

30-025-44349

HOBBS OCD
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Antietam 9 Fed Com

#707H

OH

Design: OH

Midland PVA

25 May, 2018





Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Site:	Antietam 9 Fed Com	MD Reference:	KB - 25' @ 3465.0usft (H&P 462)
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	Antietam 9 Fed Com				
Site Position:		Northing:	419,815.00 usft	Latitude:	32° 9' 6.852 N
From:	Map	Easting:	774,698.00 usft	Longitude:	103° 34' 45.452 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#707H					
Well Position	+N-S	0.0 usft	Northing:	419,936.00 usft	Latitude:	32° 9' 8.076 N
	+E-W	0.0 usft	Easting:	774,316.00 usft	Longitude:	103° 34' 49.885 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,440.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/10/2018	6.86	59.98	47,810.81289671

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	174.76	



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Survey Program		Date	5/25/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
173.0	1,214.0	Olebrook MWD TN to GN (OH)	MWD	OWSG MWD - Standard	
1,345.0	19,809.0	Intrepid MWD (OH)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
173.0	0.35	230.58	173.0	-0.3	-0.4	0.20	0.20	0.00	0.0	0.0
294.0	0.70	347.73	294.0	0.2	-0.9	0.76	0.29	96.82	0.0	0.0
386.0	0.44	112.80	386.0	0.6	-0.6	1.11	-0.28	135.95	0.0	0.0
480.0	0.90	176.35	480.0	-0.3	-0.3	0.86	0.49	67.61	0.0	0.0
575.0	0.62	67.10	575.0	-0.9	0.3	1.32	-0.29	-115.00	0.0	0.0
670.0	0.79	2.76	670.0	0.0	0.8	0.80	0.18	-67.73	0.0	0.0
764.0	0.97	12.70	764.0	1.4	1.0	0.25	0.19	10.57	0.0	0.0
889.0	1.06	35.20	889.0	3.4	1.9	0.32	0.07	18.00	0.0	0.0
981.0	1.14	355.25	980.9	5.0	2.3	0.82	0.09	-43.42	0.0	0.0
1,079.0	0.53	347.03	1,078.9	6.4	2.1	0.63	-0.62	-8.39	0.0	0.0
1,173.0	0.88	334.20	1,172.9	7.5	1.7	0.41	0.37	-13.65	0.0	0.0
1,214.0	0.97	338.95	1,213.9	8.1	1.4	0.29	0.22	11.59	0.0	0.0
1,345.0	1.40	66.30	1,344.9	9.8	2.5	1.27	0.33	66.68	-1.4	-1.0
1,532.0	3.90	88.10	1,531.7	10.9	10.9	1.42	1.34	11.66	-3.3	-0.6
1,721.0	5.60	90.00	1,720.0	11.1	26.6	0.90	0.90	1.01	-5.8	-0.3
1,910.0	5.90	89.60	1,908.1	11.2	45.5	0.16	0.16	-0.21	-11.6	-0.3
2,100.0	5.60	88.30	2,097.1	11.5	64.6	0.17	-0.16	-0.68	-17.4	-0.4
2,290.0	3.60	99.60	2,286.5	10.8	79.7	1.15	-1.05	5.95	-19.1	2.6
2,479.0	3.60	97.10	2,475.1	9.1	91.4	0.08	0.00	-1.32	-18.0	-0.1
2,668.0	4.30	88.80	2,663.7	8.5	104.4	0.48	0.37	-4.39	-17.5	-3.3



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Site:	Antietam 9 Fed Com	MD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
ND (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)	
2,858.0	5.00	83.60	2,853.0	9.6	119.8	0.43	0.37	-2.74	-19.4	-4.0	
3,048.0	4.40	83.00	3,042.4	11.4	135.2	0.32	-0.32	-0.32	-21.8	-2.7	
3,238.0	3.70	97.00	3,231.9	11.5	148.5	0.63	-0.37	7.37	-21.8	2.8	
3,428.0	3.60	97.50	3,421.5	10.0	160.5	0.06	-0.05	0.26	-20.7	1.3	
3,618.0	3.30	97.30	3,611.2	8.5	171.9	0.16	-0.16	-0.11	-19.0	-0.5	
3,807.0	4.40	94.70	3,799.8	7.2	184.5	0.59	0.58	-1.38	-18.5	-2.7	
3,997.0	4.40	91.00	3,989.2	6.5	199.1	0.15	0.00	-1.95	-19.6	-4.6	
4,187.0	3.80	98.30	4,178.7	5.5	212.6	0.42	-0.32	3.84	-20.5	-3.0	
4,377.0	5.30	110.40	4,368.1	1.5	227.0	0.93	0.79	6.37	-23.2	-2.0	
4,567.0	4.60	95.80	4,557.4	-2.3	242.8	0.76	-0.37	-7.68	-24.9	-11.3	
4,757.0	6.40	98.90	4,746.5	-4.7	260.9	0.96	0.95	1.63	-30.6	-11.6	
4,939.0	8.20	90.80	4,927.1	-6.5	283.9	1.14	0.99	-4.45	-33.1	-17.0	
5,024.0	7.50	92.40	5,011.3	-6.8	295.5	0.86	-0.82	1.88	-32.8	-16.0	
5,214.0	5.80	94.90	5,200.0	-8.1	317.4	0.91	-0.89	1.32	-27.0	-15.3	
5,403.0	7.20	84.90	5,387.8	-7.9	338.8	0.95	0.74	-5.29	-17.1	-17.7	
5,592.0	7.70	90.00	5,575.2	-6.8	363.2	0.44	0.26	2.70	-14.7	-13.9	
5,782.0	7.90	93.20	5,763.4	-7.6	389.0	0.25	0.11	1.68	-12.8	-12.8	
5,971.0	8.00	89.30	5,950.6	-8.1	415.1	0.29	0.05	-2.06	-9.7	-13.1	
6,160.0	7.90	103.20	6,137.8	-10.9	440.9	1.02	-0.05	7.35	-10.5	-12.6	
6,350.0	7.40	99.40	6,326.1	-15.9	465.7	0.37	-0.26	-2.00	-6.6	-17.6	
6,540.0	7.40	96.00	6,514.5	-19.2	489.9	0.23	0.00	-1.79	-1.6	-20.5	
6,729.0	7.30	95.70	6,702.0	-21.7	514.0	0.06	-0.05	-0.16	2.6	-22.3	
6,918.0	6.60	96.60	6,889.6	-24.1	536.7	0.37	-0.37	0.48	7.7	-24.2	
7,108.0	6.00	102.20	7,078.4	-27.5	557.3	0.45	-0.32	2.95	12.6	-28.7	
7,297.0	5.30	101.50	7,266.5	-31.3	575.5	0.37	-0.37	-0.37	22.3	-33.2	
7,486.0	4.40	102.00	7,454.8	-34.5	591.1	0.48	-0.48	0.26	32.3	-37.8	
7,676.0	2.80	105.30	7,644.5	-37.3	602.7	0.85	-0.84	1.74	33.2	-42.7	



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Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
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7,865.0	2.10	65.00	7,833.3	-37.0	610.3	0.96	-0.37	-21.32	48.8	-12.6	
8,055.0	2.90	59.60	8,023.1	-33.1	617.6	0.44	0.42	-2.84	41.5	-8.3	
8,244.0	2.40	60.40	8,211.9	-28.7	625.2	0.27	-0.26	0.42	32.6	-8.8	
8,433.0	1.40	109.00	8,400.8	-27.5	630.8	0.96	-0.53	25.71	10.0	-27.3	
8,623.0	1.40	117.10	8,590.8	-29.4	635.1	0.10	0.00	4.26	1.5	-28.1	
8,812.0	1.40	113.90	8,779.7	-31.3	639.2	0.04	0.00	-1.69	-1.6	-28.1	
9,001.0	1.10	123.10	8,968.7	-33.3	642.9	0.19	-0.16	4.87	-10.1	-27.1	
9,191.0	0.40	104.60	9,158.6	-34.4	645.0	0.39	-0.37	-9.74	-3.4	-29.5	
9,381.0	0.90	7.80	9,348.6	-33.1	645.9	0.54	0.26	-50.95	28.3	-0.5	
9,570.0	0.80	314.00	9,537.6	-30.7	645.1	0.41	-0.05	-28.47	14.9	21.3	
9,759.0	1.30	139.70	9,726.6	-31.5	645.6	1.11	0.26	-92.22	-17.8	-19.9	
9,948.0	0.90	63.00	9,915.6	-32.4	648.3	0.74	-0.21	-40.58	13.3	-24.0	
10,137.0	0.60	74.30	10,104.6	-31.5	650.6	0.18	-0.16	5.98	5.9	-25.9	
10,326.0	0.50	48.60	10,293.5	-30.7	652.1	0.14	-0.05	-13.60	14.8	-21.2	
10,514.0	1.10	246.50	10,481.5	-30.8	651.1	0.84	0.32	-86.22	-8.6	24.4	
10,703.0	0.90	289.80	10,670.5	-31.1	648.0	0.40	-0.11	22.91	7.7	24.9	
10,893.0	1.20	262.10	10,860.5	-30.8	644.6	0.31	0.16	-14.58	-8.1	25.0	
11,082.0	3.10	254.70	11,049.3	-32.4	637.8	1.01	1.01	-3.92	-18.3	23.5	
11,271.0	1.30	222.80	11,238.2	-35.4	631.4	1.12	-0.95	-16.88	-34.4	7.6	
11,460.0	2.00	312.60	11,427.1	-34.7	627.5	1.26	0.37	47.51	4.1	36.6	
11,650.0	1.20	329.60	11,617.1	-30.8	624.0	0.49	-0.42	8.95	9.5	34.7	
11,700.0	1.70	329.20	11,667.0	-29.7	623.4	1.00	1.00	-0.80	8.0	34.8	
11,782.0	1.00	11.70	11,749.0	-27.9	622.9	1.43	-0.85	51.83	27.8	21.1	
11,877.0	0.80	27.70	11,844.0	-26.5	623.4	0.34	-0.21	16.84	31.0	12.6	
11,971.0	7.80	179.30	11,937.7	-32.3	623.8	9.06	7.45	161.28	-26.9	-25.9	
12,018.0	19.00	182.10	11,983.4	-43.2	623.5	23.86	23.83	5.96	-35.7	-24.8	
12,066.0	26.80	184.40	12,027.6	-61.8	622.4	16.35	16.25	4.79	-47.3	-24.0	



Midland PVA



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Site: Antietam 9 Fed Com
Well: #707H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #707H
TVD Reference: KB - 25' @ 3465.0usft (H&P 462)
MD Reference: KB - 25' @ 3465.0usft (H&P 462)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,113.0	30.40	184.10	12,068.8	-84.3	620.8	7.67	7.66	-0.64	-57.5	-25.2	
12,161.0	33.50	181.50	12,109.6	-109.6	619.5	7.06	6.46	-5.42	-64.4	-28.7	
12,208.0	38.20	181.50	12,147.6	-137.1	618.8	10.00	10.00	0.00	-70.1	-29.5	
12,256.0	42.30	181.80	12,184.3	-168.1	617.9	8.55	8.54	0.63	-74.2	-30.2	
12,303.0	45.80	181.00	12,218.0	-200.8	617.1	7.54	7.45	-1.70	-75.3	-32.1	
12,351.0	48.70	177.10	12,250.6	-236.0	617.7	8.49	6.04	-8.13	-72.4	-35.0	
12,398.0	52.50	175.00	12,280.5	-272.2	620.3	8.79	8.09	-4.47	-67.7	-33.8	
12,414.8	54.11	175.80	12,290.5	-285.7	621.3	10.29	9.56	4.75	-66.0	-32.1	
FTP Crossing 12414.8' MD; 12290.5' TVD; -285.7' 621.3' 54.11											
12,446.0	57.10	177.20	12,308.1	-311.3	622.9	10.29	9.60	4.49	-62.1	-29.8	
12,493.0	58.30	177.90	12,333.2	-351.0	624.6	2.85	2.55	1.49	-53.2	-28.1	
12,541.0	65.20	176.80	12,355.9	-393.2	626.6	14.52	14.38	-2.29	-42.1	-26.3	
12,588.0	69.90	176.20	12,373.9	-436.6	629.2	10.07	10.00	-1.28	-31.1	-23.7	
12,635.0	75.30	176.20	12,387.9	-481.3	632.2	11.49	11.49	0.00	-19.6	-20.7	
12,682.0	84.00	178.10	12,396.4	-527.5	634.5	18.93	18.51	4.04	-12.2	-18.3	
12,730.0	90.20	178.30	12,398.8	-575.4	636.0	12.92	12.92	0.42	-10.5	-17.1	
12,825.0	92.20	178.40	12,396.8	-670.3	638.7	2.11	2.11	0.11	-13.8	-15.0	
12,928.0	91.50	179.50	12,393.5	-773.2	640.6	1.27	-0.68	1.07	-18.5	-13.8	
13,023.0	89.50	178.20	12,392.7	-868.2	642.5	2.51	-2.11	-1.37	-20.6	-12.5	
13,118.0	84.50	177.40	12,397.6	-963.0	646.2	5.33	-5.26	-0.84	-16.9	-9.6	
13,213.0	86.00	177.10	12,405.5	-1,057.5	650.7	1.61	1.58	-0.32	-10.3	-5.7	
13,307.0	87.30	177.60	12,411.0	-1,151.2	655.0	1.48	1.38	0.53	-6.1	-1.9	
13,339.0	88.70	179.80	12,412.1	-1,183.2	655.8	8.15	4.38	6.88	-5.5	-1.4	
13,402.0	88.00	179.80	12,413.9	-1,246.2	656.0	1.11	-1.11	0.00	-4.5	-1.6	
13,439.0	87.60	179.50	12,415.3	-1,283.2	656.2	1.35	-1.08	-0.81	-3.6	-1.7	
13,497.0	89.00	180.40	12,417.1	-1,341.1	656.3	2.87	2.41	1.55	-2.7	-2.0	
13,592.0	87.80	178.60	12,419.7	-1,436.1	657.1	2.28	-1.26	-1.89	-1.3	-1.8	



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13,687.0	87.60	179.20	12,423.5	-1,531.0	658.9	0.67	-0.21	0.63	1.2	-0.6	
13,781.0	90.30	178.60	12,425.3	-1,625.0	660.7	2.94	2.87	-0.64	1.7	0.5	
13,876.0	87.50	175.10	12,427.1	-1,719.8	665.9	4.72	-2.95	-3.68	2.2	5.1	
13,939.0	87.40	175.20	12,429.9	-1,782.5	671.2	0.22	-0.16	0.16	4.1	10.0	
13,971.0	87.70	179.40	12,431.2	-1,814.4	672.8	13.15	0.94	13.13	5.1	11.3	
14,003.0	88.90	180.70	12,432.2	-1,846.4	672.7	5.53	3.75	4.06	5.6	11.0	
14,034.0	87.70	179.80	12,433.1	-1,877.4	672.6	4.84	-3.87	-2.90	6.1	10.7	
14,066.0	89.90	179.90	12,433.8	-1,909.4	672.7	6.88	6.88	0.31	6.3	10.6	
14,098.0	92.50	180.70	12,433.1	-1,941.4	672.5	8.50	8.13	2.50	5.2	10.2	
14,128.0	92.50	180.10	12,431.8	-1,971.3	672.3	2.00	0.00	-2.00	3.5	9.8	
14,160.0	91.30	182.10	12,430.7	-2,003.3	671.7	7.29	-3.75	6.25	2.2	8.9	
14,191.0	90.00	183.70	12,430.4	-2,034.3	670.1	6.65	-4.19	5.16	1.6	7.2	
14,223.0	90.50	183.50	12,430.3	-2,066.2	668.1	1.68	1.56	-0.63	1.1	4.9	
14,255.0	89.50	182.60	12,430.3	-2,098.1	666.4	4.20	-3.13	-2.81	0.8	3.0	
14,286.0	88.50	181.50	12,430.8	-2,129.1	665.3	4.80	-3.23	-3.55	1.1	1.7	
14,350.0	86.20	180.00	12,433.8	-2,193.0	664.5	4.29	-3.59	-2.34	3.4	0.4	
14,444.0	93.50	184.50	12,434.0	-2,286.9	660.8	9.12	7.77	4.79	2.8	-3.9	
14,539.0	91.60	184.00	12,429.8	-2,381.5	653.7	2.07	-2.00	-0.53	-2.3	-11.6	
14,634.0	91.10	183.20	12,427.5	-2,476.3	647.8	0.99	-0.53	-0.84	-5.5	-18.2	
14,729.0	87.30	180.10	12,428.9	-2,571.2	645.0	5.16	-4.00	-3.26	-5.1	-21.6	
14,824.0	90.70	181.10	12,430.5	-2,666.2	644.0	3.73	3.58	1.05	-4.3	-23.2	
14,919.0	95.30	181.30	12,425.5	-2,761.0	642.1	4.85	4.84	0.21	-10.1	-25.9	
14,978.0	93.00	181.10	12,421.3	-2,819.8	640.8	3.91	-3.90	-0.34	-14.9	-27.5	
15,014.0	91.30	179.80	12,419.9	-2,855.8	640.5	5.94	-4.72	-3.61	-16.7	-28.0	
15,045.0	94.50	180.30	12,418.4	-2,886.8	640.5	10.45	10.32	1.61	-18.5	-28.3	
15,089.0	99.00	181.90	12,413.2	-2,930.4	639.7	10.85	10.23	3.64	-23.8	-29.6	
15,142.0	93.50	179.80	12,407.4	-2,983.1	638.9	11.10	-10.38	-3.96	-30.3	-30.5	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Site:	Antietam 9 Fed Com	MD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Well:	#707H	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)	Bulid (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,194.0	88.30	177.50	12,406.6	-3,035.1	640.1	10.93	-10.00	-4.42	-31.7	-29.6	
15,237.0	84.30	175.90	12,409.4	-3,077.9	642.6	10.02	-9.30	-3.72	-29.2	-27.6	
15,284.0	84.60	176.10	12,413.9	-3,124.6	645.9	0.77	0.64	0.43	-25.1	-24.6	
15,332.0	84.80	176.30	12,418.4	-3,172.2	649.0	0.59	0.42	0.42	-21.2	-21.7	
15,379.0	86.00	177.00	12,422.1	-3,219.0	651.8	2.95	2.55	1.49	-17.9	-19.3	
15,427.0	86.30	177.30	12,425.4	-3,266.8	654.1	0.88	0.63	0.63	-15.1	-17.2	
15,474.0	84.60	177.30	12,429.1	-3,313.6	656.4	3.62	-3.62	0.00	-11.8	-15.3	
15,522.0	84.20	177.40	12,433.8	-3,361.4	658.6	0.86	-0.83	0.21	-7.8	-13.4	
15,617.0	86.80	179.90	12,441.2	-3,456.0	660.8	3.79	2.74	2.63	-1.1	-11.8	
15,694.0	91.30	183.70	12,442.5	-3,532.9	658.4	7.65	5.84	4.94	-0.5	-14.7	
15,712.0	91.70	183.70	12,442.0	-3,550.9	657.2	2.22	2.22	0.00	-1.1	-16.0	
15,775.0	88.60	180.90	12,441.9	-3,613.8	654.7	6.63	-4.92	-4.44	-1.9	-18.0	
15,807.0	84.00	178.80	12,443.9	-3,645.8	654.8	15.80	-14.38	-6.56	-0.1	-19.1	
15,902.0	84.20	179.00	12,453.7	-3,740.2	656.6	0.30	0.21	0.21	8.7	-17.9	
15,997.0	89.90	179.90	12,458.6	-3,835.1	657.5	6.07	6.00	0.95	12.7	-17.7	
16,024.0	91.70	181.20	12,458.2	-3,862.1	657.2	8.22	6.67	4.81	12.1	-18.1	
16,091.0	87.80	179.10	12,458.5	-3,929.0	657.1	6.61	-5.82	-3.13	11.7	-18.7	
16,186.0	88.40	178.20	12,461.6	-4,024.0	659.3	1.14	0.63	-0.95	14.2	-17.1	
16,281.0	89.30	180.00	12,463.5	-4,118.9	660.8	2.12	0.95	1.89	15.5	-16.3	
16,376.0	89.50	179.30	12,464.5	-4,213.9	661.4	0.77	0.21	-0.74	15.9	-16.4	
16,470.0	90.80	178.20	12,464.3	-4,307.9	663.4	1.81	1.38	-1.17	15.0	-15.0	
16,564.0	91.20	177.80	12,462.7	-4,401.8	666.7	0.60	0.43	-0.43	12.7	-12.3	
16,659.0	91.10	179.00	12,460.7	-4,496.8	669.3	1.27	-0.11	1.26	10.2	-10.3	
16,754.0	90.20	178.60	12,459.7	-4,591.7	671.3	1.04	-0.95	-0.42	8.5	-9.0	
16,849.0	89.00	177.90	12,460.3	-4,686.7	674.2	1.46	-1.26	-0.74	8.6	-6.7	
16,943.0	87.80	176.20	12,463.0	-4,780.5	679.1	2.21	-1.28	-1.81	10.6	-2.5	
17,037.0	87.30	178.50	12,467.0	-4,874.3	683.4	2.50	-0.53	2.45	14.0	1.2	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB - 25' @ 3465.00ft (H&P 462)
Site:	Antelope 9 Fed Corn	MD Reference:	KB - 25' @ 3465.00ft (H&P 462)
Well:	#707H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey	MD (unit)	Inc (°)	Adj (estimated) (°)	TVD (unit)	NIS (unit)	ENV (unit)	Drag (ft/100unit)	Built (ft/100unit)	Turn (ft/100unit)	High to Plan (unit)	Right to Plan (unit)
	17.132.0	86.80	179.70	12,471.9	-4,989.2	684.9	1.37	-0.53	1.26	18.3	2.1
	17.211.0	89.30	178.80	12,474.6	-5,048.1	685.9	3.36	3.16	-1.14	20.5	2.5
	17.226.0	87.90	178.60	12,474.9	-5,063.1	686.3	9.43	-9.33	-1.33	20.7	2.8
	17.304.0	87.90	179.20	12,477.8	-5,141.1	687.8	0.77	0.00	0.77	23.1	3.8
	17.321.0	89.40	180.10	12,478.2	-5,158.0	687.9	10.29	8.82	5.29	23.4	3.7
	17.375.0	88.80	180.10	12,478.0	-5,212.0	687.8	1.11	-1.11	0.00	23.9	3.3
	17.416.0	93.30	179.70	12,478.3	-5,253.0	687.9	11.02	10.88	-0.88	22.9	3.1
	17.510.0	88.50	181.50	12,478.8	-5,347.0	686.9	5.45	-5.11	1.91	20.8	1.4
	17.605.0	88.40	181.40	12,478.5	-5,441.9	684.5	0.95	0.85	-0.11	21.9	-1.6
	17.700.0	90.90	182.10	12,478.3	-5,536.9	681.6	1.74	1.58	0.74	21.0	-5.1
	17.795.0	91.50	176.30	12,476.3	-5,631.8	682.9	6.14	0.63	-6.11	18.4	-4.4
	17.889.0	89.70	182.20	12,475.3	-5,725.7	684.1	6.56	-1.91	8.28	16.8	-3.9
	17.984.0	86.80	184.90	12,478.2	-5,820.5	678.2	4.17	-3.05	2.84	19.1	-10.4
	18.079.0	89.00	182.00	12,481.7	-5,915.2	672.5	3.83	2.32	-3.05	22.0	-16.7
	18.174.0	90.30	180.10	12,482.3	-6,010.2	670.8	2.42	1.37	-2.00	22.0	-19.1
	18.269.0	89.50	177.00	12,482.4	-6,105.2	673.2	3.37	-0.84	-3.26	21.6	-17.3
	18.364.0	90.70	180.00	12,482.3	-6,200.1	675.7	3.40	1.26	3.16	20.9	-15.5
	18.459.0	90.10	180.10	12,481.6	-6,295.1	676.6	0.64	-0.63	0.11	19.6	-16.2
	18.554.0	89.60	179.10	12,481.9	-6,390.1	676.3	1.18	-0.53	-1.05	19.3	-16.2
	18.649.0	88.20	177.00	12,483.7	-6,485.0	679.5	2.66	-1.47	-2.21	20.6	-13.6
	18.743.0	89.70	178.60	12,485.4	-6,579.0	683.1	2.33	1.60	1.70	21.7	-10.7
	18.838.0	89.80	176.30	12,485.8	-6,673.9	687.3	2.42	0.11	-2.42	21.6	-7.1
	18.933.0	90.60	178.90	12,485.5	-6,768.8	691.3	2.86	0.84	2.74	20.7	-3.7
	19.028.0	87.80	180.60	12,486.8	-6,863.7	691.7	3.45	-2.95	1.79	21.5	-4.0
	19.122.0	88.90	182.90	12,488.5	-6,957.6	688.8	2.71	1.17	2.45	23.6	-7.5
	19.217.0	88.80	183.60	12,491.4	-7,052.5	683.5	0.74	-0.11	0.74	25.0	-13.5
	19.309.0	92.40	183.70	12,490.5	-7,144.3	677.6	3.91	3.91	0.11	23.5	-19.9



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Site:	Antietam 9 Fed Com	MD Reference:	KB - 25' @ 3465.0usft (H&P 462)
Well:	#707H	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)	
19,403.0	90.40	183.00	12,488.2	-7,238.1	672.1	2.25	-2.13	-0.74	20.6	-26.1	
19,498.0	89.80	181.40	12,488.0	-7,333.0	668.5	1.80	-0.63	-1.68	19.9	-30.4	
19,593.0	87.30	180.40	12,490.4	-7,428.0	667.0	2.83	-2.63	-1.05	21.7	-32.6	
19,688.0	86.80	179.30	12,495.3	-7,522.8	667.2	1.27	-0.53	-1.16	26.0	-32.9	
19,711.4	86.84	179.38	12,496.6	-7,546.2	667.5	0.37	0.17	0.33	27.2	-32.8	
LTP Crossing 19711.4' MD; 12496.6' TVD; -7546.2'; 667.5'; 86.84											
19,748.0	86.90	179.50	12,498.6	-7,582.8	667.9	0.37	0.17	0.33	29.0	-32.7	
Last MWD Survey (MD = 19748.0)											
19,809.0	86.90	179.50	12,501.9	-7,643.6	668.4	0.00	0.00	0.00	31.9	-32.6	
Projection to Bit (MD = 19809.0)											

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,414.8	12,290.5	-285.7	621.3	FTP Crossing 12414.8' MD; 12290.5' TVD; -285.7'; 621.3'; 54.11
19,711.4	12,496.6	-7,546.2	667.5	LTP Crossing 19711.4' MD; 12496.6' TVD; -7546.2'; 667.5'; 86.84
19,748.0	12,498.6	-7,582.8	667.9	Last MWD Survey (MD = 19748.0)
19,809.0	12,501.9	-7,643.6	668.4	Projection to Bit (MD = 19809.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Antietam 9 Fed Com #707H

H&P 462

Plan #2

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

KB - 25' @ 3465.0ush (H&P 462) 3440.0
Northing 419936.00 Easting 774316.00 Latitude 32° 9' 8.078 N Longitude 103° 34' 49.885 W

SECTION DETAILS

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	1214.0	0.97	338.95	1213.9	8.1	1.4	0.00	0.00	-7.9	
2	1314.0	0.97	338.95	1313.9	9.7	0.8	0.00	0.00	-9.6	
3	1536.1	4.00	90.00	1535.8	11.4	7.9	2.00	122.79	-10.7	
4	4756.1	4.00	90.00	4748.0	11.4	232.5	0.00	0.00	9.8	
5	4987.1	8.61	92.30	4977.5	10.7	257.9	2.00	4.29	12.8	
6	7386.6	8.61	92.30	7350.0	-3.7	616.9	0.00	0.00	60.0	
7	7817.3	0.00	0.00	7779.0	-5.0	649.2	2.00	180.00	64.3	KOP (Antietam 9 Fed Com #707H)
8	11968.8	0.00	0.00	11930.5	-5.0	649.2	0.00	0.00	64.3	
9	12712.3	89.22	179.61	12407.9	-475.9	652.4	12.00	179.61	533.5	
10	14184.2	89.22	179.61	12428.0	-1947.7	662.4	0.00	0.00	2000.0	TGT #1 (Antietam 9 Fed Com #707H)
11	14196.2	89.46	179.61	12428.1	-1959.7	662.5	2.00	0.00	2012.0	
12	16191.4	89.46	179.61	12447.0	-3954.8	676.0	0.00	0.00	4000.0	TGT #2 (Antietam 9 Fed Com #707H)
13	16200.0	89.63	179.61	12447.1	-3963.3	676.0	2.00	0.00	4008.5	
14	18198.6	89.63	179.61	12460.0	-5961.9	689.6	0.00	0.00	6000.0	TGT #3 (Antietam 9 Fed Com #707H)
15	18200.1	89.66	179.61	12460.0	-5963.4	689.6	2.00	0.00	6001.5	
16	19882.8	89.66	179.61	12470.0	-7646.0	701.0	0.00	0.00	7678.1	PBHL (Antietam 9 Fed Com #707H)

CASING DETAILS

No casing data is available

WELLSHORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Antietam 9 Fed Com #707H)	7779.0	-5.0	649.2	419931.00	774365.20
TGT #1 (Antietam 9 Fed Com #707H)	12428.0	-1947.7	662.4	417888.30	774978.37
TGT #2 (Antietam 9 Fed Com #707H)	12447.0	-3954.8	676.0	415981.20	774991.58
TGT #3 (Antietam 9 Fed Com #707H)	12460.0	-5961.9	689.6	413974.10	775005.58
PBHL (Antietam 9 Fed Com #707H)	12470.0	-7646.0	701.0	412280.00	775017.00
FTP (Antietam 9 Fed Com #707H)	12405.0	-285.0	651.0	419651.00	774987.00

