



Lea County, NM (NAD 83 NME)

Hawk 26 Fed #701H

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: #701H

KB= 25' @ 3539.0usft 3514.0
Northing 431092.00 Easting 783852.00 Latitude 32° 10' 57.794 N Longitude 103° 32' 58.022 W



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.53°

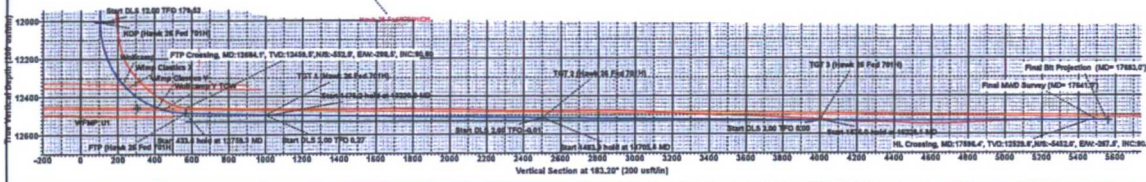
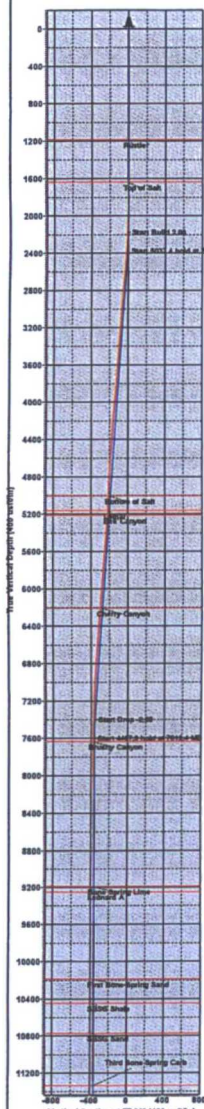
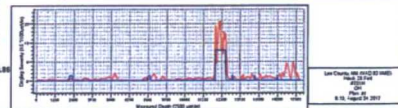
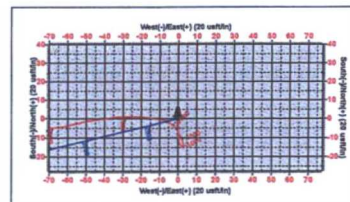
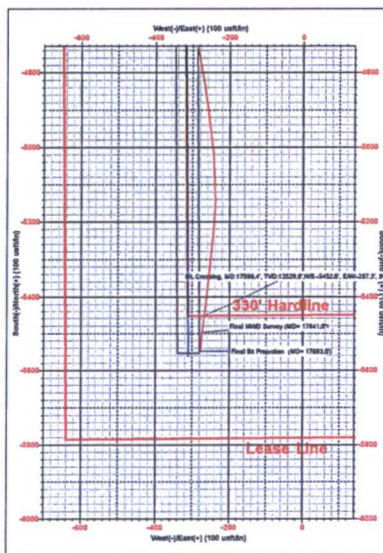
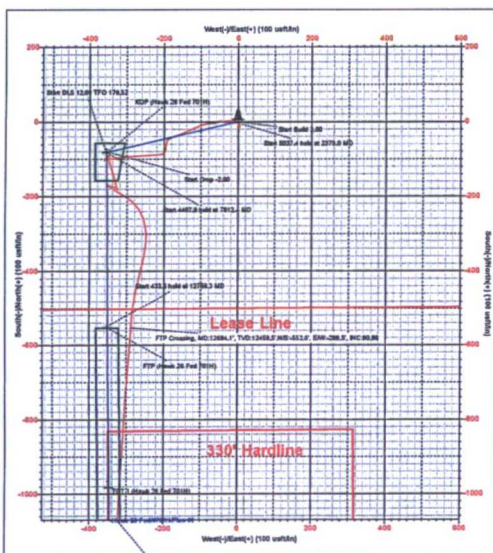
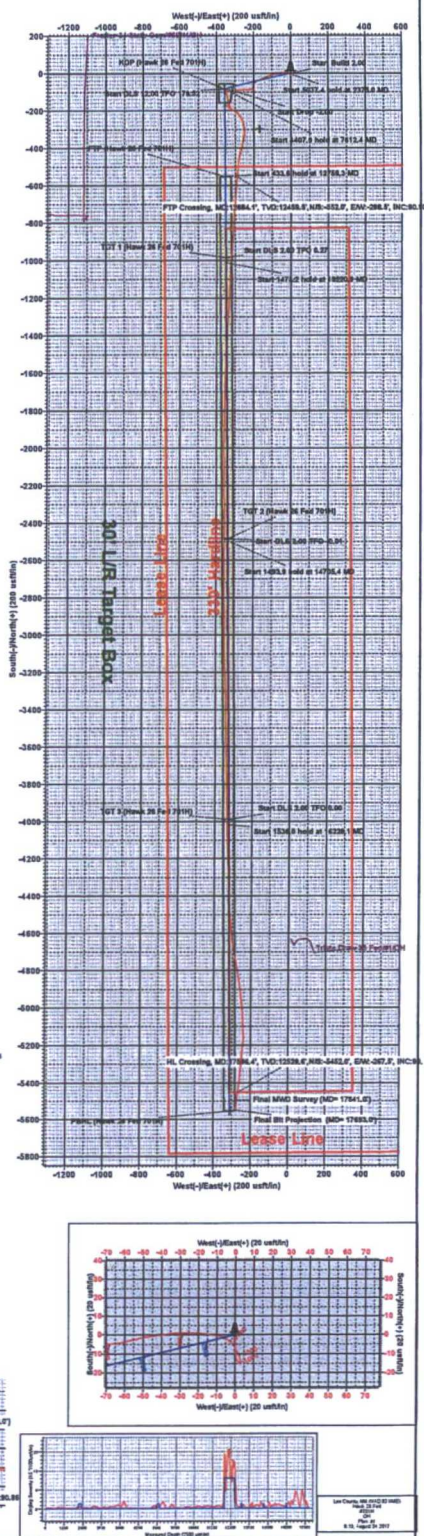
Magnetic Field
Strength: 47912.5esT
Dip Angle: 60.03°
Date: 6/27/2017
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.53°
To convert a Magnetic Direction to a True Direction, Add 6.94° East
To convert a True Direction to a Grid Direction, Subtract 0.43°

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	2175.0	0.00	0.00	2175.0	0.0	0.0	0.00	0.00	0.0		
3	2375.0	4.00	257.00	2374.8	-1.6	-6.8	2.00	257.00	1.9		
4	7412.4	4.00	257.00	7409.0	-30.6	-348.2	0.00	0.00	100.0		
5	7812.4	0.00	0.00	7898.8	-82.2	-356.0	2.00	180.00	101.9		
6	12020.3	0.00	0.00	12007.7	-82.2	-356.0	0.00	0.00	101.9		
7	12759.3	88.68	178.52	12485.0	-548.7	-352.0	12.00	178.52	867.4		
8	13192.9	88.68	178.52	12485.0	-82.1	-348.4	0.00	0.00	1000.0		
9	13220.9	88.24	178.52	12485.0	-101.0	-348.2	2.00	0.27	1027.9		
10	14486.1	88.34	178.52	12815.1	-348.5	-335.8	0.00	0.00	2000.0		
11	14705.4	88.43	178.52	12815.1	-348.4	-335.7	2.00	-0.01	2508.2		
12	16198.3	88.43	178.52	12830.0	-388.2	-323.1	0.00	0.00	4000.0		
13	16228.1	88.01	178.52	12830.1	-4017.0	-322.9	2.00	0.00	4028.8		
14	17764.2	90.01	178.52	12830.0	-5553.0	-310.0	0.00	0.00	5561.6		

CASING DETAILS	
No casing data is available	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)				
Name	TVD	+N-S	+E-W	Northing
TGT 1 (Hawk 26 Fed 701H)	12485.0	-82.1	-348.4	430109.90
TGT 2 (Hawk 26 Fed 701H)	12815.0	-485.1	-335.8	428906.90
TGT 3 (Hawk 26 Fed 701H)	12830.0	-388.2	-323.1	427163.90
PBHL (Hawk 26 Fed 701H)	12830.0	-553.0	-310.0	425539.00
FTP (Hawk 26 Fed 701H)	12485.0	-82.0	-352.0	430540.00
Intery @ 12456.4 (701H OH Plan #2)	12456.4	-398.8	-167.0	430783.21
KOP (Hawk 26 Fed 701H)	12007.7	-82.2	-356.0	431009.91



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hawk 26 Fed

#701H

OH

Design: OH

PVA Report

24 August, 2017

HOBBS OCD
NOV 22 2017
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PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3539.0usft
Site:	Hawk 26 Fed	MD Reference:	KB= 25' @ 3539.0usft
Well:	#701H	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		Hawk 26 Fed			
Site Position:		Northing:		431,092.00	usft
From:	Map	Easting:		783,852.00	usft
Position Uncertainty:		Slot Radius:		13-3/16	"
				0.0	usft
				Latitude:	32° 10' 57.794 N
				Longitude:	103° 32' 58.022 W
				Grid Convergence:	0.42 °

Well		#701H				
Well Position	+N/-S	0.0 usft	Northing:	431,092.00 usft	Latitude:	32° 10' 57.794 N
	+E/-W	0.0 usft	Easting:	783,852.00 usft	Longitude:	103° 32' 58.022 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,514.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/27/2017	6.94	60.03	47,912.47127541

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	183.20	

Survey Program		Date	8/24/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
183.0	17,693.0	Intrepid MWD (OH)	MWD	MWD - Standard	

PVA Report

Company:	EQG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3539.0usft
Site:	Hawk 26 Fed	MD Reference:	KB= 25' @ 3539.0usft
Well:	#701H	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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
183.0	0.80	175.80	183.0	-1.3	0.1	0.44	0.44	0.00	-1.3	0.0
362.0	1.30	184.80	362.0	-4.5	0.0	0.29	0.28	5.03	-4.5	0.4
543.0	1.20	173.20	542.9	-8.5	0.1	0.15	-0.06	-6.41	-8.4	-0.9
664.0	1.40	176.10	663.9	-11.2	0.3	0.17	0.17	2.40	-11.2	-0.4
853.0	0.60	111.50	852.9	-13.9	1.4	0.67	-0.42	-34.18	-6.4	-12.4
1,039.0	0.70	160.60	1,038.9	-15.3	2.7	0.29	0.05	26.40	-15.3	-2.6
1,224.0	0.90	354.70	1,223.8	-14.9	2.9	0.86	0.11	-89.68	15.1	-1.5
1,294.0	1.00	355.90	1,293.8	-13.8	2.8	0.15	0.14	1.71	13.9	-1.8
1,433.0	0.70	337.20	1,432.8	-11.8	2.4	0.29	-0.22	-13.45	11.8	2.3
1,621.0	0.90	333.20	1,620.8	-9.4	1.3	0.11	0.11	-2.13	9.0	3.1
1,811.0	1.10	325.70	1,810.8	-6.6	-0.4	0.13	0.11	-3.95	5.2	4.0
2,000.0	1.40	318.10	1,999.7	-3.3	-3.0	0.18	0.16	-4.02	0.5	4.4
2,190.0	2.50	283.60	2,189.6	-0.6	-8.5	0.82	0.58	-18.16	-8.1	2.6
2,380.0	3.90	273.30	2,379.3	0.7	-19.0	0.79	0.74	-5.42	-12.0	-1.7
2,570.0	4.70	267.50	2,568.8	0.7	-33.2	0.48	0.42	-3.05	-13.0	-5.9
2,760.0	4.80	256.90	2,758.1	-1.4	-48.8	0.46	0.05	-5.58	-14.0	-9.6
2,950.0	4.60	260.10	2,947.5	-4.5	-64.0	0.17	-0.11	1.68	-16.8	-9.1
3,140.0	3.50	274.90	3,137.0	-5.3	-77.3	0.79	-0.58	7.79	-19.2	-6.6
3,330.0	4.70	251.20	3,326.6	-7.3	-90.5	1.08	0.63	-12.47	-14.8	-14.8
3,520.0	4.00	247.50	3,516.0	-12.4	-103.9	0.40	-0.37	-1.95	-15.1	-14.0
3,710.0	4.30	246.80	3,705.5	-17.7	-116.6	0.16	0.16	-0.37	-15.7	-11.9
3,900.0	5.90	247.90	3,894.7	-24.2	-132.2	0.84	0.84	0.58	-19.7	-9.4
4,090.0	5.90	245.30	4,083.7	-32.0	-150.1	0.14	0.00	-1.37	-25.8	-8.0
4,280.0	4.70	256.00	4,272.9	-37.9	-166.6	0.82	-0.63	5.63	-31.0	-1.1
4,470.0	3.30	249.30	4,462.5	-41.7	-179.2	0.78	-0.74	-3.53	-30.8	-3.8
4,660.0	4.00	227.20	4,652.1	-48.2	-189.2	0.82	0.37	-11.63	-27.3	-10.5

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3539.0usft
Site:	Hawk 26 Fed	MD Reference:	KB= 25' @ 3539.0usft
Well:	#701H	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)	
4,850.0	4.70	183.00	4,841.6	-60.5	-194.5	1.75	0.37	-23.26	-21.1	-18.4	
5,039.0	5.40	188.20	5,029.9	-77.0	-196.1	0.44	0.37	2.75	-34.5	-3.5	
5,229.0	4.40	258.40	5,219.3	-87.3	-204.6	2.99	-0.53	36.95	-12.1	39.4	
5,420.0	4.40	265.60	5,409.7	-89.3	-219.0	0.29	0.00	3.77	-8.5	39.5	
5,610.0	4.70	266.60	5,599.1	-90.4	-234.1	0.16	0.16	0.53	-9.8	37.6	
5,800.0	4.40	268.10	5,788.5	-91.1	-249.1	0.17	-0.16	0.79	-10.9	35.4	
5,990.0	4.60	267.20	5,978.0	-91.7	-264.0	0.11	0.11	-0.47	-13.3	32.8	
6,179.0	4.60	267.10	6,166.4	-92.4	-279.2	0.00	0.00	-0.05	-15.6	30.5	
6,370.0	4.40	264.40	6,356.8	-93.5	-294.1	0.15	-0.10	-1.41	-18.8	27.6	
6,560.0	4.00	263.50	6,546.3	-95.0	-308.0	0.21	-0.21	-0.47	-19.9	25.7	
6,750.0	4.40	260.00	6,735.7	-97.0	-321.7	0.25	0.21	-1.84	-22.1	23.3	
6,940.0	4.40	261.10	6,925.2	-99.4	-336.1	0.04	0.00	0.58	-23.0	23.0	
7,130.0	3.40	266.70	7,114.7	-100.9	-348.9	0.56	-0.53	2.95	-20.5	23.6	
7,320.0	0.90	257.50	7,304.6	-101.5	-356.0	1.32	-1.32	-4.84	-17.8	19.0	
7,510.0	0.30	306.20	7,494.6	-101.5	-357.9	0.39	-0.32	25.63	8.7	18.2	
7,700.0	2.60	222.60	7,684.5	-104.4	-361.2	1.36	1.21	-44.00	-19.9	11.2	
7,890.0	2.90	35.40	7,874.4	-103.7	-361.3	2.89	0.16	90.95	20.6	-8.1	
8,080.0	2.50	39.90	8,064.2	-96.6	-355.9	0.24	-0.21	2.37	11.0	-9.3	
8,270.0	2.20	46.90	8,254.1	-90.9	-350.5	0.22	-0.16	3.68	2.0	-10.1	
8,460.0	1.40	192.90	8,444.0	-90.7	-348.4	1.82	-0.42	76.84	-6.6	9.3	
8,650.0	1.00	183.40	8,634.0	-94.6	-349.0	0.23	-0.21	-5.00	-12.0	7.7	
8,839.0	1.50	175.10	8,822.9	-98.7	-348.9	0.28	0.26	-4.39	-17.1	5.6	
9,029.0	1.10	187.90	9,012.9	-103.0	-348.9	0.26	-0.21	6.74	-19.6	9.8	
9,220.0	1.10	171.80	9,203.9	-106.6	-348.9	0.16	0.00	-8.43	-25.2	3.5	
9,397.0	1.70	158.60	9,380.8	-110.7	-347.7	0.38	0.34	-7.46	-29.6	-2.7	
9,587.0	3.30	160.90	9,570.6	-118.5	-344.9	0.84	0.84	1.21	-38.0	-1.4	
9,777.0	3.30	172.10	9,760.3	-129.1	-342.4	0.34	0.00	5.89	-48.4	7.0	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hawk 26 Fed
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB= 25' @ 3539.0usft
 MD Reference: KB= 25' @ 3539.0usft
 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)	
9,967.0	3.80	161.20	9,949.9	-140.5	-339.6	0.44	0.26	-5.74	-60.5	-3.3	
10,157.0	5.20	163.70	10,139.4	-154.7	-335.1	0.74	0.74	1.32	-75.5	-0.4	
10,347.0	3.30	172.00	10,328.8	-168.4	-332.0	1.05	-1.00	4.37	-88.7	11.8	
10,537.0	2.40	162.00	10,518.6	-177.6	-330.0	0.54	-0.47	-5.26	-98.8	-4.8	
10,727.0	1.00	154.20	10,708.5	-182.9	-328.0	0.75	-0.74	-4.11	-102.8	-18.7	
10,917.0	1.40	27.30	10,898.5	-182.3	-326.2	1.13	0.21	-66.79	75.3	-72.4	
11,107.0	0.90	306.10	11,088.5	-179.4	-326.4	0.81	-0.26	-42.74	81.2	61.1	
11,297.0	2.10	291.50	11,278.4	-177.2	-330.8	0.66	0.63	-7.68	58.2	79.2	
11,487.0	0.50	291.60	11,468.3	-175.6	-334.8	0.84	-0.84	0.05	54.1	79.1	
11,677.0	3.10	281.70	11,658.2	-174.3	-340.6	1.37	1.37	-5.21	33.7	87.1	
11,805.0	2.70	289.80	11,786.1	-172.6	-346.9	0.45	-0.31	6.33	39.2	82.0	
11,897.0	2.70	298.30	11,878.0	-170.8	-350.8	0.43	0.00	9.24	46.5	75.6	
11,992.0	0.60	259.40	11,972.9	-169.8	-353.3	2.38	-2.21	-40.95	-13.5	86.6	
12,021.0	5.92	139.09	12,001.8	-171.0	-352.4	21.56	18.37	-415.06	-69.3	-55.7	
KOP (Hawk 26 Fed 701H)											
12,039.0	9.80	137.20	12,019.7	-172.8	-350.8	21.56	21.51	-10.51	-69.7	-57.9	
12,086.0	18.90	122.50	12,065.2	-179.9	-341.6	20.71	19.36	-31.28	-63.0	-70.3	
12,134.0	22.10	120.60	12,110.1	-188.6	-327.3	6.81	6.67	-3.96	-74.2	-62.3	
12,181.0	28.90	119.80	12,152.5	-198.8	-309.8	14.49	14.47	-1.70	-87.1	-48.8	
12,229.0	36.20	128.10	12,193.0	-213.3	-288.6	17.80	15.21	17.29	-106.5	-17.8	
12,276.0	38.60	145.70	12,230.4	-234.1	-269.3	23.25	5.11	37.45	-114.7	33.5	
12,324.0	40.80	160.70	12,267.5	-261.3	-255.7	20.44	4.58	31.25	-105.2	74.2	
12,371.0	43.60	176.50	12,302.4	-292.1	-249.6	23.31	5.96	33.62	-83.8	101.7	
12,419.0	45.50	184.10	12,336.6	-325.7	-249.8	11.79	3.96	15.83	-68.1	108.3	
12,466.0	50.00	190.80	12,368.2	-360.1	-254.4	14.24	9.57	14.26	-53.2	106.6	
12,514.0	57.30	194.60	12,396.6	-397.8	-262.9	16.49	15.21	7.92	-44.3	96.9	
12,561.0	62.30	194.60	12,420.3	-437.1	-273.2	10.64	10.64	0.00	-38.3	84.5	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hawk 26 Fed
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB= 25' @ 3539.0usft
 MD Reference: KB= 25' @ 3539.0usft
 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)	
12,608.0	69.60	188.80	12,439.4	-479.1	-281.8	19.18	15.53	-12.34	-34.6	72.8	
12,656.0	75.60	183.70	12,453.8	-524.6	-286.7	16.09	12.50	-10.62	-28.7	66.1	
12,684.1	80.80	183.76	12,459.5	-552.0	-288.5	18.51	18.51	0.22	-24.8	63.8	
FTP Crossing, MD:12684.1', TVD:12459.5', N/S:-552.0', E/W:-288.5', INC:80.80											
12,691.5	82.18	183.78	12,460.6	-559.4	-289.0	18.51	18.51	0.21	-24.0	63.2	
FTP (Hawk 26 Fed 701H)											
12,703.0	84.30	183.80	12,462.0	-570.7	-289.8	18.51	18.51	0.21	-23.1	62.3	
12,751.0	91.90	184.60	12,463.6	-618.5	-293.3	15.92	15.83	1.67	-23.3	58.1	
12,846.0	89.40	184.40	12,462.5	-713.2	-300.7	2.64	-2.63	-0.21	-26.3	49.9	
12,889.0	88.90	184.10	12,463.1	-756.1	-303.9	1.36	-1.16	-0.70	-26.7	46.4	
12,984.0	88.80	183.70	12,465.0	-850.9	-310.4	0.43	-0.11	-0.42	-26.9	39.1	
13,079.0	89.50	183.90	12,466.5	-945.6	-316.7	0.77	0.74	0.21	-27.7	32.0	
13,117.6	89.58	183.74	12,466.8	-984.2	-319.2	0.47	0.21	-0.42	-28.3	29.1	
TGT 1 (Hawk 26 Fed 701H)											
13,174.0	89.70	183.50	12,467.1	-1,040.4	-322.8	0.47	0.21	-0.42	-28.8	25.1	
13,269.0	89.00	183.30	12,468.2	-1,135.3	-328.4	0.77	-0.74	-0.21	-29.0	18.7	
13,364.0	90.50	183.00	12,468.6	-1,230.1	-333.6	1.61	1.58	-0.32	-29.8	12.7	
13,459.0	90.40	182.70	12,467.9	-1,325.0	-338.4	0.33	-0.11	-0.32	-31.8	7.2	
13,554.0	90.70	182.40	12,466.9	-1,419.9	-342.6	0.45	0.32	-0.32	-34.0	2.1	
13,649.0	90.40	182.30	12,466.0	-1,514.8	-346.5	0.33	-0.32	-0.11	-36.1	-2.6	
13,744.0	90.80	182.70	12,465.0	-1,609.7	-350.6	0.60	0.42	0.42	-38.4	-7.5	
13,839.0	89.40	181.60	12,464.9	-1,704.6	-354.2	1.87	-1.47	-1.16	-39.8	-11.9	
13,907.0	89.40	181.60	12,465.6	-1,772.6	-356.1	0.00	0.00	0.00	-40.0	-14.3	
13,934.0	88.90	181.20	12,466.0	-1,799.6	-356.8	2.37	-1.85	-1.48	-40.0	-15.2	
14,029.0	89.10	180.90	12,467.6	-1,894.6	-358.5	0.38	0.21	-0.32	-39.6	-17.8	
14,124.0	89.80	180.50	12,468.6	-1,989.6	-359.7	0.85	0.74	-0.42	-39.9	-19.7	
14,219.0	88.40	179.80	12,470.1	-2,084.5	-359.9	1.65	-1.47	-0.74	-39.7	-20.8	
14,314.0	87.40	179.20	12,473.5	-2,179.5	-359.1	1.23	-1.05	-0.63	-37.4	-20.8	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hawk 26 Fed
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB= 25' @ 3539.0usft
 MD Reference: KB= 25' @ 3539.0usft
 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)
14,409.0	87.70	179.80	12,477.6	-2,274.4	-358.3	0.71	0.32	0.63	-34.6	-20.7
14,504.0	90.20	179.80	12,479.3	-2,369.4	-357.9	2.63	2.63	0.00	-34.1	-21.2
14,599.0	91.30	180.10	12,478.1	-2,464.3	-357.8	1.20	1.16	0.32	-36.6	-21.9
14,619.1	91.17	180.04	12,477.7	-2,484.5	-357.9	0.71	-0.63	-0.32	-37.3	-22.1
TGT 2 (Hawk 26 Fed 701H)										
14,694.0	90.70	179.80	12,476.4	-2,559.3	-357.8	0.71	-0.63	-0.32	-39.3	-22.6
14,789.0	90.80	179.80	12,475.2	-2,654.3	-357.4	0.11	0.11	0.00	-41.5	-23.1
14,884.0	90.30	179.20	12,474.3	-2,749.3	-356.6	0.82	-0.53	-0.63	-43.4	-23.0
14,979.0	89.80	179.30	12,474.2	-2,844.3	-355.3	0.54	-0.53	0.11	-44.4	-22.6
15,074.0	87.50	179.70	12,476.4	-2,939.3	-354.5	2.46	-2.42	0.42	-43.1	-22.6
15,169.0	87.00	179.40	12,481.0	-3,034.2	-353.8	0.61	-0.53	-0.32	-39.5	-22.6
15,264.0	86.30	178.30	12,486.5	-3,129.0	-351.9	1.37	-0.74	-1.16	-34.9	-21.6
15,359.0	86.20	177.60	12,492.8	-3,223.7	-348.5	0.74	-0.11	-0.74	-29.6	-19.0
15,454.0	87.40	179.00	12,498.1	-3,318.5	-345.7	1.94	1.26	1.47	-25.3	-16.9
15,549.0	88.10	179.60	12,501.8	-3,413.4	-344.5	0.97	0.74	0.63	-22.5	-16.5
15,644.0	89.80	179.00	12,503.5	-3,508.4	-343.3	1.90	1.79	-0.63	-21.7	-16.2
15,737.0	88.30	179.00	12,505.1	-3,601.4	-341.7	1.61	-1.61	0.00	-21.1	-15.3
15,832.0	87.30	179.30	12,508.7	-3,696.3	-340.3	1.10	-1.05	0.32	-18.4	-14.7
15,927.0	87.10	178.30	12,513.4	-3,791.2	-338.3	1.07	-0.21	-1.05	-14.7	-13.5
16,022.0	86.60	178.80	12,518.6	-3,886.0	-335.9	0.74	-0.53	0.53	-10.4	-11.9
16,117.0	87.30	179.10	12,523.6	-3,980.8	-334.2	0.80	0.74	0.32	-6.3	-11.0
16,124.9	87.32	179.06	12,524.0	-3,988.7	-334.1	0.57	0.21	-0.53	-6.0	-10.9
TGT 3 (Hawk 26 Fed 701H)										
16,212.0	87.50	178.60	12,527.9	-4,075.7	-332.3	0.57	0.21	-0.53	-2.2	-9.9
16,307.0	86.20	177.60	12,533.2	-4,170.5	-329.1	1.73	-1.37	-1.05	3.0	-7.5
16,402.0	88.70	177.90	12,537.4	-4,265.3	-325.4	2.65	2.63	0.32	7.3	-4.6
16,496.0	89.10	178.10	12,539.2	-4,359.3	-322.1	0.48	0.43	0.21	9.1	-2.1

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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)
16,591.0	86.70	176.50	12,542.7	-4,454.1	-317.7	3.04	-2.53	-1.68	12.6	1.6
16,686.0	87.90	175.50	12,547.1	-4,548.7	-311.0	1.64	1.26	-1.05	17.1	7.4
16,781.0	91.30	173.20	12,547.8	-4,643.3	-301.7	4.32	3.58	-2.42	17.8	15.9
16,877.0	92.70	166.90	12,544.5	-4,737.7	-285.1	6.72	1.46	-6.56	14.9	31.5
16,972.0	92.80	171.80	12,539.9	-4,830.9	-267.6	5.15	0.11	5.16	10.2	48.4
17,067.0	92.10	173.10	12,535.8	-4,925.0	-255.1	1.55	-0.74	1.37	6.1	60.1
17,161.0	92.70	173.40	12,531.9	-5,018.3	-244.1	0.71	0.64	0.32	2.2	70.4
17,276.0	89.70	181.00	12,529.5	-5,133.0	-238.5	7.10	-2.61	6.61	-0.5	75.0
17,371.0	90.50	185.80	12,529.3	-5,227.8	-244.1	5.12	0.84	5.05	-0.8	68.6
17,466.0	88.80	185.20	12,529.9	-5,322.4	-253.2	1.90	-1.79	-0.63	0.0	58.7
17,561.0	90.90	187.00	12,530.2	-5,416.8	-263.3	2.91	2.21	1.89	0.0	47.8
17,596.4	90.86	186.73	12,529.6	-5,452.0	-267.5	0.76	-0.12	-0.75	-0.5	43.3
HL Crossing, MD:17596.4', TVD:12529.6', N/S:-5452.0', E/W:-267.5', INC:90.86										
17,641.0	90.80	186.40	12,529.0	-5,496.3	-272.6	0.76	-0.13	-0.75	-1.1	37.8
Final MWD Survey (MD= 17641.0')										
17,693.0	90.80	186.40	12,528.2	-5,548.0	-278.4	0.00	0.00	0.00	-1.8	31.6
Final Bit Projection (MD= 17693.0') - PBHL (Hawk 26 Fed 701H)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,684.1	12,459.5	-552.0	-288.5	FTP Crossing, MD:12684.1', TVD:12459.5', N/S:-552.0', E/W:-288.5', INC:80.80
17,596.4	12,529.6	-5,452.0	-267.5	HL Crossing, MD:17596.4', TVD:12529.6', N/S:-5452.0', E/W:-267.5', INC:90.86
17,641.0	12,529.0	-5,496.3	-272.6	Final MWD Survey (MD= 17641.0')
17,693.0	12,528.2	-5,548.0	-278.4	Final Bit Projection (MD= 17693.0')

Checked By: _____

Approved By: _____

Date: _____