eog resources

EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Mamba 30 State Com
#503H
OH

Design: OH

Midland PVA

12 October, 2018

Company:	EOG Resources - Midland	**Local Co-ordinate Reference:**	Well #503H
Project:	Lea County, NM (NAD 83 NME)	**TVD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Site:	Mamba 30 State Com	**MD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Well:	#503H	**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	**Latitude:**	32° 10' 56.143 N
From:	Map	**Easting:**	767,053.00 usft	**Longitude:**	103° 36' 13.509 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.39 °

Well #503H

Well Position	**+N/-S**	0.0 usft	**Northing:**	430,881.00 usft	**Latitude:**	32° 10' 56.958 N
	+E/-W	0.0 usft	**Easting:**	765,822.00 usft	**Longitude:**	103° 36' 27.826 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,537.0 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	7/5/2018	6.85	60.01	47,800.98918635

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	350.47

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Survey Program **Date** 10/12/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	1,175.0	Invictus MWD + 25' kb and GN (OH)	MWD	OWSG MWD - Standard
1,226.0	16,145.0	Driltech MWD (OH)	MWD	OWSG MWD - Standard

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
125.0	0.70	311.49	125.0	0.5	-0.6	0.56	0.56	0.00	0.0	0.0
153.0	1.50	15.49	153.0	1.0	-0.6	4.82	2.86	228.57	0.0	0.0
182.0	1.20	19.49	182.0	1.6	-0.4	1.08	-1.03	13.79	0.0	0.0
210.0	0.90	4.49	210.0	2.1	-0.3	1.44	-1.07	-53.57	0.0	0.0
269.0	0.60	25.49	269.0	2.9	-0.1	0.68	-0.51	35.59	0.0	0.0
332.0	1.30	17.49	332.0	3.8	0.2	1.13	1.11	-12.70	0.0	0.0
363.0	0.80	10.49	363.0	4.4	0.4	1.66	-1.61	-22.58	0.0	0.0
395.0	1.00	357.49	395.0	4.9	0.4	0.89	0.62	-40.62	0.0	0.0
427.0	0.70	341.49	427.0	5.4	0.3	1.19	-0.94	-50.00	0.0	0.0
458.0	0.70	52.49	458.0	5.6	0.4	2.62	0.00	229.03	0.0	0.0
494.0	0.10	49.49	493.9	5.8	0.6	1.67	-1.67	-8.33	0.0	0.0
582.0	0.20	204.49	581.9	5.7	0.6	0.33	0.11	176.14	0.0	0.0
613.0	0.80	297.49	612.9	5.8	0.4	2.69	1.94	300.00	0.0	0.0
644.0	0.20	39.49	643.9	5.9	0.3	2.79	-1.94	329.03	0.0	0.0
675.0	0.40	235.49	674.9	5.9	0.2	1.92	0.65	-529.03	0.0	0.0
706.0	0.80	278.49	705.9	5.9	-0.1	1.86	1.29	138.71	0.0	0.0
738.0	0.80	338.49	737.9	6.1	-0.4	2.50	0.00	187.50	0.0	0.0
769.0	0.40	232.49	768.9	6.2	-0.6	3.19	-1.29	-341.94	0.0	0.0
799.0	0.70	345.49	798.9	6.3	-0.7	3.11	1.00	376.67	0.0	0.0
831.0	0.10	271.49	830.9	6.5	-0.8	2.12	-1.87	-231.25	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)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
862.0	0.20	311.49	861.9	6.6	-0.8	0.45	0.32	129.03	0.0	0.0
894.0	0.90	314.49	893.9	6.8	-1.1	2.19	2.19	9.37	0.0	0.0
926.0	1.20	349.49	925.9	7.3	-1.3	2.17	0.94	109.37	0.0	0.0
957.0	1.00	325.49	956.9	7.8	-1.5	1.60	-0.65	-77.42	0.0	0.0
988.0	0.80	328.49	987.9	8.2	-1.8	0.66	-0.65	9.68	0.0	0.0
1,049.0	1.00	329.49	1,048.9	9.1	-2.3	0.33	0.33	1.64	0.0	0.0
1,081.0	1.20	16.49	1,080.9	9.6	-2.3	2.80	0.62	146.87	0.0	0.0
1,113.0	1.20	17.49	1,112.9	10.3	-2.1	0.07	0.00	3.12	0.0	0.0
1,175.0	1.30	16.49	1,174.9	11.6	-1.7	0.17	0.16	-1.61	0.0	0.0
1,226.0	0.97	358.08	1,225.9	12.5	-1.6	0.96	-0.65	-36.10	-0.1	0.1
1,319.0	0.97	24.80	1,318.9	14.0	-1.3	0.48	0.00	28.73	-1.0	0.4
1,411.0	0.70	15.48	1,410.9	15.3	-0.8	0.33	-0.29	-10.13	-2.4	0.1
1,503.0	0.88	32.62	1,502.8	16.4	-0.3	0.32	0.20	18.63	-3.5	1.0
1,597.0	0.97	25.06	1,596.8	17.8	0.5	0.16	0.10	-8.04	-5.1	0.4
1,690.0	0.79	349.82	1,689.8	19.1	0.7	0.60	-0.19	-37.89	-5.7	-3.0
1,783.0	2.37	275.38	1,782.8	19.9	-1.4	2.46	1.70	-80.04	-0.7	-6.9
1,876.0	2.64	265.45	1,875.7	19.9	-5.4	0.55	0.29	-10.68	-3.5	-7.3
1,968.0	2.37	277.05	1,967.6	20.0	-9.4	0.62	-0.29	12.61	-8.9	-6.0
2,063.0	2.20	267.56	2,062.5	20.2	-13.2	0.44	-0.18	-9.99	-11.5	-7.7
2,156.0	3.78	248.66	2,155.4	19.0	-17.8	1.98	1.70	-20.32	-12.7	-11.7
2,250.0	3.96	245.58	2,249.2	16.5	-23.7	0.29	0.19	-3.28	-15.2	-12.7
2,344.0	5.72	240.13	2,342.9	12.8	-30.7	1.93	1.87	-5.80	-15.6	-14.3
2,437.0	5.72	241.28	2,435.4	8.3	-38.8	0.12	0.00	1.24	-16.0	-13.9
2,532.0	5.45	241.80	2,529.9	3.9	-46.9	0.29	-0.28	0.55	-15.5	-13.9
2,625.0	5.19	240.31	2,622.5	-0.3	-54.4	0.32	-0.28	-1.60	-14.0	-14.2
2,718.0	4.84	236.71	2,715.2	-4.5	-61.4	0.51	-0.38	-3.87	-11.5	-14.6
2,812.0	5.19	240.48	2,808.8	-8.8	-68.4	0.51	0.37	4.01	-10.8	-13.4

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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)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
2,905.0	6.51	240.84	2,901.3	-13.4	-76.6	1.42	1.42	0.39	-10.7	-13.3
2,998.0	6.60	236.71	2,993.7	-18.9	-85.7	0.52	0.10	-4.44	-10.6	-13.6
3,092.0	6.16	235.21	3,087.2	-24.8	-94.4	0.50	-0.47	-1.60	-10.9	-13.0
3,185.0	5.89	233.45	3,179.6	-30.5	-102.3	0.35	-0.29	-1.89	-10.6	-12.2
3,280.0	5.54	233.28	3,274.2	-36.1	-109.9	0.37	-0.37	-0.18	-10.2	-10.9
3,373.0	5.63	225.19	3,366.7	-42.0	-116.7	0.85	0.10	-8.70	-8.3	-10.2
3,467.0	6.33	222.56	3,460.2	-49.1	-123.5	0.80	0.74	-2.80	-8.3	-7.6
3,561.0	5.80	220.89	3,553.7	-56.5	-130.1	0.59	-0.56	-1.78	-8.7	-4.6
3,654.0	5.54	220.01	3,646.2	-63.5	-136.1	0.29	-0.28	-0.95	-8.8	-1.3
3,748.0	5.54	233.98	3,739.8	-69.6	-142.7	1.43	0.00	14.86	-8.0	3.1
3,841.0	5.63	243.30	3,832.4	-74.3	-150.4	0.98	0.10	10.02	-6.7	4.8
3,934.0	5.01	244.98	3,925.0	-78.1	-158.1	0.69	-0.67	1.81	-5.5	4.4
4,028.0	5.72	246.55	4,018.5	-81.7	-166.2	0.77	0.76	1.67	-4.3	3.8
4,122.0	6.95	247.43	4,112.0	-85.7	-175.7	1.31	1.31	0.94	-4.9	2.8
4,216.0	6.24	250.42	4,205.4	-89.6	-185.8	0.84	-0.76	3.18	-5.8	1.8
4,309.0	5.10	245.85	4,297.9	-93.0	-194.3	1.32	-1.23	-4.91	-5.4	0.1
4,404.0	5.54	245.76	4,392.5	-96.6	-202.3	0.46	0.46	-0.09	-4.3	-0.7
4,497.0	6.51	243.21	4,485.0	-100.6	-211.1	1.08	1.04	-2.74	-4.3	-1.4
4,590.0	5.72	243.39	4,577.4	-105.3	-220.0	0.85	-0.85	0.19	-4.5	-1.8
4,684.0	6.42	231.08	4,670.9	-110.7	-228.3	1.57	0.74	-13.10	-4.2	-2.0
4,778.0	7.39	225.98	4,764.2	-118.2	-236.7	1.22	1.03	-5.43	-5.8	-0.3
4,872.0	6.68	226.69	4,857.5	-126.2	-245.0	0.76	-0.76	0.76	-7.8	2.3
4,957.0	6.24	229.94	4,942.0	-132.5	-252.2	0.67	-0.52	3.82	-8.5	4.8
5,050.0	5.80	228.27	5,034.5	-138.9	-259.5	0.51	-0.47	-1.80	-8.9	6.6
5,144.0	7.30	236.44	5,127.9	-145.4	-268.1	1.87	1.60	8.69	-8.7	9.2
5,237.0	8.62	235.04	5,220.0	-152.6	-278.7	1.43	1.42	-1.51	-9.7	10.2
5,331.0	12.05	242.59	5,312.4	-161.2	-293.2	3.92	3.65	8.03	-9.8	11.9

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Survey

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5,424.0	13.81	251.30	5,403.1	-169.2	-312.3	2.82	1.89	9.37	-10.8	11.5
5,517.0	13.72	249.89	5,493.4	-176.6	-333.2	0.37	-0.10	-1.52	-12.6	7.8
5,611.0	13.45	249.63	5,584.8	-184.2	-353.9	0.29	-0.29	-0.28	-13.5	4.5
5,704.0	13.81	248.22	5,675.2	-192.1	-374.3	0.53	0.39	-1.52	-14.4	1.3
5,798.0	14.33	247.43	5,766.3	-200.7	-395.5	0.59	0.55	-0.84	-15.9	-1.4
5,892.0	13.98	246.20	5,857.5	-209.8	-416.6	0.49	-0.37	-1.31	-17.4	-3.9
5,984.0	12.75	246.02	5,947.0	-218.4	-436.1	1.34	-1.34	-0.20	-17.7	-5.8
6,078.0	11.96	245.93	6,038.8	-226.6	-454.5	0.84	-0.84	-0.10	-16.3	-7.6
6,173.0	11.87	245.23	6,131.8	-234.7	-472.3	0.18	-0.09	-0.74	-14.1	-9.5
6,267.0	11.43	243.82	6,223.8	-242.8	-489.4	0.56	-0.47	-1.50	-11.2	-11.1
6,360.0	11.43	244.88	6,315.0	-250.8	-506.1	0.23	0.00	1.14	-8.6	-12.1
6,453.0	11.70	242.07	6,406.1	-259.1	-522.7	0.67	0.29	-3.02	-5.2	-13.3
6,548.0	11.96	240.48	6,499.1	-268.5	-539.8	0.44	0.27	-1.67	-2.5	-13.4
6,643.0	11.87	239.96	6,592.0	-278.2	-556.8	0.15	-0.09	-0.55	-0.2	-13.1
6,736.0	11.43	240.84	6,683.1	-287.5	-573.2	0.51	-0.47	0.95	2.1	-12.8
6,830.0	10.99	242.15	6,775.3	-296.2	-589.2	0.54	-0.47	1.39	5.2	-13.0
6,925.0	10.55	241.98	6,868.6	-304.5	-604.9	0.46	-0.46	-0.18	8.5	-13.3
7,019.0	10.46	243.30	6,961.1	-312.4	-620.1	0.27	-0.10	1.40	9.0	-14.0
7,113.0	10.46	243.30	7,053.5	-320.1	-635.4	0.00	0.00	0.00	6.7	-14.6
7,207.0	8.97	247.69	7,146.2	-326.7	-649.8	1.77	-1.59	4.67	1.4	-15.7
7,301.0	8.09	251.03	7,239.1	-331.6	-662.8	1.07	-0.94	3.55	-4.9	-16.8
7,395.0	8.00	248.75	7,332.2	-336.2	-675.2	0.35	-0.10	-2.43	-11.8	-18.1
7,488.0	5.10	244.88	7,424.6	-340.3	-684.9	3.15	-3.12	-4.16	-18.6	-19.4
7,582.0	3.43	217.46	7,518.3	-344.3	-690.4	2.76	-1.78	-29.17	-13.9	-27.6
7,676.0	1.41	195.40	7,612.2	-347.6	-692.4	2.33	-2.15	-23.47	-6.3	-31.9
7,770.0	0.26	250.15	7,706.2	-348.8	-693.0	1.36	-1.22	58.24	-30.6	-12.3
7,862.0	0.26	224.58	7,798.2	-349.0	-693.3	0.13	0.00	-27.79	-22.7	-24.4

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7,955.0	0.53	332.68	7,891.2	-348.8	-693.6	0.71	0.29	116.24	-16.5	29.3
8,049.0	0.62	292.69	7,985.2	-348.2	-694.3	0.43	0.10	-42.54	-32.3	11.6
8,142.0	0.35	260.00	8,078.2	-348.1	-695.1	0.40	-0.29	-35.15	-34.2	-8.0
8,236.0	0.44	284.61	8,172.2	-348.0	-695.7	0.20	0.10	26.18	-35.0	7.1
8,330.0	2.29	110.49	8,266.2	-348.6	-694.3	2.90	1.97	-185.23	32.6	-10.7
8,424.0	2.29	111.46	8,360.1	-349.9	-690.8	0.04	0.00	1.03	28.7	-11.2
8,518.0	1.93	117.00	8,454.1	-351.3	-687.6	0.44	-0.38	5.89	24.0	-13.7
8,611.0	1.93	122.36	8,547.0	-352.9	-684.9	0.19	0.00	5.76	19.5	-15.8
8,704.0	1.76	130.45	8,640.0	-354.7	-682.5	0.33	-0.18	8.70	14.1	-18.1
8,798.0	1.58	135.10	8,733.9	-356.5	-680.5	0.24	-0.19	4.95	9.8	-19.1
8,891.0	1.41	142.66	8,826.9	-358.3	-678.9	0.28	-0.18	8.13	4.8	-20.1
8,983.0	1.76	160.42	8,918.8	-360.6	-677.7	0.65	0.38	19.30	-4.0	-20.2
9,077.0	1.67	165.51	9,012.8	-363.2	-676.9	0.19	-0.10	5.41	-8.6	-19.7
9,171.0	1.32	172.11	9,106.8	-365.6	-676.4	0.41	-0.37	7.02	-13.2	-18.4
9,265.0	1.41	179.14	9,200.7	-367.9	-676.2	0.20	0.10	7.48	-17.6	-16.5
9,360.0	1.32	181.77	9,295.7	-370.1	-676.2	0.12	-0.09	2.77	-20.6	-15.6
9,454.0	1.14	190.83	9,389.7	-372.1	-676.5	0.28	-0.19	9.64	-24.8	-12.0
9,549.0	1.76	219.65	9,484.7	-374.2	-677.6	0.99	0.65	30.34	-29.8	1.9
9,643.0	1.76	257.01	9,578.6	-375.6	-679.9	1.20	0.00	39.74	-25.1	20.5
9,736.0	1.58	294.27	9,671.6	-375.4	-682.4	1.16	-0.19	40.06	-10.0	32.4
9,831.0	2.99	310.97	9,766.5	-373.3	-685.5	1.63	1.48	17.58	-4.0	34.3
9,926.0	3.78	298.93	9,861.3	-370.1	-690.1	1.11	0.83	-12.67	-16.6	32.2
10,020.0	4.04	300.25	9,955.1	-366.9	-695.7	0.29	0.28	1.40	-22.3	32.6
10,114.0	4.75	302.18	10,048.9	-363.2	-701.9	0.77	0.76	2.05	-28.3	33.5
10,208.0	2.99	303.50	10,142.6	-359.8	-707.2	1.87	-1.87	1.40	-33.9	34.2
10,302.0	1.23	324.51	10,236.6	-357.6	-709.8	2.01	-1.87	22.35	-22.7	45.0
10,397.0	0.62	318.62	10,331.6	-356.4	-710.8	0.65	-0.64	-6.20	-28.8	42.3

Company:	EOG Resources - Midland	**Local Co-ordinate Reference:**	Well #503H
Project:	Lea County, NM (NAD 83 NME)	**TVD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Site:	Mamba 30 State Com	**MD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Well:	#503H	**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)
10,492.0	0.70	257.36	10,426.5	-356.1	-711.7	0.71	0.08	-64.48	-51.7	-5.3
10,586.0	1.06	247.78	10,520.5	-356.6	-713.0	0.41	0.38	-10.19	-51.6	-14.0
10,669.0	1.23	258.41	10,603.5	-357.1	-714.6	0.33	0.20	12.81	-54.9	-4.1
10,718.0	1.58	247.25	10,652.5	-357.4	-715.7	0.90	0.71	-22.78	-54.3	-14.7
10,730.0	1.35	298.03	10,664.5	-357.4	-716.0	10.60	-1.95	423.13	-46.0	32.9
KOP 10730.0' MD; 10664.5' TVD; -357.4'; -716.0'; 1.35										
10,812.0	9.15	4.15	10,746.1	-350.4	-716.4	10.60	9.52	80.64	9.8	54.9
10,907.0	18.64	8.01	10,838.2	-327.8	-713.7	10.03	9.99	4.06	12.9	47.5
10,975.3	28.00	6.07	10,900.9	-301.0	-710.5	13.75	13.71	-2.84	10.9	40.1
FTP Crossing 10975.3' MD; 10900.9' TVD; -301.0'; -710.5'; 28.00										
11,000.0	31.39	5.64	10,922.3	-288.8	-709.3	13.75	13.72	-1.75	10.0	36.9
11,094.0	41.42	1.77	10,997.9	-233.3	-705.9	10.94	10.67	-4.12	7.2	24.8
11,188.0	48.54	356.59	11,064.4	-166.9	-707.0	8.51	7.57	-5.51	10.0	14.8
11,220.0	54.17	357.03	11,084.4	-142.0	-708.4	17.63	17.59	1.37	12.1	11.9
11,250.0	60.76	356.59	11,100.5	-116.7	-709.8	22.00	21.97	-1.47	12.7	9.1
11,281.0	67.97	357.47	11,113.9	-88.8	-711.3	23.40	23.26	2.84	11.6	5.9
11,313.0	74.74	358.08	11,124.1	-58.6	-712.4	21.23	21.16	1.91	8.7	2.1
11,344.0	80.37	0.02	11,130.8	-28.3	-712.9	19.16	18.16	6.26	4.4	-2.2
11,375.0	86.35	358.96	11,134.4	2.5	-713.2	19.59	19.29	-3.42	-0.7	-6.9
11,469.0	88.64	358.26	11,138.5	96.4	-715.5	2.55	2.44	-0.74	-11.5	-20.4
11,563.0	91.01	357.29	11,138.8	190.3	-719.1	2.72	2.52	-1.03	-11.6	-31.7
11,657.0	90.92	355.53	11,137.2	284.1	-725.0	1.87	-0.10	-1.87	-12.8	-36.2
11,751.0	91.36	354.39	11,135.3	377.7	-733.3	1.30	0.47	-1.21	-14.3	-33.6
11,845.0	90.57	356.06	11,133.7	471.3	-741.1	1.97	-0.84	1.78	-15.4	-27.2
11,939.0	89.52	354.74	11,133.7	565.0	-748.6	1.79	-1.12	-1.40	-15.1	-20.4
12,032.0	90.84	356.15	11,133.4	657.7	-756.0	2.08	1.42	1.52	-14.9	-13.7
12,127.0	90.22	358.35	11,132.5	752.6	-760.6	2.41	-0.65	2.32	-15.4	-9.9

Company:	EOG Resources - Midland	**Local Co-ordinate Reference:**	Well #503H
Project:	Lea County, NM (NAD 83 NME)	**TVD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Site:	Mamba 30 State Com	**MD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Well:	#503H	**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)
12,221.0	89.34	357.56	11,132.9	846.6	-763.9	1.26	-0.94	-0.84	-14.6	-7.3
12,315.0	90.66	358.70	11,132.9	940.5	-767.0	1.86	1.40	1.21	-14.2	-4.9
12,408.0	89.34	0.02	11,132.9	1,033.5	-768.0	2.01	-1.42	1.42	-13.8	-4.6
12,503.0	89.60	359.05	11,133.7	1,128.5	-768.8	1.06	0.27	-1.02	-12.5	-4.5
12,597.0	89.52	0.37	11,134.5	1,222.5	-769.3	1.41	-0.09	1.40	-11.3	-4.8
12,690.0	90.13	359.93	11,134.7	1,315.5	-769.0	0.81	0.66	-0.47	-10.6	-5.7
12,784.0	90.04	358.70	11,134.6	1,409.5	-770.2	1.31	-0.10	-1.31	-10.3	-5.3
12,876.0	90.75	359.23	11,134.0	1,501.5	-771.8	0.96	0.77	0.58	-10.6	-4.4
12,970.0	91.28	358.26	11,132.3	1,595.4	-773.9	1.18	0.56	-1.03	-11.8	-3.0
13,065.0	90.40	0.72	11,130.9	1,690.4	-774.7	2.75	-0.93	2.59	-12.8	-2.9
13,158.0	89.69	1.60	11,130.8	1,783.4	-772.8	1.22	-0.76	0.95	-12.4	-5.5
13,253.0	88.81	1.51	11,132.1	1,878.3	-770.3	0.93	-0.93	-0.09	-10.8	-8.8
13,347.0	89.69	359.84	11,133.3	1,972.3	-769.2	2.01	0.94	-1.78	-9.1	-10.6
13,442.0	90.40	359.58	11,133.2	2,067.3	-769.6	0.80	0.75	-0.27	-8.8	-10.8
13,537.0	89.69	2.65	11,133.2	2,162.3	-767.8	3.32	-0.75	3.23	-8.4	-13.4
13,630.0	88.37	1.77	11,134.7	2,255.2	-764.2	1.71	-1.42	-0.95	-8.5	-17.7
13,725.0	88.55	1.16	11,137.3	2,350.1	-761.8	0.67	0.19	-0.64	-3.5	-20.8
13,818.0	89.87	0.19	11,138.6	2,443.1	-760.7	1.76	1.42	-1.04	-1.8	-22.6
13,912.0	91.10	359.05	11,137.8	2,537.1	-761.3	1.78	1.31	-1.21	-2.2	-22.7
14,007.0	88.55	359.75	11,138.1	2,632.1	-762.3	2.78	-2.68	0.74	-1.4	-22.5
14,101.0	88.64	358.79	11,140.4	2,726.0	-763.5	1.03	0.10	-1.02	1.3	-22.0
14,196.0	88.72	0.54	11,142.6	2,821.0	-764.1	1.84	0.08	1.84	3.9	-22.1
14,291.0	88.81	0.98	11,144.6	2,916.0	-762.8	0.47	0.09	0.46	6.4	-24.1
14,385.0	90.22	359.40	11,145.4	3,010.0	-762.5	2.25	1.50	-1.68	7.6	-25.2
14,479.0	90.92	359.23	11,144.5	3,104.0	-763.6	0.77	0.74	-0.18	7.1	-24.7
14,573.0	92.59	358.26	11,141.6	3,197.9	-765.7	2.05	1.78	-1.03	4.6	-23.4
14,668.0	89.16	357.91	11,140.1	3,292.8	-768.8	3.63	-3.61	-0.37	3.6	-20.9

Company:	EOG Resources - Midland	**Local Co-ordinate Reference:**	Well #503H
Project:	Lea County, NM (NAD 83 NME)	**TVD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Site:	Mamba 30 State Com	**MD Reference:**	KB = 25 @ 3562.0usft (HP 444)
Well:	#503H	**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)
14,762.0	87.93	357.03	11,142.5	3,386.7	-773.0	1.61	-1.31	-0.94	6.4	-17.5
14,856.0	87.93	358.08	11,145.9	3,480.5	-777.0	1.12	0.00	1.12	10.2	-14.2
14,950.0	90.57	359.49	11,147.1	3,574.5	-779.0	3.18	2.81	1.50	11.8	-12.9
15,045.0	91.80	359.58	11,145.2	3,669.5	-779.8	1.30	1.29	0.09	10.3	-12.9
15,139.0	92.59	358.96	11,141.6	3,763.4	-781.0	1.07	0.84	-0.66	7.1	-12.4
15,233.0	91.19	359.40	11,138.5	3,857.3	-782.3	1.56	-1.49	0.47	4.4	-11.8
15,327.0	91.01	357.47	11,136.7	3,951.3	-784.9	2.06	-0.19	-2.05	3.0	-9.9
15,422.0	90.92	0.19	11,135.1	4,046.2	-786.8	2.86	-0.09	2.86	1.9	-8.7
15,515.0	90.04	0.10	11,134.3	4,139.2	-786.6	0.95	-0.95	-0.10	1.5	-9.6
15,608.0	90.57	358.96	11,133.8	4,232.2	-787.3	1.35	0.57	-1.23	1.4	-9.6
15,703.0	89.25	358.96	11,134.0	4,327.2	-789.1	1.39	-1.39	0.00	2.0	-8.6
15,795.0	89.52	358.61	11,134.9	4,419.2	-791.0	0.48	0.29	-0.38	3.4	-7.3
15,889.0	87.93	357.38	11,137.0	4,513.1	-794.3	2.14	-1.69	-1.31	5.9	-4.8
15,984.0	87.67	357.12	11,140.7	4,607.9	-798.9	0.39	-0.27	-0.27	10.0	-0.9
16,078.0	88.02	356.59	11,144.2	4,701.7	-804.0	0.68	0.37	-0.56	13.9	3.5
Last MWD Survey (MD = 16078.0)										
16,145.0	88.02	356.59	11,146.5	4,768.5	-808.0	0.00	0.00	0.00	16.5	7.0
Projection to Bit (MD = 16145.0)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,730.0	10,664.5	-357.4	-716.0	KOP 10730.0' MD; 10664.5' TVD; -357.4'; -716.0'; 1.35
10,975.3	10,900.9	-301.0	-710.5	FTP Crossing 10975.3' MD; 10900.9' TVD; -301.0'; -710.5'; 28.00
16,078.0	11,144.2	4,701.7	-804.0	Last MWD Survey (MD = 16078.0)
16,145.0	11,146.5	4,768.5	-808.0	Projection to Bit (MD = 16145.0)

eog resources

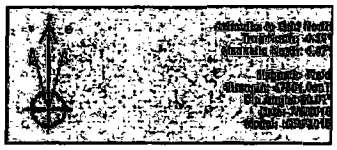
Lea County, NM (NAD 83 NME)

Mamba 30 State Com #503H

HP 444

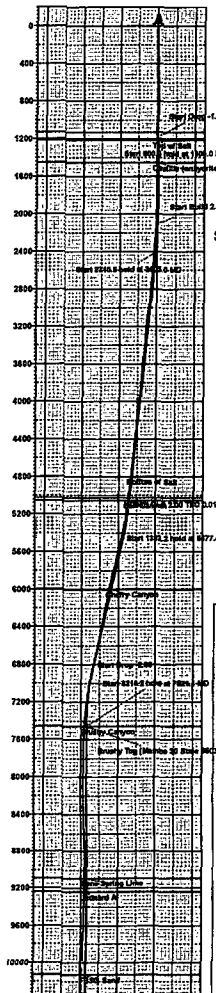
Plan #1

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



To convert a Magnetic Direction to a Grid Direction, Add 6.47°
To convert a Magnetic Direction to a True Direction, Add 6.85° East
To convert a True Direction to a Grid Direction, Subtract 0.39°

WELL DETAILS: #503H			
		3537.0	
	KB = 25 @ 3562.0usft (HP 444)		
Northing	Easting	Latitude	Longitude
430881.00	765822.00	32° 10' 56.958 N	103° 36' 27.626 W



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	1175.0	1.30	16.49	1174.9	11.6	-1.7	0.00	0.00	11.7	
2	1305.0	0.00	0.00	1304.9	13.0	-1.3	1.00	180.00	13.0	
3	2105.0	0.00	0.00	2104.9	13.0	-1.3	0.00	0.00	13.0	
4	2405.0	6.00	241.14	2404.3	5.4	-15.1	2.00	241.14	7.8	
5	5115.5	6.00	241.14	5100.0	-131.4	-263.2	0.00	0.00	-85.9	
6	5477.4	13.24	241.14	5456.6	-160.5	-316.1	2.00	0.01	-105.9	
7	6859.6	13.24	241.14	6802.0	-313.3	-593.3	0.00	0.00	-210.7	
8	7521.4	0.00	0.00	7458.0	-350.0	-660.0	2.00	180.00	-235.9	Brushy Top (Mamba 30 State #503H)
9	10736.6	0.00	0.00	10673.2	-350.0	-660.0	0.00	0.00	-235.9	
10	11488.7	90.25	350.30	11150.7	122.7	-740.8	12.00	350.30	243.7	
11	11797.6	90.25	359.56	11149.3	430.0	-768.0	3.00	89.95	551.2	
12	16136.7	90.25	359.56	11130.0	4769.0	-801.0	0.00	0.00	4835.8	PBHL 10' Short (Mamba 30 State #503H)

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 #503H)	7458.0	-350.0	-660.0	430531.00	765162.00
PBHL 10' Short (Mamba 30 State #503H)	11130.0	4769.0	-801.0	435650.00	765021.00
FTP (Mamba 30 State #503H)	11162.0	-301.0	-763.0	430580.00	765059.00