



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Caravan 28 State Com

#602H

OH

Design: OH

Midland PVA

02 June, 2019

HOBBS OCD
NOV 20 2019
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Midland PVA

Company: EOG Resources - Midland Project: Lea County, NM (NAD 83 NME) Site: Caravan 28 State Com Well: #602H Wellbore: OH Design: OH		Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:		Well #602H KB = 25 @ 3557.0usft KB = 25 @ 3557.0usft Grid Minimum Curvature EDM 5000.14													
Project Lea County, NM (NAD 83 NME)																	
Map System: US State Plane 1983 Geo Datum: North American Datum 1983 Map Zone: New Mexico Eastern Zone		System Datum:		Mean Sea Level													
Site Caravan 28 State Com																	
Site Position: From: Map Position Uncertainty: 0.0 usft		Northing: 435,288.00 usft Easting: 774,878.00 usft Slot Radius: 13-3/16 "		Latitude: 32° 11' 39.963 N Longitude: 103° 34' 44.423 W Grid Convergence: 0.40 °													
Well #602H																	
Well Position +N-S 0.0 usft +E-W 0.0 usft Position Uncertainty 0.0 usft		Northing: 435,324.00 usft Easting: 772,945.00 usft Wellhead Elevation: usft		Latitude: 32° 11' 40.439 N Longitude: 103° 35' 4.587 W Ground Level: 3,532.0 usft													
Wellbore OH																	
<table border="1"> <thead> <tr> <th>Magnetics</th> <th>Model Name</th> <th>Sample Date</th> <th>Declination (°)</th> <th>Dip Angle (°)</th> <th>Field Strength (nT)</th> </tr> </thead> <tbody> <tr> <td></td> <td>IGRF2015</td> <td>9/27/2018</td> <td>8.82</td> <td>60.02</td> <td>47,786.95859341</td> </tr> </tbody> </table>						Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)		IGRF2015	9/27/2018	8.82	60.02	47,786.95859341
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	IGRF2015	9/27/2018	8.82	60.02	47,786.95859341												
Design OH																	
Audit Notes: Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0																	
<table border="1"> <thead> <tr> <th>Vertical Section:</th> <th>Depth From (TVD) (usft)</th> <th>+N-S (usft)</th> <th>+E-W (usft)</th> <th>Direction (°)</th> </tr> </thead> <tbody> <tr> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>178.29</td> </tr> </tbody> </table>						Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)		0.0	0.0	0.0	178.29		
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)													
	0.0	0.0	0.0	178.29													
Survey Program Date 6/2/2019																	
<table border="1"> <thead> <tr> <th>From (usft)</th> <th>To (usft)</th> <th>Survey (Wellbore)</th> <th>Tool Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>185.0</td> <td>22,466.0</td> <td>Newsco MWD (OH)</td> <td>MWD</td> <td>OWSG MWD - Standard</td> </tr> </tbody> </table>						From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	185.0	22,466.0	Newsco MWD (OH)	MWD	OWSG MWD - Standard		
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185.0	22,466.0	Newsco MWD (OH)	MWD	OWSG MWD - Standard													



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Local Co-ordinate Reference: Well #602H
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 MD Reference: KB = 25 @ 3557.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey

MD (usft)	Inc (")	Asl (azimuth) (")	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
165.0	1.10	211.40	165.0	-1.4	-0.8	0.87	0.87	0.00	-1.6	0.0
313.0	1.70	195.30	312.9	-4.7	-2.1	0.48	0.41	-10.88	-5.1	-0.8
488.0	1.80	187.30	487.9	-10.0	-3.7	0.12	0.11	1.14	-10.6	-0.6
672.0	1.80	210.80	671.8	-15.5	-6.2	0.24	0.00	7.34	-16.5	2.6
860.0	2.20	233.50	859.8	-20.3	-10.7	0.48	0.16	12.07	-20.6	10.0
1,047.0	2.30	254.00	1,046.5	-23.5	-17.2	0.43	0.05	10.96	-23.0	17.9
1,235.0	1.10	247.80	1,234.4	-25.2	-22.4	0.64	-0.64	-3.30	-30.3	14.9
1,377.0	1.10	283.50	1,376.4	-25.2	-25.0	0.60	0.00	32.18	-12.9	34.0
1,521.0	3.50	37.20	1,520.3	-21.1	-23.6	2.71	1.67	72.01	39.3	4.8
1,708.0	5.70	31.10	1,706.7	-8.6	-15.3	1.20	1.18	-3.26	42.0	7.1
1,896.0	8.70	30.00	1,893.2	11.7	-3.4	1.60	1.60	-0.59	37.9	6.9
2,084.0	9.00	29.70	2,078.9	36.8	11.0	0.16	0.16	-0.16	28.5	6.3
2,271.0	9.00	29.00	2,263.6	62.3	25.3	0.06	0.00	-0.37	18.6	6.0
2,457.0	8.60	29.70	2,447.4	87.4	39.4	0.12	-0.11	0.38	9.2	5.2
2,645.0	8.70	27.30	2,633.2	112.5	53.1	0.20	-0.05	-1.28	0.0	5.1
2,833.0	8.40	30.30	2,819.1	137.0	66.5	0.29	-0.16	1.60	-8.1	4.9
3,021.0	7.90	29.10	3,005.2	160.1	79.8	0.28	-0.27	-0.64	-15.3	3.9
3,209.0	7.60	29.70	3,191.5	182.2	92.2	0.17	-0.16	0.32	-21.0	3.5
3,396.0	7.60	32.50	3,376.9	203.4	105.0	0.20	0.00	1.50	-26.1	3.5
3,583.0	7.10	33.00	3,562.3	223.5	117.9	0.27	-0.27	0.27	-30.5	2.0
3,771.0	6.10	27.10	3,749.1	242.1	128.8	0.64	-0.53	-3.14	-32.5	-2.2
3,959.0	5.40	23.20	3,936.1	259.2	136.8	0.43	-0.37	-2.07	-31.5	-3.5
4,146.0	5.10	21.00	4,122.4	275.0	143.3	0.19	-0.16	-1.18	-29.0	-2.8
4,333.0	4.80	22.00	4,308.7	290.0	149.2	0.17	-0.16	0.53	-25.7	-0.2
4,522.0	4.90	62.30	4,497.0	302.3	158.5	1.34	0.05	16.03	-19.3	6.4
4,708.0	4.30	67.80	4,682.4	309.8	171.3	0.74	-0.32	8.33	-16.1	2.9



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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)
4,898.0	7.00	52.60	4,869.5	319.4	186.9	1.63	1.44	-8.09	-16.7	-11.6	
5,084.0	7.10	14.20	5,056.2	337.6	188.9	2.46	0.05	-20.43	-7.5	-22.0	
5,270.0	6.70	4.40	5,240.8	359.6	202.5	0.67	-0.22	-5.27	-8.0	-17.2	
5,458.0	7.00	3.00	5,427.5	382.0	204.0	0.18	0.16	-0.74	-12.1	-9.5	
5,645.0	5.30	5.50	5,613.4	402.0	205.4	0.92	-0.91	1.34	-14.4	-1.1	
5,831.0	4.50	20.70	5,798.7	417.3	208.8	0.82	-0.43	8.17	-10.5	7.3	
6,018.0	3.10	38.80	5,885.3	428.1	214.5	0.98	-0.75	9.68	-0.9	8.7	
6,205.0	2.50	39.70	6,172.1	435.2	220.3	0.32	-0.32	0.48	0.4	6.6	
6,393.0	1.20	66.40	6,360.0	439.2	224.7	0.81	-0.69	14.20	-1.7	7.1	
6,580.0	1.10	83.30	6,547.0	440.2	228.3	0.19	-0.05	9.04	-3.2	7.8	
6,767.0	0.80	69.20	6,733.9	440.8	231.3	0.20	-0.16	-7.54	-8.1	6.4	
6,955.0	0.50	89.50	6,921.9	441.3	233.4	0.20	-0.16	10.80	-7.4	9.2	
7,143.0	0.40	85.40	7,109.9	441.2	234.8	0.08	-0.05	3.14	-7.9	10.0	
7,330.0	0.60	143.30	7,296.9	440.4	236.1	0.24	0.11	25.61	0.7	13.1	
7,518.0	0.90	152.30	7,484.9	438.3	237.3	0.17	0.16	4.79	0.3	13.0	
7,706.0	1.20	170.00	7,672.9	435.1	238.4	0.23	0.16	9.41	0.9	12.7	
7,894.0	1.10	189.50	7,860.8	431.4	238.1	0.32	-0.05	15.69	3.5	11.6	
8,082.0	1.40	207.50	8,048.8	427.7	238.5	0.18	0.16	4.26	1.0	11.3	
8,269.0	1.70	219.50	8,235.7	423.5	233.8	0.24	0.16	6.42	-1.7	11.3	
8,457.0	1.90	219.80	8,423.6	419.0	229.9	0.11	0.11	0.16	-7.5	11.3	
8,644.0	2.10	217.80	8,610.5	413.9	225.8	0.11	0.11	-1.07	-14.5	10.9	
8,832.0	1.90	212.00	8,798.4	408.5	222.0	0.15	-0.11	-3.09	-22.0	9.1	
9,020.0	2.10	216.50	8,986.3	403.1	218.3	0.14	0.11	2.39	-27.8	11.0	
9,207.0	1.80	224.80	9,173.2	398.3	214.2	0.22	-0.16	4.49	-32.2	15.5	
9,394.0	1.80	224.70	9,360.1	394.1	210.1	0.00	0.00	-0.11	-38.1	15.3	
9,580.0	1.80	228.50	9,546.0	390.1	205.8	0.08	0.00	2.04	-42.9	18.0	
9,768.0	2.10	231.40	9,733.9	386.0	200.9	0.17	0.16	1.54	-48.3	20.3	



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9,956.0	2.00	232.10	9,921.8	381.8	195.8	0.05	-0.05	0.37	-54.8	21.0	
10,144.0	1.40	233.80	10,109.7	378.4	191.2	0.32	-0.32	0.86	-59.7	22.8	
10,331.0	1.10	23.10	10,298.7	378.8	190.1	1.29	-0.16	79.79	63.1	12.2	
10,519.0	0.90	46.80	10,484.8	381.4	191.8	0.24	-0.11	12.61	59.5	-13.5	
10,707.0	1.00	318.40	10,672.6	383.6	191.8	0.72	0.05	-48.09	11.4	58.1	
10,894.0	0.70	207.90	10,859.6	383.8	190.1	0.74	-0.16	-58.02	-59.4	-9.1	
11,082.0	0.80	278.00	11,047.6	382.9	188.3	0.45	0.05	36.22	-32.4	52.8	
11,270.0	0.70	267.70	11,235.6	383.0	185.8	0.08	-0.05	-4.41	-42.1	47.3	
11,458.0	2.80	232.90	11,423.5	380.4	181.3	1.10	1.01	-18.51	-66.8	14.2	
11,627.0	2.40	229.40	11,592.3	375.8	175.5	0.15	-0.12	-2.07	-74.9	9.9	
11,891.0	2.50	236.40	11,856.3	374.1	173.4	0.48	0.16	10.94	-75.9	19.1	
11,774.0	1.40	298.50	11,738.2	373.6	171.0	2.68	-1.33	74.82	-20.5	77.6	
11,868.0	10.40	358.50	11,832.7	382.7	169.7	10.40	9.57	83.83	43.3	58.5	
11,960.0	3.30	31.80	11,924.0	393.2	170.9	8.54	-7.72	36.30	42.0	39.3	
12,054.0	18.80	174.30	12,016.5	380.3	173.9	22.88	16.49	151.49	14.2	-51.5	
12,149.0	43.30	165.40	12,097.3	332.8	183.8	26.17	25.79	-9.37	24.1	-39.1	
12,243.0	64.30	167.00	12,152.5	259.5	201.6	22.38	22.34	1.70	6.4	-25.1	
12,337.0	78.10	176.30	12,182.8	171.8	214.2	17.40	14.68	9.89	-19.4	-14.4	
12,431.0	78.90	176.30	12,201.5	79.8	220.1	0.85	0.85	0.00	-37.7	-8.9	
12,525.0	79.40	176.10	12,219.2	-12.3	226.3	0.57	0.53	-0.21	-37.2	-3.0	
12,618.0	84.40	176.40	12,232.3	-104.1	232.3	5.39	5.38	0.32	-24.9	2.6	
12,712.0	89.10	177.00	12,237.6	-197.8	237.7	5.04	5.00	0.64	-18.8	7.3	
12,805.0	90.20	178.70	12,238.2	-290.7	241.2	2.18	1.18	1.83	-17.5	10.2	
12,898.0	89.30	179.90	12,238.6	-383.7	242.3	1.61	-0.97	1.29	-16.3	10.7	
12,992.0	88.90	181.00	12,240.1	-477.7	241.6	1.25	-0.43	1.17	-14.1	9.3	
13,085.0	88.80	180.70	12,242.0	-570.7	240.2	0.34	-0.11	-0.32	-11.5	7.2	
13,178.0	90.10	182.30	12,242.9	-663.6	237.7	2.22	1.40	1.72	-9.8	4.2	



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13,272.0	89.20	181.80	12,243.4	-757.6	234.3	1.05	-0.96	-0.43	-8.5	0.1
13,365.0	89.10	182.10	12,244.8	-850.5	231.1	0.24	-0.11	0.22	-6.4	-3.8
13,459.0	91.10	182.80	12,244.6	-944.4	227.0	2.25	2.13	0.74	-5.8	-8.5
13,552.0	89.10	181.40	12,244.5	-1,037.3	223.6	2.63	-2.15	-1.51	-5.4	-12.5
13,646.0	89.40	182.10	12,245.7	-1,131.3	220.6	0.81	0.32	0.74	-3.9	-16.1
13,740.0	89.50	181.80	12,246.6	-1,225.2	217.6	0.34	0.11	-0.32	-2.8	-19.9
13,834.0	88.70	182.10	12,248.1	-1,319.1	214.4	0.91	-0.85	0.32	-1.1	-23.8
13,927.0	93.80	181.40	12,248.1	-1,412.1	211.5	5.54	5.48	-0.75	-2.8	-27.2
14,021.0	92.10	180.30	12,241.2	-1,505.9	210.1	2.15	-1.81	-1.17	-7.5	-28.3
14,115.0	89.50	179.80	12,239.9	-1,599.9	210.0	2.80	-2.77	-0.43	-8.6	-30.1
14,209.0	88.00	177.70	12,242.0	-1,693.8	211.9	2.83	-1.60	-2.34	-6.3	-28.8
14,303.0	87.90	177.70	12,245.3	-1,787.7	215.7	0.11	-0.11	0.00	-2.7	-25.7
14,397.0	87.60	178.40	12,249.0	-1,881.6	218.9	0.81	-0.32	0.74	1.2	-23.1
14,490.0	88.20	179.00	12,252.4	-1,974.5	221.0	0.91	0.65	0.65	4.8	-21.6
14,584.0	87.80	179.40	12,255.7	-2,068.4	222.3	0.60	-0.43	0.43	8.3	-21.0
14,677.0	90.30	178.40	12,257.2	-2,161.4	224.1	2.90	2.69	-1.08	10.1	-19.8
14,771.0	89.40	178.60	12,257.5	-2,255.4	226.6	0.98	-0.86	0.21	10.5	-18.0
14,865.0	90.00	178.40	12,258.0	-2,349.3	229.0	0.67	0.64	-0.21	11.3	-16.2
14,959.0	94.00	183.00	12,254.7	-2,443.2	227.9	6.48	4.26	4.89	8.3	-18.0
15,053.0	94.00	180.80	12,248.1	-2,536.9	224.8	2.33	0.00	-2.34	1.9	-21.8
15,146.0	90.70	178.60	12,244.3	-2,629.8	225.3	4.26	-3.55	-2.37	-1.7	-21.9
15,240.0	91.40	179.00	12,242.6	-2,723.8	227.2	0.86	0.74	0.43	-3.2	-20.6
15,334.0	91.90	179.90	12,239.9	-2,817.7	228.1	1.09	0.53	0.96	-5.7	-20.4
15,427.0	92.40	179.20	12,236.4	-2,910.7	228.9	0.92	0.54	-0.75	-9.0	-20.3
15,521.0	89.70	178.20	12,234.7	-3,004.6	231.0	3.08	-2.87	-1.06	-10.5	-18.8
15,543.0	90.00	178.90	12,234.7	-3,026.6	231.8	3.46	1.36	3.18	-10.4	-18.4
15,637.0	91.80	180.50	12,233.3	-3,120.6	232.1	2.56	1.91	1.70	-11.6	-18.6



Midland PVA

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15,732.0	88.80	179.70	12,232.8	-3,215.6	231.9	3.27	-3.16	-0.84	-11.9	-19.4	
15,826.0	88.50	178.30	12,236.6	-3,309.4	235.2	4.36	-2.45	-3.62	-7.8	-16.8	
15,919.0	88.40	177.00	12,240.8	-3,402.2	240.6	2.18	2.04	0.75	-3.4	-12.0	
16,013.0	85.30	174.60	12,245.9	-3,495.8	247.5	4.17	-3.30	-2.55	2.0	-5.7	
16,106.0	89.10	177.00	12,250.5	-3,588.4	254.3	4.83	4.09	2.58	5.9	0.4	
16,200.0	90.20	177.80	12,251.1	-3,682.3	258.5	1.45	1.17	0.85	5.8	4.0	
16,294.0	91.30	178.00	12,249.8	-3,776.2	261.1	1.73	1.17	1.28	4.0	6.0	
16,388.0	90.80	179.80	12,248.0	-3,870.2	262.1	0.95	-0.43	0.85	1.5	6.3	
16,482.0	89.10	180.60	12,248.0	-3,964.2	261.8	2.10	-1.91	0.85	0.8	5.4	
16,575.0	93.10	181.00	12,246.2	-4,057.2	260.5	4.32	4.30	0.43	-1.6	3.4	
16,670.0	94.50	180.80	12,239.9	-4,151.9	259.0	1.48	1.47	-0.21	-8.6	1.3	
16,763.0	94.50	180.10	12,232.6	-4,244.6	258.3	0.75	0.00	-0.75	-16.5	-0.1	
16,857.0	90.40	179.10	12,228.6	-4,338.5	258.9	4.49	-4.36	-1.06	-21.2	-0.1	
16,951.0	87.20	179.20	12,230.6	-4,432.5	260.3	3.41	-3.40	0.11	-19.9	0.6	
17,036.0	88.10	177.80	12,234.1	-4,517.4	262.6	1.96	1.06	-1.65	-17.0	2.3	
17,130.0	90.80	177.70	12,235.0	-4,611.3	266.2	2.87	2.87	-0.11	-16.8	5.3	
17,224.0	91.40	177.50	12,233.2	-4,705.2	270.2	0.67	0.64	-0.21	-19.3	8.6	
17,318.0	89.90	177.60	12,232.1	-4,799.1	274.2	1.80	-1.80	0.11	-21.0	12.0	
17,411.0	94.20	180.70	12,228.8	-4,892.0	275.6	5.70	4.62	3.33	-25.0	12.7	
17,504.0	92.30	178.90	12,223.5	-4,984.8	275.9	2.81	-2.04	-1.94	-30.9	12.4	
17,598.0	89.90	179.30	12,221.7	-5,078.6	277.4	2.59	-2.55	0.43	-33.4	13.2	
17,691.0	91.00	180.30	12,221.0	-5,171.8	277.7	1.80	1.18	1.08	-34.7	12.9	
17,785.0	91.30	180.40	12,218.1	-5,265.6	277.1	0.34	0.32	0.11	-37.3	11.7	
17,879.0	88.80	180.40	12,219.0	-5,359.8	276.5	2.68	-2.66	0.00	-38.0	10.4	
17,973.0	88.10	180.20	12,221.5	-5,453.7	276.0	0.77	-0.74	-0.21	-36.2	9.2	
18,067.0	90.70	181.40	12,222.5	-5,547.7	274.7	3.05	2.77	1.28	-35.7	7.3	
18,161.0	91.30	180.50	12,220.8	-5,641.7	273.1	1.15	0.84	-0.98	-37.7	5.1	



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ceravan 28 State Com
 Well: #602H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #602H
 TVD Reference: KB = 25 @ 3557.0usft
 MD Reference: KB = 25 @ 3557.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
18,255.0	89.40	180.60	12,220.3	-5,735.7	272.2	2.02	-2.02	0.11	-38.7	3.5	
18,349.0	88.00	181.80	12,222.4	-5,829.6	270.2	1.86	-1.48	1.28	-36.9	0.9	
18,442.0	87.40	181.00	12,226.2	-5,922.5	268.0	1.07	-0.65	-0.86	-33.5	-2.0	
18,536.0	86.80	181.70	12,230.9	-6,016.4	265.8	0.81	-0.53	0.74	-29.2	-4.9	
18,629.0	85.40	180.10	12,237.1	-6,109.1	264.3	2.36	-1.61	-1.72	-23.4	-7.0	
18,722.0	88.80	180.60	12,241.8	-6,202.0	263.7	3.70	3.66	0.54	-19.0	-8.2	
18,816.0	91.00	178.50	12,242.0	-6,296.0	263.7	2.62	2.34	-1.17	-19.2	-8.9	
18,909.0	89.60	179.80	12,241.5	-6,389.0	264.2	1.54	-1.51	0.32	-20.1	-9.0	
19,003.0	89.20	179.70	12,242.5	-6,483.0	264.6	0.44	-0.43	-0.11	-19.5	-9.3	
19,097.0	89.40	178.80	12,243.6	-6,577.0	265.0	0.24	0.21	0.11	-18.7	-9.5	
19,191.0	88.60	178.10	12,245.3	-6,671.0	265.9	1.13	-0.85	-0.74	-17.5	-9.2	
19,285.0	90.20	179.70	12,246.2	-6,765.0	266.9	1.82	1.70	0.64	-16.8	-8.9	
19,378.0	90.00	180.80	12,246.1	-6,858.0	266.5	1.20	-0.22	1.18	-17.4	-10.0	
19,472.0	93.30	178.90	12,243.4	-6,951.9	266.0	3.64	3.51	-0.96	-20.5	-11.2	
19,566.0	91.70	178.30	12,239.3	-7,045.8	267.4	2.41	-1.70	-1.70	-24.9	-10.4	
19,660.0	93.30	179.00	12,235.2	-7,139.7	269.6	1.86	1.70	0.74	-29.4	-8.8	
19,753.0	91.50	178.80	12,231.3	-7,232.6	271.4	1.95	-1.94	-0.22	-33.7	-7.7	
19,846.0	89.70	179.10	12,230.3	-7,325.5	273.1	1.86	-1.94	0.32	-35.0	-6.6	
19,939.0	87.70	179.90	12,232.4	-7,418.5	273.9	2.32	-2.15	0.86	-33.3	-8.4	
20,032.0	86.90	180.20	12,236.8	-7,511.4	273.9	0.82	-0.86	0.32	-29.3	-7.2	
20,126.0	85.80	180.80	12,242.9	-7,605.2	273.0	1.33	-1.17	0.64	-23.8	-6.6	
20,220.0	90.20	181.40	12,246.1	-7,699.1	271.2	4.72	4.68	0.64	-20.9	-11.1	
20,314.0	89.80	180.20	12,246.1	-7,793.1	269.9	1.35	-0.43	-1.28	-21.4	-13.0	
20,408.0	90.40	180.30	12,245.9	-7,887.1	269.5	0.65	0.64	0.11	-22.0	-14.1	
20,502.0	91.00	180.70	12,244.7	-7,981.1	268.7	0.77	0.64	0.43	-23.6	-15.6	
20,595.0	91.10	178.80	12,243.0	-8,074.1	268.3	0.97	0.11	-0.87	-25.8	-16.6	
20,689.0	90.60	178.30	12,241.8	-8,168.0	269.8	1.68	-0.53	-1.80	-27.6	-15.7	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3557.0usft
Site:	Caravan 28 State Com	MD Reference:	KB = 25 @ 3557.0usft
Well:	#602H	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)	Hgh to Plan (usft)	Right to Plan (usft)	
20,781.0	90.30	177.70	12,240.9	-8,260.0	273.1	0.73	-0.33	-0.85	-28.8	-13.1	
20,874.0	91.00	178.00	12,239.9	-8,352.9	278.5	0.82	0.75	0.32	-30.3	-10.3	
20,968.0	88.70	177.00	12,240.1	-8,446.8	280.6	2.67	-2.45	-1.08	-30.5	-6.8	
21,062.0	89.20	177.70	12,241.8	-8,540.7	285.0	0.82	0.53	0.74	-29.2	-3.1	
21,156.0	89.80	178.30	12,242.7	-8,634.6	288.3	0.90	0.84	0.64	-28.9	-0.5	
21,250.0	89.70	178.90	12,243.1	-8,728.6	290.6	0.65	-0.11	0.64	-28.9	1.1	
21,343.0	89.70	178.70	12,243.6	-8,821.6	292.5	0.22	0.00	-0.22	-28.9	2.4	
21,437.0	90.20	179.00	12,243.6	-8,915.6	294.4	0.82	0.53	0.32	-29.3	3.7	
21,530.0	91.10	179.60	12,242.6	-9,008.6	295.5	1.16	0.97	0.65	-30.8	4.2	
21,623.0	90.60	178.90	12,241.2	-9,101.5	298.8	0.82	-0.54	-0.75	-32.6	4.7	
21,717.0	89.50	178.60	12,241.1	-9,195.5	298.8	1.21	-1.17	-0.32	-33.1	6.1	
21,811.0	89.90	178.80	12,241.6	-9,289.5	300.9	0.48	0.43	0.21	-33.1	7.8	
21,904.0	90.40	179.60	12,241.4	-9,382.5	302.2	1.01	0.54	0.88	-33.8	8.3	
21,998.0	88.40	179.50	12,242.4	-9,476.5	303.0	2.13	-2.13	-0.11	-33.3	8.4	
22,091.0	88.60	179.60	12,244.8	-9,569.4	303.7	0.24	0.22	0.11	-31.3	8.4	
22,185.0	89.60	179.50	12,246.3	-9,663.4	304.4	1.07	1.06	-0.11	-30.3	8.5	
22,279.0	89.40	179.80	12,247.1	-9,757.4	305.0	0.38	-0.21	0.32	-29.9	8.5	
22,373.0	90.10	180.00	12,247.5	-9,851.4	305.2	0.77	0.74	0.21	-30.0	8.0	
22,405.0	90.10	179.70	12,247.4	-9,883.4	305.3	0.94	0.00	-0.94	-30.2	7.8	
22,466.0	90.10	179.70	12,247.3	-9,944.4	305.6	0.00	0.00	0.00	-30.6	7.7	



Midland PVA

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Caravan 28 State Corn
Well: #602H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #602H
TVD Reference: KB = 25 @ 3557.0usft
MD Reference: KB = 25 @ 3557.0usft
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)	
11,740.0	11,705.2	373.5	171.8	KOP, MD:11740.0', TVD:11705.2', N/S:373.5', E/W:171.8', INC:1.59
12,048.8	12,011.5	381.9	173.7	FTP Crossing, MD:12048.8', TVD:12011.5', N/S:381.9', E/W:173.7', INC:17.62
22,405.0	12,247.4	-9,883.4	305.3	Last MWD Survey (MD=22405.0')
22,488.0	12,247.3	-9,944.4	305.6	Projection to Bit (MD=22488.0')

Checked By: _____ Approved By: _____ Date: _____

I certify this survey to be true and correct to the best of my belief and knowledge.

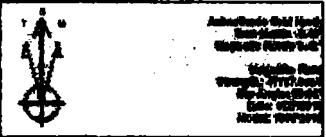
Kay Maddox 11/15/2019
Signed Date



Lea County, NM (NAD 83 NME)
Caravan 28 State Com #602H
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: 602H
KB = 28 @ 357.0' 3532.0'
Northing 436324.00 Easting 772945.00 Latitude 32° 11' 40.439 N Longitude 103° 35' 4.587 W



To convert a Magnetic Direction to a Grid Direction, Add 6.42°
To convert a Magnetic Direction to a True Direction, Add 6.42° East
To convert a True Direction to a Grid Direction, Subtract 0.40°

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1300.0	0.00	0.00	1300.0	0.0	0.0	0.00	0.00	0.0	
3	1599.9	6.00	27.62	1599.4	13.9	7.3	2.00	27.62	-13.7	
4	5985.1	6.00	27.62	5940.8	418.1	218.7	0.00	0.00	-411.4	
5	6265.0	0.00	0.00	6240.0	432.0	226.0	2.00	180.00	-425.1	
6	11805.2	0.00	0.00	11780.2	432.0	226.0	0.00	0.00	-425.1	
7	12559.1	90.48	179.60	12257.8	-49.3	229.3	12.00	179.80	56.2	
8	13503.2	90.48	179.60	12250.0	-983.4	235.9	0.00	0.00	1000.0	TGT#1(Caravan 28 State Com #602H)
9	13519.6	90.14	179.60	12249.9	-1009.8	238.0	2.00	180.00	1018.4	TGT#2(Caravan 28 State Com #602H)
10	16003.9	90.14	179.60	12244.0	-3494.0	253.2	0.00	0.00	3500.0	TGT#3(Caravan 28 State Com #602H)
11	16030.9	89.60	179.60	12244.1	-3521.0	253.4	2.00	-180.00	3527.1	TGT#4(Caravan 28 State Com #602H)
12	18004.5	89.60	179.60	12258.0	-5494.5	287.0	0.00	0.00	5500.0	
13	18013.3	89.77	179.60	12258.0	-5503.3	287.1	2.00	0.00	5508.8	
14	20005.0	89.77	179.60	12266.0	-7495.0	280.9	0.00	0.00	7500.0	
15	20007.5	89.72	179.60	12266.0	-7497.5	280.9	2.00	-180.00	7502.5	
16	22475.1	89.72	179.60	12278.0	-9965.0	298.0	0.00	0.00	9969.5	PBHL (Caravan 28 State Com #602H)

WELLBORE TAPPOINT DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N/S	+E/W	Northing	Easting
Brady Top(Caravan 28 State Com #602H)	7659.0	432.0	226.0	435768.00	773171.00
TGT#1(Caravan 28 State Com #602H)	12244.0	-3494.0	253.2	431630.00	773128.19
TGT#2(Caravan 28 State Com #602H)	12250.0	-4924.0	235.9	434330.00	773180.87
TGT#3(Caravan 28 State Com #602H)	12258.0	-5494.5	287.0	435708.00	773213.04
FTP (Caravan 28 State Com #602H)	12291.0	-352.0	226.0	435708.00	773171.00
TGT#4(Caravan 28 State Com #602H)	12266.0	-7495.0	280.9	427625.00	773226.80
PBHL (Caravan 28 State Com #602H)	12278.0	-9965.0	298.0	429339.00	773343.30

