2	-100.7	-5.2	1.68	0.91	125.91	-20.5	20.0	
12,058.0	4.90	2.60	12,053.2	-98.4	-5.1	8.90	8.89	13.11	-20.5	22.1	
12,103.0	12.10	357.70	12,097.7	-91.8	-5.2	16.07	16.00	-10.89	-25.9	20.2	
12,148.0	21.30	357.00	12,140.7	-78.9	-5.8	20.45	20.44	-1.56	-31.6	20.3	
12,193.0	27.10	359.30	12,181.7	-60.5	-6.4	13.06	12.89	5.11	-37.8	22.0	



EOG Resources, Inc.
EOG PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Site:	Thor 21 Fed Com	MD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
12,238.0	29.00	0.20	12,221.5	-39.3	-6.4	4.33	4.22	2.00	-43.0	22.4
12,283.0	31.50	1.00	12,260.3	-16.6	-6.2	5.63	5.56	1.78	-45.3	22.4
12,328.0	35.40	359.50	12,297.9	8.2	-6.1	8.86	8.67	-3.33	-46.2	21.1
12,372.0	38.40	0.20	12,333.0	34.6	-6.2	6.88	6.82	1.59	-44.5	21.5
12,417.0	41.70	1.20	12,367.5	63.5	-5.8	7.47	7.33	2.22	-40.5	21.4
12,462.0	48.60	1.90	12,399.2	95.4	-4.9	15.37	15.33	1.56	-36.2	20.4
12,507.0	52.60	2.30	12,427.8	130.1	-3.7	8.92	8.89	0.89	-31.6	18.8
12,552.0	54.90	2.10	12,454.4	166.4	-2.3	5.12	5.11	-0.44	-25.0	16.9
12,585.8	57.83	2.10	12,473.1	194.5	-1.2	8.67	8.67	0.00	-18.7	15.6
FTP(Thor 21 Fed Com #703H)										
12,597.0	58.80	2.10	12,479.0	204.0	-0.9	8.67	8.67	0.00	-16.5	15.1
12,642.0	65.60	2.60	12,499.9	243.8	0.7	15.14	15.11	1.11	-7.9	12.9
12,687.0	72.50	1.20	12,516.0	285.8	2.1	15.61	15.33	-3.11	-0.6	11.0
12,732.0	76.70	359.10	12,528.0	329.1	2.2	10.36	9.33	-4.67	6.5	10.7
12,773.0	81.10	0.00	12,535.9	369.4	1.9	10.95	10.73	2.20	13.8	10.7
12,833.0	91.30	2.50	12,539.8	429.1	3.2	17.50	17.00	4.17	18.7	8.9
12,911.0	91.00	0.30	12,538.3	507.1	5.1	2.85	-0.38	-2.82	18.3	6.5
13,001.0	91.00	359.50	12,536.7	597.1	5.0	0.89	0.00	-0.89	18.1	6.0
13,090.0	91.30	358.40	12,534.9	686.0	3.3	1.28	0.34	-1.24	17.7	7.0
13,180.0	92.40	357.70	12,532.0	775.9	0.3	1.45	1.22	-0.78	16.1	9.4
13,270.0	91.70	357.40	12,528.8	865.8	-3.6	0.85	-0.78	-0.33	14.3	12.6
13,359.0	91.10	354.20	12,526.6	954.5	-10.1	3.66	-0.67	-3.60	13.5	18.5
13,449.0	91.50	356.10	12,524.6	1,044.2	-17.7	2.16	0.44	2.11	12.8	25.5
13,539.0	92.90	3.00	12,521.1	1,134.0	-18.4	7.82	1.56	7.67	10.5	25.6
13,629.0	91.10	3.90	12,518.0	1,223.8	-13.0	2.24	-2.00	1.00	8.8	19.5
13,718.0	89.00	0.30	12,517.9	1,312.7	-9.7	4.68	-2.36	-4.04	10.1	15.6
13,808.0	90.30	359.80	12,518.4	1,402.7	-9.6	1.55	1.44	-0.56	12.0	14.9



EOG Resources, Inc.
EOG PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Site:	Thor 21 Fed Com	MD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,898.0	92.20	0.70	12,516.5	1,492.7	-9.2	2.34	2.11	1.00	11.4	13.9	
13,905.0	92.11	0.54	12,516.2	1,499.7	-9.2	2.69	-1.33	-2.33	11.2	13.8	
TGT#1(Thor 21 Fed Com #703H)											
13,988.0	91.00	358.60	12,514.0	1,582.7	-9.8	2.69	-1.33	-2.33	10.7	13.8	
14,077.0	91.10	356.80	12,512.3	1,671.6	-13.4	2.03	0.11	-2.02	11.1	16.7	
14,167.0	93.10	359.80	12,509.0	1,761.5	-16.0	4.00	2.22	3.33	9.7	18.8	
14,257.0	92.90	358.40	12,504.3	1,851.3	-17.4	1.57	-0.22	-1.56	7.0	19.6	
14,280.0	94.00	359.30	12,502.9	1,874.3	-17.9	6.17	4.78	3.91	6.1	19.9	
14,346.0	89.00	356.10	12,501.2	1,940.2	-20.6	8.99	-7.58	-4.85	5.9	22.1	
14,436.0	91.80	355.60	12,500.6	2,029.9	-27.1	3.16	3.11	-0.56	7.3	27.9	
14,526.0	91.10	356.50	12,498.3	2,119.7	-33.3	1.27	-0.78	1.00	7.0	33.5	
14,616.0	92.40	2.10	12,495.6	2,209.6	-34.4	6.38	1.44	6.22	6.1	34.0	
14,706.0	94.10	3.50	12,490.5	2,299.3	-30.0	2.45	1.89	1.56	2.9	29.0	
14,795.0	86.60	359.50	12,489.9	2,388.2	-27.7	9.55	-8.43	-4.49	4.4	26.0	
14,885.0	90.30	0.20	12,492.3	2,478.2	-27.9	4.18	4.11	0.78	8.9	25.6	
14,975.0	91.80	359.80	12,490.7	2,568.2	-27.9	1.72	1.67	-0.44	9.2	25.0	
15,064.0	92.20	359.80	12,487.6	2,657.1	-28.2	0.45	0.45	0.00	8.0	24.7	
15,154.0	92.20	0.00	12,484.1	2,747.0	-28.4	0.22	0.00	0.22	6.6	24.2	
15,244.0	91.30	358.10	12,481.4	2,837.0	-29.8	2.34	-1.00	-2.11	5.8	25.1	
15,334.0	94.10	0.50	12,477.2	2,926.9	-30.9	4.10	3.11	2.67	3.5	25.6	
15,407.1	90.85	0.91	12,474.0	2,999.9	-30.0	4.48	-4.44	0.56	2.0	24.1	
TGT#2(Thor 21 Fed Com #703H)											
15,424.0	90.10	1.00	12,473.9	3,016.8	-29.8	4.48	-4.44	0.55	2.3	23.7	
15,513.0	88.70	2.50	12,474.8	3,105.7	-27.0	2.31	-1.57	1.69	5.6	20.4	
15,603.0	92.00	3.50	12,474.2	3,195.6	-22.3	3.83	3.67	1.11	7.3	15.1	
15,693.0	93.10	2.80	12,470.2	3,285.3	-17.4	1.45	1.22	-0.78	5.6	9.5	
15,783.0	90.60	358.10	12,467.3	3,375.3	-16.7	5.91	-2.78	-5.22	5.1	8.2	



EOG Resources, Inc.
EOG PVA

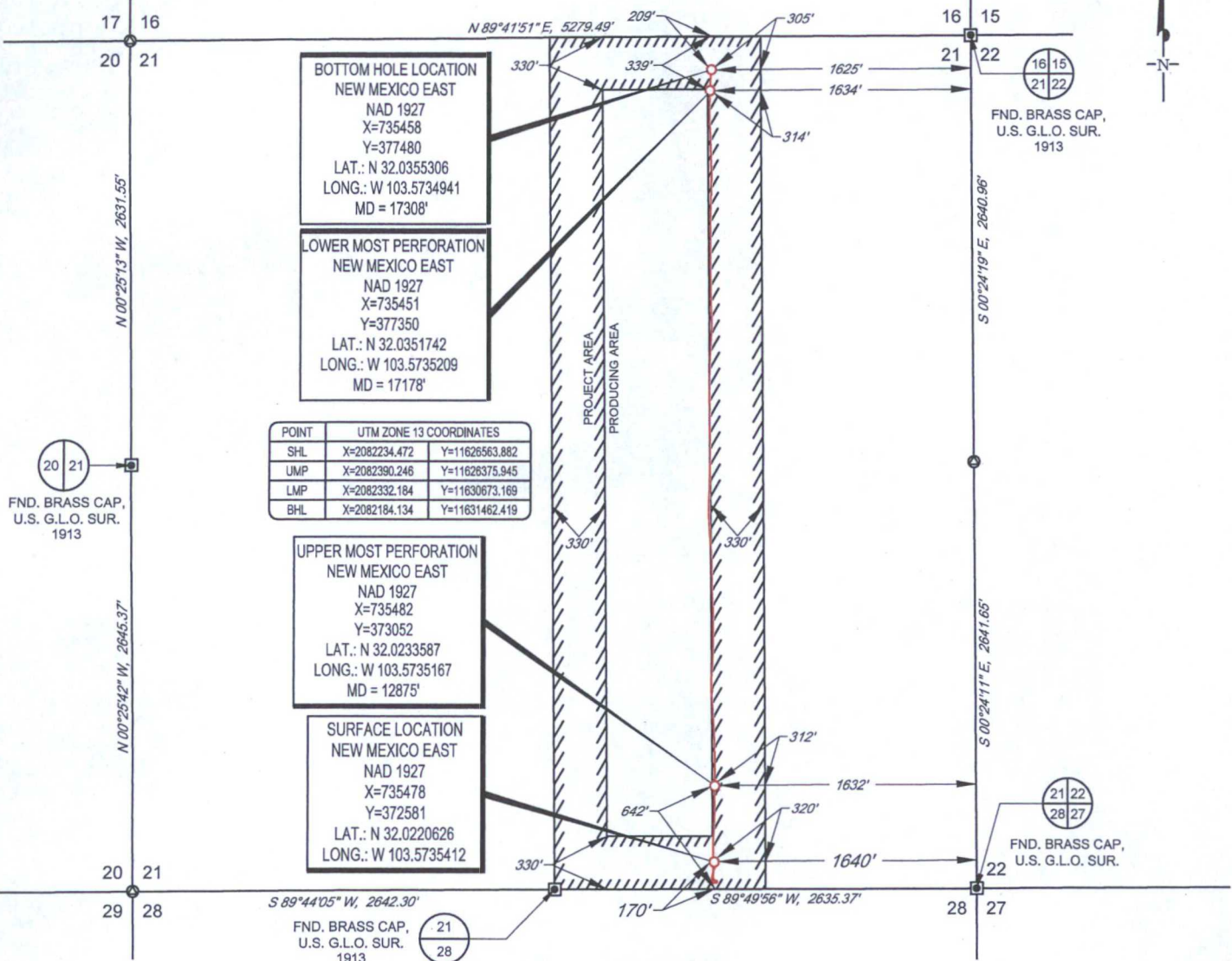
Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Site:	Thor 21 Fed Com	MD Reference:	KB = 25 @ 3281.0usft (H&P 415)
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,903.0	92.00	358.60	12,464.6	3,495.2	-20.2	1.24	1.17	0.42	5.5	10.8	
15,993.0	90.60	358.60	12,462.6	3,585.1	-22.3	1.56	-1.56	0.00	5.8	12.4	
16,083.0	92.40	359.60	12,460.2	3,675.1	-23.8	2.29	2.00	1.11	5.8	13.2	
16,173.0	92.20	0.00	12,456.6	3,765.0	-24.1	0.50	-0.22	0.44	4.5	12.8	
16,262.0	91.30	359.50	12,453.9	3,854.0	-24.5	1.16	-1.01	-0.56	4.2	12.6	
16,352.0	90.40	0.30	12,452.5	3,944.0	-24.6	1.34	-1.00	0.89	5.2	12.1	
16,442.0	91.10	1.90	12,451.4	4,033.9	-22.9	1.94	0.78	1.78	6.3	9.8	
16,532.0	91.10	2.30	12,449.6	4,123.8	-19.6	0.44	0.00	0.44	6.9	5.9	
16,621.0	91.30	0.50	12,447.8	4,212.8	-17.4	2.03	0.22	-2.02	7.4	3.1	
16,711.0	92.20	358.90	12,445.0	4,302.8	-17.9	2.04	1.00	-1.78	7.0	2.9	
16,801.0	92.70	357.70	12,441.2	4,392.6	-20.6	1.44	0.56	-1.33	5.5	4.9	
16,891.0	92.70	356.80	12,436.9	4,482.4	-24.9	1.00	0.00	-1.00	3.6	8.6	
16,981.0	93.60	357.50	12,432.0	4,572.2	-29.3	1.27	1.00	0.78	1.0	12.5	
17,070.0	92.90	0.90	12,426.9	4,661.0	-30.6	3.89	-0.79	3.82	-1.7	13.1	
17,160.0	93.10	2.10	12,422.2	4,750.9	-28.2	1.35	0.22	1.33	-4.1	10.1	
17,249.0	93.40	3.70	12,417.2	4,839.6	-23.7	1.83	0.34	1.80	-6.8	5.0	
Last MWD Survey											
17,287.2	93.40	3.70	12,414.9	4,877.7	-21.3	0.00	0.00	0.00	-8.1	2.3	
PBHL(Thor 21 Fed Com #703H											
17,309.0	93.40	3.70	12,413.6	4,899.4	-19.9	0.00	0.00	0.00	-22.5	6.2	
Projection To Bit											

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,249.0	12,417.2	4,839.6	-23.7	Last MWD Survey
17,309.0	12,413.6	4,899.4	-19.9	Projection To Bit

SCALE: 1" = 1000'

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

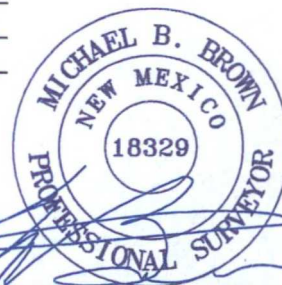


LEASE NAME & WELL NO.: THOR 21 FED COM #703H
SECTION 21 TWP 26-S RGE 33-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3256'
DESCRIPTION 170' FSL & 1640' FEL



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
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WWW.TOPOGRAPHIC.COM



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



THOR 21 FED COM #703H
AS-COMPLETED

REVISION:

DATE: 06/21/16

FILE: AD_THOR21FEDCOM_703H

DRAWN BY: R.M.

SHEET: 1 OF 1

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
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.