



Lea County, NM (NAD 83 NME)
Heartthrob 17 State Com #708H
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: #708H

KB = 25 @ 3593.0ust
Northing 441601.00 Easting 771745.00
Latitude 32° 12' 42.634 N Longitude 103° 35' 18.010 W

SECTION DETAILS

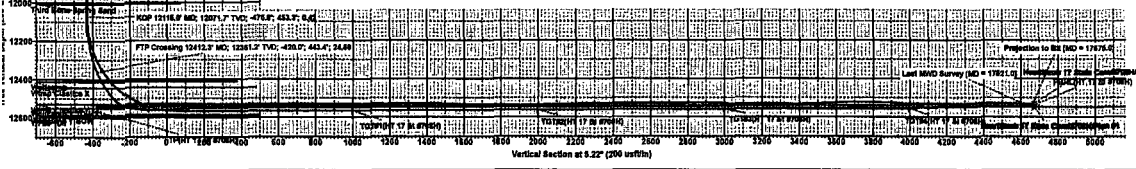
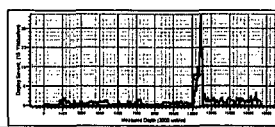
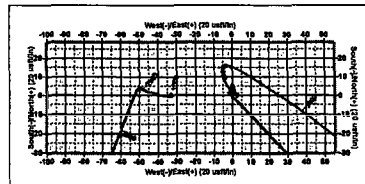
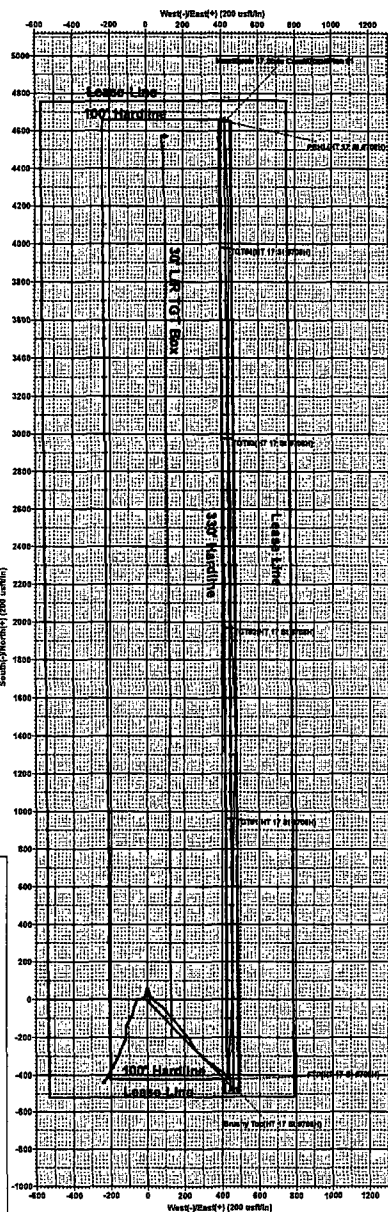
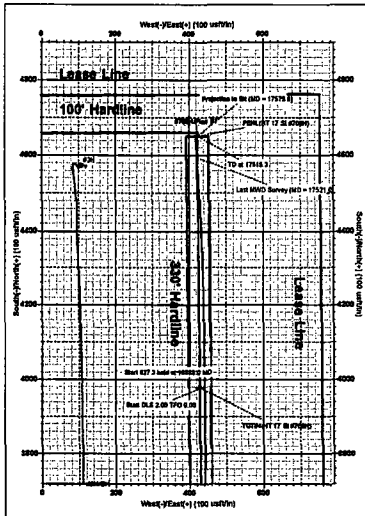
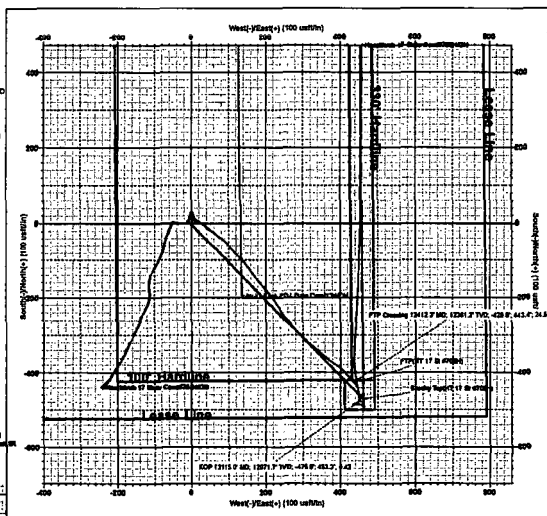
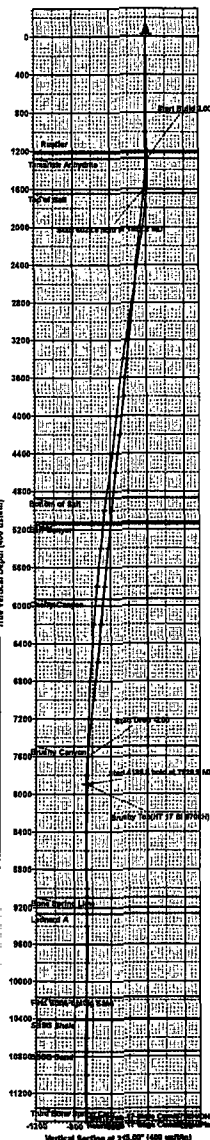
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1300.0	0.00	0.00	1300.0	0.0	0.0	0.00	0.00	0.0	
3	1599.2	5.98	135.43	1598.7	-11.1	11.0	2.00	135.43	-10.1	
4	7627.7	5.98	135.43	7594.3	-458.9	452.0	0.00	0.00	-415.8	
5	7926.9	0.00	0.00	7893.0	-470.0	463.0	2.00	180.00	-425.9	Brushy Top(HT 17 St #708H)
6	12122.4	0.00	0.00	12088.5	-470.0	463.0	0.00	0.00	-425.9	
7	12873.4	90.12	359.57	12566.0	8.4	459.4	12.00	359.57	50.2	
8	13827.8	90.12	359.57	12564.0	962.8	452.4	0.00	0.00	1000.0	TGT#1(HT 17 St #708H)
9	13833.3	90.23	359.57	12564.0	968.3	452.3	2.00	0.00	1005.5	
10	14832.8	90.23	359.57	12560.0	1987.7	444.9	0.00	0.00	2000.0	TGT#2(HT 17 St #708H)
11	14835.6	90.17	359.57	12560.0	1970.6	444.9	2.00	180.00	2002.9	
12	15837.6	90.17	359.57	12557.0	2972.5	437.5	0.00	0.00	3000.0	TGT#3(HT 17 St #708H)
13	15840.4	90.23	359.57	12557.0	2975.4	437.4	2.00	0.00	3002.8	
14	16842.5	90.23	359.57	12553.0	3977.4	430.0	0.00	0.00	4000.0	TGT#4(HT 17 St #708H)
15	16888.0	91.14	359.57	12552.5	4022.9	429.7	2.00	0.00	4045.3	
16	17515.3	91.14	359.57	12540.0	4650.0	425.0	0.00	0.00	4669.4	PBHL(HT 17 St #708H)

CASING DETAILS

No casing data is available

WELLSBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Brushy Top(HT 17 St #708H)	7893.0	-470.0	452.0	441131.00	772211.00
PBHL(HT 17 St #708H)	12540.0	4650.0	428.0	446291.00	772173.00
TGT#1(HT 17 St #708H)	12563.0	3977.4	430.0	446276.40	772177.59
TGT#2(HT 17 St #708H)	12567.0	3972.5	437.5	444873.50	772188.48
TGT#3(HT 17 St #708H)	12560.0	1987.7	444.9	443568.70	772192.91
TGT#4(HT 17 St #708H)	12564.0	962.8	452.4	442563.80	772200.37
FTP(HT 17 St #708H)	12567.0	-425.0	453.0	441191.00	772211.00



HOBBS OCD
FEB 08 2019
RECEIVED



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Heartthrob 17 State Com

#708H

OH

Design: OH

HOBBS

FEB 08 2019

RECEIVED

Midland PVA

10 December, 2018



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	RID Reference:	KB = 25 @ 3593.0usft
Well:	#708H	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	Hearthrob 17 State Com		
Site Position:		Northing:	441,601.00 usft
From:	Map	Easting:	771,748.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 12' 42.634 N
		Longitude:	103° 35' 18.010 W
		Grid Convergence:	0.40 °

Well	#708H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 12' 42.634 N
		Longitude:	103° 35' 18.010 W
		Ground Level:	3,568.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	8/23/2018	8.83
			Dip Angle
			60.03
			Field Strength
			47,806.40206505

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
			5.22

Survey Program	Date 12/10/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
207.0	17,575.0	Lean MWD (OH)	MWD
			OWSG MWD - Standard

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Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
	#708H	North Reference:	Grid
Design:	OH	Survey Calculation Method:	Minimum Curvature
	OH	Database:	EDM 5000.14

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	NBS (usft)	EW (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
207.0	1.00	332.70	207.0	1.6	-0.8	0.48	0.48	0.00	-1.8	0.0
382.0	0.60	334.10	382.0	3.8	-1.9	0.23	-0.23	0.80	-4.2	0.1
528.0	0.50	318.40	528.0	5.0	-2.7	0.12	-0.07	-10.75	-5.5	-1.3
684.0	0.60	336.70	684.0	8.2	-3.5	0.13	0.06	11.73	-7.1	0.7
867.0	0.50	336.00	866.9	7.8	-4.2	0.05	-0.05	-0.38	-8.8	0.6
1,053.0	0.60	331.10	1,052.9	9.4	-5.0	0.06	0.05	-2.63	-10.6	-0.2
1,239.0	0.90	1.50	1,238.9	11.7	-5.4	0.28	0.16	16.34	-11.6	5.7
1,296.0	0.90	2.00	1,295.9	12.6	-5.4	0.01	0.00	0.88	-12.4	5.8
1,422.0	1.40	6.40	1,421.9	15.1	-5.2	0.40	0.40	3.49	-16.1	8.8
1,514.0	1.60	84.30	1,513.9	16.4	-3.8	2.06	0.22	84.67	7.1	22.8
1,606.0	3.70	114.70	1,605.8	15.3	0.2	2.67	2.28	33.04	21.4	19.7
1,698.0	6.20	121.00	1,697.4	11.5	7.2	2.78	2.72	6.85	24.8	19.9
1,791.0	6.90	121.70	1,789.8	5.9	16.2	0.76	0.75	0.75	23.8	22.0
1,885.0	6.40	123.10	1,883.2	0.1	25.4	0.56	-0.53	1.49	23.0	23.6
1,977.0	8.00	125.60	1,974.5	-6.4	34.9	1.77	1.74	2.72	22.0	24.5
2,071.0	9.00	126.70	2,067.4	-14.6	46.1	1.08	1.06	1.17	18.2	25.7
2,164.0	8.90	126.10	2,159.3	-23.2	57.8	0.15	-0.11	-0.65	13.0	27.3
2,257.0	8.50	126.80	2,251.2	-31.6	69.1	0.44	-0.43	0.75	8.8	28.7
2,351.0	8.40	126.50	2,344.2	-39.8	80.2	0.12	-0.11	-0.32	4.5	30.2
2,445.0	9.10	136.50	2,437.1	-49.3	90.8	1.78	0.74	10.64	5.2	30.0
2,538.0	9.30	139.50	2,528.9	-60.3	100.8	0.56	0.22	3.23	1.5	29.4
2,631.0	9.10	138.40	2,620.7	-71.5	110.5	0.29	-0.22	-1.18	-4.3	28.8
2,724.0	8.70	137.40	2,712.6	-82.2	120.2	0.46	-0.43	-1.08	-9.5	28.3
2,818.0	8.50	136.30	2,805.5	-92.5	129.8	0.28	-0.21	-1.17	-14.3	27.8
2,911.0	8.40	134.40	2,897.5	-102.2	139.4	0.32	-0.11	-2.04	-19.2	27.2
3,005.0	9.10	140.70	2,990.4	-112.7	149.0	1.26	0.74	6.70	-20.7	29.0



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
Well:	#708H	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)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
3,098.0	9.50	144.80	3,082.2	-124.7	158.1	0.83	0.43	4.41	-24.0	29.4	
3,192.0	9.20	143.70	3,175.0	-137.1	167.0	0.37	-0.32	-1.17	-30.2	27.4	
3,285.0	9.00	142.30	3,266.8	-148.9	175.8	0.32	-0.22	-1.51	-36.0	25.3	
3,379.0	8.70	140.40	3,359.7	-160.1	184.9	0.45	-0.32	-2.02	-41.5	23.0	
3,472.0	8.40	138.40	3,451.6	-170.6	193.9	0.45	-0.32	-2.15	-46.5	20.8	
3,567.0	7.80	138.60	3,545.7	-180.7	202.7	0.63	-0.63	0.21	-49.9	20.4	
3,660.0	7.10	138.60	3,637.9	-189.7	210.7	0.75	-0.75	0.00	-52.3	19.9	
3,754.0	6.20	139.10	3,731.3	-197.9	217.9	0.96	-0.96	0.53	-53.3	19.8	
3,848.0	7.40	145.50	3,824.6	-206.7	224.6	1.51	1.28	6.81	-52.2	24.4	
3,942.0	7.10	149.70	3,917.9	-216.7	231.0	0.65	-0.32	4.47	-52.7	26.2	
4,035.0	6.70	148.30	4,010.2	-226.3	236.7	0.47	-0.43	-1.51	-55.0	22.6	
4,129.0	5.60	148.80	4,103.6	-234.9	242.0	1.17	-1.17	0.53	-55.3	20.8	
4,223.0	6.30	148.80	4,197.1	-243.2	247.0	0.74	0.74	0.00	-55.5	18.6	
4,316.0	6.10	146.50	4,289.6	-251.7	252.4	0.34	-0.22	-2.47	-56.8	14.3	
4,410.0	6.80	139.00	4,383.0	-260.1	258.8	1.16	0.74	-7.98	-58.9	5.5	
4,504.0	7.70	137.00	4,476.2	-268.9	266.8	0.99	0.96	-2.13	-61.1	3.0	
4,598.0	6.80	141.10	4,569.5	-277.8	274.6	1.10	-0.96	4.36	-62.9	6.8	
4,692.0	7.90	136.90	4,662.7	-286.9	282.5	1.30	1.17	-4.47	-65.4	1.6	
4,785.0	9.00	136.20	4,754.7	-296.8	291.9	1.19	1.18	-0.75	-69.4	0.6	
4,879.0	9.80	137.70	4,847.4	-308.1	302.4	0.99	0.96	1.60	-75.1	2.2	
4,972.0	8.60	129.10	4,939.2	-318.4	313.2	2.04	-1.40	-9.25	-79.8	-9.1	
5,066.0	7.70	131.10	5,032.3	-327.0	323.4	1.00	-0.86	2.13	-83.7	-5.4	
5,160.0	6.20	130.70	5,125.6	-334.4	332.0	1.60	-1.60	-0.43	-85.3	-5.2	
5,254.0	6.20	130.40	5,219.0	-341.0	339.7	0.03	0.00	-0.32	-85.6	-4.8	
5,348.0	6.20	129.50	5,312.5	-347.5	347.5	0.10	0.00	-0.96	-85.9	-5.2	
5,441.0	6.20	129.70	5,404.9	-353.9	355.2	0.02	0.00	0.22	-86.3	-3.9	
5,534.0	6.00	129.50	5,497.4	-360.2	362.8	0.22	-0.22	-0.22	-86.6	-3.2	

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
	#708H	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)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
5,828.0	5.90	127.90	5,590.9	-366.3	370.4	0.21	-0.11	-1.70	-86.5	-4.5
5,722.0	5.50	126.80	5,684.4	-372.0	377.8	0.44	-0.43	-1.17	-86.0	-4.8
5,816.0	5.50	125.30	5,778.0	-377.3	385.1	0.15	0.00	-1.60	-85.2	-5.4
5,909.0	5.50	122.60	5,870.6	-382.3	392.5	0.28	0.00	-2.90	-84.3	-7.4
6,003.0	5.20	122.40	5,964.2	-387.0	399.9	0.32	-0.32	-0.21	-83.5	-5.5
6,097.0	5.20	137.90	6,057.8	-392.4	406.4	1.49	0.00	16.49	-80.5	17.6
6,191.0	5.40	137.90	6,151.4	-398.9	412.2	0.21	0.21	0.00	-79.4	17.1
6,285.0	5.10	137.40	6,245.0	-405.2	418.0	0.32	-0.32	-0.53	-78.4	16.1
6,379.0	4.60	138.80	6,338.7	-411.1	423.3	0.55	-0.53	1.49	-76.1	17.5
6,471.0	4.60	138.80	6,430.4	-416.7	428.1	0.00	0.00	0.00	-73.9	16.9
6,565.0	4.20	140.20	6,524.1	-422.2	432.8	0.44	-0.43	1.49	-70.9	18.0
6,659.0	4.20	139.10	6,617.8	-427.4	437.3	0.09	0.00	-1.17	-68.3	16.0
6,752.0	4.20	139.30	6,710.6	-432.6	441.7	0.02	0.00	0.22	-65.4	15.6
6,846.0	3.00	156.00	6,804.4	-437.4	445.0	1.68	-1.28	17.77	-54.8	31.2
6,939.0	3.00	155.70	6,897.3	-441.9	447.0	0.02	0.00	-0.32	-50.7	27.5
7,033.0	1.90	177.50	6,991.2	-445.7	448.1	1.51	-1.17	23.19	-33.4	38.7
7,126.0	1.90	185.90	7,084.1	-448.7	448.0	0.30	0.00	9.03	-24.3	35.9
7,220.0	1.80	180.80	7,178.1	-451.8	447.8	0.20	-0.11	-5.43	-23.5	26.5
7,313.0	1.90	180.50	7,271.0	-454.8	447.8	0.11	0.11	-0.32	-19.8	19.5
7,407.0	1.00	184.10	7,365.0	-457.1	448.0	1.04	-0.96	-17.45	-18.2	8.0
7,501.0	1.10	155.30	7,459.0	-458.7	448.6	0.20	0.11	-9.36	-11.7	1.7
7,594.0	1.10	171.30	7,552.0	-460.4	449.1	0.33	0.00	17.20	-4.6	-0.6
7,688.0	1.10	171.30	7,646.0	-462.2	449.3	0.00	0.00	0.00	1.1	-6.1
7,781.0	1.00	180.30	7,738.9	-463.9	449.5	0.21	-0.11	9.68	3.1	-10.6
7,875.0	0.90	179.80	7,832.9	-465.4	449.5	0.11	-0.11	-0.53	4.2	-13.1
7,968.0	1.00	179.00	7,925.9	-467.0	449.5	0.11	0.11	-0.86	3.2	-13.5
8,061.0	1.00	161.30	8,018.9	-468.6	449.8	0.33	0.00	-19.03	5.6	-12.1



Midland PVA

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	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
	#708H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Ad (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
8,156.0	1.10	169.40	8,113.9	-470.2	450.2	0.19	0.11	8.53	2.1	-12.6	
8,250.0	1.00	165.20	8,207.9	-471.9	450.6	0.13	-0.11	-4.47	1.3	-12.5	
8,343.0	0.90	188.50	8,300.9	-473.4	450.7	0.43	-0.11	25.05	-5.2	-11.7	
8,437.0	0.90	184.00	8,394.8	-474.9	450.5	0.08	0.00	-4.79	-5.8	-12.1	
8,531.0	0.90	198.20	8,488.8	-476.3	450.2	0.24	0.00	15.11	-10.0	-10.2	
8,624.0	1.10	202.40	8,581.8	-477.9	449.7	0.23	0.22	4.52	-12.3	-9.3	
8,718.0	1.10	219.70	8,675.8	-479.4	448.7	0.35	0.00	18.40	-16.3	-5.0	
8,812.0	1.20	227.60	8,769.8	-480.7	447.4	0.20	0.11	8.40	-18.7	-2.6	
8,905.0	1.20	228.10	8,862.8	-482.1	446.0	0.01	0.00	0.54	-20.7	-2.4	
8,999.0	1.30	232.00	8,956.7	-483.4	444.4	0.14	0.11	4.15	-22.9	-0.9	
9,093.0	0.90	233.20	9,050.7	-484.5	443.0	0.43	-0.43	1.28	-24.7	-0.4	
9,187.0	0.70	236.70	9,144.7	-485.2	441.9	0.22	-0.21	3.72	-26.0	1.2	
9,280.0	1.10	249.90	9,237.7	-485.8	440.6	0.48	0.43	14.19	-26.5	7.2	
9,374.0	1.10	265.40	9,331.7	-486.2	438.9	0.32	0.00	16.49	-25.4	14.2	
9,468.0	1.10	265.70	9,425.7	-486.4	437.1	0.01	0.00	0.32	-27.1	14.4	
9,562.0	0.70	266.10	9,519.7	-486.5	435.6	0.43	-0.43	0.43	-28.5	14.6	
9,656.0	0.40	304.20	9,613.7	-486.3	434.7	0.49	-0.32	40.53	-14.2	29.4	
9,750.0	0.90	53.00	9,707.6	-485.7	435.1	1.17	0.53	115.74	31.8	4.3	
9,844.0	1.80	76.40	9,801.6	-484.9	437.1	1.10	0.96	24.89	28.7	-8.4	
9,937.0	2.40	94.00	9,894.6	-484.7	440.4	0.94	0.65	18.92	21.5	-16.2	
10,032.0	1.90	106.40	9,989.5	-485.3	443.9	0.72	-0.53	13.05	14.0	-20.0	
10,125.0	2.70	90.30	10,082.4	-485.7	447.6	1.10	0.86	-17.31	15.3	-15.8	
10,218.0	2.60	104.50	10,175.3	-486.3	451.8	0.71	-0.11	15.27	6.7	-18.5	
10,312.0	2.20	109.10	10,269.2	-487.4	455.6	0.47	-0.43	4.89	1.3	-18.9	
10,405.0	2.00	124.70	10,362.2	-488.9	458.6	0.65	-0.22	16.77	-7.2	-18.0	
10,499.0	1.10	121.40	10,456.1	-490.3	460.8	0.96	-0.96	-3.51	-8.7	-18.5	
10,598.0	0.90	141.60	10,555.1	-491.4	462.0	0.41	-0.20	20.40	-16.2	-14.0	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Heartthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
	#708H	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)	EW (usft)	DLeg (°/100usft)	BuId (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,691.0	1.30	160.10	10,648.1	-493.0	462.9	0.57	0.43	19.89	-21.6	-8.0	
10,784.0	0.80	90.30	10,741.1	-494.0	483.9	1.37	-0.54	-75.05	-1.0	-24.0	
10,877.0	0.70	101.00	10,834.1	-494.1	465.1	0.18	-0.11	11.51	-8.6	-23.2	
10,971.0	0.70	121.00	10,928.1	-494.5	466.1	0.26	0.00	21.28	-15.3	-19.4	
11,064.0	0.60	330.00	11,021.1	-494.4	466.4	1.35	-0.11	-162.37	22.8	9.3	
11,158.0	2.00	335.80	11,115.1	-492.4	465.5	1.49	1.49	6.17	21.5	7.0	
11,252.0	2.30	341.10	11,209.0	-489.2	464.2	0.38	0.32	5.64	18.5	5.1	
11,346.0	2.60	342.20	11,302.9	-485.3	462.9	0.32	0.32	1.17	14.6	4.8	
11,440.0	2.20	324.40	11,396.8	-481.8	461.2	0.89	-0.43	-18.94	8.6	8.4	
11,533.0	1.20	316.00	11,489.8	-479.7	459.5	1.11	-1.08	-9.03	4.5	9.3	
11,627.0	0.80	326.20	11,583.8	-478.4	458.4	0.46	-0.43	10.85	4.5	8.5	
11,721.0	0.90	298.60	11,677.8	-477.5	457.4	0.44	0.11	-29.36	-1.3	9.3	
11,814.0	1.30	276.80	11,770.7	-477.1	455.7	0.62	0.43	-23.44	-6.4	7.9	
11,926.0	0.80	286.10	11,862.7	-476.7	453.7	0.47	-0.45	8.30	-7.0	9.0	
12,017.0	0.70	348.30	11,973.7	-476.0	453.0	0.86	-0.11	88.35	3.8	11.0	
12,111.0	0.60	131.20	12,067.7	-475.7	453.3	1.31	-0.11	152.02	3.5	-10.7	
12,115.0	0.42	112.05	12,071.7	-475.8	453.3	6.11	-4.46	-478.69	6.8	-9.0	
KOP 12115.0' MD; 12071.7' TVD; -475.8'; 453.3'; 0.42											
12,204.0	5.20	349.40	12,160.6	-471.9	452.9	6.11	5.37	-137.81	5.3	11.3	
12,294.0	14.40	350.40	12,249.2	-456.8	450.2	10.22	10.22	1.11	11.6	14.6	
12,345.0	17.20	350.40	12,298.2	-443.1	447.9	5.49	5.49	0.00	17.0	17.7	
12,392.0	21.60	348.10	12,342.6	-427.8	445.0	9.50	9.36	-4.89	22.8	22.2	
12,412.3	24.59	349.34	12,361.2	-420.0	443.4	14.92	14.73	6.11	26.1	23.6	
FTP Crossing 12412.3' MD; 12361.2' TVD; -420.0'; 443.4'; 24.59											
12,432.0	27.50	350.30	12,378.9	-411.5	441.9	14.92	14.77	4.87	29.0	24.9	
12,485.0	32.80	355.20	12,424.8	-385.1	438.6	11.02	10.00	9.25	37.7	26.2	
12,532.0	37.90	0.30	12,463.1	-358.0	437.6	12.53	10.85	10.85	45.8	24.3	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
Well:	#708H	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)	
12,578.0	42.50	3.10	12,498.2	-328.3	438.6	10.74	10.00	6.09	53.0	21.5	
12,625.0	56.80	4.50	12,528.6	-292.7	441.0	30.51	30.43	2.98	56.1	18.0	
12,671.0	71.20	5.00	12,548.7	-251.6	444.4	31.32	31.30	1.09	51.2	14.9	
12,681.0	74.70	5.00	12,551.6	-242.0	445.2	35.00	35.00	0.00	49.1	14.3	
12,770.0	90.90	1.50	12,562.7	-154.2	450.2	18.61	18.20	-3.93	23.4	10.8	
12,863.0	91.10	1.20	12,561.1	-61.2	452.4	0.39	0.22	-0.32	0.1	7.6	
12,957.0	95.00	0.50	12,556.1	32.6	453.7	4.22	4.15	-0.74	-9.8	5.5	
13,051.0	93.60	1.00	12,549.1	126.3	455.0	1.58	-1.49	0.53	-16.7	3.6	
13,145.0	93.80	0.10	12,543.0	220.1	455.9	0.98	0.21	-0.96	-22.5	2.0	
13,239.0	91.20	1.30	12,538.9	314.0	457.0	3.05	-2.77	1.28	-26.4	0.2	
13,332.0	91.30	0.30	12,536.9	407.0	458.3	1.08	0.11	-1.08	-28.3	-1.8	
13,426.0	91.40	359.20	12,534.7	501.0	457.9	1.17	0.11	-1.17	-30.3	-2.1	
13,519.0	90.50	1.00	12,533.1	593.9	458.1	2.16	-0.97	1.94	-31.6	-3.0	
13,613.0	90.90	359.90	12,532.0	687.9	458.8	1.25	0.43	-1.17	-32.6	-4.4	
13,706.0	88.80	1.20	12,532.2	780.9	459.7	2.66	-2.26	1.40	-32.2	-6.0	
13,800.0	89.30	1.90	12,533.8	874.9	462.2	0.92	0.53	0.74	-30.4	-9.2	
13,893.0	89.60	2.00	12,534.7	967.8	465.4	0.34	0.32	0.11	-29.3	-13.1	
13,988.0	91.30	1.50	12,533.9	1,062.8	468.3	1.87	1.79	-0.53	-29.7	-16.7	
14,082.0	91.50	1.30	12,531.6	1,156.7	470.6	0.30	0.21	-0.21	-31.6	-19.7	
14,175.0	91.50	0.60	12,529.2	1,249.7	472.2	0.75	0.00	-0.75	-33.7	-21.9	
14,269.0	89.30	1.20	12,528.5	1,343.6	473.6	2.43	-2.34	0.64	-34.0	-24.1	
14,363.0	88.20	358.90	12,530.6	1,437.6	473.7	2.71	-1.17	-2.45	-31.5	-24.9	
14,456.0	88.80	358.10	12,533.0	1,530.5	471.3	1.08	0.65	-0.86	-28.7	-23.1	
14,551.0	89.40	358.00	12,534.5	1,625.5	468.0	0.64	0.63	-0.11	-26.9	-20.8	
14,644.0	88.70	357.50	12,536.0	1,718.4	464.4	0.82	-0.75	-0.54	-24.9	-17.6	
14,738.0	89.10	357.20	12,537.8	1,812.3	460.0	0.53	0.43	-0.32	-22.8	-14.0	
14,832.0	90.50	356.60	12,538.2	1,906.1	455.0	1.62	1.49	-0.64	-22.1	-9.6	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
Well:	#708H	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)	
14,925.0	92.40	358.20	12,535.8	1,999.0	450.7	2.67	2.04	1.72	-24.1	-6.1	
15,019.0	90.50	358.90	12,533.4	2,092.9	448.4	2.15	-2.02	0.74	-26.2	-4.4	
15,113.0	92.20	359.40	12,531.2	2,186.9	447.0	1.89	1.81	0.53	-28.1	-3.7	
15,207.0	90.70	359.90	12,528.9	2,280.9	446.4	1.68	-1.60	0.53	-30.2	-3.8	
15,301.0	89.40	0.80	12,528.8	2,374.9	447.0	1.68	-1.38	0.96	-30.0	-5.1	
15,394.0	89.70	0.80	12,529.5	2,467.8	448.3	0.32	0.32	0.00	-29.0	-7.1	
15,488.0	90.30	0.60	12,529.5	2,561.8	449.4	0.67	0.64	-0.21	-28.7	-8.9	
15,581.0	89.20	358.30	12,529.9	2,654.8	448.5	2.74	-1.18	-2.47	-28.0	-8.7	
15,675.0	91.20	357.60	12,529.6	2,748.8	445.2	2.25	2.13	-0.74	-28.1	-6.1	
15,769.0	90.40	359.00	12,528.3	2,842.7	442.4	1.72	-0.85	1.49	-29.1	-4.0	
15,862.0	87.80	358.90	12,529.7	2,935.7	440.7	2.80	-2.80	-0.11	-27.4	-3.0	
15,956.0	88.90	359.20	12,532.4	3,029.6	439.1	1.21	1.17	0.32	-24.3	-2.1	
16,050.0	91.10	359.80	12,532.4	3,123.6	438.3	2.43	2.34	0.64	-24.0	-2.0	
16,143.0	89.70	0.50	12,531.8	3,216.6	438.5	1.68	-1.51	0.75	-24.2	-2.9	
16,237.0	89.80	359.90	12,532.4	3,310.6	438.9	0.65	-0.11	-0.64	-23.3	-3.9	
16,331.0	90.40	0.60	12,532.4	3,404.6	439.3	1.13	0.85	0.74	-22.9	-5.0	
16,425.0	92.20	359.80	12,530.2	3,498.6	439.6	2.10	1.91	-0.85	-24.7	-6.1	
16,518.0	91.60	0.60	12,527.1	3,591.5	439.9	1.07	-0.65	0.86	-27.4	-7.1	
16,612.0	91.50	1.50	12,524.6	3,685.5	441.7	0.96	-0.11	0.96	-29.6	-9.5	
16,706.0	88.50	0.10	12,524.6	3,779.4	443.0	3.52	-3.19	-1.49	-29.2	-11.5	
16,799.0	87.40	0.50	12,527.9	3,872.4	443.5	1.26	-1.18	0.43	-25.5	-12.7	
16,893.0	88.70	358.90	12,531.1	3,966.3	443.0	2.19	1.38	-1.70	-21.9	-12.9	
16,986.0	90.50	359.00	12,531.8	4,059.3	441.3	1.94	1.94	0.11	-20.0	-11.9	
17,080.0	87.80	0.60	12,533.2	4,153.3	440.9	3.34	-2.87	1.70	-16.7	-12.3	
17,173.0	91.80	358.20	12,533.7	4,246.2	440.0	4.83	4.09	-2.58	-14.4	-11.9	
17,266.0	91.90	357.80	12,530.8	4,339.1	436.5	0.72	0.32	-0.65	-15.4	-9.2	
17,359.0	90.00	357.50	12,529.3	4,432.0	432.6	2.05	-2.04	-0.11	-15.1	-5.9	

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3593.0usft
Site:	Hearthrob 17 State Com	MD Reference:	KB = 25 @ 3593.0usft
	#708H	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)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
17,453.0	88.80	356.60	12,530.3	4,525.9	427.7	1.60	-1.28	-0.96	-12.2	-1.8
17,521.0	87.70	356.20	12,532.3	4,593.7	423.5	1.72	-1.62	-0.59	-8.8	2.0
Last MWD Survey (MD = 17521.0)										
17,575.0	87.70	356.20	12,534.5	4,647.6	419.9	0.00	0.00	0.00	-5.5	5.1
Projection to Bit (MD = 17575.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
12,115.0	12,071.7	-475.8	453.3	KOP 12115.0' MD; 12071.7' TVD; -475.8'; 453.3'; 0.42
12,412.3	12,361.2	-420.0	443.4	FTP Crossing 12412.3' MD; 12361.2' TVD; -420.0'; 443.4'; 24.59
17,521.0	12,532.3	4,593.7	423.5	Last MWD Survey (MD = 17521.0)
17,575.0	12,534.5	4,647.6	419.9	Projection to Bit (MD = 17575.0)

Checked By: _____ Approved By: _____ Date: _____

