

HOBBS OCD
NOV 20 2018
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Mamba 30 State Com

#704H

OH

Design: OH

Midland PVA

05 October, 2018



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3563.0usft (HP 444)
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3563.0usft (HP 444)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Mamba 30 State Com		
Site Position:		Northing:	430,807.00 usft
From:	Map	Easting:	767,053.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 56.143 N
		Longitude:	103° 36' 13.509 W
		Grid Convergence:	0.39 °

Well	#704H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			usft
			Latitude:
			Longitude:
			Ground Level:
			3,538.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	7/5/2018	(°)
			6.85
			Dip Angle
			(°)
			60.01
			Field Strength
			(nT)
			47,800.92799721

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			350.12



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Survey Program	Date	10/5/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
118.0	1,176.0	Invictus MWD (OH)	MWD	OWSG MWD - Standard	
1,224.0	17,433.0	Drilltech MWD (OH)	MWD	OWSG MWD - Standard	

MD (usft)	Inc (")	Azi (azimuth) (")	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
118.0	0.80	19.49	118.0	0.8	0.3	0.68	0.68	0.00	0.0	0.0
125.0	0.20	28.49	125.0	0.8	0.3	8.62	-8.57	128.57	0.0	0.0
181.0	0.70	310.49	181.0	1.1	0.1	1.23	0.89	-139.29	0.0	0.0
209.0	0.90	320.49	209.0	1.4	-0.2	0.87	0.71	35.71	0.0	0.0
237.0	0.60	326.49	237.0	1.7	-0.4	1.11	-1.07	21.43	0.0	0.0
269.0	0.30	61.49	269.0	1.9	-0.4	2.17	-0.94	296.87	0.0	0.0
302.0	0.20	324.49	302.0	2.0	-0.4	1.15	-0.30	-293.94	0.0	0.0
333.0	0.30	204.49	333.0	2.0	-0.4	1.41	0.32	-387.10	0.0	0.0
364.0	0.50	338.49	364.0	2.0	-0.5	2.39	0.65	432.26	0.0	0.0
396.0	0.90	328.49	396.0	2.3	-0.7	1.30	1.25	-31.25	0.0	0.0
427.0	0.20	175.49	427.0	2.5	-0.8	3.49	-2.26	-493.55	0.0	0.0
458.0	1.00	277.49	458.0	2.5	-1.1	3.42	2.58	329.03	0.0	0.0
520.0	1.10	268.49	520.0	2.5	-2.2	0.31	0.16	-14.52	0.0	0.0
533.0	1.00	334.49	533.0	2.6	-2.4	8.82	-0.77	507.69	0.0	0.0
552.0	0.50	340.49	552.0	2.9	-2.5	2.68	-2.63	31.58	0.0	0.0
583.0	0.40	305.49	583.0	3.1	-2.6	0.93	-0.32	-112.90	0.0	0.0
614.0	0.40	301.49	614.0	3.2	-2.8	0.09	0.00	-12.90	0.0	0.0
645.0	0.30	274.49	645.0	3.2	-3.0	0.61	-0.32	-87.10	0.0	0.0
676.0	0.40	292.49	676.0	3.3	-3.2	0.48	0.32	58.06	0.0	0.0
707.0	0.20	212.49	707.0	3.3	-3.3	1.34	-0.65	-258.06	0.0	0.0



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Buflg ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
739.0	0.50	265.49	739.0	3.2	-3.5	1.29	0.94	165.62	0.0	0.0	
769.0	0.40	302.49	769.0	3.3	-3.7	1.00	-0.33	123.33	0.0	0.0	
800.0	0.50	229.49	800.0	3.2	-3.9	1.75	0.32	-235.48	0.0	0.0	
831.0	0.50	304.49	831.0	3.2	-4.1	1.96	0.00	241.94	0.0	0.0	
862.0	0.70	13.49	862.0	3.5	-4.2	2.26	0.65	222.58	0.0	0.0	
894.0	0.50	348.49	894.0	3.8	-4.1	1.02	-0.62	-78.12	0.0	0.0	
925.0	1.90	13.49	925.0	4.4	-4.1	4.72	4.52	80.65	0.0	0.0	
1,019.0	0.90	19.49	1,018.9	6.7	-3.4	1.07	-1.06	6.38	0.0	0.0	
1,081.0	1.80	359.49	1,080.9	8.1	-3.3	1.62	1.45	-32.26	0.0	0.0	
1,112.0	1.40	352.49	1,111.9	9.0	-3.3	1.43	-1.29	-22.58	0.0	0.0	
1,144.0	0.80	23.49	1,143.9	9.5	-3.3	2.58	-1.87	96.87	0.0	0.0	
1,176.0	0.90	86.49	1,175.9	9.8	-3.0	2.79	0.31	196.87	0.0	0.0	
1,224.0	1.23	54.51	1,223.9	10.1	-2.2	1.39	0.69	-66.63	-0.2	0.2	
1,317.0	1.06	36.67	1,316.9	11.4	-0.8	0.42	-0.18	-19.18	-1.4	0.8	
1,409.0	3.17	281.09	1,408.8	12.5	-2.8	4.08	2.29	-125.63	-1.3	-3.4	
1,502.0	7.30	277.75	1,501.4	13.8	-11.2	4.45	4.44	-3.59	-5.9	-6.1	
1,595.0	6.86	261.31	1,593.7	13.8	-22.6	2.22	-0.47	-17.68	-7.9	-11.0	
1,689.0	6.95	254.90	1,687.0	11.5	-33.6	0.82	0.10	-6.82	-8.3	-13.7	
1,781.0	6.60	256.39	1,778.4	8.8	-44.1	0.43	-0.38	1.62	-10.0	-14.9	
1,874.0	6.16	245.76	1,870.8	5.5	-53.9	1.35	-0.47	-11.43	-7.7	-17.2	
1,967.0	5.89	239.87	1,963.3	1.0	-62.5	0.72	-0.29	-6.33	-6.0	-17.1	
2,061.0	5.36	236.88	2,056.8	-3.8	-70.4	0.64	-0.56	-3.18	-4.6	-15.8	
2,155.0	6.42	239.87	2,150.3	-8.9	-78.6	1.17	1.13	3.18	-5.3	-14.0	
2,248.0	8.00	244.18	2,242.6	-14.3	-88.9	1.79	1.70	4.63	-8.3	-12.7	
2,342.0	7.12	244.79	2,335.8	-19.6	-100.1	0.94	-0.94	0.65	-11.0	-12.1	
2,436.0	6.24	245.06	2,429.2	-24.2	-110.0	0.94	-0.94	0.29	-12.2	-11.6	
2,530.0	5.45	245.67	2,522.7	-28.2	-118.7	0.84	-0.84	0.65	-12.1	-11.1	



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Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
2,623.0	4.84	249.22	2,815.3	-31.5	-126.4	0.70	-0.68	2.74	-11.2	-10.5	
2,716.0	4.04	249.54	2,708.0	-34.1	-133.1	0.87	-0.86	1.42	-8.9	-10.5	
2,810.0	4.57	237.06	2,801.7	-37.3	-139.3	1.14	0.56	-13.28	-3.7	-11.1	
2,903.0	7.30	236.00	2,894.2	-42.6	-147.3	2.94	2.94	-1.14	-3.6	-9.3	
2,997.0	8.27	238.38	2,987.4	-49.5	-158.0	1.09	1.03	2.53	-7.0	-7.4	
3,090.0	7.39	233.01	3,079.5	-56.6	-168.5	1.23	-0.95	-5.77	-9.5	-6.2	
3,184.0	6.77	229.50	3,172.8	-63.9	-177.6	0.80	-0.66	-3.73	-11.4	-4.1	
3,278.0	6.33	222.47	3,266.2	-71.3	-185.3	0.97	-0.47	-7.48	-12.6	-2.0	
3,372.0	5.98	221.41	3,359.6	-78.8	-192.0	0.39	-0.37	-1.13	-13.8	2.0	
3,465.0	6.33	232.84	3,452.1	-85.5	-199.3	1.37	0.38	12.29	-13.6	8.1	
3,559.0	6.42	238.81	3,545.5	-91.4	-207.9	0.71	0.10	6.35	-13.4	11.5	
3,652.0	5.63	238.02	3,638.0	-96.5	-216.2	0.85	-0.85	-0.85	-13.7	12.8	
3,746.0	4.48	235.56	3,731.6	-101.0	-223.2	1.24	-1.22	-2.62	-12.9	14.0	
3,839.0	3.96	254.55	3,824.4	-103.9	-229.3	1.59	-0.56	20.42	-4.6	17.4	
3,932.0	5.10	266.06	3,917.1	-105.0	-236.5	1.56	1.23	12.38	0.8	15.5	
4,026.0	6.07	261.23	4,010.7	-106.1	-245.6	1.15	1.03	-5.14	0.0	12.8	
4,120.0	7.03	259.38	4,104.0	-107.9	-256.1	1.05	1.02	-1.97	-1.6	10.6	
4,214.0	6.16	256.04	4,197.4	-110.2	-266.7	1.01	-0.93	-3.55	-3.3	8.7	
4,308.0	5.45	254.64	4,290.9	-112.6	-275.9	0.77	-0.76	-1.49	-3.2	7.3	
4,402.0	5.45	253.23	4,384.5	-115.0	-284.5	0.14	0.00	-1.50	-2.6	6.1	
4,495.0	5.80	254.99	4,477.1	-117.5	-293.2	0.42	0.38	1.89	-1.8	5.0	
4,588.0	5.19	250.94	4,569.6	-120.1	-301.7	0.78	-0.68	-4.35	-1.4	4.0	
4,683.0	4.92	244.53	4,664.3	-123.3	-309.5	0.66	-0.28	-6.75	-0.2	3.8	
4,776.0	4.66	237.23	4,756.9	-127.0	-316.3	0.71	-0.28	-7.85	1.1	5.0	
4,862.0	4.40	234.16	4,842.7	-130.9	-321.9	0.41	-0.30	-3.57	2.8	6.9	
4,955.0	3.78	235.39	4,935.4	-134.7	-327.3	0.67	-0.67	1.32	5.9	8.9	
5,048.0	4.31	258.77	5,028.2	-137.1	-333.2	1.85	0.57	25.14	12.3	5.2	



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5,142.0	6.95	265.09	5,121.7	-138.3	-342.4	2.88	2.81	6.72	15.3	0.5
5,236.0	11.08	264.30	5,214.6	-139.7	-357.0	4.40	4.39	-0.84	15.1	-3.8
5,330.0	13.54	263.42	5,306.4	-141.8	-376.9	2.62	2.62	-0.94	12.7	-8.7
5,422.0	14.25	259.82	5,395.7	-145.1	-398.8	1.22	0.77	-3.91	11.3	-13.0
5,515.0	14.16	259.12	5,485.9	-149.2	-421.2	0.21	-0.10	-0.75	9.8	-17.4
5,609.0	14.77	263.25	5,576.9	-152.8	-444.4	1.27	0.65	4.39	6.1	-23.2
5,702.0	15.83	261.93	5,666.6	-156.0	-468.8	1.20	1.14	-1.42	3.0	-28.8
5,796.0	16.53	249.45	5,756.9	-162.5	-494.0	3.77	0.74	-13.28	4.7	-31.1
5,890.0	16.44	249.01	5,847.0	-171.9	-518.9	0.16	-0.10	-0.47	-0.1	-31.8
5,983.0	16.09	248.22	5,936.3	-181.4	-543.2	0.45	-0.38	-0.85	-4.2	-32.3
6,076.0	15.21	248.31	6,025.9	-190.7	-566.5	0.85	-0.95	0.10	-7.9	-32.6
6,171.0	13.63	250.94	6,117.9	-199.0	-588.6	1.80	-1.66	2.77	-11.0	-33.0
6,266.0	12.93	241.89	6,210.3	-207.7	-608.6	2.31	-0.74	-9.53	-5.5	-33.9
6,358.0	12.84	238.90	6,300.0	-217.8	-626.4	0.73	-0.10	-3.25	-3.1	-31.5
6,452.0	12.93	238.81	6,391.6	-228.6	-644.4	0.10	0.10	-0.10	-2.4	-28.3
6,547.0	13.37	236.79	6,484.2	-240.1	-662.6	0.67	0.46	-2.13	-1.3	-24.7
6,641.0	13.19	238.29	6,575.6	-251.7	-680.9	0.41	-0.19	1.60	-2.0	-20.9
6,735.0	10.90	240.40	6,667.6	-261.8	-697.7	2.48	-2.44	2.24	-0.5	-17.8
6,828.0	8.62	234.24	6,759.2	-270.2	-711.0	2.69	-2.45	-6.62	6.8	-13.8
6,923.0	6.95	228.80	6,853.3	-278.1	-721.1	1.92	-1.76	-5.73	15.6	-7.0
7,018.0	6.68	223.43	6,947.7	-285.9	-729.2	0.73	-0.28	-5.65	21.8	1.5
7,112.0	6.42	222.73	7,041.1	-293.8	-736.6	0.29	-0.28	-0.74	24.9	8.0
7,206.0	6.33	221.85	7,134.5	-301.5	-743.6	0.14	-0.10	-0.94	25.2	13.5
7,299.0	5.28	224.31	7,227.0	-308.4	-750.0	1.16	-1.13	2.65	24.5	16.2
7,393.0	3.61	242.24	7,320.7	-312.8	-755.6	2.29	-1.78	19.07	27.1	9.8
7,486.0	3.25	260.26	7,413.6	-314.6	-760.8	1.22	-0.39	19.38	26.1	1.2
7,580.0	2.81	275.55	7,507.4	-314.9	-765.8	0.97	-0.47	16.27	20.8	-5.2



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7,675.0	2.11	258.15	7,602.3	-315.0	-769.8	1.07	-0.74	-18.32	17.5	0.6	
7,768.0	1.76	238.38	7,695.3	-316.1	-772.7	0.80	-0.38	-21.26	13.2	5.9	
7,861.0	1.49	235.65	7,788.2	-317.5	-774.9	0.30	-0.29	-2.94	10.3	6.5	
7,954.0	1.87	235.91	7,881.2	-319.0	-777.0	0.19	0.19	0.28	7.7	6.4	
8,048.0	1.76	222.38	7,975.2	-320.8	-779.1	0.44	0.10	-14.39	3.2	7.7	
8,141.0	1.93	209.02	8,068.1	-323.2	-780.8	0.50	0.18	-14.37	-1.6	7.9	
8,234.0	0.88	305.52	8,161.1	-324.2	-782.2	2.38	-1.13	103.76	7.5	2.2	
8,328.0	1.06	344.46	8,255.1	-322.9	-783.0	0.71	0.19	41.43	5.8	-2.5	
8,423.0	0.70	346.13	8,350.1	-321.5	-783.4	0.38	-0.38	1.76	4.3	-2.7	
8,516.0	0.70	343.93	8,443.1	-320.4	-783.7	0.03	0.00	-2.37	3.3	-2.5	
8,610.0	0.70	281.62	8,537.1	-319.8	-784.4	0.77	0.00	-66.29	2.9	1.2	
8,702.0	0.53	296.82	8,629.1	-319.5	-785.3	0.25	-0.18	16.52	2.2	0.5	
8,796.0	0.97	255.07	8,723.1	-319.5	-786.5	0.72	0.47	-44.41	0.1	1.5	
8,889.0	1.06	239.78	8,816.0	-320.1	-788.0	0.31	0.10	-16.44	-1.9	1.3	
8,982.0	1.14	228.80	8,909.0	-321.1	-789.4	0.24	0.09	-11.81	-3.9	0.8	
9,076.0	1.32	241.80	9,003.0	-322.3	-791.1	0.35	0.19	13.83	-5.6	1.8	
9,169.0	1.58	234.51	9,096.0	-323.5	-793.1	0.34	0.28	-7.84	-8.1	1.0	
9,264.0	1.06	228.53	9,190.9	-324.9	-794.8	0.57	-0.55	-6.29	-10.4	0.0	
9,358.0	1.23	230.11	9,284.9	-326.1	-796.2	0.18	0.18	1.68	-12.3	0.3	
9,453.0	1.06	234.68	9,379.9	-327.2	-797.7	0.20	-0.18	4.81	-14.1	1.3	
9,547.0	0.88	233.63	9,473.9	-328.2	-799.0	0.19	-0.19	-1.12	-15.7	1.1	
9,641.0	0.79	233.45	9,567.9	-329.0	-800.1	0.10	-0.10	-0.19	-17.1	1.0	
9,735.0	1.23	215.70	9,661.9	-330.2	-801.2	0.57	0.47	-18.88	-18.2	-4.4	
9,829.0	1.14	249.36	9,755.8	-331.3	-802.7	0.74	-0.10	35.81	-19.4	7.0	
9,924.0	1.58	263.95	9,850.8	-331.8	-804.9	0.59	0.46	15.36	-19.2	11.9	
10,018.0	2.02	262.98	9,944.8	-332.2	-807.8	0.47	0.47	-1.03	-22.4	11.5	
10,112.0	1.93	267.47	10,038.7	-332.4	-811.0	0.19	-0.10	4.78	-24.6	13.4	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3563.0usft (HP 444)
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3563.0usft (HP 444)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,206.0	2.46	287.42	10,132.7	-331.9	-814.5	0.98	0.58	21.22	-22.1	21.5	
10,300.0	2.02	272.74	10,226.6	-331.2	-818.1	0.77	-0.47	-15.62	-30.4	14.7	
10,395.0	0.26	230.11	10,321.6	-331.3	-819.9	1.93	-1.85	-44.87	-33.8	-11.0	
10,490.0	0.79	171.31	10,416.6	-332.1	-820.0	0.73	0.56	-61.89	-8.9	-34.8	
10,584.0	2.11	179.31	10,510.5	-334.4	-819.9	1.42	1.40	8.51	-16.0	-33.1	
10,679.0	2.64	194.43	10,605.4	-338.3	-820.4	0.86	0.56	15.92	-28.0	-27.3	
10,773.0	1.67	187.40	10,699.4	-341.7	-821.1	1.07	-1.03	-7.48	-27.9	-30.8	
10,868.0	1.85	162.97	10,794.3	-344.6	-820.9	0.81	0.19	-25.72	-15.5	-40.2	
10,961.0	1.41	91.51	10,887.3	-346.1	-819.3	2.08	-0.47	-76.84	31.5	-28.9	
11,055.0	1.67	73.58	10,981.3	-345.7	-816.8	0.58	0.28	-19.07	36.4	-18.1	
11,150.0	1.67	105.40	11,076.2	-345.7	-814.1	0.96	0.00	33.49	18.8	-33.9	
11,244.0	1.14	125.26	11,170.2	-346.6	-812.1	0.76	-0.56	21.13	4.0	-37.8	
11,338.0	0.53	131.41	11,264.2	-347.4	-811.0	0.65	-0.65	6.54	-1.5	-37.9	
11,433.0	0.79	211.92	11,359.2	-348.2	-811.0	0.92	0.27	84.75	-38.4	-4.4	
11,527.0	1.41	55.12	11,453.2	-348.1	-810.4	2.30	0.66	-166.81	36.4	-11.4	
11,621.0	1.41	23.66	11,547.2	-346.4	-809.0	0.81	0.00	-33.47	34.8	8.7	
11,715.0	1.41	326.09	11,641.1	-344.4	-809.2	1.44	0.00	-61.24	9.5	33.1	
11,808.0	1.32	21.02	11,734.1	-342.4	-809.4	1.36	-0.10	59.06	30.9	12.2	
11,864.0	1.14	37.46	11,790.1	-341.4	-808.8	0.70	-0.32	29.36	31.9	3.1	
11,946.0	1.23	8.98	11,872.1	-339.9	-808.2	0.72	0.11	-34.73	24.9	17.5	
12,040.0	1.49	0.37	11,966.0	-337.7	-808.0	0.35	0.28	-9.16	19.8	20.9	
12,049.0	2.86	2.74	11,975.0	-337.3	-808.0	15.26	15.23	26.30	20.3	20.1	
KOP, MD:12049.0, TVD:11975.0, N/S:-337.3, E/W:-808.0, INC:2.86											
12,134.0	15.83	4.85	12,058.7	-323.6	-806.9	15.26	15.26	2.49	13.8	18.8	
12,228.0	29.55	355.97	12,145.3	-287.5	-807.5	15.00	14.60	-9.45	-1.6	20.1	
12,265.4	33.61	355.49	12,177.1	-268.0	-809.0	10.87	10.85	-1.30	-7.5	21.1	
FTP Crossing, MD:12265.4, TVD:12177.1, N/S:-268.0, E/W:-809.0, INC:33.61											



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3563.0usft (HP 444)
Site:	Mamba 30 State Corn	MD Reference:	KB = 25 @ 3563.0usft (HP 444)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,322.0	39.75	354.92	12,222.5	-234.3	-811.8	10.87	10.85	-1.00	-15.8	23.1	
12,415.0	52.85	6.26	12,286.7	-167.5	-810.4	16.58	14.09	12.19	-26.3	24.3	
12,510.0	60.23	14.17	12,339.1	-89.6	-796.1	10.41	7.77	8.33	-37.8	12.4	
12,604.0	63.22	10.39	12,383.7	-8.8	-778.6	4.76	3.18	-4.02	-39.5	-8.4	
12,697.0	75.10	3.88	12,416.7	77.3	-768.0	14.34	12.77	-7.00	-31.9	-22.3	
12,791.0	79.49	0.88	12,437.4	168.9	-764.1	5.56	4.67	-3.09	-18.5	-27.6	
12,883.0	83.27	356.32	12,451.2	259.7	-766.3	6.48	4.11	-5.07	-4.5	-26.3	
12,978.0	85.82	354.83	12,460.2	354.0	-773.6	3.11	2.68	-1.57	4.4	-19.8	
13,073.0	90.92	354.83	12,462.9	448.6	-782.1	5.37	5.37	0.00	7.1	-12.2	
13,164.0	91.71	353.16	12,460.8	539.0	-791.6	2.03	0.87	-1.84	5.0	-3.6	
13,259.0	91.71	355.09	12,458.0	633.5	-801.4	2.03	0.00	2.03	2.2	5.2	
13,354.0	90.66	359.93	12,456.0	728.4	-805.5	5.21	-1.11	5.09	0.3	8.5	
13,448.0	88.72	1.25	12,456.5	822.3	-804.5	2.50	-2.06	1.40	0.9	6.6	
13,543.0	90.75	1.69	12,457.0	917.3	-802.1	2.19	2.14	0.46	1.3	3.3	
13,637.0	94.26	4.32	12,452.9	1,011.1	-797.2	4.66	3.73	2.80	-2.7	-2.6	
13,731.0	94.00	5.64	12,446.1	1,104.5	-789.0	1.43	-0.28	1.40	-9.4	-11.6	
13,824.0	93.65	5.47	12,439.9	1,196.8	-780.0	0.42	-0.38	-0.18	-15.6	-21.5	
13,919.0	91.36	4.15	12,435.7	1,291.4	-772.1	2.78	-2.41	-1.39	-19.7	-30.3	
14,013.0	90.31	1.77	12,434.4	1,385.2	-767.2	2.77	-1.12	-2.53	-21.1	-36.1	
14,108.0	86.26	359.75	12,437.2	1,480.2	-766.0	4.76	-4.26	-2.13	-18.2	-38.2	
14,203.0	86.88	359.23	12,442.9	1,575.0	-766.8	0.85	0.65	-0.55	-12.4	-36.3	
14,297.0	88.02	359.66	12,447.1	1,668.9	-767.7	1.30	1.21	0.46	-8.2	-38.3	
14,391.0	89.87	357.20	12,448.8	1,762.8	-770.3	3.27	1.97	-2.62	-6.5	-36.6	
14,486.0	90.75	357.64	12,448.3	1,857.7	-774.6	1.04	0.93	0.46	-7.0	-33.2	
14,580.0	91.63	358.17	12,446.3	1,951.6	-778.0	1.09	0.94	0.56	-8.9	-30.7	
14,674.0	90.46	357.47	12,444.6	2,045.6	-781.6	1.43	-1.22	-0.74	-10.6	-28.0	
14,769.0	90.46	357.03	12,443.8	2,140.5	-786.1	0.46	0.00	-0.46	-11.3	-24.4	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3583.0usft (HP 444)
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3583.0usft (HP 444)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey										
MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
14,863.0	92.68	358.35	12,441.2	2,234.3	-789.9	2.73	2.34	1.40	-13.9	-21.5
14,957.0	90.92	0.02	12,438.3	2,328.3	-791.3	2.58	-1.87	1.78	-16.8	-21.1
15,051.0	89.60	0.54	12,437.8	2,422.3	-790.8	1.51	-1.40	0.55	-17.2	-22.4
15,146.0	85.30	1.07	12,442.1	2,517.1	-789.5	4.56	-4.53	0.56	-12.9	-24.6
15,239.0	85.38	359.75	12,449.6	2,609.8	-788.8	1.42	0.09	-1.42	-5.3	-26.2
15,333.0	87.05	357.12	12,455.8	2,703.6	-791.4	3.31	1.78	-2.80	1.0	-24.5
15,428.0	90.57	357.56	12,457.8	2,798.4	-795.8	3.73	3.71	0.46	3.0	-21.0
15,521.0	90.04	357.47	12,457.3	2,891.3	-799.8	0.58	-0.57	-0.10	2.5	-17.9
15,614.0	90.92	358.26	12,456.5	2,984.3	-803.3	1.27	0.95	0.85	1.8	-15.3
15,709.0	90.04	356.59	12,455.7	3,079.2	-807.5	1.99	-0.93	-1.76	1.0	-12.0
15,802.0	91.54	356.76	12,454.5	3,172.0	-812.9	1.62	1.61	0.18	-0.2	-7.5
15,896.0	88.64	357.73	12,454.3	3,265.9	-817.5	3.25	-3.09	1.03	-0.3	-3.8
15,990.0	88.81	357.38	12,456.4	3,359.8	-821.5	0.41	0.18	-0.37	1.8	-0.7
16,085.0	91.71	356.59	12,456.0	3,454.6	-826.5	3.16	3.05	-0.83	1.4	3.4
16,179.0	90.13	357.99	12,454.5	3,548.5	-830.9	2.25	-1.68	1.49	-0.1	6.9
16,273.0	89.08	359.84	12,455.1	3,642.5	-832.7	2.26	-1.12	1.97	0.6	7.8
16,367.0	88.99	359.31	12,456.7	3,736.5	-833.4	0.57	-0.10	-0.56	2.2	7.6
16,461.0	88.99	359.40	12,458.3	3,830.4	-834.4	0.10	0.00	0.10	3.9	7.7
16,555.0	88.37	358.35	12,460.5	3,924.4	-836.3	1.30	-0.66	-1.12	6.1	8.7
16,648.0	90.75	359.49	12,461.2	4,017.4	-838.0	2.84	2.56	1.23	6.9	9.5
16,742.0	90.31	0.02	12,460.4	4,111.4	-838.4	0.73	-0.47	0.56	6.1	9.1
16,836.0	91.89	0.98	12,458.6	4,205.3	-837.6	1.97	1.68	1.02	4.3	7.3
16,931.0	87.41	0.54	12,459.1	4,300.3	-836.4	4.74	-4.72	-0.46	4.9	5.2
17,025.0	87.23	359.75	12,463.5	4,394.2	-836.1	0.86	-0.19	-0.84	9.4	4.0
17,119.0	90.66	0.19	12,465.3	4,488.2	-836.2	3.68	3.65	0.47	11.1	3.2
17,214.0	88.81	358.70	12,465.7	4,583.2	-837.1	2.50	-1.95	-1.57	11.6	3.2
17,309.0	90.48	358.43	12,466.3	4,678.1	-839.5	1.78	1.76	-0.28	12.2	4.7



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3563.0usft (HP 444)
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3563.0usft (HP 444)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
17,368.0	93.91	0.98	12,464.0	4,737.1	-839.8	7.24	5.81	4.32	10.0	4.4
Last MWD Survey (MD=17368.0)										
17,433.0	93.91	0.98	12,459.6	4,801.9	-838.7	0.00	0.00	0.00	5.6	2.7
Projection to Bit (MD=17433.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
12,049.0	11,975.0	-337.3	-808.0	KOP, MD:12049.0', TVD:11975.0', N/S:-337.3', E/W:-808.0', INC:2.66
12,265.4	12,177.1	-268.0	-809.0	FTP Crossing, MD:12265.4', TVD:12177.1', N/S:-268.0', E/W:-809.0', INC:33.61
17,368.0	12,464.0	4,737.1	-839.8	Last MWD Survey (MD=17368.0)
17,433.0	12,459.6	4,801.9	-838.7	Projection to Bit (MD=17433.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Mamba 30 State Com #704H

HP 444

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #704H

KB = 28 @ 3563.0usft (HP 444) 3538.0
Northing 430848.00 Easting 765822.00 Latitude 32° 10' 58.831 N Longitude 103° 36' 27.829 W

SECTION DETAILS

	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	1176.0	0.90	86.49	1175.9	9.8	-3.0	0.00	0.00	10.1	
2	1276.0	0.90	86.49	1275.9	9.9	-1.4	0.00	0.00	10.0	
3	1618.8	6.00	247.43	1618.2	3.1	-15.3	2.00	163.38	5.7	
4	5019.3	6.00	247.43	5000.0	-133.3	-343.5	0.00	0.00	-72.4	
5	5391.2	13.44	247.39	5366.3	-157.4	-401.4	2.00	-0.08	-86.2	
6	6851.1	13.44	247.39	6786.3	-287.8	-714.6	0.00	0.00	-161.0	
7	7523.0	0.00	0.00	7452.0	-318.0	-787.0	2.00	180.00	-178.3	Brushy Top (Mamba 30 State #704H)
8	12049.5	0.00	0.00	11978.5	-318.0	-787.0	0.00	0.00	-178.3	
9	12799.7	90.02	359.45	12456.0	159.6	-791.6	12.00	359.45	293.0	
10	17442.3	90.02	359.45	12454.0	4802.0	-836.0	0.00	0.00	4874.2	PBHL (Mamba 30 State #704H)

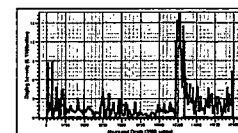
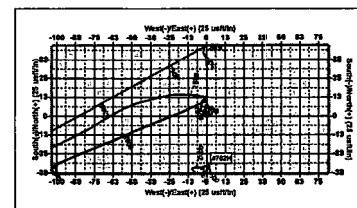
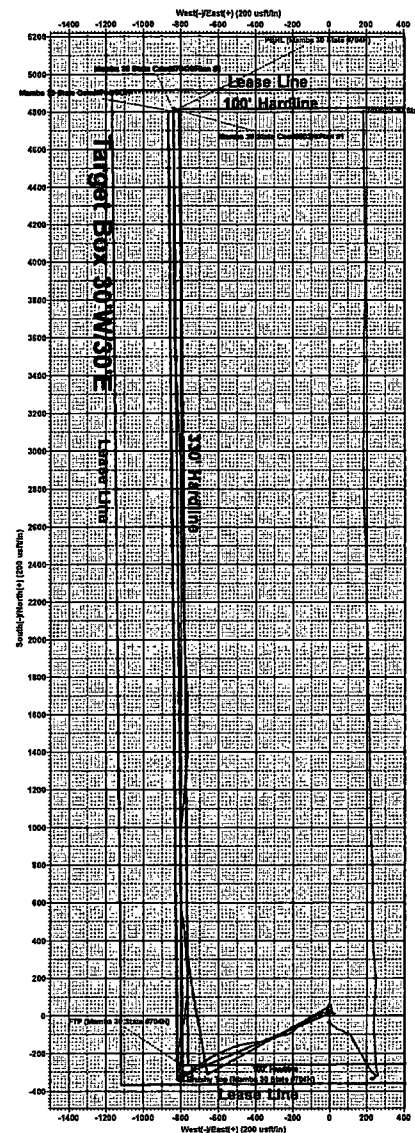
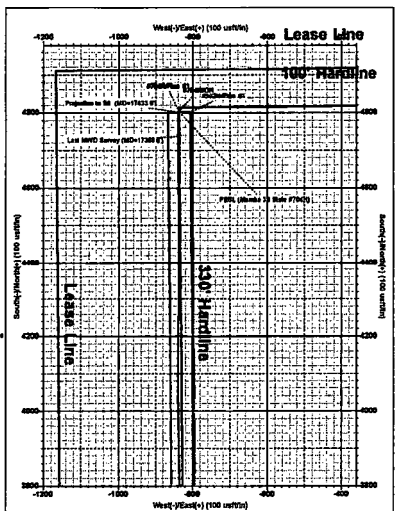
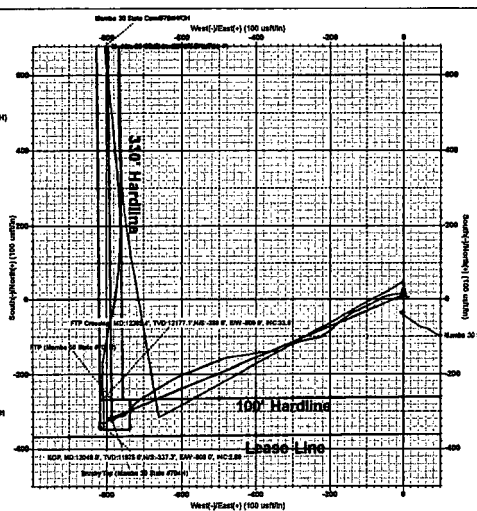
To convert a Magnetic Direction to a Grid Direction, Add 8.47°
To convert a Magnetic Direction to a True Direction, Add 6.85° East
To convert a True Direction to a Grid Direction, Subtract 0.35°

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Brushy Top (Mamba 30 State #704H)	7452.0	-318.0	-787.0	430830.00	765035.00
PBHL (Mamba 30 State #704H)	12454.0	4802.0	-836.0	430850.00	764935.00
FTP (Mamba 30 State #704H)	12444.0	-265.0	-787.0	430950.00	765035.00



Lea County, NM (NAD 83 NME)
Mamba 30 State Com #704H
HP 444
Plan #1