

30-025-44008



Lea County, NM (NAD 83 NME)

Ophelia 22 Fed Com #707H

HP #610

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: #707H

Ground Level: 3301.0
 KB = 25' @ 3328.0usft (HP #610)
 Northing: 377566.00 Easting: 780273.00 Latitude: 32° 2' 8.392 N Longitude: 103° 33' 44.120 W

Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 6.55°
 Magnetic Field
 Strength: 47851.0nT
 Dip Angle: 59.89°
 Date: 3/27/2017
 Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.55°
 To convert a True Direction to a Grid Direction, Subtract 0.41°

SECTION DETAILS

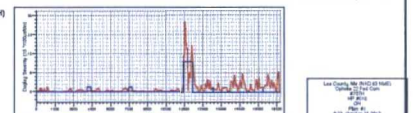
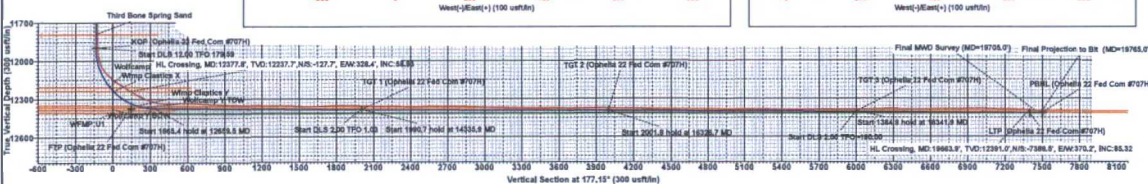
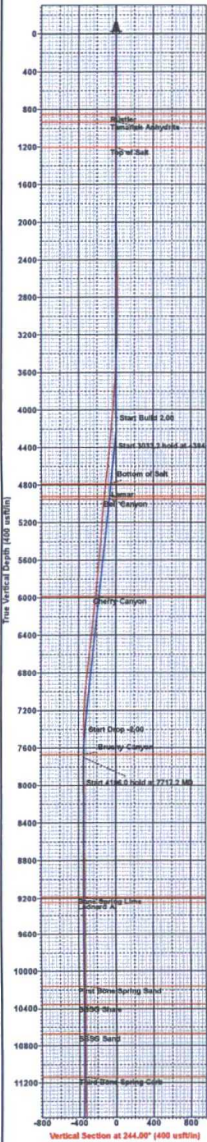
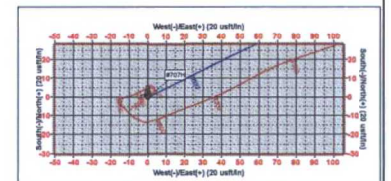
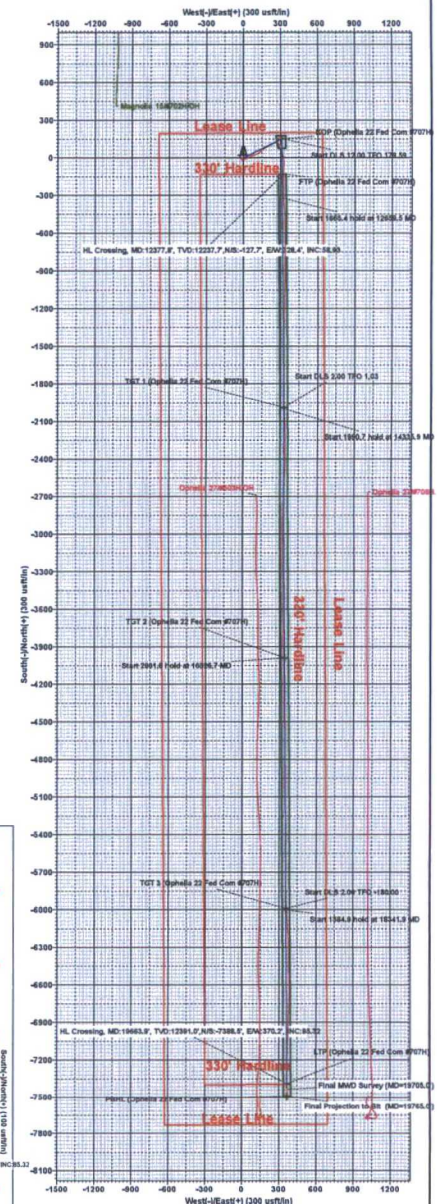
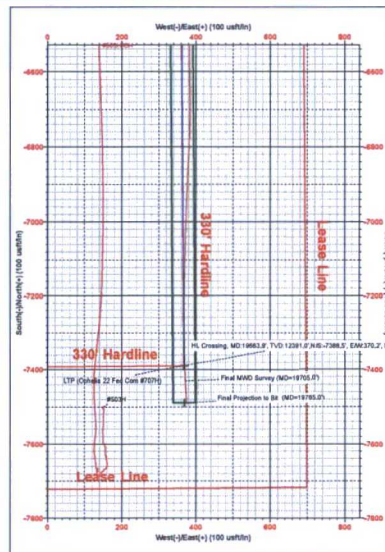
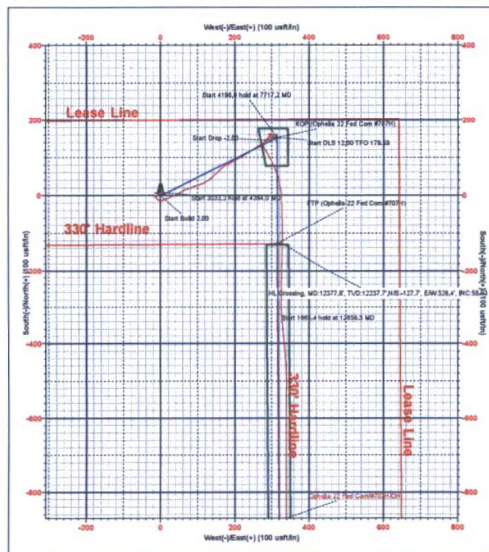
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V/Sec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4084.0	0.00	0.00	4084.0	0.0	0.0	0.00	0.00	0.0	
3	4384.0	6.00	64.00	4383.5	6.9	14.1	2.00	64.00	-6.2	
4	7417.2	6.00	64.00	7400.0	145.9	299.1	0.00	0.00	-130.8	
5	7717.2	0.00	0.00	7699.5	152.7	313.2	2.00	180.00	-137.0	
6	11913.2	0.00	0.00	11895.5	152.7	313.2	0.00	0.00	-137.0	
7	12659.5	89.55	179.59	12373.0	-321.0	316.6	12.00	179.59	336.3	
8	14324.9	89.55	179.59	12386.0	-1986.3	328.6	0.00	0.00	2000.2	TGT 1 (Ophelia 22 Fed Com #707H)
9	14335.9	89.77	179.59	12386.1	-1997.3	328.7	2.00	1.03	2011.2	
10	16326.7	89.77	179.59	12394.0	-3988.0	343.0	0.00	0.00	4000.1	TGT 2 (Ophelia 22 Fed Com #707H)
11	18328.4	89.77	179.59	12402.0	-5989.7	357.3	0.00	0.00	6000.1	TGT 3 (Ophelia 22 Fed Com #707H)
12	18341.9	89.50	179.59	12402.1	-6003.2	357.4	2.00	-180.00	6013.5	
13	19726.8	89.50	179.59	12414.1	-7388.0	367.3	0.00	0.00	7397.1	LTP (Ophelia 22 Fed Com #707H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Ophelia 22 Fed Com #707H)	11895.5	152.7	313.2	377716.75	780586.16
FTP (Ophelia 22 Fed Com #707H)	12373.0	-128.0	315.0	377438.00	780588.00
TGT 1 (Ophelia 22 Fed Com #707H)	12386.0	-1986.3	328.6	375578.70	780601.63
TGT 2 (Ophelia 22 Fed Com #707H)	12394.0	-3988.0	343.0	373878.00	780615.86
TGT 3 (Ophelia 22 Fed Com #707H)	12402.0	-5989.7	357.3	371576.30	780630.28
LTP (Ophelia 22 Fed Com #707H)	12414.1	-7388.0	367.3	370178.00	780640.28
PBHL (Ophelia 22 Fed Com #707H)	12415.0	-7488.0	368.0	370078.00	780641.00



30-025-44008

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Ophelia 22 Fed Com

#707H

OH

Design: OH

PVA Report

16 October, 2017

HOBBS OCD
JAN 08 2017
RECEIVED

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	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	Ophelia 22 Fed Com		
Site Position:		Northing:	377,559.00 usft
From:	Map	Easting:	778,915.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 8.418 N
		Longitude:	103° 33' 59.896 W
		Grid Convergence:	0.41 °

Well	#707H		
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° 2' 8.392 N
		Longitude:	103° 33' 44.120 W
		Ground Level:	3,301.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/27/2017	6.96
			59.89
			47,850.98907670

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)
	0.0	0.0	0.0
		Direction (°)	177.19

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey Program		Date 10/16/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
162.0	978.0	Invictus MWD (OH)	MWD	MWD - Standard	
1,053.0	19,765.0	Intrepid MWD (OH)	MWD	MWD - Standard	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
162.0	0.70	44.52	162.0	0.7	0.7	0.43	0.43	0.00	-1.0	0.0	0.0
247.0	0.30	61.52	247.0	1.2	1.3	0.50	-0.47	20.00	-1.7	0.4	0.4
279.0	0.80	62.52	279.0	1.3	1.5	1.56	1.56	3.12	-2.0	0.5	0.5
310.0	0.80	61.52	310.0	1.5	1.9	0.05	0.00	-3.23	-2.4	0.4	0.4
342.0	0.50	26.52	342.0	1.8	2.2	1.51	-0.94	-109.37	-2.5	-1.2	-1.2
373.0	0.60	28.52	373.0	2.0	2.3	0.33	0.32	6.45	-2.9	-1.1	-1.1
405.0	0.20	10.52	405.0	2.2	2.4	1.30	-1.25	-56.25	-2.6	-1.9	-1.9
498.0	0.50	65.52	498.0	2.6	2.8	0.45	0.32	59.14	-3.6	1.2	1.2
561.0	0.30	61.52	561.0	2.7	3.2	0.32	-0.32	-6.35	-4.1	0.9	0.9
592.0	0.10	25.52	592.0	2.8	3.3	0.73	-0.65	-116.13	-3.9	-1.7	-1.7
623.0	0.50	44.52	623.0	2.9	3.4	1.31	1.29	61.29	-4.5	-0.4	-0.4
654.0	0.50	343.52	654.0	3.2	3.4	1.64	0.00	-196.77	-2.1	-4.2	-4.2
686.0	0.60	350.52	686.0	3.5	3.4	0.38	0.31	21.87	-2.9	-3.9	-3.9
779.0	0.60	34.52	779.0	4.3	3.6	0.48	0.00	47.31	-5.6	-0.5	-0.5
842.0	0.60	2.52	842.0	4.9	3.8	0.53	0.00	-50.79	-5.1	-3.5	-3.5
872.0	0.70	307.52	872.0	5.2	3.6	2.02	0.33	-183.33	-0.3	-6.3	-6.3
904.0	0.10	251.52	904.0	5.3	3.4	2.03	-1.87	-175.00	5.0	-4.0	-4.0
936.0	0.40	305.52	936.0	5.4	3.3	1.10	0.94	168.75	-0.4	-6.3	-6.3
978.0	0.10	24.52	978.0	5.5	3.2	0.94	-0.71	188.10	-6.3	-0.7	-0.7
1,053.0	0.10	321.80	1,053.0	5.6	3.2	0.14	0.00	-83.63	-2.4	-6.0	-6.0

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
1,248.0	0.60	300.30	1,248.0	6.3	2.2	0.26	0.26	-11.03	-1.2	-6.5	
1,372.0	0.30	232.20	1,372.0	6.4	1.4	0.45	-0.24	-54.92	5.0	-4.2	
1,527.0	0.40	211.50	1,527.0	5.7	0.8	0.10	0.06	-13.35	5.3	-2.3	
1,716.0	0.70	243.20	1,715.9	4.6	-0.6	0.22	0.16	16.77	1.6	-4.4	
1,904.0	0.80	247.10	1,903.9	3.6	-2.8	0.06	0.05	2.07	-1.2	-4.4	
2,092.0	0.90	243.10	2,091.9	2.4	-5.3	0.06	0.05	-2.13	-3.7	-4.5	
2,185.0	1.10	245.20	2,184.9	1.7	-6.8	0.22	0.22	2.26	-5.5	-4.4	
2,371.0	1.30	256.00	2,370.9	0.4	-10.5	0.16	0.11	5.81	-10.1	-2.9	
2,558.0	1.50	265.50	2,557.8	-0.3	-15.0	0.16	0.11	5.08	-14.9	-0.9	
2,744.0	1.60	139.50	2,743.8	-2.5	-15.7	1.49	0.05	-67.74	8.3	-13.5	
2,929.0	1.80	133.10	2,928.7	-6.4	-11.9	0.15	0.11	-3.46	4.3	-12.8	
3,115.0	2.00	133.50	3,114.6	-10.6	-7.4	0.11	0.11	0.22	-1.9	-12.8	
3,304.0	2.20	98.10	3,303.5	-13.4	-1.4	0.68	0.11	-18.73	-0.5	-13.5	
3,490.0	2.50	60.60	3,489.3	-11.9	5.6	0.83	0.16	-20.16	0.9	-13.2	
3,677.0	3.80	70.90	3,676.0	-7.9	15.0	0.76	0.70	5.51	-11.6	-12.4	
3,864.0	4.40	68.50	3,862.6	-3.2	27.6	0.33	0.32	-1.28	-24.5	-13.2	
4,051.0	4.70	66.60	4,049.0	2.4	41.3	0.18	0.16	-1.02	-38.8	-14.2	
4,238.0	5.30	58.80	4,235.3	9.9	55.7	0.48	0.32	-4.17	-48.7	-20.0	
4,426.0	5.80	68.50	4,422.4	17.9	72.0	0.56	0.27	5.16	-53.5	-11.3	
4,615.0	6.60	72.80	4,610.3	24.6	91.2	0.49	0.42	2.28	-55.1	-9.6	
4,802.0	7.20	68.90	4,795.9	32.0	112.4	0.41	0.32	-2.09	-57.3	-15.7	
4,990.0	5.00	50.90	4,982.9	41.4	129.8	1.54	-1.17	-9.57	-49.9	-31.7	
5,177.0	4.70	47.60	5,169.2	51.8	141.8	0.22	-0.16	-1.76	-45.1	-29.5	
5,365.0	4.70	48.60	5,356.6	62.0	153.2	0.04	0.00	0.53	-42.0	-23.3	
5,552.0	4.60	46.20	5,542.9	72.3	164.4	0.12	-0.05	-1.28	-37.5	-19.4	
5,740.0	5.30	63.60	5,730.2	81.4	177.6	0.88	0.37	9.26	-37.8	-5.0	
5,926.0	4.90	62.40	5,915.5	88.9	192.3	0.22	-0.22	-0.65	-34.8	-5.4	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
6,114.0	6.10	60.80	6,102.6	97.5	208.2	0.64	0.64	-0.85	-33.0	-5.5	
6,301.0	5.70	59.40	6,288.7	107.0	224.8	0.23	-0.21	-0.75	-32.6	-5.0	
6,489.0	6.30	58.30	6,475.6	117.2	241.7	0.32	0.32	-0.59	-32.6	-3.8	
6,676.0	6.90	57.50	6,661.4	128.6	259.9	0.32	0.32	-0.43	-34.6	-2.2	
6,863.0	6.60	58.60	6,847.1	140.3	278.5	0.17	-0.16	0.59	-37.2	0.5	
7,050.0	4.70	54.80	7,033.2	150.3	293.9	1.04	-1.02	-2.03	-36.2	0.5	
7,238.0	1.50	63.50	7,220.9	155.8	302.4	1.72	-1.70	4.63	-26.1	7.3	
7,425.0	0.80	34.80	7,407.8	158.0	305.4	0.47	-0.37	-15.35	-12.8	2.2	
7,612.0	0.40	345.90	7,594.8	159.7	306.0	0.33	-0.21	-26.15	-8.9	3.4	
7,799.0	0.80	255.00	7,781.8	160.0	304.5	0.48	0.21	-48.61	-6.5	-9.2	
7,987.0	0.90	314.50	7,969.8	160.7	302.2	0.45	0.05	31.65	-13.4	2.0	
8,174.0	0.70	329.30	8,156.8	162.7	300.6	0.15	-0.11	7.91	-15.0	5.7	
8,361.0	0.50	287.40	8,343.8	163.9	299.2	0.25	-0.11	-22.41	-16.7	-6.5	
8,548.0	0.80	240.40	8,530.8	163.5	297.3	0.31	0.16	-25.13	-8.5	-17.2	
8,735.0	0.30	226.80	8,717.8	162.5	295.8	0.27	-0.27	-7.27	-5.9	-19.0	
8,922.0	0.50	225.70	8,904.7	161.6	294.9	0.11	0.11	-0.59	-6.9	-19.1	
9,109.0	0.40	299.40	9,091.7	161.4	293.7	0.29	-0.05	39.41	-21.2	2.0	
9,281.0	0.70	283.30	9,263.7	161.9	292.2	0.19	0.17	-9.36	-22.5	-4.1	
9,468.0	0.70	287.20	9,450.7	162.5	290.0	0.03	0.00	2.09	-25.1	-2.5	
9,655.0	1.90	111.40	9,637.7	161.7	291.8	1.39	0.64	-94.01	23.2	0.6	
9,842.0	1.50	136.50	9,824.6	158.8	296.3	0.45	-0.21	13.42	16.0	-8.0	
10,029.0	0.50	231.60	10,011.6	156.5	297.4	0.87	-0.53	50.86	-10.0	-12.8	
10,216.0	0.50	295.90	10,198.6	156.4	296.0	0.28	0.00	34.39	-17.0	4.2	
10,403.0	0.30	325.60	10,385.6	157.2	295.0	0.15	-0.11	15.88	-13.9	12.5	
10,590.0	0.40	87.40	10,572.6	157.6	295.4	0.33	0.05	65.13	17.6	5.6	
10,776.0	0.40	67.40	10,758.6	157.9	296.6	0.07	0.00	-10.75	13.3	11.1	
10,962.0	1.10	230.30	10,944.6	157.0	295.9	0.80	0.38	87.58	-10.6	-14.3	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)
11,149.0	0.80	282.70	11,131.5	156.1	293.2	0.47	-0.16	28.02	-20.2	1.1
11,337.0	0.60	198.30	11,319.5	155.5	291.6	0.51	-0.11	-44.89	-4.2	-21.3
11,525.0	3.10	223.70	11,507.4	150.9	287.8	1.37	1.33	13.51	-18.9	-17.1
11,653.0	3.10	221.30	11,635.2	145.8	283.1	0.10	0.00	-1.87	-25.1	-18.0
11,832.0	2.50	227.30	11,814.0	139.5	277.0	0.37	-0.34	3.35	-35.5	-14.8
11,926.0	3.90	180.80	11,907.9	134.9	275.5	3.01	1.49	-49.47	-18.2	-37.4
11,972.0	9.70	152.00	11,953.6	129.9	277.3	14.25	12.61	-62.61	-0.3	-40.7
12,019.0	16.50	146.90	11,999.3	120.8	282.8	14.66	14.47	-10.85	-1.0	-36.4
12,065.0	29.10	150.20	12,041.6	105.6	292.0	27.52	27.39	7.17	-10.9	-29.5
12,113.0	40.90	155.00	12,080.9	81.1	304.5	25.23	24.58	10.00	-25.4	-20.4
12,159.0	48.20	162.40	12,113.7	51.0	316.0	19.45	15.87	16.09	-42.0	-9.4
12,207.0	53.10	171.00	12,144.1	15.0	324.5	17.19	10.21	17.92	-57.4	3.5
12,253.0	57.30	179.10	12,170.4	-22.6	327.6	17.09	9.13	17.61	-69.1	13.2
12,300.0	57.30	179.60	12,195.8	-62.2	328.1	0.90	0.00	1.06	-78.6	13.5
12,346.0	56.90	179.50	12,220.8	-100.8	328.4	0.89	-0.87	-0.22	-82.6	13.3
12,377.8	58.93	180.32	12,237.7	-127.7	328.4	6.74	6.38	2.58	-82.6	13.8
HL Crossing, MD:12377.8', TVD:12237.7', N/S: -127.7', E/W:328.4', INC:58.93										
12,393.0	59.90	180.70	12,245.4	-140.8	328.3	6.74	6.39	2.50	-82.1	13.8
12,439.0	63.40	181.90	12,267.2	-181.3	327.4	7.95	7.61	2.61	-78.8	13.0
12,486.0	66.20	181.80	12,287.3	-223.8	326.0	5.96	5.96	-0.21	-72.8	11.0
12,532.0	68.30	180.00	12,305.0	-266.2	325.4	5.82	4.57	-3.91	-63.7	9.5
12,579.0	73.90	177.40	12,320.3	-310.6	326.4	13.01	11.91	-5.53	-52.4	10.1
12,626.0	82.20	174.80	12,330.0	-356.4	329.5	18.47	17.66	-5.53	-43.2	12.7
12,674.0	89.10	173.80	12,333.6	-404.0	334.3	14.52	14.37	-2.08	-40.0	17.0
12,794.0	91.50	180.80	12,333.0	-523.8	339.9	6.17	2.00	5.83	-41.5	21.9
12,888.0	88.40	180.20	12,333.1	-617.8	339.1	3.36	-3.30	-0.64	-42.2	20.4
12,982.0	86.50	179.30	12,337.3	-711.7	339.5	2.24	-2.02	-0.96	-38.7	20.1

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
13,075.0	88.20	180.20	12,341.6	-804.6	339.9	2.07	1.83	0.97	-35.2	19.8	
13,169.0	88.00	180.30	12,344.7	-898.5	339.5	0.24	-0.21	0.11	-32.8	18.8	
13,263.0	88.10	180.30	12,347.9	-992.5	339.0	0.11	0.11	0.00	-30.3	17.6	
13,357.0	90.50	181.50	12,349.0	-1,086.5	337.5	2.85	2.55	1.28	-29.9	15.4	
13,450.0	89.20	182.00	12,349.3	-1,179.4	334.7	1.50	-1.40	0.54	-30.4	11.9	
13,543.0	89.20	181.50	12,350.6	-1,272.4	331.9	0.54	0.00	-0.54	-29.8	8.4	
13,636.0	89.70	181.30	12,351.5	-1,365.3	329.6	0.58	0.54	-0.22	-29.7	5.5	
13,730.0	86.50	180.70	12,354.6	-1,459.3	328.0	3.46	-3.40	-0.64	-27.3	3.1	
13,824.0	87.90	179.70	12,359.2	-1,553.1	327.6	1.83	1.49	-1.06	-23.4	2.1	
13,918.0	92.50	179.40	12,358.8	-1,647.1	328.4	4.90	4.89	-0.32	-24.5	2.2	
14,011.0	93.60	179.90	12,353.9	-1,740.0	328.9	1.30	1.18	0.54	-30.2	2.1	
14,104.0	89.60	179.10	12,351.3	-1,832.9	329.7	4.39	-4.30	-0.86	-33.5	2.2	
14,197.0	89.40	178.10	12,352.1	-1,925.9	332.0	1.10	-0.22	-1.08	-33.4	3.8	
14,291.0	87.80	177.40	12,354.4	-2,019.8	335.7	1.86	-1.70	-0.74	-31.8	6.8	
14,384.0	88.80	178.80	12,357.2	-2,112.7	338.8	1.85	1.08	1.51	-29.4	9.2	
14,477.0	89.90	179.10	12,358.2	-2,205.7	340.5	1.23	1.18	0.32	-28.7	10.3	
14,570.0	89.10	178.70	12,359.0	-2,298.6	342.3	0.96	-0.86	-0.43	-28.2	11.4	
14,663.0	89.70	179.60	12,360.0	-2,391.6	343.7	1.16	0.65	0.97	-27.6	12.1	
14,757.0	91.50	182.60	12,359.0	-2,485.6	341.9	3.72	1.91	3.19	-29.0	9.6	
14,850.0	90.60	182.60	12,357.3	-2,578.5	337.6	0.97	-0.97	0.00	-31.1	4.8	
14,943.0	89.80	182.40	12,357.0	-2,671.4	333.6	0.89	-0.86	-0.22	-31.8	0.0	
15,037.0	89.50	182.80	12,357.6	-2,765.3	329.3	0.53	-0.32	0.43	-31.6	-4.9	
15,131.0	87.80	181.70	12,359.8	-2,859.2	325.6	2.15	-1.81	-1.17	-29.7	-9.2	
15,225.0	86.80	180.20	12,364.2	-2,953.1	324.1	1.92	-1.06	-1.60	-25.7	-11.5	
15,319.0	87.80	178.50	12,368.6	-3,046.9	325.1	2.10	1.06	-1.81	-21.6	-11.1	
15,413.0	89.30	179.60	12,371.0	-3,140.9	326.7	1.98	1.60	1.17	-19.6	-10.2	
15,506.0	89.20	180.00	12,372.2	-3,233.9	327.0	0.44	-0.11	0.43	-18.8	-10.5	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ophelia 22 Fed Com
 Well: #707H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #707H
 TVD Reference: KB = 25' @ 3326.0usft (HP #610)
 MD Reference: KB = 25' @ 3326.0usft (HP #610)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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)	
15,599.0	88.80	179.50	12,373.9	-3,326.9	327.4	0.69	-0.43	-0.54	-17.5	-10.8	
15,693.0	88.90	179.10	12,375.7	-3,420.8	328.6	0.44	0.11	-0.43	-16.0	-10.3	
15,787.0	92.70	180.20	12,374.4	-3,514.8	329.1	4.21	4.04	1.17	-17.7	-10.4	
15,880.0	88.70	179.80	12,373.3	-3,607.8	329.1	4.32	-4.30	-0.43	-19.2	-11.1	
15,973.0	87.30	178.90	12,376.5	-3,700.7	330.2	1.79	-1.51	-0.97	-16.3	-10.7	
16,066.0	93.50	178.70	12,375.9	-3,793.7	332.1	6.67	6.67	-0.22	-17.3	-9.4	
16,160.0	91.30	178.50	12,372.0	-3,887.5	334.4	2.35	-2.34	-0.21	-21.6	-7.8	
16,253.0	88.10	179.10	12,372.4	-3,980.5	336.4	3.50	-3.44	0.65	-21.5	-6.5	
16,345.0	88.70	178.90	12,375.0	-4,072.5	338.0	0.69	0.65	-0.22	-19.3	-5.6	
16,437.0	90.70	179.00	12,375.5	-4,164.4	339.7	2.18	2.17	0.11	-19.2	-4.5	
16,532.0	86.60	180.90	12,377.7	-4,259.4	339.8	4.76	-4.32	2.00	-17.4	-5.1	
16,626.0	84.90	180.30	12,384.7	-4,353.1	338.8	1.92	-1.81	-0.64	-10.8	-6.8	
16,719.0	91.30	178.30	12,387.8	-4,446.0	339.9	7.21	6.88	-2.15	-8.0	-6.3	
16,812.0	87.30	177.70	12,388.9	-4,538.9	343.2	4.35	-4.30	-0.65	-7.3	-3.7	
16,907.0	89.40	179.80	12,391.6	-4,633.8	345.2	3.13	2.21	2.21	-4.9	-2.3	
17,000.0	90.50	179.90	12,391.7	-4,726.8	345.5	1.19	1.18	0.11	-5.2	-2.8	
17,093.0	90.80	179.80	12,390.7	-4,819.8	345.7	0.34	0.32	-0.11	-6.6	-3.2	
17,186.0	91.60	179.90	12,388.7	-4,912.8	346.0	0.87	0.86	0.11	-9.0	-3.6	
17,279.0	91.30	179.70	12,386.4	-5,005.8	346.3	0.39	-0.32	-0.22	-11.7	-4.0	
17,373.0	89.60	177.20	12,385.6	-5,099.7	348.8	3.22	-1.81	-2.66	-12.8	-2.1	
17,466.0	89.90	178.20	12,386.0	-5,192.7	352.6	1.12	0.32	1.08	-12.8	1.0	
17,560.0	89.50	179.00	12,386.5	-5,286.6	354.9	0.95	-0.43	0.85	-12.6	2.6	
17,653.0	89.90	179.50	12,387.0	-5,379.6	356.1	0.69	0.43	0.54	-12.5	3.2	
17,746.0	88.30	179.20	12,388.5	-5,472.6	357.1	1.75	-1.72	-0.32	-11.4	3.6	
17,840.0	92.80	180.60	12,387.6	-5,566.6	357.3	5.01	4.79	1.49	-12.7	3.0	
17,933.0	93.10	179.70	12,382.8	-5,659.4	357.0	1.02	0.32	-0.97	-17.9	2.1	
18,027.0	87.90	179.10	12,382.0	-5,753.4	358.0	5.57	-5.53	-0.64	-19.1	2.4	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3326.0usft (HP #610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3326.0usft (HP #610)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
18,120.0	89.50	179.50	12,384.1	-5,846.4	359.2	1.77	1.72	0.43	-17.3	2.9	
18,213.0	89.50	177.80	12,384.9	-5,939.3	361.4	1.83	0.00	-1.83	-16.9	4.4	
18,307.0	91.60	177.40	12,384.0	-6,033.2	365.3	2.27	2.23	-0.43	-18.4	7.7	
18,401.0	92.70	176.10	12,380.5	-6,127.0	370.6	1.81	1.17	-1.38	-22.7	12.4	
18,494.0	90.60	176.80	12,377.8	-6,219.8	376.4	2.38	-2.26	0.75	-26.2	17.4	
18,588.0	88.10	178.00	12,378.9	-6,313.7	380.6	2.95	-2.66	1.28	-25.9	21.0	
18,679.0	86.70	180.00	12,383.0	-6,404.6	382.2	2.68	-1.54	2.20	-22.6	22.0	
18,772.0	93.20	180.30	12,383.1	-6,497.5	382.0	7.00	6.99	0.32	-23.3	21.1	
18,866.0	90.30	179.00	12,380.2	-6,591.5	382.6	3.38	-3.09	-1.38	-27.0	21.0	
18,959.0	88.70	179.00	12,381.0	-6,684.4	384.2	1.72	-1.72	0.00	-27.0	21.9	
19,052.0	90.90	182.90	12,381.3	-6,777.4	382.6	4.81	2.37	4.19	-27.5	19.7	
19,146.0	92.80	182.90	12,378.3	-6,871.2	377.9	2.02	2.02	0.00	-31.3	14.3	
19,239.0	89.20	181.70	12,376.7	-6,964.1	374.2	4.08	-3.87	-1.29	-33.8	9.9	
19,332.0	87.50	181.40	12,379.3	-7,057.1	371.6	1.86	-1.83	-0.32	-31.9	6.7	
19,426.0	87.20	181.30	12,383.7	-7,150.9	369.4	0.34	-0.32	-0.11	-28.4	3.9	
19,519.0	92.00	180.90	12,384.3	-7,243.9	367.6	5.18	5.16	-0.43	-28.5	1.4	
19,612.0	85.10	178.20	12,386.7	-7,336.8	368.4	7.97	-7.42	-2.90	-27.0	1.5	
19,663.9	85.32	177.75	12,391.0	-7,388.5	370.2	0.96	0.43	-0.86	-23.1	2.9	
HL Crossing, MD:19663.9', TVD:12391.0', N/S:-7388.5', E/W:370.2', INC:85.32											
19,705.0	85.50	177.40	12,394.3	-7,429.4	371.9	0.96	0.43	-0.86	-45.8	5.5	
Final MWD Survey (MD=19705.0')											
19,765.0	85.50	177.40	12,399.0	-7,489.2	374.6	0.00	0.00	0.00	-101.8	12.2	
Final Projection to Bit (MD=19765.0')											

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ophelia 22 Fed Com
 Well: #707H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #707H
 TVD Reference: KB = 25' @ 3326.0usft (HP #610)
 MD Reference: KB = 25' @ 3326.0usft (HP #610)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,377.8	12,237.7	-127.7	328.4	HL Crossing, MD:12377.8', TVD:12237.7',N/S:-127.7', E/W:328.4', INC:58.93
19,663.9	12,391.0	-7,388.5	370.2	HL Crossing, MD:19663.9', TVD:12391.0',N/S:-7388.5', E/W:370.2', INC:85.32
19,705.0	12,394.3	-7,429.4	371.9	Final MWD Survey (MD=19705.0')
19,765.0	12,399.0	-7,489.2	374.6	Final Projection to Bit (MD=19765.0')

Checked By: _____ Approved By: _____ Date: _____