

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hawk 26 Fed

#702H

ST

Design: ST

PVA Report

25 September, 2017

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NOV 22 2017
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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' @ 3539.0usft (H&P 653)
Site:	Hawk 26 Fed	MD Reference:	KB= 25' @ 3539.0usft (H&P 653)
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	Hawk 26 Fed		
Site Position:		Northing:	431,092.00 usft
From:	Map	Easting:	783,852.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 57.794 N
		Longitude:	103° 32' 58.022 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:
			usft
			Latitude:
			32° 10' 57.791 N
			Longitude:
			103° 32' 57.614 W
			Ground Level:
			3,514.0 usft

Wellbore	ST		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	8/29/2017	6.92
			Dip Angle (°)
			60.03
			Field Strength (nT)
			47,894.73302324

Design	ST		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	4,858.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			177.37

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Survey Program		Date	9/25/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
112.0	1,314.0	Invictus MWD (OH)	MWD	MWD - Standard	
1,441.0	4,858.0	Intrepid MWD (OH)	MWD	MWD - Standard	
5,048.0	17,780.0	MWD Run #1 (ST)	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	
112.0	0.50	52.95	112.0	0.3	0.4	0.45	0.45	0.00	0.0	0.0	
132.0	0.80	87.95	132.0	0.4	0.6	2.42	1.50	175.00	0.0	0.0	
161.0	0.60	85.95	161.0	0.4	1.0	0.69	-0.69	-6.90	0.0	0.0	
189.0	0.60	71.95	189.0	0.4	1.2	0.52	0.00	-50.00	0.0	0.0	
221.0	0.60	141.95	221.0	0.3	1.5	2.15	0.00	218.75	0.0	0.0	
250.0	0.30	43.95	250.0	0.3	1.6	2.44	-1.03	-337.93	0.0	0.0	
278.0	0.40	194.95	278.0	0.2	1.7	2.42	0.36	539.29	0.0	0.0	
307.0	0.20	239.95	307.0	0.1	1.6	1.02	-0.69	155.17	0.0	0.0	
337.0	0.60	130.95	337.0	0.0	1.7	2.30	1.33	-363.33	0.0	0.0	
369.0	0.50	202.95	369.0	-0.3	1.7	2.04	-0.31	225.00	0.0	0.0	
431.0	0.80	159.95	431.0	-0.9	1.8	0.89	0.48	-69.35	0.0	0.0	
463.0	0.30	233.95	463.0	-1.2	1.8	2.42	-1.56	231.25	0.0	0.0	
495.0	0.30	115.95	495.0	-1.3	1.8	1.61	0.00	-368.75	0.0	0.0	
525.0	0.50	139.95	525.0	-1.4	2.0	0.86	0.67	80.00	0.0	0.0	
557.0	0.20	130.95	557.0	-1.5	2.1	0.95	-0.94	-28.12	0.0	0.0	
651.0	0.20	218.95	651.0	-1.8	2.1	0.30	0.00	93.62	0.0	0.0	
682.0	0.40	257.95	682.0	-1.8	2.0	0.89	0.65	125.81	0.0	0.0	
713.0	0.70	179.95	713.0	-2.0	1.9	2.36	0.97	-251.61	0.0	0.0	
744.0	0.70	251.95	744.0	-2.3	1.7	2.65	0.00	232.26	0.0	0.0	

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 Wellbore: ST
 Design: ST

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 MD Reference: KB= 25' @ 3539.0usft (H&P 653)
 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)	
776.0	0.50	233.95	776.0	-2.4	1.4	0.85	-0.62	-56.25	0.0	0.0	
807.0	0.60	241.95	807.0	-2.6	1.1	0.41	0.32	25.81	0.0	0.0	
869.0	0.70	186.95	869.0	-3.1	0.8	0.98	0.16	-86.71	0.0	0.0	
900.0	0.50	217.95	900.0	-3.4	0.7	1.21	-0.65	100.00	0.0	0.0	
934.0	0.60	235.95	934.0	-3.6	0.5	0.58	0.29	52.94	0.0	0.0	
995.0	1.30	227.95	995.0	-4.3	-0.3	1.17	1.15	-13.11	0.0	0.0	
1,026.0	1.00	228.95	1,026.0	-4.7	-0.8	0.97	-0.97	3.23	0.0	0.0	
1,058.0	1.20	219.95	1,057.9	-5.1	-1.2	0.82	0.62	-28.12	0.0	0.0	
1,090.0	1.20	201.95	1,089.9	-5.7	-1.5	1.17	0.00	-56.25	0.0	0.0	
1,122.0	0.90	239.95	1,121.9	-6.1	-1.9	2.31	-0.94	118.75	0.0	0.0	
1,153.0	1.20	223.95	1,152.9	-6.5	-2.3	1.34	0.97	-51.61	0.0	0.0	
1,184.0	0.60	248.95	1,183.9	-6.8	-2.7	2.27	-1.94	80.65	0.0	0.0	
1,215.0	0.90	198.95	1,214.9	-7.1	-2.9	2.23	0.97	-161.29	0.0	0.0	
1,270.0	0.30	242.95	1,269.9	-7.5	-3.2	1.30	-1.09	80.00	0.0	0.0	
1,309.0	0.70	200.95	1,308.9	-7.8	-3.4	1.33	1.03	-107.69	0.0	0.0	
1,314.0	0.80	243.95	1,313.9	-7.9	-3.4	11.15	2.00	860.00	0.0	0.0	
1,441.0	0.40	223.30	1,440.9	-8.6	-4.5	0.35	-0.31	-16.26	0.0	0.0	
1,629.0	0.30	329.10	1,628.9	-8.6	-5.2	0.30	-0.05	56.28	0.0	0.0	
1,819.0	0.40	317.80	1,818.9	-7.7	-5.9	0.06	0.05	-5.95	0.0	0.0	
2,009.0	0.80	319.90	2,008.9	-6.2	-7.2	0.21	0.21	1.11	0.0	0.0	
2,199.0	1.30	326.50	2,198.9	-3.4	-9.3	0.27	0.26	3.47	0.0	0.0	
2,388.0	0.60	98.00	2,387.8	-1.7	-9.5	0.93	-0.37	69.58	0.0	0.0	
2,578.0	0.90	43.90	2,577.8	-0.8	-7.5	0.39	0.16	-28.47	0.0	0.0	
2,768.0	1.20	22.80	2,767.8	2.1	-5.6	0.26	0.16	-11.11	0.0	0.0	
2,959.0	2.00	77.30	2,958.7	4.7	-1.6	0.85	0.42	28.53	0.0	0.0	
3,149.0	2.80	63.20	3,148.6	7.5	5.8	0.52	0.42	-7.42	0.0	0.0	
3,339.0	3.80	82.00	3,338.3	10.5	16.1	0.77	0.53	9.89	0.0	0.0	

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3,529.0	3.20	97.10	3,527.9	10.7	27.6	0.58	-0.32	7.95	0.0	0.0
3,719.0	3.00	95.80	3,717.6	9.5	37.8	0.11	-0.11	-0.68	0.0	0.0
3,908.0	1.10	8.70	3,906.5	10.8	43.0	1.66	-1.01	-46.08	0.0	0.0
4,098.0	1.50	93.20	4,096.5	12.5	45.8	0.93	0.21	44.47	0.0	0.0
4,288.0	0.70	156.90	4,286.5	11.3	48.7	0.71	-0.42	33.53	0.0	0.0
4,478.0	1.40	108.50	4,476.4	9.5	51.4	0.56	0.37	-25.47	0.0	0.0
4,668.0	2.50	110.00	4,666.3	7.3	57.5	0.58	0.58	0.79	0.0	0.0
4,858.0	5.10	122.70	4,855.9	1.4	68.5	1.43	1.37	6.68	0.0	0.0
5,048.0	3.30	147.40	5,045.4	-7.8	78.5	1.32	-0.95	13.00	0.0	0.0
5,115.0	9.10	85.70	5,112.0	-9.0	84.9	12.05	8.66	-92.09	-4.4	1.5
5,147.0	9.40	87.20	5,143.6	-8.7	90.0	1.20	0.94	4.69	-8.0	2.9
5,337.0	6.30	102.10	5,331.8	-10.2	115.7	1.94	-1.63	7.84	-14.6	9.2
5,527.0	4.40	103.70	5,521.0	-14.1	133.0	1.00	-1.00	0.84	-14.2	8.7
5,717.0	3.60	132.80	5,710.5	-19.8	144.4	1.13	-0.42	15.32	-15.0	14.5
5,907.0	1.60	149.40	5,900.3	-26.2	150.2	1.11	-1.05	8.74	-18.6	19.9
6,097.0	0.70	144.60	6,090.3	-29.4	152.2	0.48	-0.47	-2.53	-24.0	18.0
6,287.0	0.30	193.50	6,280.3	-30.8	152.7	0.29	-0.21	25.74	-3.4	30.8
6,477.0	0.00	1.80	6,470.3	-31.3	152.6	0.16	-0.16	0.00	11.0	-29.0
6,667.0	0.20	323.80	6,660.3	-31.1	152.4	0.11	0.11	0.00	25.7	-16.9
6,857.0	0.10	286.20	6,850.3	-30.7	152.1	0.07	-0.05	-19.79	30.3	2.1
7,047.0	0.10	341.70	7,040.3	-30.5	151.9	0.05	0.00	29.21	18.6	-23.6
7,238.0	0.30	357.40	7,231.3	-29.9	151.8	0.11	0.10	8.22	10.8	-27.7
7,428.0	0.10	340.00	7,421.3	-29.2	151.7	0.11	-0.11	-9.16	18.0	-23.4
7,617.0	2.20	243.90	7,610.2	-30.7	148.4	1.17	1.11	-50.85	17.7	20.2
7,807.0	1.30	246.50	7,800.1	-33.1	143.2	0.48	-0.47	1.37	12.8	19.6
7,997.0	1.90	225.30	7,990.1	-36.2	138.9	0.44	0.32	-11.16	-0.3	22.1
8,187.0	1.80	214.00	8,180.0	-40.9	135.0	0.20	-0.05	-5.95	-10.7	21.0

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8,377.0	0.80	187.90	8,369.9	-44.7	133.2	0.60	-0.53	-13.74	-22.8	12.8	
8,567.0	0.40	179.50	8,559.9	-46.7	133.0	0.21	-0.21	-4.42	-26.4	9.2	
8,757.0	0.30	208.20	8,749.9	-47.8	132.8	0.10	-0.05	15.11	-19.8	21.1	
8,947.0	1.20	174.30	8,939.9	-50.2	132.7	0.51	0.47	-17.84	-30.6	6.1	
9,137.0	1.10	188.30	9,129.9	-54.0	132.7	0.16	-0.05	7.37	-32.0	13.8	
9,327.0	1.50	197.90	9,319.8	-58.1	131.6	0.24	0.21	5.05	-33.5	19.3	
9,517.0	1.10	199.50	9,509.8	-62.2	130.3	0.21	-0.21	0.84	-37.3	20.3	
9,707.0	1.40	213.80	9,699.7	-65.9	128.4	0.23	0.16	7.53	-35.2	29.3	
9,896.0	2.30	226.10	9,888.6	-70.4	124.4	0.52	0.48	6.51	-34.2	36.6	
10,086.0	3.00	231.20	10,078.4	-76.2	117.7	0.39	0.37	2.68	-39.5	39.9	
10,276.0	3.20	287.70	10,268.2	-77.7	108.8	1.55	0.11	29.74	3.3	59.1	
10,465.0	4.00	318.70	10,456.8	-71.1	99.4	1.10	0.42	16.40	22.2	51.7	
10,656.0	2.50	342.70	10,647.5	-62.1	93.8	1.04	-0.79	12.57	31.0	40.9	
10,845.0	1.00	274.40	10,836.4	-58.1	90.9	1.23	-0.79	-36.14	-29.7	40.2	
11,035.0	1.00	283.40	11,026.4	-57.6	87.6	0.08	0.00	4.74	-26.3	44.6	
11,225.0	0.20	153.00	11,216.4	-57.5	86.2	0.60	-0.42	-68.63	-16.1	-50.2	
11,415.0	1.10	267.80	11,406.4	-57.8	84.5	0.63	0.47	60.42	-40.5	36.0	
11,605.0	2.10	277.80	11,596.3	-57.4	79.2	0.54	0.53	5.26	-38.9	42.8	
11,795.0	2.90	283.30	11,786.1	-55.9	71.1	0.44	0.42	2.89	-42.9	46.7	
11,900.0	2.10	275.90	11,891.0	-55.1	66.6	0.82	-0.76	-7.05	-53.1	40.4	
11,947.0	1.60	250.60	11,938.0	-55.2	65.1	2.01	-1.06	-53.83	-66.7	13.5	
11,994.0	4.90	167.30	11,984.9	-57.4	65.0	10.58	7.02	-177.23	-23.2	-65.4	
12,042.0	11.70	158.40	12,032.4	-63.9	67.2	14.38	14.17	-18.54	-17.7	-67.9	
12,089.0	15.40	155.80	12,078.1	-74.0	71.5	7.98	7.87	-5.53	-19.2	-66.8	
12,137.0	19.00	153.20	12,123.9	-86.8	77.7	7.67	7.50	-5.42	-19.3	-63.9	
12,184.0	23.10	154.60	12,167.8	-102.0	85.1	8.79	8.72	2.98	-21.9	-58.2	
12,232.0	27.30	156.50	12,211.2	-120.6	93.5	8.91	8.75	3.96	-23.2	-51.4	

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12,280.0	30.40	159.40	12,253.3	-142.1	102.2	7.08	6.46	6.04	-22.4	-44.2
12,327.0	36.50	163.80	12,292.5	-166.6	110.3	13.96	12.98	9.36	-20.8	-37.6
12,374.0	44.40	168.70	12,328.2	-196.2	117.4	18.11	16.81	10.43	-19.5	-33.3
12,422.0	51.10	171.60	12,360.5	-231.2	123.4	14.65	13.96	6.04	-17.8	-32.0
12,469.0	55.00	170.20	12,388.7	-268.3	129.4	8.63	8.30	-2.98	-14.0	-31.9
12,517.0	63.10	165.30	12,413.4	-308.5	138.2	19.00	16.87	-10.21	-9.7	-29.6
12,564.0	69.30	167.30	12,432.3	-350.2	148.3	13.75	13.19	4.26	-8.3	-25.6
12,612.0	75.10	169.00	12,447.0	-394.9	157.7	12.54	12.08	3.54	-6.6	-22.9
12,659.0	84.20	171.00	12,455.4	-440.4	165.7	19.81	19.36	4.26	-6.3	-21.8
12,754.0	91.90	172.80	12,458.7	-534.3	179.1	8.32	8.11	1.89	-8.3	-21.9
12,767.8	92.19	172.66	12,458.2	-548.0	180.8	2.31	2.07	-1.03	-9.3	-21.8
FTP Crossing, MD:12767.8', TVD:12458.2', N/S:-548.0', E/W:180.8', INC:92.19										
12,812.0	93.10	172.20	12,456.1	-591.8	186.6	2.31	2.07	-1.03	-13.1	-20.4
12,907.0	93.10	176.20	12,451.0	-686.1	196.2	4.20	0.00	4.21	-21.9	-17.1
13,002.0	89.20	174.80	12,449.1	-780.8	203.7	4.36	-4.11	-1.47	-27.6	-11.4
13,049.4	88.40	175.00	12,450.1	-828.0	207.9	1.74	-1.68	0.42	-28.4	-7.6
HL Crossing, MD:13049.4', TVD:12450.1', N/S:-828.0', E/W:207.9', INC:88.40										
13,097.0	87.60	175.20	12,451.8	-875.4	211.9	1.74	-1.68	0.42	-28.6	-3.9
13,192.0	87.30	177.60	12,456.0	-970.1	217.9	2.54	-0.32	2.53	-28.1	1.3
13,287.0	91.30	179.10	12,457.1	-1,065.1	220.6	4.50	4.21	1.58	-29.7	3.3
13,382.0	91.80	178.90	12,454.6	-1,160.0	222.3	0.57	0.53	-0.21	-33.8	4.1
13,477.0	88.80	179.90	12,454.1	-1,255.0	223.3	3.33	-3.16	1.05	-35.8	4.3
13,571.0	87.60	178.70	12,457.0	-1,348.9	224.4	1.80	-1.28	-1.28	-34.4	4.7
13,666.0	85.60	175.10	12,462.7	-1,443.6	229.6	4.33	-2.11	-3.79	-30.3	9.0
13,762.0	88.20	176.80	12,467.9	-1,539.2	236.3	3.23	2.71	1.77	-26.7	15.0
13,857.0	87.80	178.60	12,471.2	-1,634.1	240.1	1.94	-0.42	1.89	-24.9	18.0
13,952.0	85.80	179.00	12,476.5	-1,728.9	242.1	2.15	-2.11	0.42	-21.1	19.2

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hawk 26 Fed
 Well: #702H
 Wellbore: ST
 Design: ST

Local Co-ordinate Reference: Well #702H
 TVD Reference: KB= 25' @ 3539.0usft (H&P 653)
 MD Reference: KB= 25' @ 3539.0usft (H&P 653)
 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)
14,047.0	89.40	179.90	12,480.5	-1,823.8	243.0	3.91	3.79	0.95	-18.7	19.3
14,142.0	89.10	179.30	12,481.7	-1,918.8	243.7	0.71	-0.32	-0.63	-19.0	19.2
14,237.0	88.70	179.40	12,483.5	-2,013.8	244.8	0.43	-0.42	0.11	-18.7	19.5
14,331.0	88.00	179.30	12,486.2	-2,107.7	245.8	0.75	-0.74	-0.11	-17.5	19.7
14,427.0	84.60	178.20	12,492.4	-2,203.5	247.9	3.72	-3.54	-1.15	-12.8	21.0
14,521.0	85.00	178.70	12,500.9	-2,297.1	250.5	0.68	0.43	0.53	-5.8	22.8
14,576.0	88.90	180.70	12,503.9	-2,352.0	250.7	7.97	7.09	3.64	-3.8	22.6
14,671.0	92.40	183.20	12,502.8	-2,446.9	247.5	4.53	3.68	2.63	-6.4	18.5
14,766.0	90.80	182.10	12,500.1	-2,541.7	243.1	2.04	-1.68	-1.16	-10.2	13.4
14,861.0	91.30	181.80	12,498.4	-2,636.7	239.9	0.61	0.53	-0.32	-12.0	9.3
14,956.0	88.30	178.20	12,498.7	-2,731.6	239.9	4.93	-3.16	-3.79	-11.8	8.5
15,051.0	87.90	177.10	12,501.9	-2,826.5	243.8	1.23	-0.42	-1.16	-8.7	11.6
15,146.0	89.20	178.80	12,504.3	-2,921.4	247.2	2.25	1.37	1.79	-6.4	14.2
15,241.0	87.60	177.00	12,506.9	-3,016.3	250.7	2.53	-1.68	-1.89	-3.9	16.9
15,336.0	89.30	176.00	12,509.5	-3,111.1	256.5	2.08	1.79	-1.05	-1.4	21.9
15,431.0	90.70	176.90	12,509.5	-3,205.9	262.3	1.75	1.47	0.95	-1.5	27.0
15,526.0	88.60	177.50	12,510.1	-3,300.8	267.0	2.30	-2.21	0.63	-1.1	30.9
15,621.0	91.00	181.00	12,510.4	-3,395.7	268.2	4.47	2.53	3.68	-0.8	31.3
15,716.0	91.00	182.60	12,508.8	-3,490.7	265.2	1.68	0.00	1.68	-2.6	27.5
15,811.0	89.50	183.40	12,508.3	-3,585.6	260.3	1.79	-1.58	0.84	-3.1	21.8
15,906.0	87.60	181.00	12,510.7	-3,680.4	256.6	3.22	-2.00	-2.53	-0.8	17.3
16,001.0	85.30	178.90	12,516.6	-3,775.2	256.7	3.28	-2.42	-2.21	4.9	16.6
16,096.0	88.20	181.80	12,522.0	-3,870.1	256.1	4.31	3.05	3.05	10.3	15.2
16,191.0	88.10	182.80	12,525.1	-3,964.9	252.3	1.06	-0.11	1.05	13.2	10.6
16,286.0	89.80	182.50	12,526.8	-4,059.8	247.9	1.82	1.79	-0.32	14.9	5.4
16,381.0	89.60	182.50	12,527.3	-4,154.7	243.8	0.21	-0.21	0.00	15.4	0.5
16,476.0	87.70	182.00	12,529.6	-4,249.6	240.1	2.07	-2.00	-0.53	17.6	-4.0

PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hawk 26 Fed
Well: #702H
Wellbore: ST
Design: ST

Local Co-ordinate Reference: Well #702H
TVD Reference: KB= 25' @ 3539.0usft (H&P 653)
MD Reference: KB= 25' @ 3539.0usft (H&P 653)
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)
16,571.0	89.50	182.40	12,531.9	-4,344.5	236.4	1.94	1.89	0.42	20.0	-8.5
16,666.0	89.10	181.00	12,533.0	-4,439.5	233.6	1.53	-0.42	-1.47	21.1	-12.1
16,761.0	89.00	180.90	12,534.6	-4,534.4	232.0	0.15	-0.11	-0.11	22.7	-14.5
16,857.0	88.40	180.20	12,536.8	-4,630.4	231.1	0.96	-0.62	-0.73	24.9	-16.2
16,952.0	87.90	178.90	12,539.9	-4,725.4	231.8	1.47	-0.53	-1.37	27.9	-16.3
17,047.0	87.90	179.10	12,543.3	-4,820.3	233.5	0.21	0.00	0.21	31.4	-15.4
17,142.0	90.30	179.10	12,544.8	-4,915.3	235.0	2.53	2.53	0.00	32.9	-14.7
17,236.0	90.50	179.50	12,544.2	-5,009.2	236.1	0.48	0.21	0.43	32.3	-14.3
17,331.0	90.90	180.60	12,543.0	-5,104.2	236.0	1.23	0.42	1.16	31.1	-15.2
17,426.0	87.50	180.60	12,544.3	-5,199.2	235.1	3.58	-3.58	0.00	32.4	-17.0
17,521.0	89.40	180.90	12,546.9	-5,294.2	233.8	2.02	2.00	0.32	35.0	-19.0
17,616.0	90.40	180.60	12,547.1	-5,389.1	232.6	1.10	1.05	-0.32	35.2	-21.1
17,674.9	88.97	180.35	12,547.4	-5,448.0	232.1	2.46	-2.42	-0.42	35.5	-22.1
HL Crossing, MD:17674.9', TVD:12547.4',N/S:-5448.0', E/W:232.1', INC:88.97										
17,711.0	88.10	180.20	12,548.3	-5,484.1	231.9	2.46	-2.42	-0.42	36.4	-22.6
17,726.0	88.60	180.30	12,548.8	-5,499.1	231.8	3.40	3.33	0.67	36.8	-22.7
Final MWD Survey (MD=17726.0')										
17,780.0	88.60	180.30	12,550.1	-5,553.1	231.6	0.00	0.00	0.00	38.2	-23.5
Final Projection to Bit (MD=17780.0')										

PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hawk 26 Fed
Well: #702H
Wellbore: ST
Design: ST

Local Co-ordinate Reference: Well #702H
TVD Reference: KB= 25' @ 3539.0usft (H&P 653)
MD Reference: KB= 25' @ 3539.0usft (H&P 653)
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)	
12,767.8	12,458.2	-548.0	180.8	FTP Crossing, MD:12767.8', TVD:12458.2',N/S:-548.0', E/W:180.8', INC:92.19
13,049.4	12,450.1	-828.0	207.9	HL Crossing, MD:13049.4', TVD:12450.1',N/S:-828.0', E/W:207.9', INC:88.40
17,674.9	12,547.4	-5,448.0	232.1	HL Crossing, MD:17674.9', TVD:12547.4',N/S:-5448.0', E/W:232.1', INC:88.97
17,726.0	12,548.8	-5,499.1	231.8	Final MWD Survey (MD=17726.0')
17,780.0	12,550.1	-5,553.1	231.6	Final Projection to Bit (MD=17780.0')

Checked By: _____ Approved By: _____ Date: _____

HOBBS OCD
NOV 22 2017
RECEIVED



Lea County, NM (NAD 83 NME)

Hawk 26 Fed #702H

H&P 653

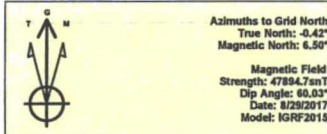
Plan #4

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

KB= 28' @ 3539.0usft (H&P 653) 3514.0
Northing 431092.00 Easting 783887.00 Latitude 32° 10' 57.791 N Longitude 103° 32' 57.614 W



To convert a Magnetic Direction to a Grid Direction, Add 6.50°
To convert a Magnetic Direction to a True Direction, Add 6.50° East
To convert a True Direction to a Grid Direction, Subtract 0.42°

Sec	MD	Inc	Azi	TVD	+NI-S	+EJ-W	Dleg	TFace	V/Sect	Target	Annotation
1	5100.0	2.87	151.85	5097.3	-10.3	80.0	0.00	0.00	13.8		
2	5219.8	6.00	100.00	5216.8	-14.0	87.5	4.00	-80.02	18.0		
3	5419.9	6.00	100.00	5415.7	-17.5	108.1	0.00	0.00	22.5		
4	5719.9	0.00	0.00	5715.2	-20.3	123.6	2.00	180.00	26.0		
5	11922.4	0.00	0.00	11987.7	-30.3	123.6	0.00	0.00	26.0		
6	12723.8	87.77	171.31	12464.8	-473.9	182.9	12.00	171.31	482.3		
7	12897.1	87.77	179.52	12475.5	-745.9	214.7	3.00	90.16	755.0		
8	13242.4	87.77	179.52	12485.0	-991.1	216.7	0.00	0.00	1000.0		TGT 1 (Hawk 26 Fed #702H)
9	13207.6	88.07	179.52	12486.8	-1056.3	217.3	2.00	-0.03	1065.1		
10	14743.7	89.07	179.52	12510.0	-2482.1	228.3	0.00	0.00	2500.0		TGT 2 (Hawk 26 Fed #702H)
11	14786.8	89.84	179.52	12510.4	-2535.2	229.7	2.00	0.00	2543.1		TGT 3 (Hawk 26 Fed #702H)
12	16244.8	90.84	179.52	12512.0	-3893.1	241.9	0.00	0.00	4000.0		
13	16248.0	90.00	179.52	12512.0	-3896.3	242.0	2.00	0.00	4003.2		
14	17800.7	90.00	179.52	12512.0	-5548.0	255.0	0.00	0.00	5554.8		PSHL (Hawk 26 Fed #702H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+NI-S	+EJ-W	Northing	Easting
TGT 1 (Hawk 26 Fed #702H)	12485.0	-991.1	216.7	430100.80	784103.74
TGT 2 (Hawk 26 Fed #702H)	12510.0	-2482.1	228.3	428888.80	784116.34
TGT 3 (Hawk 26 Fed #702H)	12512.0	-3893.1	241.9	427088.90	784128.84
PSHL (Hawk 26 Fed #702H)	12512.0	-5548.0	255.0	425543.00	784142.00
FTP (Hawk 26 Fed #702H)	12485.0	-548.0	213.0	425544.00	784100.00
KOP (Hawk 26 Fed #702H)	12008.7	0.0	38.4	431082.00	783925.41

