



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Dogwood 23 Fed Com

#702H

ST

Design: ST

PVA Report

15 February, 2018

HOBBS OCD

APR 13 2018

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PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft
Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	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	Dogwood 23 Fed Com		
Site Position:		Northing:	372,741.00 usft
From:	Map	Easting:	788,311.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 20.069 N
		Longitude:	103° 32' 11.158 W
		Grid Convergence:	0.42 °

Well	#702H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 1' 20.072 N
		Longitude:	103° 32' 11.565 W
		Ground Level:	3,331.0 usft

Wellbore	ST		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	2/1/2018	6.85
			Dip Angle (°)
			59.87
			Field Strength (nT)
			47,758.08630439

Design	ST		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	11,970.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			358.23



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Survey Program		Date 2/15/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
173.0	1,005.0	Olebrook MWD (OH)	MWD	OWSG MWD - Standard
1,059.0	11,970.0	Intrepid MWD (OH)	MWD	OWSG MWD - Standard
12,032.0	22,467.0	Intrepid MWD #2 (ST)	MWD	OWSG MWD - Standard

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
173.0	0.26	28.67	173.0	0.3	0.2	0.15	0.15	0.00	0.0	0.0
234.0	0.70	84.57	234.0	0.5	0.6	0.97	0.72	91.64	0.0	0.0
358.0	0.18	268.53	358.0	0.6	1.2	0.71	-0.42	-141.97	0.0	0.0
389.0	0.88	160.07	389.0	0.3	1.2	3.07	2.26	-349.87	0.0	0.0
452.0	1.06	113.49	452.0	-0.3	1.9	1.25	0.29	-73.94	0.0	0.0
483.0	0.62	83.25	483.0	-0.4	2.3	1.97	-1.42	-97.55	0.0	0.0
578.0	0.79	84.22	578.0	-0.3	3.5	0.18	0.18	1.02	0.0	0.0
673.0	0.53	84.48	673.0	-0.2	4.6	0.27	-0.27	0.27	0.0	0.0
735.0	0.79	93.71	735.0	-0.2	5.3	0.45	0.42	14.89	0.0	0.0
798.0	0.70	85.45	798.0	-0.2	6.1	0.22	-0.14	-13.11	0.0	0.0
830.0	0.62	84.22	830.0	-0.2	6.5	0.25	-0.25	-3.84	0.0	0.0
861.0	0.44	87.91	861.0	-0.1	6.8	0.59	-0.58	11.90	0.0	0.0
956.0	0.88	92.30	955.9	-0.2	7.9	0.47	0.46	4.62	0.0	0.0
1,005.0	1.41	42.14	1,004.9	0.3	8.7	2.21	1.08	-102.37	0.0	0.0
1,059.0	0.80	130.70	1,058.9	0.5	9.4	2.97	-1.13	164.00	0.0	0.0
1,245.0	0.90	111.40	1,244.9	-0.9	11.7	0.16	0.05	-10.38	0.0	0.0
1,430.0	0.70	130.50	1,429.9	-2.1	13.9	0.18	-0.11	10.32	0.0	0.0
1,616.0	0.50	111.80	1,615.9	-3.2	15.6	0.15	-0.11	-10.05	0.0	0.0
1,803.0	0.70	140.50	1,802.9	-4.4	17.0	0.19	0.11	15.35	0.0	0.0



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Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	Database:	EDM 5000.14

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)	
1,990.0	0.90	160.80	1,989.9	-6.6	18.3	0.18	0.11	10.86	0.0	0.0	
2,176.0	1.10	178.30	2,175.8	-9.8	18.8	0.20	0.11	9.41	0.0	0.0	
2,364.0	1.10	171.80	2,363.8	-13.4	19.1	0.07	0.00	-3.46	0.0	0.0	
2,552.0	1.50	147.40	2,551.7	-17.2	20.7	0.36	0.21	-12.98	0.0	0.0	
2,738.0	2.30	246.30	2,737.7	-20.8	18.6	1.58	0.43	53.17	0.0	0.0	
2,926.0	1.70	229.90	2,925.6	-24.1	13.0	0.44	-0.32	-8.72	0.0	0.0	
3,113.0	1.40	198.80	3,112.5	-28.0	10.1	0.47	-0.16	-16.63	0.0	0.0	
3,301.0	1.80	142.90	3,300.4	-32.6	11.2	0.82	0.21	-29.73	0.0	0.0	
3,488.0	1.10	27.20	3,487.4	-33.3	13.8	1.33	-0.37	-61.87	0.0	0.0	
3,676.0	1.80	17.70	3,675.3	-28.9	15.5	0.39	0.37	-5.05	0.0	0.0	
3,863.0	3.30	59.80	3,862.2	-23.4	21.0	1.23	0.80	22.51	0.0	0.0	
4,051.0	4.20	30.00	4,049.8	-14.7	29.1	1.12	0.48	-15.85	0.0	0.0	
4,238.0	3.60	335.90	4,236.4	-3.4	30.2	1.92	-0.32	-28.93	0.0	0.0	
4,425.0	3.20	325.40	4,423.1	6.2	24.8	0.39	-0.21	-5.61	0.0	0.0	
4,612.0	0.40	200.00	4,610.0	9.9	21.6	1.84	-1.50	-67.06	0.0	0.0	
4,800.0	2.10	182.50	4,797.9	5.9	21.3	0.92	0.90	-9.31	0.0	0.0	
4,987.0	2.90	188.20	4,984.8	-2.2	20.4	0.45	0.43	3.05	0.0	0.0	
5,064.0	2.90	191.40	5,061.7	-6.1	19.8	0.21	0.00	4.16	0.0	0.0	
5,249.0	5.20	220.80	5,246.2	-17.0	13.4	1.64	1.24	15.89	0.0	0.0	
5,436.0	5.50	219.70	5,432.4	-30.3	2.1	0.17	0.16	-0.59	0.0	0.0	
5,624.0	7.30	228.60	5,619.2	-45.2	-12.6	1.09	0.96	4.73	0.0	0.0	
5,812.0	6.90	233.60	5,805.8	-59.8	-30.7	0.39	-0.21	2.66	0.0	0.0	
5,999.0	6.90	233.50	5,991.4	-73.1	-48.7	0.01	0.00	-0.05	0.0	0.0	
6,186.0	5.80	242.60	6,177.3	-84.1	-66.2	0.80	-0.59	4.87	0.0	0.0	
6,374.0	6.10	242.80	6,364.3	-93.1	-83.5	0.16	0.16	0.11	0.0	0.0	
6,563.0	7.20	242.70	6,552.0	-103.1	-102.9	0.58	0.58	-0.05	0.0	0.0	
6,750.0	6.90	241.80	6,737.6	-113.8	-123.2	0.17	-0.16	-0.48	0.0	0.0	



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

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)	
6,937.0	7.40	248.20	6,923.1	-123.6	-144.3	0.50	0.27	3.42	0.0	0.0	
7,124.0	7.10	245.90	7,108.6	-132.8	-166.1	0.22	-0.16	-1.23	0.0	0.0	
7,310.0	6.70	241.90	7,293.3	-142.6	-186.1	0.34	-0.22	-2.15	0.0	0.0	
7,497.0	6.30	241.80	7,479.1	-152.5	-204.8	0.21	-0.21	-0.05	0.0	0.0	
7,592.0	4.70	248.60	7,573.6	-156.4	-213.0	1.82	-1.68	7.16	0.0	0.0	
7,685.0	3.00	277.40	7,666.4	-157.5	-219.0	2.71	-1.83	30.97	0.0	0.0	
7,779.0	2.20	303.50	7,760.3	-156.2	-222.9	1.50	-0.85	27.77	0.0	0.0	
7,873.0	1.90	306.60	7,854.3	-154.3	-225.7	0.34	-0.32	3.30	0.0	0.0	
8,060.0	1.50	282.50	8,041.2	-151.9	-230.5	0.43	-0.21	-12.89	0.0	0.0	
8,247.0	1.50	272.00	8,228.1	-151.3	-235.4	0.15	0.00	-5.61	0.0	0.0	
8,435.0	0.90	268.60	8,416.1	-151.2	-239.3	0.32	-0.32	-1.81	0.0	0.0	
8,622.0	0.90	242.10	8,603.1	-151.9	-242.1	0.22	0.00	-14.17	0.0	0.0	
8,810.0	0.80	224.00	8,791.0	-153.6	-244.3	0.15	-0.05	-9.63	0.0	0.0	
8,996.0	0.90	191.50	8,977.0	-155.9	-245.5	0.26	0.05	-17.47	0.0	0.0	
9,184.0	1.00	204.20	9,165.0	-158.9	-246.5	0.12	0.05	6.76	0.0	0.0	
9,371.0	1.10	198.10	9,352.0	-162.1	-247.7	0.08	0.05	-3.26	0.0	0.0	
9,559.0	0.80	262.30	9,539.9	-164.0	-249.5	0.55	-0.16	34.15	0.0	0.0	
9,747.0	0.20	138.80	9,727.9	-164.4	-250.6	0.49	-0.32	-65.69	0.0	0.0	
9,933.0	0.90	5.60	9,913.9	-163.2	-250.3	0.56	0.38	-71.61	0.0	0.0	
10,121.0	1.00	326.60	10,101.9	-160.4	-251.0	0.34	0.05	-20.74	0.0	0.0	
10,307.0	1.80	309.20	10,287.9	-157.1	-254.2	0.48	0.43	-9.35	0.0	0.0	
10,495.0	1.30	19.40	10,475.8	-153.3	-255.8	0.97	-0.27	37.34	0.0	0.0	
10,682.0	1.20	26.00	10,662.8	-149.5	-254.2	0.09	-0.05	3.53	0.0	0.0	
10,870.0	1.60	68.80	10,850.7	-146.8	-250.9	0.58	0.21	22.77	0.0	0.0	
11,057.0	1.40	341.30	11,037.7	-143.7	-249.2	1.11	-0.11	-46.79	0.0	0.0	
11,245.0	2.60	286.50	11,225.6	-140.3	-254.0	1.13	0.64	-29.15	0.0	0.0	
11,432.0	3.80	296.60	11,412.3	-136.3	-263.6	0.71	0.64	5.40	0.0	0.0	



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11,620.0	2.00	301.10	11,600.0	-131.8	-272.0	0.96	-0.96	2.39	0.0	0.0	
11,802.0	1.70	290.20	11,781.9	-129.3	-277.3	0.25	-0.16	-5.99	0.0	0.0	
11,970.0	1.50	305.50	11,949.9	-127.1	-281.4	0.28	-0.12	9.11	0.0	0.0	
12,032.0	6.40	331.50	12,011.7	-123.6	-283.7	8.22	7.90	41.94	-1.6	0.2	
12,044.0	7.08	328.57	12,023.6	-122.4	-284.4	6.36	5.68	-24.40	-1.8	0.1	
KOP (Dogwood 23 Fed Com #702H)											
12,126.0	12.00	317.80	12,104.5	-111.8	-292.8	6.36	6.00	-13.14	-2.7	1.6	
12,219.0	19.40	326.50	12,193.9	-91.7	-307.8	8.33	7.96	9.35	-3.5	10.4	
12,313.0	30.90	345.30	12,279.0	-55.1	-322.6	14.76	12.23	20.00	2.1	20.8	
12,406.0	45.50	0.60	12,352.1	1.6	-328.4	18.61	15.70	16.45	5.0	21.5	
12,500.0	57.50	4.80	12,410.5	74.9	-324.7	13.23	12.77	4.47	-0.4	15.7	
12,547.0	63.90	6.60	12,433.5	115.6	-320.6	14.02	13.62	3.83	-4.1	11.5	
12,560.5	65.25	6.54	12,439.3	127.7	-319.2	10.01	10.00	-0.44	-5.3	10.1	
HL Crossing, MD:12560.5', TVD:12439.3', N/S:127.7', E/W:-319.2', INC:65.25											
12,594.0	68.60	6.40	12,452.4	158.4	-315.7	10.01	10.00	-0.42	-8.0	7.2	
FTP (Dogwood 23 Fed Com #702H)											
12,641.0	72.90	5.70	12,467.9	202.5	-311.1	9.26	9.15	-1.49	-11.0	4.6	
12,688.0	77.70	6.30	12,479.8	247.7	-306.3	10.29	10.21	1.28	-13.3	3.3	
12,734.0	80.00	5.90	12,488.7	292.5	-301.5	5.07	5.00	-0.87	-13.9	3.3	
12,781.0	80.10	6.20	12,496.8	338.6	-296.6	0.66	0.21	0.64	-11.1	4.8	
12,828.0	84.30	7.80	12,503.2	384.8	-291.0	9.55	8.94	3.40	-5.7	6.6	
12,900.0	90.20	9.10	12,506.7	455.9	-280.4	8.39	8.19	1.81	-2.3	6.8	
12,994.0	89.40	7.10	12,507.0	548.9	-267.2	2.29	-0.85	-2.13	-2.0	4.9	
13,088.0	89.30	5.20	12,508.1	642.4	-257.1	2.02	-0.11	-2.02	-1.0	3.1	
13,181.0	89.50	4.80	12,509.0	735.0	-249.0	0.48	0.22	-0.43	0.0	0.2	
13,274.0	89.40	2.10	12,509.9	827.8	-243.4	2.91	-0.11	-2.90	0.8	-3.3	
13,367.0	88.50	1.60	12,511.6	920.8	-240.4	1.11	-0.97	-0.54	2.5	-6.7	



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13,461.0	88.00	2.10	12,514.5	1,014.7	-237.4	0.75	-0.53	0.53	5.3	-10.4	
13,553.0	91.40	2.50	12,515.0	1,106.6	-233.7	3.72	3.70	0.43	5.7	-14.7	
13,649.0	91.40	3.50	12,512.6	1,202.4	-228.6	1.04	0.00	1.04	3.4	-20.4	
13,743.0	91.10	3.30	12,510.6	1,296.2	-223.1	0.38	-0.32	-0.21	1.3	-26.7	
13,837.0	90.30	1.00	12,509.4	1,390.2	-219.5	2.59	-0.85	-2.45	0.0	-30.9	
13,931.0	89.70	359.80	12,509.4	1,484.2	-218.9	1.43	-0.64	-1.28	0.0	-32.2	
14,024.0	88.50	359.50	12,510.9	1,577.1	-219.5	1.33	-1.29	-0.32	1.4	-32.3	
14,118.0	88.70	357.70	12,513.2	1,671.1	-221.8	1.93	0.21	-1.91	3.7	-30.7	
14,212.0	91.60	356.90	12,512.9	1,765.0	-226.2	3.20	3.09	-0.85	3.3	-27.0	
14,305.0	92.50	357.70	12,509.6	1,857.8	-230.6	1.29	0.97	0.86	-0.1	-23.3	
14,399.0	90.10	356.70	12,507.5	1,951.7	-235.1	2.77	-2.55	-1.06	-2.2	-19.3	
14,493.0	87.50	355.90	12,509.5	2,045.4	-241.2	2.89	-2.77	-0.85	-0.3	-13.9	
14,586.0	91.30	356.90	12,510.4	2,138.2	-247.0	4.23	4.09	1.08	0.6	-8.8	
14,679.0	88.60	357.70	12,510.5	2,231.1	-251.4	3.03	-2.90	0.86	0.7	-5.1	
14,772.0	91.30	358.40	12,510.6	2,324.1	-254.6	3.00	2.90	0.75	0.7	-2.6	
14,865.0	91.80	359.80	12,508.1	2,417.0	-256.1	1.60	0.54	1.51	-1.9	-1.8	
14,942.0	90.41	359.88	12,506.6	2,493.9	-256.3	1.81	-1.81	0.11	-3.4	-2.1	
TGT 1 (Dogwood 23 Fed Com #702H)											
14,959.0	90.10	359.90	12,506.5	2,511.0	-256.3	1.81	-1.81	0.11	-3.5	-2.2	
15,053.0	88.40	358.70	12,507.8	2,605.0	-257.4	2.21	-1.81	-1.28	-3.1	-1.7	
15,147.0	91.40	359.80	12,507.9	2,699.0	-258.7	3.40	3.19	1.17	-3.7	-1.2	
15,241.0	88.90	0.10	12,507.7	2,792.9	-258.8	2.68	-2.66	0.32	-4.8	-1.8	
15,334.0	93.20	359.20	12,506.0	2,885.9	-259.3	4.72	4.62	-0.97	-7.2	-1.9	
15,428.0	90.20	358.80	12,503.2	2,979.8	-261.0	3.22	-3.19	-0.43	-10.8	-0.9	
15,522.0	87.80	358.80	12,504.8	3,073.8	-262.9	2.55	-2.55	0.00	-10.0	0.4	
15,616.0	91.50	358.90	12,505.4	3,167.8	-264.8	3.94	3.94	0.11	-10.2	1.6	
15,710.0	89.40	358.80	12,504.7	3,261.7	-266.7	2.24	-2.23	-0.11	-11.7	2.8	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft
Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	Database:	EDM 5000.14

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)	
15,803.0	91.70	358.80	12,503.8	3,354.7	-268.7	2.47	2.47	0.00	-13.4	4.1	
15,896.0	89.70	358.70	12,502.6	3,447.7	-270.7	2.15	-2.15	-0.11	-15.3	5.5	
15,990.0	89.60	359.50	12,503.2	3,541.7	-272.2	0.86	-0.11	0.85	-15.5	6.3	
16,084.0	91.30	0.40	12,502.5	3,635.6	-272.2	2.05	1.81	0.96	-17.1	5.7	
16,178.0	87.50	1.00	12,503.4	3,729.6	-271.1	4.09	-4.04	0.64	-16.9	3.9	
16,271.0	92.30	1.50	12,503.6	3,822.6	-269.1	5.19	5.16	0.54	-17.5	1.2	
16,365.0	89.20	1.80	12,502.4	3,916.5	-266.4	3.31	-3.30	0.32	-19.5	-2.2	
16,459.0	85.70	1.60	12,506.6	4,010.4	-263.6	3.73	-3.72	-0.21	-16.1	-5.7	
16,553.0	90.70	2.20	12,509.5	4,104.2	-260.5	5.36	5.32	0.64	-14.0	-9.4	
16,646.0	89.80	1.40	12,509.1	4,197.2	-257.5	1.29	-0.97	-0.86	-15.2	-13.0	
16,740.0	91.30	1.30	12,508.2	4,291.1	-255.3	1.60	1.60	-0.11	-16.9	-15.9	
16,834.0	86.60	0.80	12,509.9	4,385.1	-253.6	5.03	-5.00	-0.53	-15.9	-18.3	
16,928.0	88.80	0.60	12,513.7	4,479.0	-252.5	2.35	2.34	-0.21	-13.0	-20.1	
17,021.0	89.50	0.70	12,515.1	4,572.0	-251.4	0.76	0.75	0.11	-12.4	-21.9	
17,114.0	90.00	0.60	12,515.5	4,665.0	-250.3	0.55	0.54	-0.11	-12.7	-23.6	
17,208.0	90.50	0.40	12,515.1	4,759.0	-249.5	0.57	0.53	-0.21	-13.9	-25.1	
17,301.0	89.80	0.30	12,514.8	4,852.0	-249.0	0.76	-0.75	-0.11	-15.0	-26.3	
17,395.0	90.70	359.90	12,514.4	4,946.0	-248.8	1.05	0.96	-0.43	-16.2	-27.1	
17,443.1	90.44	359.49	12,513.9	4,994.1	-249.0	1.01	-0.54	-0.86	-17.1	-27.2	
TGT 2 (Dogwood 23 Fed Com #702H)											
17,488.0	90.20	359.10	12,513.7	5,039.0	-249.6	1.01	-0.54	-0.86	-17.4	-27.0	
17,582.0	90.20	359.40	12,513.4	5,133.0	-250.8	0.32	0.00	0.32	-17.3	-26.4	
17,676.0	90.60	359.30	12,512.7	5,226.9	-251.9	0.44	0.43	-0.11	-17.7	-26.0	
17,770.0	90.80	358.30	12,511.6	5,320.9	-253.9	1.08	0.21	-1.06	-18.5	-24.7	
17,865.0	89.60	358.00	12,511.2	5,415.9	-256.9	1.30	-1.26	-0.32	-18.4	-22.4	
17,959.0	89.80	357.50	12,511.7	5,509.8	-260.6	0.57	0.21	-0.53	-17.6	-19.3	
18,052.0	90.70	356.70	12,511.3	5,602.7	-265.3	1.29	0.97	-0.86	-17.7	-15.3	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft
Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	Database:	EDM 5000.14

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)	
18,146.0	88.10	355.30	12,512.3	5,696.4	-271.9	3.14	-2.77	-1.49	-16.3	-9.4	
18,240.0	87.80	356.20	12,515.7	5,790.1	-278.8	1.01	-0.32	0.96	-12.6	-3.1	
18,334.0	88.40	355.70	12,518.8	5,883.8	-285.5	0.83	0.64	-0.53	-9.2	2.8	
18,428.0	88.40	355.50	12,521.4	5,977.5	-292.7	0.21	0.00	-0.21	-6.2	9.4	
18,522.0	91.80	356.90	12,521.2	6,071.3	-298.9	3.91	3.62	1.49	-6.0	14.9	
18,616.0	92.00	355.80	12,518.1	6,165.0	-304.9	1.19	0.21	-1.17	-8.8	20.3	
18,709.0	91.30	357.30	12,515.4	6,257.8	-310.5	1.78	-0.75	1.61	-11.1	25.2	
18,803.0	89.40	357.60	12,514.9	6,351.7	-314.7	2.05	-2.02	0.32	-11.4	28.7	
18,896.0	90.00	357.70	12,515.4	6,444.6	-318.5	0.65	0.65	0.11	-10.5	31.8	
18,990.0	92.70	359.10	12,513.1	6,538.6	-321.1	3.24	2.87	1.49	-12.4	33.8	
19,084.0	90.80	359.80	12,510.3	6,632.5	-322.0	2.15	-2.02	0.74	-14.9	34.0	
19,178.0	87.80	0.70	12,511.4	6,726.5	-321.6	3.33	-3.19	0.96	-13.4	32.9	
19,272.0	91.10	358.80	12,512.3	6,820.5	-322.0	4.05	3.51	-2.02	-12.2	32.7	
19,366.0	88.70	359.20	12,512.5	6,914.5	-323.7	2.59	-2.55	0.43	-11.7	33.6	
19,460.0	89.10	0.80	12,514.3	7,008.4	-323.7	1.75	0.43	1.70	-9.5	33.0	
19,553.0	90.70	1.70	12,514.4	7,101.4	-321.6	1.97	1.72	0.97	-9.0	30.3	
19,647.0	92.30	1.90	12,512.0	7,195.3	-318.7	1.72	1.70	0.21	-11.2	26.6	
19,741.0	89.20	1.10	12,510.8	7,289.3	-316.2	3.41	-3.30	-0.85	-12.0	23.5	
19,835.0	87.20	359.40	12,513.7	7,383.2	-315.8	2.79	-2.13	-1.81	-8.7	22.4	
19,929.0	87.30	0.00	12,518.2	7,477.1	-316.3	0.65	0.11	0.64	-3.8	22.2	
19,946.6	87.28	0.04	12,519.1	7,494.7	-316.3	0.24	-0.11	0.21	-2.9	22.1	
TGT 3 (Dogwood 23 Fed Com #702H)											
20,022.0	87.20	0.20	12,522.7	7,570.0	-316.1	0.24	-0.11	0.21	0.5	21.4	
20,116.0	88.10	0.00	12,526.5	7,663.9	-316.0	0.98	0.96	-0.21	4.0	20.6	
20,209.0	89.30	359.70	12,528.6	7,756.9	-316.2	1.33	1.29	-0.33	5.8	20.1	
20,303.0	90.80	359.40	12,528.6	7,850.9	-316.9	1.63	1.60	-0.32	5.4	20.2	
20,397.0	92.20	0.50	12,526.1	7,944.9	-317.0	1.89	1.49	1.17	2.6	19.6	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft
Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	Database:	EDM 5000.14

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)	
20,491.0	93.10	0.60	12,521.8	8,038.7	-316.1	0.96	0.96	0.11	-2.1	18.0	
20,585.0	93.20	0.40	12,516.6	8,132.6	-315.3	0.24	0.11	-0.21	-7.5	16.6	
20,679.0	92.80	0.60	12,511.7	8,226.5	-314.5	0.48	-0.43	0.21	-12.8	15.1	
20,773.0	90.20	1.70	12,509.2	8,320.4	-312.6	3.00	-2.77	1.17	-15.6	12.5	
20,867.0	86.20	2.00	12,512.2	8,414.3	-309.6	4.27	-4.26	0.32	-12.9	8.8	
20,959.0	87.50	1.50	12,517.2	8,506.1	-306.8	1.51	1.41	-0.54	-8.2	5.3	
21,053.0	91.90	2.20	12,517.7	8,600.0	-303.7	4.74	4.68	0.74	-8.0	1.6	
21,146.0	92.10	1.70	12,514.5	8,692.9	-300.6	0.58	0.22	-0.54	-11.6	-2.2	
21,240.0	92.50	1.30	12,510.7	8,786.8	-298.1	0.60	0.43	-0.43	-15.7	-5.3	
21,334.0	92.60	0.80	12,506.5	8,880.7	-296.4	0.54	0.11	-0.53	-20.2	-7.7	
21,427.0	91.50	0.60	12,503.2	8,973.6	-295.2	1.20	-1.18	-0.22	-23.8	-9.5	
21,520.0	90.30	0.70	12,501.7	9,066.6	-294.2	1.29	-1.29	0.11	-25.6	-11.2	
21,613.0	89.70	359.90	12,501.7	9,159.6	-293.7	1.08	-0.65	-0.86	-25.9	-12.4	
21,707.0	89.80	359.60	12,502.1	9,253.6	-294.1	0.34	0.11	-0.32	-25.9	-12.7	
21,800.0	89.60	359.50	12,502.6	9,346.6	-294.8	0.24	-0.22	-0.11	-25.7	-12.6	
21,893.0	88.40	359.30	12,504.2	9,439.6	-295.8	1.31	-1.29	-0.22	-24.4	-12.3	
21,987.0	88.50	359.20	12,506.8	9,533.5	-297.0	0.15	0.11	-0.11	-22.2	-11.7	
22,081.0	88.80	359.70	12,509.0	9,627.5	-297.9	0.62	0.32	0.53	-20.3	-11.5	
22,174.0	88.90	359.80	12,510.9	9,720.5	-298.4	0.15	0.11	0.11	-18.7	-11.7	
22,268.0	90.20	359.40	12,511.6	9,814.5	-299.0	1.45	1.38	-0.43	-18.3	-11.8	
22,361.0	91.50	359.70	12,510.2	9,907.5	-299.7	1.43	1.40	0.32	-20.0	-11.7	
22,400.0	91.60	359.60	12,509.2	9,946.5	-300.0	0.36	0.26	-0.26	-21.2	-11.7	
Final MWD Survey (MD= 22400.0')											
22,467.0	91.60	359.60	12,507.3	10,013.4	-300.4	0.00	0.00	0.00	-23.3	-11.8	
Final Bit Projection (MD= 22467.0') - PBHL (Dogwood 23 Fed Com #702H)											



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft
Well:	#702H	North Reference:	Grid
Wellbore:	ST	Survey Calculation Method:	Minimum Curvature
Design:	ST	Database:	EDM 5000.14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,560.5	12,439.3	127.7	-319.2	HL Crossing, MD:12560.5', TVD:12439.3', N/S:127.7', E/W:-319.2', INC:65.25
22,400.0	12,509.2	9,946.5	-300.0	Final MWD Survey (MD= 22400.0')
22,467.0	12,507.3	10,013.4	-300.4	Final Bit Projection (MD= 22467.0')

Checked By: _____ Approved By: _____ Date: _____



HOBBS OCD
APR 13 2018
RECEIVED

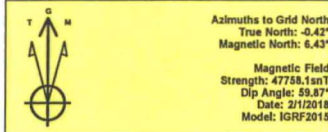
Lea County, NM (NAD 83 NME)
Dogwood 23 Fed Com #702H
Plan #2

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: #702H

Ground Level: 3331.0
KS = 25' @ 3358.0usft
Northing: 372741.00 Easting: 788276.00 Latitude: 32° 1' 20.072 N Longitude: 103° 32' 11.565 W



To convert a Magnetic Direction to a Grid Direction, Add 6.43°
To convert a True Direction to a Grid Direction, Subtract 0.42°

SECTION DETAILS

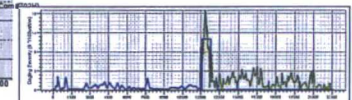
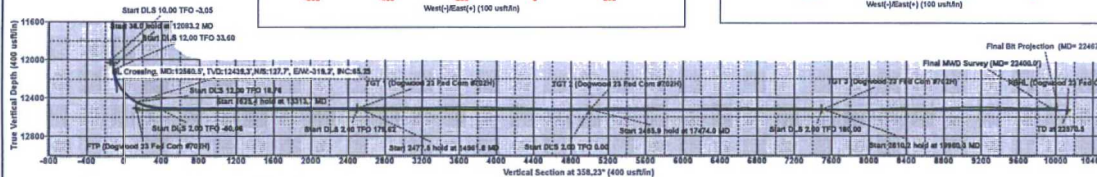
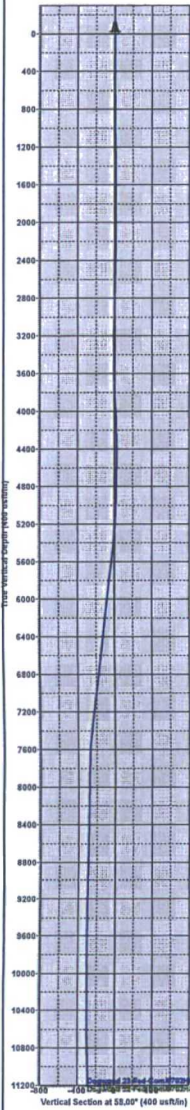
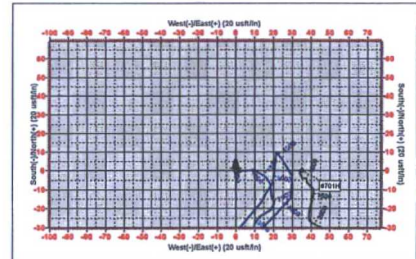
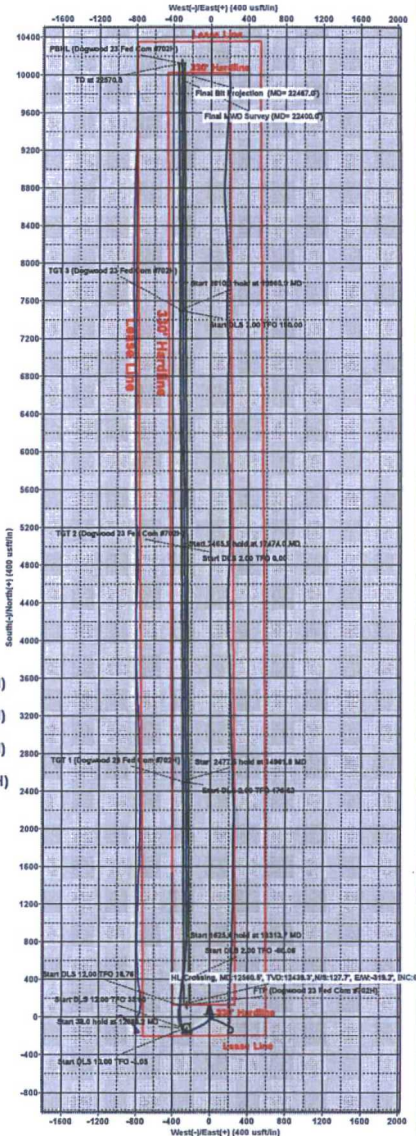
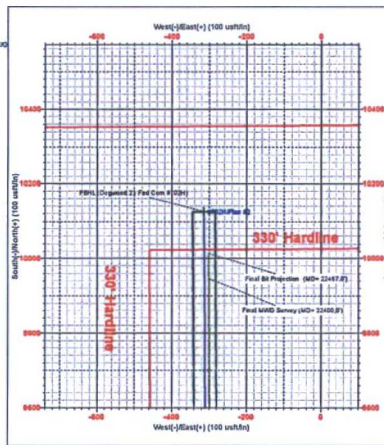
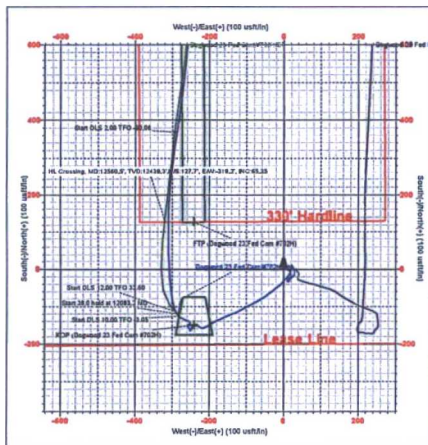
MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Target
11970.0	1.50	305.50	11949.9	-127.1	-281.4	0.00	0.00	-118.4	
12000.0	1.68	332.54	11979.8	-126.5	-281.9	2.55	90.27	-117.7	
12083.2	10.00	330.00	12062.6	-119.2	-286.1	10.00	-3.05	-110.3	
12121.2	10.00	330.00	12100.0	-113.4	-289.4	0.00	0.00	-104.4	
12550.3	60.00	0.00	12441.9	120.6	-309.4	12.00	33.60	130.1	
12811.6	89.98	9.63	12508.9	368.7	-287.0	12.00	18.76	377.4	
13313.7	89.97	359.59	12509.1	868.6	-246.7	2.00	-90.06	875.8	
14939.1	89.97	359.59	12510.0	2494.0	-258.4	0.00	0.00	2500.8	TGT 1 (Dogwood 23 Fed Com #702H)
14961.8	89.52	359.59	12510.1	2516.6	-258.6	2.00	179.62	2523.4	TGT 2 (Dogwood 23 Fed Com #702H)
17439.3	89.52	359.59	12531.0	4994.0	-276.3	0.00	0.00	5000.2	TGT 3 (Dogwood 23 Fed Com #702H)
17474.0	90.21	359.59	12531.1	5028.7	-276.5	2.00	0.00	5034.9	
19939.9	90.21	359.59	12522.0	7494.5	-294.2	0.00	0.00	7500.0	
19960.3	89.80	359.59	12522.0	7514.9	-294.3	2.00	180.00	7520.4	
22570.5	89.80	359.59	12531.0	10125.0	-313.0	0.00	0.00	10129.8	PBHL (Dogwood 23 Fed Com #702H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Easting
KOP (Dogwood 23 Fed Com #702H)	12031.5	-148.7	-238.5	372391.33	788036.48
FTP (Dogwood 23 Fed Com #702H)	12509.0	128.0	-240.0	372869.00	788036.00
TGT 1 (Dogwood 23 Fed Com #702H)	12510.0	2494.0	-258.4	375235.00	788017.61
TGT 3 (Dogwood 23 Fed Com #702H)	12522.0	7494.5	-294.2	380235.50	787981.82
PBHL (Dogwood 23 Fed Com #702H)	12531.0	10125.0	-313.0	382866.00	787963.00
TGT 2 (Dogwood 23 Fed Com #702H)	12531.0	4994.0	-276.3	377735.00	787989.72



Lea County, NM (NAD 83 NME)
Dogwood 23 Fed Com #702H
Plan #2
11/11/2017
11/11/2017
11/11/2017