



HOBBS OCD
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Cobalt 32 State Com

#703H

OH

Design: OH

Midland PVA

26 November, 2018



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Com	MD Reference:	KB = 25 @ 3444.0usft
Well:	#703H	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	Cobalt 32 State Com		
Site Position:		Northing:	425,635.00 usft
From:	Map	Easting:	802,483.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 2.401 N
		Longitude:	103° 29' 21.743 W
		Grid Convergence:	0.45 °

Well	#703H		
Well Position	+N-S	0.0 usft	Northing: 425,635.00 usft
	+E-W	0.0 usft	Easting: 802,483.00 usft
Position Uncertainty	0.0 usft		Wellhead Elevation: usft
			Latitude: 32° 10' 2.401 N
			Longitude: 103° 29' 21.743 W
			Ground Level: 3,419.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	8/21/2018	6.78
			Dip Angle (°)
			60.01
			Field Strength (nT)
			47,791.98776392

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 (°)
			359.65

Survey Program	Date 11/26/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
200.0	17,202.0	Drilltech MWD (OH)	MWD
			Description
			OWSG MWD - Standard



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Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Asl (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	0.0
200.0	0.79	130.70	200.0	-0.9	1.0	0.39	0.39	0.00	-1.4	0.0	0.0
317.0	0.70	116.90	317.0	-1.7	2.3	0.17	-0.08	-11.79	-2.6	-0.5	-0.5
434.0	0.88	96.33	434.0	-2.2	3.8	0.28	0.15	-17.58	-4.0	-1.7	-1.7
551.0	1.23	106.09	551.0	-2.6	5.9	0.34	0.30	8.34	-6.4	-0.9	-0.9
702.0	1.49	97.65	701.9	-3.3	9.4	0.22	0.17	-5.59	-9.8	-2.0	-2.0
763.0	1.49	98.79	762.9	-3.6	11.0	0.05	0.00	1.87	-11.4	-1.8	-1.8
856.0	1.67	90.53	855.9	-3.8	13.5	0.31	0.19	-8.88	-13.6	-3.6	-3.6
1,046.0	2.11	86.75	1,045.8	-3.6	19.8	0.24	0.23	-1.99	-19.6	-4.7	-4.7
1,133.0	0.97	131.84	1,132.7	-4.0	22.0	1.82	-1.31	51.83	-19.0	11.7	11.7
1,229.0	1.14	190.72	1,228.7	-5.5	22.4	1.09	0.18	61.33	-1.2	23.0	23.0
1,306.0	1.41	196.88	1,305.7	-7.1	22.0	0.39	0.35	8.00	-0.4	23.1	23.1
1,398.0	1.41	199.95	1,397.7	-9.3	21.3	0.08	0.00	3.34	-1.5	23.1	23.1
1,491.0	1.32	194.42	1,490.6	-11.4	20.6	0.17	-0.10	-5.95	-5.9	22.8	22.8
1,585.0	1.23	193.71	1,584.6	-13.4	20.1	0.10	-0.10	-0.76	-8.3	22.7	22.7
1,680.0	0.44	292.24	1,679.6	-14.3	19.5	1.44	-0.83	103.72	23.5	5.8	5.8
1,775.0	0.70	349.02	1,774.8	-13.6	19.1	0.62	0.27	59.77	16.9	-16.1	-16.1
1,870.0	0.70	346.64	1,869.6	-12.4	18.8	0.03	0.00	-2.51	16.4	-15.4	-15.4
1,965.0	0.53	355.08	1,964.6	-11.4	18.6	0.20	-0.18	8.88	13.0	-17.6	-17.6
2,059.0	0.53	359.30	2,058.6	-10.5	18.6	0.04	0.00	4.49	10.8	-18.5	-18.5
2,155.0	0.53	353.32	2,154.6	-9.7	18.5	0.06	0.00	-6.23	11.8	-17.3	-17.3
2,250.0	0.44	343.83	2,249.6	-8.9	18.4	0.13	-0.09	-9.99	13.6	-15.2	-15.2
2,344.0	0.62	320.71	2,343.6	-8.1	18.0	0.29	0.19	-24.60	17.7	-8.8	-8.8
2,439.0	0.62	319.75	2,438.6	-7.3	17.3	0.01	0.00	-1.01	16.8	-8.5	-8.5
2,534.0	0.53	324.49	2,533.6	-6.6	16.7	0.11	-0.09	4.99	15.1	-9.8	-9.8
2,629.0	0.35	335.57	2,628.6	-6.0	16.3	0.21	-0.19	11.66	12.2	-12.4	-12.4
2,724.0	0.44	17.84	2,723.6	-5.4	16.3	0.31	0.09	44.49	0.1	-17.2	-17.2



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Well:	#703H	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)	
2,819.0	0.53	47.02	2,818.6	-4.7	18.8	0.27	0.09	30.72	-9.1	-14.9	
2,914.0	0.62	73.83	2,913.5	-4.3	17.6	0.30	0.09	28.22	-15.7	-9.0	
3,009.0	0.70	84.20	3,008.5	-4.1	18.7	0.15	0.08	10.92	-18.1	-5.9	
3,104.0	1.76	58.19	3,103.5	-3.2	20.5	1.23	1.12	-27.38	-15.7	-13.6	
3,199.0	2.64	59.06	3,198.4	-1.4	23.6	0.93	0.93	0.92	-19.5	-13.3	
3,294.0	4.04	57.83	3,293.3	1.6	28.3	1.48	1.47	-1.29	-24.8	-13.8	
3,389.0	8.79	49.75	3,387.7	8.0	36.7	5.08	5.00	-8.51	-33.1	-17.7	
3,484.0	14.07	46.06	3,480.7	20.7	50.5	5.61	5.56	-3.88	-50.6	-20.7	
3,515.0	11.08	48.43	3,511.0	25.3	55.5	9.79	-9.65	7.65	-58.2	-18.2	
3,547.0	8.18	55.20	3,542.5	28.7	59.7	9.71	-9.06	21.16	-65.3	-10.6	
3,578.0	4.66	65.13	3,573.3	30.5	62.6	11.86	-11.35	32.03	-69.6	1.3	
3,625.0	1.49	178.33	3,620.3	30.7	64.4	11.54	-6.74	240.85	28.8	65.2	
3,673.0	2.11	214.98	3,668.3	29.3	63.9	2.66	1.29	76.35	60.6	35.6	
3,768.0	4.31	236.87	3,763.1	25.9	59.9	2.61	2.32	23.04	64.3	11.0	
3,863.0	4.22	236.96	3,857.9	22.1	54.0	0.09	-0.09	0.09	57.3	11.0	
3,958.0	4.31	236.69	3,952.6	18.2	48.0	0.10	0.09	-0.28	50.1	11.2	
4,053.0	4.04	240.82	4,047.3	14.6	42.1	0.43	-0.28	4.35	43.9	7.8	
4,148.0	3.69	242.58	4,142.1	11.6	36.5	0.39	-0.37	1.85	37.7	6.6	
4,243.0	3.61	248.03	4,236.9	9.0	31.0	0.37	-0.08	5.74	32.2	3.2	
4,338.0	3.34	250.31	4,331.8	7.0	25.6	0.32	-0.28	2.40	26.5	2.1	
4,433.0	2.73	246.89	4,426.6	5.2	21.0	0.67	-0.64	-3.60	21.3	3.5	
4,528.0	1.93	226.14	4,521.6	3.2	17.7	1.21	-0.84	-21.84	15.0	10.0	
4,623.0	1.67	192.48	4,616.5	0.7	16.3	1.13	-0.27	-35.43	4.2	15.7	
4,718.0	1.76	177.45	4,711.5	-2.1	16.0	0.48	0.09	-15.82	-2.8	15.9	
4,813.0	2.90	155.22	4,806.4	-5.7	17.1	1.51	1.20	-23.40	-12.4	13.1	
4,908.0	3.96	143.44	4,901.2	-10.5	20.1	1.33	1.12	-12.40	-20.4	9.9	
5,003.0	5.19	137.37	4,995.9	-16.3	24.9	1.39	1.29	-6.39	-28.9	7.3	



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5,098.0	2.90	140.80	5,090.7	-21.4	29.4	2.42	-2.41	3.61	-35.1	9.3	
5,193.0	2.37	271.67	5,185.6	-23.2	28.9	5.05	-0.56	137.76	29.3	21.1	
5,288.0	2.20	272.37	5,280.5	-23.0	25.1	0.18	-0.18	0.74	24.9	16.4	
5,383.0	2.02	268.42	5,375.5	-23.0	21.6	0.24	-0.19	-4.16	19.4	12.3	
5,478.0	1.76	267.72	5,470.4	-23.1	18.5	0.27	-0.27	-0.74	15.4	6.8	
5,573.0	1.67	263.06	5,565.4	-23.3	15.7	0.17	-0.09	-4.91	11.7	2.3	
5,668.0	2.64	242.93	5,660.3	-24.5	12.3	1.28	1.02	-21.19	8.5	0.2	
5,763.0	3.08	221.66	5,755.2	-27.4	8.7	1.20	0.46	-22.39	6.8	-1.9	
5,857.0	4.22	204.61	5,849.0	-32.4	5.6	1.66	1.21	-18.14	5.9	-3.7	
5,953.0	4.40	205.23	5,944.7	-39.0	2.5	0.19	0.19	0.65	3.4	-7.1	
6,047.0	4.48	206.46	6,038.5	-45.5	-0.6	0.13	0.09	1.31	0.5	-10.4	
6,142.0	4.40	197.76	6,133.2	-52.3	-3.4	0.71	-0.08	-9.16	-0.2	-13.3	
6,237.0	5.01	184.48	6,227.9	-59.9	-4.8	1.31	0.64	-13.98	0.7	-15.2	
6,332.0	5.36	176.57	6,322.5	-68.5	-4.9	0.84	0.37	-8.33	-0.1	-16.2	
6,427.0	3.87	166.38	6,417.2	-76.0	-3.9	1.78	-1.57	-10.73	0.9	-16.3	
6,521.0	3.08	152.84	6,511.0	-81.4	-2.0	1.21	-0.84	-14.40	4.5	-14.7	
6,616.0	3.17	153.72	6,605.9	-86.0	0.4	0.11	0.09	0.93	4.5	-13.0	
6,711.0	3.17	151.88	6,700.7	-90.7	2.8	0.11	0.00	-1.94	5.1	-11.1	
6,806.0	3.17	148.98	6,795.6	-95.2	5.4	0.17	0.00	-3.05	5.7	-8.9	
6,901.0	3.17	146.96	6,890.4	-99.7	8.1	0.12	0.00	-2.13	6.0	-6.5	
6,996.0	2.90	146.16	6,985.3	-103.9	10.9	0.29	-0.28	-0.84	6.3	-4.1	
7,091.0	2.64	144.32	7,080.2	-107.7	13.5	0.29	-0.27	-1.94	6.9	-1.5	
7,186.0	2.37	144.23	7,175.1	-111.0	15.9	0.28	-0.28	-0.09	7.9	1.1	
7,281.0	2.37	145.29	7,270.0	-114.2	18.2	0.05	0.00	1.12	9.1	3.4	
7,376.0	2.37	150.47	7,364.9	-117.6	20.3	0.23	0.00	5.45	10.9	4.7	
7,470.0	2.20	153.02	7,458.8	-120.9	22.1	0.21	-0.18	2.71	12.7	6.0	
7,565.0	2.20	153.11	7,553.8	-124.1	23.7	0.00	0.00	0.09	14.5	7.7	



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Survey											
MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	D/Lag ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
7,660.0	1.93	150.82	7,648.7	-127.1	25.3	0.30	-0.28	-2.41	16.1	10.1	
7,755.0	1.67	150.47	7,743.7	-129.7	26.8	0.27	-0.27	-0.37	16.2	11.4	
7,850.0	1.67	154.16	7,838.6	-132.2	28.1	0.11	0.00	3.88	14.7	10.5	
7,945.0	1.49	154.95	7,933.6	-134.6	29.2	0.19	-0.19	0.83	12.2	10.4	
8,040.0	1.58	156.54	8,028.6	-136.9	30.3	0.10	0.09	1.67	9.9	10.0	
8,135.0	1.58	159.96	8,123.5	-139.3	31.2	0.10	0.00	3.60	7.9	9.5	
8,230.0	1.32	166.47	8,218.5	-141.6	31.9	0.32	-0.27	6.85	6.5	8.7	
8,325.0	1.23	172.62	8,313.5	-143.7	32.3	0.17	-0.09	6.47	5.3	8.1	
8,420.0	1.06	169.10	8,406.4	-145.5	32.6	0.19	-0.18	-3.71	2.9	8.3	
8,515.0	1.23	167.96	8,503.4	-147.4	33.0	0.18	0.18	-1.20	0.9	8.4	
8,609.0	1.32	164.09	8,597.4	-149.4	33.5	0.13	0.10	-4.12	-1.8	8.3	
8,704.0	1.23	169.89	8,692.4	-151.5	34.0	0.17	-0.09	6.11	-3.0	8.6	
8,799.0	1.14	175.96	8,787.4	-153.4	34.2	0.16	-0.09	6.39	-4.1	9.0	
8,894.0	0.97	180.35	8,882.3	-155.2	34.3	0.20	-0.18	4.62	-5.1	9.3	
8,989.0	1.06	185.54	8,977.3	-156.9	34.2	0.14	0.09	5.46	-5.9	9.8	
9,084.0	1.14	187.03	9,072.3	-158.7	34.0	0.09	0.08	1.57	-7.5	10.0	
9,178.0	1.23	192.04	9,166.3	-160.6	33.7	0.15	0.10	5.33	-8.5	10.7	
9,273.0	1.23	190.11	9,261.3	-162.6	33.3	0.04	0.00	-2.03	-10.9	10.4	
9,368.0	1.41	196.35	9,356.2	-164.7	32.8	0.24	0.19	6.57	-11.9	11.6	
9,463.0	1.41	201.18	9,451.2	-166.9	32.0	0.13	0.00	5.08	-13.2	12.7	
9,557.0	1.58	212.52	9,545.2	-169.1	30.9	0.36	0.18	12.06	-12.9	15.2	
9,652.0	2.20	216.21	9,640.1	-171.7	29.1	0.66	0.65	3.88	-15.0	16.1	
9,747.0	2.73	210.76	9,735.0	-175.1	26.9	0.61	0.56	-5.74	-20.6	14.5	
9,841.0	2.90	200.83	9,828.9	-179.2	24.9	0.55	0.18	-10.56	-27.4	10.3	
9,936.0	2.64	196.09	9,923.8	-183.6	23.4	0.36	-0.27	-4.99	-32.7	7.8	
10,126.0	1.14	183.96	10,113.7	-189.7	22.1	0.81	-0.79	-6.38	-39.8	-0.2	
10,220.0	0.44	234.05	10,207.7	-190.8	21.7	0.98	-0.74	53.29	-26.6	31.1	



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10,315.0	7.03	354.64	10,302.5	-185.2	20.9	7.65	6.94	126.94	34.7	7.4	
10,410.0	2.81	11.16	10,397.1	-177.2	20.8	4.64	-4.44	17.39	27.5	-1.1	
10,505.0	1.85	354.90	10,492.0	-173.4	21.1	1.22	-1.01	-17.12	22.9	5.9	
10,600.0	1.32	347.26	10,587.0	-170.8	20.7	0.60	-0.56	-8.04	19.3	8.7	
10,695.0	1.49	30.41	10,682.0	-168.6	21.1	1.10	0.18	45.42	18.0	-6.1	
10,789.0	1.49	45.88	10,775.9	-166.7	22.6	0.43	0.00	16.46	13.3	-10.3	
10,884.0	0.88	13.27	10,870.9	-165.1	23.7	0.93	-0.64	-34.33	15.0	-2.2	
10,979.0	0.62	8.97	10,965.9	-163.9	23.9	0.28	-0.27	-4.53	13.9	-1.1	
11,074.0	1.06	324.85	11,060.9	-162.7	23.5	0.79	0.46	-46.44	9.5	8.5	
11,169.0	0.97	317.64	11,155.9	-161.4	22.5	0.16	-0.09	-7.59	6.7	9.6	
11,264.0	0.44	320.10	11,250.9	-160.5	21.7	0.56	-0.56	2.59	5.9	9.3	
11,359.0	0.53	308.06	11,345.9	-160.0	21.1	0.14	0.09	-12.67	3.1	10.3	
11,454.0	0.97	325.81	11,440.9	-159.0	20.3	0.52	0.46	18.68	4.8	9.0	
11,549.0	0.97	310.96	11,533.8	-157.2	18.7	0.18	0.00	-10.38	0.0	9.6	
11,642.0	0.88	240.12	11,628.8	-157.1	17.5	1.13	-0.09	-74.57	-10.1	2.4	
11,737.0	1.49	252.86	11,723.8	-157.8	15.6	0.70	0.64	13.41	-11.2	4.7	
11,832.0	2.61	340.42	11,798.8	-157.4	15.1	11.78	4.46	350.24	3.6	11.7	
KOP 11812.0' MD; 11798.8' TVD; -157.4; 15.1; 2.61											
11,881.0	10.46	3.61	11,867.3	-149.6	15.0	11.78	11.38	33.61	0.5	10.0	
11,976.0	24.53	8.97	11,957.7	-121.4	18.7	14.89	14.81	5.64	-14.9	9.1	
12,023.2	29.99	7.49	11,999.6	-100.0	21.7	11.65	11.57	-3.13	-24.3	6.9	
FTP Crossing 12023.2' MD; 11999.6' TVD; -100.0; 21.7; 29.99											
12,071.0	35.53	6.42	12,039.8	-74.3	24.8	11.65	11.59	-2.24	-33.3	4.4	
12,166.0	46.25	2.90	12,111.5	-12.4	29.7	11.54	11.28	-3.71	-49.4	-0.9	
12,260.0	50.39	1.41	12,174.0	57.7	32.3	4.56	4.40	-1.59	-56.8	-3.3	
12,356.0	60.59	355.96	12,228.4	136.6	30.2	11.60	10.62	-5.68	-54.7	-2.3	
12,451.0	64.46	355.43	12,272.2	220.6	23.9	4.10	4.07	-0.56	-43.3	6.8	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Corn	MD Reference:	KB = 25 @ 3444.0usft
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	NIS (usft)	EW (usft)	Dleg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,545.0	73.25	0.35	12,306.1	308.1	20.8	10.55	9.35	5.23	-22.0	12.7	
12,652.0	81.60	359.56	12,329.4	412.5	20.7	7.84	7.80	-0.74	2.1	14.4	
12,747.0	92.77	357.89	12,334.0	507.2	18.6	11.89	11.76	-1.76	8.6	18.2	
12,842.0	96.81	1.67	12,326.1	601.8	18.2	5.81	4.25	3.98	2.2	20.3	
12,936.0	89.16	3.43	12,321.2	695.5	22.4	8.35	-8.14	1.87	-0.9	17.8	
13,031.0	85.21	2.46	12,325.9	790.3	27.3	4.28	-4.16	-1.02	5.4	14.6	
13,126.0	89.69	1.50	12,330.1	885.1	30.5	4.82	4.72	-1.01	11.4	13.0	
13,221.0	90.84	0.53	12,329.6	980.1	32.2	1.58	1.21	-1.02	12.6	13.0	
13,316.0	90.40	0.53	12,328.6	1,075.1	33.1	0.46	-0.46	0.00	13.3	13.9	
13,410.0	90.66	0.27	12,327.7	1,169.1	33.8	0.39	0.28	-0.28	14.1	14.9	
13,505.0	89.43	0.09	12,327.7	1,264.1	34.1	1.31	-1.29	-0.19	15.7	16.2	
13,600.0	89.16	359.74	12,328.8	1,359.0	33.9	0.47	-0.28	-0.37	17.7	16.0	
13,695.0	89.78	358.95	12,329.7	1,454.0	32.8	1.06	0.65	-0.83	18.6	15.0	
13,790.0	89.60	358.51	12,330.2	1,549.0	30.7	0.50	-0.19	-0.46	19.1	15.0	
13,886.0	92.15	0.00	12,328.8	1,645.0	29.5	3.08	2.66	1.55	17.6	14.1	
13,981.0	93.47	359.83	12,324.1	1,739.9	29.3	1.40	1.39	-0.18	12.9	12.2	
14,076.0	90.57	0.62	12,320.8	1,834.8	29.7	3.16	-3.05	0.83	9.6	9.7	
14,172.0	90.04	0.88	12,320.3	1,930.8	31.0	0.61	-0.55	0.27	9.1	6.3	
14,267.0	92.33	0.62	12,318.3	2,025.8	32.2	2.43	2.41	-0.27	7.2	3.0	
14,362.0	91.63	0.70	12,315.0	2,120.7	33.3	0.74	-0.74	0.08	3.9	-0.2	
14,457.0	90.22	0.53	12,313.5	2,215.7	34.3	1.49	-1.48	-0.18	2.4	-3.4	
14,552.0	88.81	359.12	12,314.3	2,310.7	34.0	2.10	-1.48	-1.48	3.2	-5.2	
14,648.0	89.16	358.16	12,316.0	2,406.6	31.8	1.06	0.36	-1.00	4.9	-5.0	
14,743.0	89.60	358.68	12,317.0	2,501.6	29.1	0.72	0.46	0.55	5.9	-4.5	
14,838.0	89.69	357.80	12,317.6	2,596.5	26.2	0.93	0.09	-0.93	6.5	-3.7	
14,934.0	89.43	356.93	12,318.3	2,692.4	21.8	0.95	-0.27	-0.91	7.2	-1.4	
15,029.0	90.84	358.86	12,318.1	2,787.3	18.3	2.52	1.48	2.03	7.0	0.0	



Midland PVA

Company: EOG Resources - Midland		Local Co-ordinate Reference: Well #703H	
Project: Lea County, NM (NAD 83 NME)		TVD Reference: KB = 25 @ 3444.0usft	
Site: Cobalt 32 State Corn		MD Reference: KB = 25 @ 3444.0usft	
Well: #703H		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)	Buile (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
15,124.0	91.80	359.12	12,315.9	2,882.3	16.6	1.05	1.01	0.27	4.8	-0.5
15,220.0	90.48	357.89	12,314.0	2,978.3	14.1	1.88	-1.37	-1.28	2.9	-0.1
15,315.0	91.54	358.16	12,312.3	3,073.2	10.9	1.15	1.12	0.28	1.3	1.1
15,410.0	89.43	358.16	12,311.5	3,168.1	7.8	2.22	-2.22	0.00	0.5	2.0
15,505.0	90.48	358.07	12,311.8	3,263.1	4.7	1.11	1.11	-0.09	0.6	3.0
15,601.0	90.84	357.54	12,310.5	3,359.0	1.0	0.67	0.37	-0.55	-0.5	4.6
15,696.0	91.28	357.89	12,308.7	3,453.9	-2.8	0.59	0.46	0.37	-2.3	6.3
15,791.0	89.34	357.80	12,308.2	3,548.8	-6.3	2.04	-2.04	-0.09	-2.8	7.7
15,885.0	88.99	357.98	12,309.6	3,642.8	-9.8	0.42	-0.37	0.19	-1.4	9.1
15,980.0	89.25	357.28	12,311.1	3,737.7	-13.7	0.79	0.27	-0.74	0.0	10.9
16,075.0	89.08	356.05	12,312.4	3,832.5	-19.3	1.31	-0.18	-1.29	1.4	14.4
16,169.0	90.68	0.88	12,312.7	3,926.4	-21.8	5.41	1.68	5.14	1.6	14.8
16,264.0	91.19	2.11	12,311.1	4,021.4	-19.3	1.41	0.56	1.29	1.1	10.2
16,359.0	93.30	3.17	12,307.4	4,116.2	-14.9	2.49	2.22	1.12	-1.0	3.8
16,454.0	88.81	0.27	12,305.7	4,211.1	-12.1	5.63	-4.73	-3.05	-1.1	-1.2
16,549.0	88.81	358.24	12,307.6	4,306.1	-13.3	2.14	0.00	-2.14	2.5	-2.0
16,643.0	90.40	358.77	12,308.3	4,400.0	-15.8	1.78	1.69	0.56	4.8	-1.7
16,737.0	89.78	357.54	12,308.1	4,494.0	-18.8	1.47	-0.66	-1.31	6.3	-0.7
16,831.0	88.11	356.66	12,309.9	4,587.8	-23.5	2.01	-1.78	-0.94	10.0	2.0
16,925.0	95.41	2.46	12,307.0	4,681.7	-24.3	9.91	7.77	6.17	10.9	0.7
17,019.0	89.60	0.35	12,302.9	4,775.5	-22.0	6.57	-6.18	-2.24	10.7	-3.7
17,114.0	88.72	359.56	12,304.3	4,870.5	-22.1	1.24	-0.93	-0.83	16.1	-5.8
17,144.0	89.25	359.56	12,304.8	4,900.5	-22.3	1.77	1.77	0.00	17.9	-6.2
Last MWD Survey (MD = 17144.0)										
17,202.0	90.91	359.56	12,304.7	4,958.5	-22.7	2.86	2.86	0.00	20.2	-7.0
Projection to Bit (MD = 17202.0)										



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #703H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Corn	MD Reference:	KB = 25 @ 3444.0usft
Well:	#703H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
11,812.0	11,798.8	-157.4	15.1	KOP 11812.0' MD; 11798.8' TVD; -157.4'; 15.1'; 2.61
12,023.2	11,999.6	-100.0	21.7	FTP Crossing 12023.2' MD; 11999.6' TVD; -100.0'; 21.7'; 29.99
17,144.0	12,304.8	4,900.5	-22.3	Last MWD Survey (MD = 17144.0)
17,202.0	12,304.7	4,958.5	-22.7	Projection to Bit (MD = 17202.0)

Checked By: _____	Approved By: _____	Date: _____
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Lea County, NM (NAD 83 NME)

Cobalt 32 State Com #703H

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: #703H

KB = 25 @ 3444.0uoft 3419.0
Northing 425835.00 Easting 802483.00 Latitude 32° 10' 2.401 N Longitude 103° 29' 21.743 W



To convert a Magnetic Direction to a Grid Direction, Add 6.33°
To convert a Magnetic Direction to a True Direction, Add 6.78° East
To convert a True Direction to a Grid Direction, Subtract 0.45°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5100.0	0.00	0.00	5100.0	0.0	0.0	0.00	0.00	0.0	
3	5272.2	3.44	170.54	5272.1	-5.1	0.9	2.00	170.54	-5.1	
4	7631.3	3.44	170.54	7628.9	-144.9	24.1	0.00	0.00	-145.0	Brushy Top (Cobalt 32 State #703H)
5	7803.5	0.00	0.00	7799.0	-150.0	25.0	2.00	180.00	-150.1	
6	11855.7	0.00	0.00	11851.2	-150.0	25.0	0.00	0.00	-150.1	
7	12614.3	91.03	1.03	12328.6	336.0	33.7	12.00	1.03	335.8	TGT#1 (Cobalt 32 State #703H)
8	13035.7	91.03	1.03	12321.0	757.3	41.3	0.00	0.00	757.0	
9	13036.0	91.03	1.03	12321.0	757.3	41.3	2.00	180.00	757.3	AC TGT (Cobalt 32 State #703H)
10	13521.9	91.03	1.03	12312.3	1243.3	50.0	0.00	0.00	1243.0	
11	13647.6	90.00	358.73	12311.2	1369.0	49.7	2.00	-113.95	1368.7	TGT#2 (Cobalt 32 State #703H)
12	16221.2	90.00	358.73	12311.0	3942.0	-7.3	0.00	0.00	3942.0	
13	16270.7	90.99	358.73	12310.6	3991.5	-8.4	2.00	0.29	3991.5	TGT#3 (Cobalt 32 State #703H)
14	16922.5	90.99	358.73	12301.0	4543.0	-20.0	0.00	0.00	4543.0	
15	16992.8	92.40	358.73	12298.9	4613.3	-22.1	2.00	-0.01	4613.3	
16	17248.9	92.40	358.73	12284.0	4969.0	-30.0	0.00	0.00	4969.1	PBHL (Cobalt 32 State #703H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Brushy Top (Cobalt 32 State #703H)	7799.0	-150.0	25.0	425835.00	802483.00
PBHL (Cobalt 32 State #703H)	12284.0	4969.0	-30.0	430604.00	802463.00
TGT#1 (Cobalt 32 State #703H)	12301.0	4543.0	-20.0	430178.00	802462.41
TGT#2 (Cobalt 32 State #703H)	12311.0	3942.0	-7.3	429577.00	802475.68
AC TGT (Cobalt 32 State #703H)	12312.3	1243.3	50.0	426978.28	802533.00
TGT#3 (Cobalt 32 State #703H)	12321.0	787.3	41.3	426392.30	802524.28
FTP (Cobalt 32 State #703H)	12338.0	-100.0	25.0	425835.00	802508.00

