



HOBBS OCD
JUN 20 2019
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Gem 36 State Com

#202H

OH

Design: OH

Midland PVA

08 April, 2019



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #202H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3451.0usft
Site:	Gem 36 State Corn	MD Reference:	KB = 25 @ 3451.0usft
Well:	#202H	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 Corn		
Site Position:		Northing:	393,688.00 usft
From:	Map	Easting:	759,213.00 usft
Position Uncertainty:	0.0 usft	Spot Radius:	13-3/16 "
		Latitude:	32° 4' 49.331 N
		Longitude:	103° 37' 47.552 W
		Grid Convergence:	0.37 "

Well	#202H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			usft
			Latitude:
			Longitude:
			Ground Level:
			3,428.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	1/14/2019	(°)
			6.80
			Dip Angle
			(°)
			59.91
			Field Strength
			(nT)
			47,992.85489758

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			182.56

Survey Program	Date 4/8/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
182.0	14,450.0	Newsco MWD (OH)	MWD
			Description
			OWSG MWD - Standard



Midland PVA

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 TVD Reference: KB = 25 @ 3451.0usft
 MD Reference: KB = 25 @ 3451.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azl (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	0.0
162.0	0.30	95.50	162.0	0.0	0.4	0.18	0.19	0.00	-0.4	0.0	0.0
308.0	0.90	78.80	308.0	0.2	1.9	0.43	0.41	-12.74	-1.9	-0.3	
482.0	1.60	68.10	481.9	1.4	5.5	0.42	0.40	-5.06	-5.6	-0.8	
665.0	1.90	54.70	664.9	4.1	10.4	0.28	0.16	-7.32	-10.8	-2.6	
853.0	2.10	67.10	852.7	7.2	18.1	0.25	0.11	6.60	-17.6	0.4	
988.0	1.90	63.90	985.7	8.9	19.7	0.20	-0.18	-2.83	-21.6	-0.7	
1,079.0	1.50	59.00	1,078.8	10.5	22.6	0.38	-0.35	-4.34	-24.8	-2.7	
1,287.0	2.60	323.00	1,286.5	15.1	22.1	1.67	0.59	-51.06	2.0	-26.9	
1,454.0	4.10	310.40	1,453.2	22.9	14.5	0.89	0.80	-6.74	7.4	-25.7	
1,642.0	5.40	312.80	1,640.8	33.2	2.9	0.70	0.69	1.28	10.0	-24.5	
1,830.0	6.30	317.10	1,827.8	46.8	-10.6	0.53	0.48	2.29	8.8	-24.8	
2,016.0	7.20	324.90	2,012.3	63.8	-24.3	0.69	0.48	4.19	2.6	-27.2	
2,203.0	6.80	322.60	2,197.9	82.2	-37.7	0.26	-0.21	-1.23	0.3	-29.7	
2,390.0	6.90	310.50	2,383.6	88.3	-53.0	0.77	0.05	-6.47	3.8	-28.3	
2,577.0	7.50	315.80	2,569.1	114.3	-70.0	0.48	0.32	2.83	-2.7	-28.4	
2,765.0	6.70	328.20	2,755.7	132.4	-84.4	0.82	-0.43	6.60	-12.5	-28.5	
2,952.0	7.20	321.40	2,941.3	150.9	-97.4	0.51	0.27	-3.64	-12.2	-32.8	
3,140.0	9.50	321.90	3,127.3	172.3	-114.4	1.22	1.22	0.27	-20.2	-34.6	
3,328.0	10.40	332.60	3,310.5	199.3	-131.6	1.10	0.48	5.75	-39.6	-32.9	
3,514.0	5.30	337.20	3,496.7	222.4	-142.7	2.73	-2.71	2.45	-49.5	-35.1	
3,701.0	1.90	234.40	3,683.4	228.5	-148.6	3.22	-1.82	-54.97	46.8	-29.5	
3,888.0	4.30	165.50	3,870.2	219.9	-149.4	2.15	1.28	-36.84	19.3	39.6	
4,074.0	6.90	141.90	4,055.3	204.4	-140.7	1.84	1.40	-12.69	-34.3	43.5	
4,261.0	8.20	126.90	4,240.7	187.5	-123.1	1.26	0.70	-8.02	-87.7	27.3	
4,450.0	7.30	125.90	4,428.0	172.4	-102.6	0.48	-0.48	-0.53	-132.9	21.9	
4,543.0	10.90	129.40	4,519.8	163.3	-91.1	3.91	3.67	3.76	-155.4	29.8	



Midland PVA

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 TVD Reference: KB = 25 @ 3451.0usft
 MD Reference: KB = 25 @ 3451.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey											
MD (usft)	Inc (")	Asd (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	DLag ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
4,704.0	16.80	111.50	4,878.1	145.1	-57.8	4.49	3.66	-11.12	-209.0	-34.2	
4,892.0	4.60	349.20	4,881.6	142.6	-33.5	10.44	-8.49	-85.05	161.6	-192.4	
5,079.0	7.20	316.90	5,047.7	158.5	-42.9	2.20	1.39	-17.27	228.2	-81.4	
5,267.0	8.30	277.50	5,234.1	168.9	-64.4	2.83	0.59	-20.86	204.9	75.7	
5,454.0	3.30	274.00	5,420.0	171.0	-83.2	2.68	-2.67	-1.87	181.2	88.7	
5,641.0	2.90	302.40	5,606.8	173.9	-92.6	0.84	-0.21	15.19	191.2	-7.5	
5,828.0	3.30	304.60	5,783.5	179.5	-101.0	0.22	0.21	1.18	180.6	-14.7	
6,014.0	2.80	300.20	5,979.2	184.8	-109.3	0.30	-0.27	-2.37	171.3	-1.2	
6,200.0	2.80	302.20	6,165.0	189.5	-117.1	0.05	0.00	1.08	162.1	-7.0	
6,388.0	5.60	310.30	6,352.5	197.9	-128.0	1.52	1.49	4.31	145.8	-29.3	
6,575.0	5.80	308.70	6,538.6	209.7	-142.3	0.14	0.11	-0.86	128.0	-25.4	
6,761.0	5.10	308.30	6,723.7	220.7	-156.1	0.38	-0.38	-0.22	110.5	-24.6	
6,949.0	4.70	302.50	6,911.0	230.0	-169.2	0.34	-0.21	-3.09	88.4	-14.1	
7,136.0	1.50	266.40	7,097.8	234.0	-178.1	1.82	-1.71	-19.30	77.5	40.9	
7,324.0	1.50	285.50	7,285.7	234.5	-182.9	0.28	0.00	10.16	81.8	14.1	
7,512.0	1.20	301.00	7,473.6	236.2	-187.0	0.25	-0.16	8.24	78.3	-7.6	
7,699.0	1.10	280.30	7,660.6	237.8	-190.3	0.13	-0.05	-5.72	74.6	6.7	
7,888.0	0.80	286.90	7,849.6	238.8	-193.3	0.16	-0.16	-1.80	71.0	11.0	
8,075.0	0.70	293.60	8,036.6	239.7	-195.6	0.07	-0.05	3.58	69.3	2.8	
8,262.0	0.60	241.90	8,223.6	239.7	-197.5	0.31	-0.05	-27.65	39.1	55.3	
8,450.0	1.80	266.80	8,411.5	239.0	-201.3	0.88	0.64	13.24	54.9	34.1	
8,637.0	1.30	265.90	8,598.4	238.7	-206.4	0.27	-0.27	-0.48	49.3	34.9	
8,824.0	1.10	263.10	8,785.4	238.4	-210.3	0.11	-0.11	-1.50	43.6	37.2	
8,959.0	1.10	266.30	8,920.4	238.1	-212.8	0.05	0.00	2.37	43.0	34.7	
9,034.0	6.60	181.00	8,995.2	233.8	-213.6	8.80	7.33	-113.73	-35.3	45.1	
9,128.0	22.20	178.90	9,086.0	210.4	-213.4	16.60	16.60	-2.23	-58.7	45.7	
9,222.0	24.90	178.80	9,172.1	172.9	-212.6	2.87	2.87	-0.11	-96.3	48.9	



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Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Buikd (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
9,316.0	32.40	180.40	9,254.6	127.9	-212.4	8.02	7.98	1.70	-137.7	51.1	
9,410.0	38.30	179.00	9,331.2	73.5	-212.1	6.34	6.28	-1.49	-175.3	44.9	
9,504.0	41.70	181.90	9,403.2	13.1	-212.6	4.12	3.82	3.09	-193.2	50.0	
9,598.0	45.60	184.60	9,471.2	-51.6	-216.3	4.60	4.15	2.87	-191.2	49.8	
9,692.0	49.20	183.90	9,534.8	-120.8	-221.4	3.87	3.83	-0.74	-170.8	40.5	
9,786.0	59.60	179.60	9,589.5	-196.9	-223.6	11.67	11.08	-4.57	-138.4	33.1	
9,879.0	65.10	181.70	9,632.6	-279.2	-224.6	6.24	5.91	2.26	-99.4	31.7	
9,973.0	68.90	182.80	9,688.4	-365.7	-228.0	4.16	4.04	1.17	-64.3	26.5	
10,067.0	71.30	180.20	9,701.4	-454.0	-230.3	3.64	2.55	-2.77	-33.9	22.7	
10,161.0	76.30	182.10	9,726.0	-544.6	-232.1	7.70	7.45	2.02	-11.1	19.5	
10,251.0	85.00	182.70	9,739.1	-633.6	-235.8	7.47	7.44	0.67	0.2	14.9	
10,345.0	86.90	181.70	9,745.7	-727.3	-239.4	2.28	2.02	-1.06	5.2	10.6	
10,439.0	89.10	181.90	9,749.0	-821.1	-242.4	2.35	2.34	0.21	6.9	6.9	
10,532.0	91.60	182.10	9,748.4	-914.1	-245.6	2.70	2.69	0.22	4.7	2.9	
10,626.0	89.90	179.80	9,747.2	-1,008.0	-247.2	3.04	-1.81	-2.45	1.9	0.6	
10,720.0	89.30	178.80	9,747.8	-1,102.0	-246.0	1.24	-0.64	-1.08	1.1	1.0	
10,813.0	92.90	181.80	9,746.0	-1,195.0	-246.6	5.11	3.87	3.33	-2.0	-0.3	
10,907.0	91.60	179.70	9,742.4	-1,288.9	-247.9	2.72	-1.38	-2.34	-7.1	-2.4	
11,002.0	92.30	179.70	9,739.1	-1,383.8	-247.4	0.74	0.74	0.00	-11.8	-2.7	
11,095.0	87.80	179.60	9,739.0	-1,476.8	-246.9	4.84	-4.84	-0.11	-13.3	-2.9	
11,189.0	88.50	179.60	9,743.7	-1,570.7	-246.1	1.39	-1.38	-0.11	-10.0	-2.9	
11,282.0	86.10	178.90	9,749.7	-1,663.5	-244.8	0.77	-0.43	-0.65	-5.4	-2.3	
11,376.0	90.60	177.90	9,752.4	-1,757.4	-242.2	4.90	4.79	-1.06	-4.1	-0.4	
11,470.0	91.40	176.80	9,750.8	-1,851.3	-237.8	1.45	0.85	-1.17	-7.1	3.1	
11,563.0	89.10	177.50	9,750.4	-1,944.2	-233.2	2.69	-2.47	0.75	-8.9	7.0	
11,657.0	88.80	176.60	9,752.1	-2,038.0	-228.4	1.01	-0.32	-0.96	-8.3	11.1	
11,750.0	89.70	179.50	9,753.3	-2,130.9	-225.2	3.26	0.97	3.12	-7.7	13.5	



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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)	
11,844.0	90.80	179.60	9,752.9	-2,224.9	-224.5	1.18	1.17	0.11	-8.8	13.5	
11,838.0	89.60	180.40	9,752.6	-2,318.9	-224.5	1.53	-1.28	0.85	-9.8	12.8	
12,031.0	89.30	178.40	9,753.5	-2,411.9	-224.3	1.12	-0.32	-1.08	-8.6	12.2	
12,125.0	91.20	180.30	9,753.1	-2,505.9	-224.1	2.24	2.02	0.96	-10.6	11.7	
12,218.0	88.40	180.90	9,753.4	-2,598.9	-225.1	3.08	-3.01	0.65	-10.9	10.0	
12,312.0	87.70	180.00	9,756.6	-2,692.8	-225.8	1.21	-0.74	-0.96	-8.4	8.5	
12,405.0	87.80	179.40	9,760.2	-2,785.8	-225.3	0.65	0.11	-0.65	-5.4	8.2	
12,499.0	89.20	178.90	9,762.7	-2,879.7	-223.9	1.58	1.49	-0.53	-3.6	8.8	
12,593.0	88.30	178.10	9,764.7	-2,973.7	-221.4	1.28	-0.96	-0.85	-2.2	10.6	
12,687.0	89.50	180.00	9,766.6	-3,067.6	-219.9	2.39	1.28	2.02	-1.0	11.4	
12,781.0	89.60	179.50	9,767.3	-3,161.6	-219.5	0.54	0.11	-0.53	-1.0	11.0	
12,874.0	90.40	178.40	9,767.3	-3,254.6	-217.8	1.46	0.86	-1.18	-1.6	12.0	
12,968.0	90.50	180.20	9,768.6	-3,348.6	-216.6	1.92	0.11	1.91	-3.0	12.4	
13,061.0	90.20	179.50	9,766.0	-3,441.6	-216.4	0.82	-0.32	-0.75	-4.2	11.9	
13,155.0	89.00	181.70	9,766.6	-3,535.6	-217.4	2.67	-1.28	2.34	-4.2	10.1	
13,250.0	89.40	181.10	9,768.0	-3,630.5	-219.7	0.76	0.42	-0.63	-3.6	7.1	
13,343.0	88.90	180.20	9,769.3	-3,723.5	-220.7	1.11	-0.54	-0.97	-2.8	5.3	
13,437.0	88.40	180.00	9,771.6	-3,817.5	-220.9	0.57	-0.53	-0.21	-1.3	4.3	
13,530.0	88.40	179.40	9,774.2	-3,910.5	-220.4	0.84	0.00	-0.65	0.7	4.1	
13,624.0	87.30	177.30	9,777.7	-4,004.3	-217.7	2.52	-1.17	-2.23	3.5	6.0	
13,718.0	89.00	178.70	9,780.7	-4,098.2	-212.8	1.92	1.81	-0.64	5.9	10.2	
13,812.0	89.90	178.10	9,781.8	-4,192.1	-208.5	1.77	0.96	1.49	6.2	13.7	
13,905.0	90.10	176.40	9,781.6	-4,284.9	-204.1	1.84	0.22	-1.83	5.5	17.4	
13,999.0	89.70	177.30	9,781.8	-4,378.8	-198.9	1.05	-0.43	0.96	5.0	21.8	
14,092.0	89.60	179.20	9,782.4	-4,471.8	-196.1	2.05	-0.11	2.04	5.0	23.9	
14,185.0	89.40	179.10	9,783.2	-4,564.7	-194.7	0.24	-0.22	-0.11	5.1	24.6	
14,279.0	91.10	178.90	9,782.8	-4,658.7	-193.1	1.82	1.81	-0.21	4.1	25.4	



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14,373.0	91.10	177.50	9,780.9	-4,752.7	-180.1	1.49	0.00	-1.49	1.6	27.6
14,394.0	91.80	177.80	9,780.4	-4,773.6	-189.2	3.63	3.33	1.43	0.9	28.3
14,450.0	91.80	177.80	9,778.7	-4,829.6	-187.1	0.00	0.00	0.00	-1.2	30.0

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
8,990.0	8,951.4	237.3	-213.3	KOP, MD:8990.0', TVD:8951.4', N/S:237.3', E/W:-213.3', INC:2.85
9,100.4	9,060.0	219.8	-213.6	FTP Crossing, MD:9100.4', TVD:9060.0', N/S:219.8', E/W:-213.6', INC:17.62
14,394.0	9,780.4	-4,773.6	-189.2	Last MWD Survey (MD=14394.0')
14,450.0	9,778.7	-4,829.6	-187.1	Projection to Bit (MD=14450.0')

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Gem 36 State Com #202H

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: #202H

KB = 25 @ 3451.0surf 3428.0
Northing Easting Latitude Longitude
398433.00 760582.00 32° 6' 38.237 N 103° 37' 31.911 W

To convert a Magnetic Direction to a Grid Direction, Add 6.42°
To convert a Magnetic Direction to a True Direction, Add 8.80° East
To convert a True Direction to a Grid Direction, Subtract 0.38°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+H-S	+G-W	Dlog	TPace	V-Sect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0		
3	1459.8	0.00	316.30	1459.2	11.3	-10.8	2.00	316.30	-10.8		
4	4778.2	0.00	316.30	4778.9	298.7	-347.2	0.00	0.00	-347.4		
5	6078.0	0.00	0.00	6078.0	270.0	-258.0	2.00	180.00	-258.2		
6	8230.4	0.00	0.00	8231.4	270.0	-258.0	0.00	0.00	-258.2		
7	10029.7	89.02	179.54	8712.2	-241.9	-333.8	11.00	179.54	253.1		
8	10787.8	89.02	179.54	8743.0	-489.9	-347.8	0.00	0.00	1000.0		TOTW1 (Gem 36 State Com #202H)
9	10783.8	89.14	179.54	8743.1	-486.1	-347.8	2.00	0.00	1004.1		TOTW2 (Gem 36 State Com #202H)
10	11780.3	89.14	179.54	8760.0	-1891.3	-338.9	0.00	0.00	2000.0		
11	11812.2	89.80	179.54	8760.3	-2014.2	-233.7	2.00	0.00	2022.9		
12	14844.2	89.80	179.54	8780.0	-4848.0	-217.0	0.00	0.00	4850.9		PBHL (Gem 36 State Com #202H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+H-S	+G-W	Northing	Easting
TOTW1 (Gem 36 State Com #202H)	8748.0	-489.9	-347.8	397448.18	760314.10
TOTW2 (Gem 36 State Com #202H)	8760.0	-1891.3	-338.9	398443.70	760322.12
PBHL (Gem 36 State Com #202H)	8780.0	-4848.0	-217.0	398589.00	760348.00
Brushy Top (Gem 36 State Com #202H)	7460.0	270.0	-258.0	398708.00	760304.00
FTP (Gem 36 State Com #202H)	8728.0	220.0	-259.0	398655.00	760304.00

