



HOBBS OCD
JUN 21 2018
RECEIVED

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Gem 36 State Com

#721H

OH

Survey: Total MWD

Midland PVA

01 May, 2018





Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3367.0usft
Site:	Gem 36 State Com	MD Reference:	KB = 25 @ 3367.0usft
Well:	#721H	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	Gem 36 State Com		
Site Position:		Northing:	393,686.00 usft
From:	Map	Easting:	759,213.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 49.331 N
		Longitude:	103° 37' 47.552 W
		Grid Convergence:	0.37 °

Well	#721H					
Well Position	+N-S	0.0 usft	Northing:	393,799.00 usft	Latitude:	32° 4' 50.578 N
	+E-W	0.0 usft	Easting:	757,198.00 usft	Longitude:	103° 38' 10.963 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,342.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/6/2018	6.90	59.91	47,773.01112707

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	5.07



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Survey Program		Date	5/1/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description		
169.0	826.0	Olebrook MWD (OH)	MWD	OWSG MWD - Standard		
889.0	17,430.0	Total MWD (OH)	MWD	OWSG MWD - Standard		

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	EA/W (usft)	DLeg (°/100usft)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
826.0	0.09	11.16	826.0	-0.8	3.1	0.00	0.00	0.00	0.2	-3.2
889.0	0.40	342.10	889.0	-0.5	3.1	0.51	0.49	-46.13	1.5	-2.8
982.0	1.50	137.60	982.0	-1.1	3.8	2.01	1.18	167.20	-3.4	2.0
1,076.0	1.50	137.60	1,075.9	-3.0	5.5	0.00	0.00	0.00	-5.9	2.0
1,169.0	2.00	115.20	1,168.9	-4.5	7.7	0.90	0.54	-24.09	-8.9	-0.8
1,262.0	1.90	117.00	1,261.8	-5.9	10.6	0.13	-0.11	1.94	-12.1	-0.5
1,449.0	1.90	118.90	1,448.7	-8.8	16.1	0.03	0.00	1.02	-18.3	0.0
1,543.0	1.80	123.20	1,542.7	-10.4	18.7	0.18	-0.11	4.57	-21.3	1.5
1,637.0	1.80	123.20	1,636.6	-12.0	21.1	0.00	0.00	0.00	-24.3	1.5
1,825.0	2.20	137.90	1,824.5	-16.3	26.0	0.34	0.21	7.82	-29.6	8.4
2,014.0	2.30	144.60	2,013.4	-22.1	30.7	0.15	0.05	3.54	-35.8	12.2
2,202.0	2.50	149.30	2,201.2	-28.7	34.9	0.15	0.11	2.50	-42.5	15.4
2,391.0	2.40	151.70	2,390.0	-35.7	38.9	0.08	-0.05	1.27	-49.9	17.3
2,579.0	2.50	154.40	2,577.9	-42.9	42.6	0.08	0.05	1.44	-57.1	19.9
2,673.0	2.50	155.90	2,671.8	-46.6	44.3	0.07	0.00	1.60	-60.6	21.4
2,767.0	2.60	159.10	2,765.7	-50.5	45.9	0.19	0.11	3.40	-63.5	24.9
2,861.0	2.60	161.90	2,859.6	-54.5	47.3	0.14	0.00	2.98	-66.5	28.1
2,954.0	2.50	159.90	2,952.5	-58.4	48.6	0.14	-0.11	-2.15	-71.6	25.6
3,048.0	2.30	157.00	3,046.4	-62.1	50.1	0.25	-0.21	-3.09	-76.7	21.9
3,142.0	2.20	157.50	3,140.3	-65.5	51.5	0.11	-0.11	0.53	-80.2	22.6
3,236.0	2.20	148.20	3,234.3	-68.7	53.2	0.38	0.00	-9.89	-86.4	9.0



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

Survey											
MD (usft)	Inc (°)	Azi (eximuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
3,424.0	2.80	112.20	3,422.1	-73.5	59.3	0.88	0.32	-19.15	-82.7	-45.7	
3,517.0	3.00	104.20	3,515.0	-74.9	63.8	0.48	0.22	-8.60	-80.2	-57.0	
3,612.0	3.10	97.80	3,609.8	-75.9	68.7	0.37	0.11	-6.74	-78.3	-65.9	
3,706.0	3.40	95.00	3,703.7	-76.5	74.0	0.36	0.32	-2.98	-80.3	-69.8	
3,801.0	3.30	92.20	3,798.5	-76.8	79.6	0.20	-0.11	-2.95	-82.4	-73.8	
3,989.0	3.00	85.90	3,986.2	-76.7	89.9	0.24	-0.16	-3.35	-84.1	-83.0	
4,084.0	3.40	91.20	4,081.1	-76.6	95.2	0.52	0.42	5.58	-96.7	-74.6	
4,273.0	4.00	91.20	4,269.7	-76.8	107.4	0.32	0.32	0.00	-108.9	-74.7	
4,367.0	4.50	98.60	4,363.4	-77.4	114.3	0.79	0.53	7.87	-124.5	-59.6	
4,555.0	5.20	105.90	4,550.8	-80.9	129.8	0.50	0.37	3.88	-146.9	-42.4	
4,618.0	5.20	105.10	4,613.5	-82.4	135.3	0.12	0.00	-1.27	-152.0	-44.5	
4,719.0	4.30	107.20	4,714.2	-84.7	143.3	0.91	-0.89	2.08	-161.9	-38.6	
4,813.0	7.40	126.10	4,807.7	-89.3	151.6	3.84	3.30	20.11	-175.1	17.3	
5,001.0	8.90	131.10	4,993.8	-106.0	172.3	0.88	0.80	2.66	-192.5	33.1	
5,094.0	9.10	129.60	5,085.6	-115.4	183.4	0.33	0.22	-1.61	-199.5	27.7	
5,189.0	8.50	129.20	5,179.5	-124.7	194.6	0.63	-0.63	-0.42	-202.4	26.0	
5,283.0	8.40	130.40	5,272.5	-133.5	205.2	0.22	-0.11	1.28	-200.7	29.8	
5,377.0	8.40	130.20	5,365.5	-142.4	215.7	0.03	0.00	-0.21	-198.4	28.6	
5,471.0	8.30	129.60	5,458.5	-151.1	226.2	0.14	-0.11	-0.64	-196.2	26.1	
5,659.0	8.00	126.70	5,644.6	-167.6	247.1	0.27	-0.16	-1.54	-191.7	16.6	
5,752.0	7.60	124.60	5,736.7	-175.0	257.4	0.53	-0.43	-2.26	-188.9	10.4	
5,846.0	9.90	121.70	5,829.6	-182.7	269.4	2.49	2.45	-3.09	-187.4	2.6	
5,940.0	10.20	118.90	5,922.2	-191.0	283.5	0.61	0.32	-2.98	-187.9	-4.2	
6,034.0	9.90	118.50	6,014.7	-198.9	297.9	0.33	-0.32	-0.43	-188.4	-2.8	
6,129.0	9.60	117.90	6,108.4	-206.5	312.1	0.33	-0.32	-0.63	-188.5	-1.9	
6,223.0	9.80	118.20	6,201.0	-213.9	326.1	0.22	0.21	0.32	-188.5	2.0	
6,317.0	9.90	117.70	6,293.6	-221.5	340.3	0.14	0.11	-0.53	-188.8	3.3	



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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)
6,411.0	9.90	117.40	6,386.2	-228.9	354.6	0.05	0.00	-0.32	-189.1	5.3
6,505.0	7.80	114.70	6,479.1	-235.3	367.6	2.28	-2.23	-2.87	-188.0	0.0
6,598.0	5.50	115.60	6,572.5	-239.9	377.4	2.45	-2.45	0.96	-183.1	6.6
6,693.0	4.10	122.90	6,666.1	-243.7	384.3	1.62	-1.49	7.77	-172.6	31.7
6,787.0	4.10	122.80	6,759.9	-247.4	390.0	0.01	0.00	-0.11	-163.3	32.9
6,880.0	4.00	118.10	6,852.7	-250.7	395.6	0.37	-0.11	-5.05	-156.2	22.1
6,974.0	3.80	121.00	6,946.4	-253.8	401.2	0.30	-0.21	3.09	-145.3	32.2
7,068.0	3.70	120.20	7,040.2	-257.0	406.5	0.12	-0.11	-0.85	-135.9	32.4
7,162.0	3.40	123.20	7,134.1	-260.0	411.4	0.38	-0.32	3.19	-123.8	41.1
7,256.0	3.30	123.90	7,227.9	-263.1	416.0	0.11	-0.11	0.74	-112.7	43.9
7,360.0	3.30	124.90	7,331.7	-266.4	421.0	0.06	0.00	0.96	-100.0	46.9
7,443.0	3.00	129.90	7,414.6	-269.2	424.6	0.49	-0.36	6.02	-85.9	55.3
7,537.0	3.10	130.50	7,508.5	-272.4	428.4	0.11	0.11	0.64	-74.2	55.6
7,631.0	2.90	122.20	7,602.3	-275.3	432.4	0.51	-0.21	-8.83	-70.2	45.7
7,725.0	2.50	130.00	7,696.2	-277.9	435.9	0.58	-0.43	8.30	-52.3	54.6
7,818.0	2.30	134.90	7,789.2	-280.6	438.8	0.31	-0.22	5.27	-38.8	57.5
8,006.0	2.20	140.60	7,977.0	-286.0	443.8	0.13	-0.05	3.03	-24.0	57.9
8,099.0	2.30	138.70	8,069.9	-288.8	446.1	0.13	0.11	-2.04	-25.9	56.3
8,194.0	2.20	135.90	8,164.9	-291.5	448.7	0.16	-0.11	-2.95	-31.5	54.8
8,289.0	2.30	141.10	8,259.8	-294.3	451.1	0.24	0.11	5.47	-30.1	57.6
8,384.0	2.20	148.10	8,354.7	-297.4	453.3	0.31	-0.11	7.37	-26.6	61.0
8,477.0	2.00	152.10	8,447.7	-300.3	455.0	0.27	-0.22	4.30	-25.7	62.9
8,572.0	2.10	148.60	8,542.6	-303.3	456.7	0.17	0.11	-3.68	-32.9	61.1
8,666.0	1.80	162.50	8,636.5	-306.1	458.0	0.59	-0.32	14.79	-20.4	67.6
8,760.0	1.50	164.30	8,730.5	-308.7	458.8	0.32	-0.32	1.91	-21.0	68.3
8,854.0	1.80	166.30	8,824.5	-311.3	459.5	0.32	0.32	2.13	-21.3	69.0
8,949.0	1.50	173.10	8,919.4	-314.0	460.0	0.38	-0.32	7.16	-15.7	71.2



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9,043.0	1.00	188.30	9,013.4	-316.1	460.0	0.63	-0.53	16.17	1.5	73.2
9,138.0	0.70	235.10	9,108.4	-317.2	459.4	0.77	-0.32	49.26	53.2	49.6
9,232.0	0.30	216.80	9,202.4	-317.7	458.8	0.45	-0.43	-19.47	34.2	63.6
9,327.0	0.90	200.40	9,297.4	-318.6	458.4	0.65	0.63	-17.26	13.8	70.6
9,421.0	1.10	258.00	9,391.4	-319.5	457.2	1.04	0.21	61.28	65.7	26.8
9,515.0	1.30	317.20	9,485.4	-318.9	455.6	1.27	0.21	62.98	55.1	-42.0
9,609.0	0.80	309.50	9,579.3	-317.7	454.4	0.55	-0.53	-8.19	58.5	-34.4
9,703.0	0.50	246.70	9,673.3	-317.5	453.5	0.77	-0.32	-66.81	56.6	35.8
9,891.0	2.50	308.30	9,861.3	-315.2	449.6	1.23	1.06	32.77	53.9	-32.1
9,985.0	2.30	288.00	9,955.2	-313.4	446.1	0.92	-0.21	-21.60	57.8	-12.1
10,078.0	2.00	285.10	10,048.1	-312.4	442.8	0.34	-0.32	-3.12	54.9	-9.2
10,172.0	1.70	294.40	10,142.1	-311.4	440.0	0.45	-0.32	9.89	49.7	-17.7
10,266.0	2.10	301.40	10,236.0	-309.9	437.2	0.49	0.43	7.45	44.0	-23.5
10,360.0	1.80	289.40	10,330.0	-308.5	434.4	0.54	-0.32	-12.77	44.8	-14.2
10,454.0	1.60	293.40	10,423.9	-307.5	431.8	0.25	-0.21	4.26	40.9	-17.1
10,547.0	1.60	275.10	10,516.9	-306.9	429.3	0.55	0.00	-19.68	41.7	-3.8
10,641.0	1.50	282.90	10,610.8	-306.5	426.8	0.25	-0.11	8.30	38.3	-9.3
10,735.0	1.50	297.00	10,704.8	-305.7	424.5	0.39	0.00	15.00	32.4	-18.0
10,829.0	2.40	294.00	10,798.8	-304.3	421.6	0.96	0.96	-3.19	30.1	-16.4
10,923.0	3.00	291.50	10,892.7	-302.6	417.5	0.65	0.64	-2.66	26.4	-15.1
11,017.0	2.70	288.10	10,986.5	-301.0	413.1	0.37	-0.32	-3.62	22.6	-13.7
11,111.0	2.40	294.00	11,080.4	-299.5	409.2	0.42	-0.32	6.28	16.9	-15.7
11,205.0	2.80	270.30	11,174.4	-298.7	405.1	1.21	0.43	-25.21	17.6	-8.4
11,300.0	2.00	239.00	11,269.3	-299.6	401.4	1.59	-0.84	-32.95	15.8	0.8
11,393.0	3.50	198.20	11,362.2	-303.1	399.1	2.56	1.61	-43.87	7.4	9.9
11,487.0	3.30	201.00	11,456.0	-308.3	397.2	0.28	-0.21	2.98	2.3	9.6
11,573.0	3.30	205.50	11,541.9	-312.9	395.3	0.30	0.00	5.23	-1.9	9.6



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11,707.0	1.80	263.60	11,675.7	-316.6	391.5	2.09	-1.12	43.36	3.0	10.0	
11,801.0	2.30	340.10	11,769.7	-315.0	389.4	2.73	0.53	81.38	8.2	0.8	
11,895.0	1.70	324.10	11,863.6	-312.1	387.9	0.87	-0.64	-17.02	4.4	2.5	
11,989.0	0.90	298.30	11,957.6	-310.6	386.5	1.03	-0.85	-27.45	1.2	4.2	
12,082.0	1.20	247.40	12,050.6	-310.6	384.9	1.01	0.32	-54.73	-9.3	15.7	
12,177.0	7.10	349.80	12,145.4	-305.2	383.0	7.84	6.21	107.79	42.4	12.2	
12,271.0	16.00	2.70	12,237.4	-286.5	382.5	9.80	9.47	13.72	72.3	2.6	
12,318.0	20.50	359.00	12,282.0	-271.8	382.7	9.88	9.57	-7.87	86.5	6.8	
12,365.0	24.20	354.10	12,325.5	-254.0	381.6	8.81	7.87	-10.43	100.4	15.0	
12,412.0	26.20	356.00	12,368.0	-234.1	379.9	4.59	4.26	4.04	116.6	15.0	
12,458.0	30.40	356.00	12,408.5	-212.3	378.3	9.13	9.13	0.00	133.0	17.0	
12,505.0	39.10	352.50	12,447.1	-185.7	375.6	18.98	18.51	-7.45	147.2	25.0	
12,552.0	46.00	351.30	12,481.7	-154.3	371.1	14.78	14.68	-2.55	159.0	30.8	
12,599.0	51.30	355.50	12,512.7	-119.2	367.1	13.12	11.28	8.94	170.5	28.4	
12,646.0	56.70	0.00	12,540.3	-81.3	365.6	13.85	11.49	9.57	180.9	23.9	
12,693.0	64.40	5.20	12,563.5	-40.4	367.6	19.00	16.38	11.06	188.8	16.3	
12,707.5	68.21	5.66	12,569.3	-27.2	368.8	26.40	26.24	3.13	190.3	14.9	
HL Crossing 12707.5' MD; 12569.3' TVD; -27.2; 368.8; 68.21											
12,733.0	74.90	6.40	12,577.3	-3.2	371.4	26.40	26.25	2.92	191.3	12.4	
12,805.0	89.10	6.00	12,587.3	67.5	379.0	19.73	19.72	-0.56	186.1	7.7	
12,899.0	91.90	3.80	12,586.5	161.1	387.1	3.79	2.98	-2.34	177.1	2.9	
12,993.0	90.10	4.00	12,584.9	254.9	393.5	1.93	-1.91	0.21	176.0	-2.7	
13,087.0	88.20	3.30	12,586.3	348.7	399.4	2.15	-2.02	-0.74	178.1	-8.2	
13,182.0	88.90	3.20	12,588.7	443.5	404.8	0.74	0.74	-0.11	181.2	-13.0	
13,276.0	87.80	0.50	12,591.4	537.4	407.9	3.10	-1.17	-2.87	184.6	-15.6	
13,370.0	90.10	359.80	12,593.1	631.4	408.1	2.56	2.45	-0.74	187.0	-15.3	
13,464.0	90.30	359.50	12,592.8	725.4	407.5	0.38	0.21	-0.32	187.3	-14.2	



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Gem 36 State Com
Well: #721H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference: KB = 25 @ 3367.0usft
MD Reference: KB = 25 @ 3367.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	
13,559.0	92.10	359.60	12,590.8	820.4	406.8	1.90	1.89	0.11	186.0	-13.0	
13,614.0	92.30	359.30	12,588.7	875.3	406.3	0.66	0.36	-0.55	184.3	-12.1	
13,652.0	89.30	359.30	12,588.1	913.3	405.8	7.89	-7.89	0.00	184.1	-11.4	
13,746.0	86.90	358.90	12,591.3	1,007.2	404.3	2.59	-2.55	-0.43	187.9	-9.4	
13,840.0	89.80	359.00	12,594.0	1,101.2	402.6	3.09	3.09	0.11	191.3	-7.2	
13,934.0	91.40	358.30	12,593.0	1,195.1	400.4	1.86	1.70	-0.74	191.0	-4.4	
14,028.0	92.30	357.80	12,589.9	1,289.0	397.2	1.10	0.96	-0.53	188.6	-0.7	
14,122.0	92.30	357.40	12,586.2	1,382.9	393.2	0.43	0.00	-0.43	185.5	3.7	
14,216.0	90.20	358.40	12,584.1	1,476.8	389.8	2.47	-2.23	1.06	184.2	7.7	
14,310.0	91.50	358.20	12,582.7	1,570.7	387.0	1.40	1.38	-0.21	183.5	11.1	
14,404.0	87.60	359.00	12,583.5	1,664.7	384.7	4.24	-4.15	0.85	185.0	13.9	
14,498.0	89.10	359.50	12,586.2	1,758.6	383.5	1.68	1.60	0.53	186.5	15.7	
14,592.0	90.30	0.10	12,586.7	1,852.6	383.2	1.43	1.28	0.64	189.7	16.6	
14,686.0	90.30	0.40	12,586.2	1,946.6	383.6	0.32	0.00	0.32	190.0	16.7	
14,780.0	91.60	0.30	12,584.6	2,040.6	384.1	1.39	1.38	-0.11	189.2	16.7	
14,875.0	87.70	1.30	12,585.2	2,135.6	385.5	4.24	-4.11	1.05	190.5	15.9	
14,969.0	86.00	0.30	12,590.4	2,229.5	386.8	2.10	-1.81	-1.06	196.4	15.2	
15,064.0	88.60	0.10	12,594.8	2,324.3	387.1	2.74	2.74	-0.21	201.6	15.3	
15,158.0	87.10	359.70	12,598.4	2,418.3	386.9	1.65	-1.60	-0.43	205.9	16.0	
15,253.0	90.90	359.90	12,600.0	2,513.2	386.6	4.01	4.00	0.21	208.3	16.9	
15,347.0	91.40	358.60	12,598.1	2,607.2	385.4	1.48	0.53	-1.38	207.2	18.6	
15,441.0	92.30	357.40	12,595.1	2,701.1	382.1	1.60	0.96	-1.28	204.9	22.4	
15,535.0	91.60	357.40	12,591.9	2,794.9	377.8	0.74	-0.74	0.00	202.5	27.2	
15,630.0	88.50	357.60	12,591.8	2,889.8	373.7	3.27	-3.26	0.21	203.1	31.9	
15,723.0	90.60	357.40	12,592.5	2,982.8	369.6	2.27	2.26	-0.22	204.6	36.4	
15,818.0	93.90	2.20	12,588.8	3,077.6	369.3	6.13	3.47	5.05	202.0	37.6	
15,911.0	92.70	2.00	12,583.5	3,170.4	372.7	1.31	-1.29	-0.22	197.7	34.7	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3367.0usft
Site:	Gem 36 State Com	MD Reference:	KB = 25 @ 3367.0usft
Well:	#721H	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)	Buflg (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,005.0	93.00	2.00	12,578.8	3,264.2	376.0	0.32	0.32	0.00	194.2	31.9	
16,100.0	93.30	1.30	12,573.6	3,359.1	378.7	0.80	0.32	-0.74	190.1	29.7	
16,194.0	91.70	2.30	12,569.5	3,452.9	381.7	2.01	-1.70	1.06	187.1	27.3	
16,288.0	91.40	4.30	12,566.9	3,546.7	387.1	2.15	-0.32	2.13	185.7	22.5	
16,382.0	91.50	3.20	12,564.5	3,640.5	393.2	1.17	0.11	-1.17	184.5	16.8	
16,477.0	89.50	3.70	12,563.7	3,735.3	398.9	2.17	-2.11	0.53	184.8	11.7	
16,571.0	91.10	4.10	12,563.2	3,829.1	405.3	1.75	1.70	0.43	185.4	5.9	
16,665.0	91.60	3.40	12,561.0	3,922.9	411.5	0.91	0.53	-0.74	184.3	0.2	
16,759.0	90.40	2.30	12,559.4	4,016.7	416.2	1.73	-1.28	-1.17	183.7	-4.0	
16,854.0	91.00	2.40	12,558.2	4,111.6	420.0	0.64	0.63	0.11	183.3	-7.3	
16,948.0	91.40	1.40	12,556.2	4,205.5	423.2	1.15	0.43	-1.06	182.2	-9.9	
17,043.0	91.60	2.10	12,553.8	4,300.5	426.1	0.77	0.21	0.74	180.5	-12.3	
17,138.0	90.70	1.50	12,551.9	4,395.4	429.0	1.14	-0.95	-0.63	179.4	-14.7	
17,233.0	91.20	2.00	12,550.3	4,490.3	431.9	0.74	0.53	0.53	178.6	-17.1	
17,328.0	91.90	2.80	12,547.7	4,585.2	435.9	1.12	0.74	0.84	176.8	-20.5	
17,335.6	91.81	2.82	12,547.5	4,592.8	436.3	1.24	-1.22	0.24	176.6	-20.8	
HL Crossing 17335.6' MD; 12547.5' TVD; 4592.8'; 436.3'; 91.81											
17,369.0	91.40	2.90	12,546.5	4,626.2	438.0	1.24	-1.22	0.24	176.0	-22.3	
Last MWD Survey (MD = 17369.0)											
17,430.0	91.40	2.90	12,545.0	4,687.0	441.0	0.00	0.00	0.00	175.0	-25.0	
Projection to Bit (MD = 17430.0)											



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Gem 36 State Com
Well: #721H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #721H
TVD Reference: KB = 25 @ 3367.0usft
MD Reference: KB = 25 @ 3367.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,707.5	12,569.3	-27.2	368.8	HL Crossing 12707.5' MD; 12569.3' TVD; -27.2'; 368.8'; 68.21
17,335.6	12,547.5	4,592.8	436.3	HL Crossing 17335.6' MD; 12547.5' TVD; 4592.8'; 436.3'; 91.81
17,369.0	12,546.5	4,626.2	438.0	Last MWD Survey (MD = 17369.0)
17,430.0	12,545.0	4,687.0	441.0	Projection to Bit (MD = 17430.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Gem 36 State Com #721H

Plan #1



Adjustments to Grid North
True North: 0.37°
Magnetic North: 6.51°
Magnetic Declination: 6.14°
Grid Angle: 349.1°
Grid Angle: 349.1°
Grid Angle: 349.1°

To convert a Magnetic Direction to a Grid Direction, Add 6.51°
To convert a Magnetic Direction to a True Direction, Add 6.90° East
To convert a True Direction to a Grid Direction, Subtract 0.37°

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: #721H

3342.0

KB = 25 @ 3367.0usft
Northing 393799.00 Easting 757198.00 Latitude 32° 4' 50.578 N Longitude 103° 38' 10.963 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+NU-S	+EAW	Dleg	TFace	USect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4800.0	0.00	0.00	4800.0	0.0	0.0	0.00	0.00	0.0		
3	5282.8	6.85	128.40	5290.2	-26.2	33.1	2.00	128.40	-23.2		
4	7897.8	8.35	128.40	7848.8	-290.8	354.3	0.00	0.00	-248.4		
5	8183.2	0.00	0.00	8140.0	-307.0	387.4	2.00	180.00	-271.6		
6	11972.2	0.00	0.00	11933.0	-307.0	387.4	0.00	0.00	-271.6		
7	12735.6	90.42	0.33	12409.8	173.9	386.2	12.00	1.33	207.7		
8	14022.4	90.42	0.33	13400.0	1470.6	397.8	0.00	0.00	1500.0		
9	14024.3	90.48	0.33	13400.0	1472.8	397.8	2.00	0.00	1501.8		
10	15027.8	90.48	0.33	13388.0	2975.8	408.2	0.00	0.00	3000.0		
11	16531.1	90.63	0.33	12387.9	2987.3	408.2	2.00	0.00	3011.5		
12	16531.1	90.63	0.33	12378.0	3879.2	411.8	0.00	0.00	4000.0		
13	16541.4	90.48	0.33	12375.8	3889.5	412.0	2.00	180.00	4010.3		
14	17245.0	90.48	0.33	12370.0	4893.0	418.0	0.00	0.00	4711.4		

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+NU-S	+EAW	Northing	Easting
TGT #1 (Gem 36 State Com #721H)	12400.0	1470.6	387.8	393799.00	757198.00
TGT #2 (Gem 36 State Com #721H)	12388.0	2975.8	408.2	396774.80	757604.18
TGT #3 (Gem 36 State Com #721H)	12378.0	3879.2	411.8	397778.20	757605.92
PEHL (Gem 36 State Com #721H)	12370.0	4893.0	416.0	398482.00	757614.00
AC TGT (Gem 36 State Com #721H)	6939.9	-193.3	243.9	393605.71	757441.91
FTP (Gem 36 State Com #721H)	12411.0	-27.0	389.0	393772.00	757587.00



