



HOBBS OCD
AUG 05 2019
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#503H

OH

Design: OH

Final PVA Report

09 May, 2019



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #503H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Site:	Hearns 34 State Com	MD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Well:	#503H	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	Hearns 34 State Com		
Site Position:		Northing:	425,568.00 usft
From:	Map	Easting:	780,745.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 3.355 N
		Longitude:	103° 33' 34.635 W
		Grid Convergence:	0.41 °

Well	#503H		
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' 9.079 N
		Longitude:	103° 33' 46.663 W
		Ground Level:	3,459.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
	IGRF2015	2/5/2019	6.77
			59.99
			47,737.83737042

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	(°)
		2.27	

Survey Program	Date 5/9/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
119.0	21,073.0	Learn MWD (OH)	MWD
			OWSG MWD - Standard



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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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
119.0	0.97	338.20	119.0	0.9	-0.4	0.82	0.82	0.00	-1.0	0.0	
299.0	1.41	223.00	299.0	0.7	-2.5	1.11	0.24	-62.89	-1.2	-2.3	
479.0	1.58	234.60	478.9	-2.4	-6.1	0.19	0.09	6.44	-6.3	-1.6	
633.0	1.67	248.14	632.9	-4.4	-9.9	0.26	0.06	8.79	-10.8	0.4	
790.0	2.37	251.47	789.8	-6.3	-15.1	0.45	0.45	2.12	-16.3	1.2	
978.0	3.43	257.28	977.5	-8.8	-24.3	0.58	0.56	3.09	-25.6	3.2	
1,166.0	2.20	240.75	1,165.3	-11.8	-32.9	0.78	-0.65	-8.79	-34.5	-5.8	
1,227.0	1.85	234.95	1,226.2	-12.9	-34.7	0.66	-0.57	-9.51	-35.8	-9.4	
1,342.0	1.93	222.47	1,341.2	-15.4	-37.5	0.36	0.07	-10.85	-36.7	-17.3	
1,531.0	5.01	154.97	1,529.9	-25.2	-36.2	2.45	1.63	-35.71	-5.0	-43.7	
1,719.0	5.54	160.24	1,717.1	-41.2	-29.7	0.38	0.28	2.80	-12.4	-44.6	
1,906.0	9.58	158.84	1,902.4	-64.2	-21.0	2.16	2.16	-0.75	-10.3	-48.7	
2,094.0	10.82	154.44	2,087.4	-94.8	-7.7	0.78	0.66	-2.34	-10.6	-52.5	
2,282.0	10.38	154.97	2,272.2	-126.0	7.1	0.24	-0.23	0.28	-16.4	-54.4	
2,470.0	11.17	150.58	2,456.9	-157.2	23.2	0.61	0.42	-2.34	-18.0	-56.7	
2,659.0	10.99	146.36	2,642.4	-188.2	42.1	0.44	-0.10	-2.23	-20.6	-56.9	
2,847.0	10.64	146.36	2,827.1	-217.5	61.7	0.19	-0.19	0.00	-26.8	-54.7	
3,035.0	10.20	144.25	3,012.0	-245.5	81.0	0.31	-0.23	-1.12	-29.6	-52.9	
3,224.0	10.99	144.25	3,197.7	-273.7	101.3	0.42	0.42	0.00	-35.1	-49.6	
3,412.0	10.64	143.02	3,382.4	-302.1	122.2	0.22	-0.19	-0.65	-40.3	-46.7	
3,600.0	10.02	141.96	3,567.3	-328.9	142.8	0.34	-0.33	-0.56	-44.1	-43.3	
3,788.0	9.50	142.67	3,752.6	-354.1	162.2	0.26	-0.28	0.36	-47.4	-38.4	
3,977.0	9.15	137.57	3,939.1	-377.6	181.8	0.47	-0.19	-2.70	-45.7	-37.0	
4,165.0	8.27	140.56	4,125.0	-399.0	200.5	0.53	-0.47	1.59	-47.0	-28.7	
4,353.0	7.56	141.61	4,311.2	-419.2	216.8	0.39	-0.38	0.56	-44.3	-22.9	
4,541.0	7.39	138.27	4,497.6	-437.9	232.5	0.25	-0.09	-1.78	-38.6	-19.8	



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MD Reference: KB = 22' @ 3481.0usft (Nabors M7502)
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)
4,729.0	6.77	136.34	4,684.1	-454.9	248.2	0.35	-0.33	-1.03	-32.5	-14.2
4,917.0	7.03	137.22	4,870.8	-471.4	263.7	0.15	0.14	0.47	-26.6	-6.6
5,030.0	6.42	137.39	4,983.0	-481.1	272.6	0.54	-0.54	0.15	-22.7	-2.4
5,199.0	4.84	136.69	5,151.2	-493.3	283.9	0.94	-0.93	-0.41	-13.5	3.6
5,387.0	6.68	147.59	5,338.2	-508.3	295.2	1.13	0.88	5.80	-1.8	9.2
5,576.0	8.44	160.60	5,525.6	-530.6	305.7	1.29	0.93	6.88	4.8	6.8
5,764.0	8.53	163.06	5,711.5	-557.0	314.4	0.20	0.05	1.31	6.1	0.9
5,953.0	8.71	161.83	5,898.4	-584.0	322.9	0.14	0.10	-0.65	6.8	-5.0
6,141.0	8.53	162.71	6,084.3	-610.8	331.5	0.12	-0.10	0.47	7.4	-10.9
6,329.0	8.09	163.58	6,270.3	-636.8	339.4	0.24	-0.23	0.46	8.7	-17.4
6,518.0	8.44	155.67	6,457.3	-662.2	348.9	0.63	0.19	-4.19	13.5	-20.4
6,706.0	8.27	157.43	6,643.3	-687.3	359.7	0.16	-0.09	0.94	14.7	-23.8
6,894.0	8.27	157.26	6,829.4	-712.2	370.2	0.01	0.00	-0.09	17.0	-27.1
7,082.0	7.56	156.20	7,015.6	-736.0	380.4	0.39	-0.38	-0.56	20.9	-29.8
7,270.0	5.19	168.86	7,202.4	-755.7	387.0	1.46	-1.26	6.73	21.3	-40.1
7,459.0	1.93	166.40	7,391.0	-767.2	389.4	1.73	-1.72	-1.30	34.1	-46.0
7,647.0	1.49	157.86	7,579.0	-772.5	391.1	0.27	-0.23	-4.48	45.9	-42.3
7,835.0	0.87	156.90	7,766.9	-776.2	392.6	0.28	-0.28	-0.56	43.6	-41.6
8,023.0	0.88	169.56	7,954.9	-779.1	393.5	0.12	-0.05	6.73	30.4	-49.8
8,212.0	1.49	167.98	8,143.8	-783.0	394.3	0.32	0.32	-0.84	27.9	-49.0
8,400.0	1.32	160.95	8,331.8	-787.4	395.5	0.13	-0.09	-3.74	29.1	-45.5
8,588.0	1.76	172.90	8,519.7	-792.3	396.6	0.29	0.23	6.36	14.0	-50.1
8,775.0	1.76	172.55	8,706.6	-798.0	397.3	0.01	0.00	-0.19	8.8	-50.0
8,963.0	1.76	179.05	8,894.5	-803.8	397.7	0.11	0.00	3.46	-2.9	-50.4
9,151.0	1.58	191.01	9,082.5	-809.2	397.3	0.21	-0.10	6.36	-18.7	-48.1
9,340.0	1.58	295.95	9,271.4	-810.6	394.4	1.33	0.00	55.52	-43.5	33.0
9,528.0	1.93	295.60	9,459.3	-808.1	389.2	0.19	0.19	-0.19	-49.5	32.7



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Survey

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9,716.0	3.61	270.64	9,647.1	-806.7	380.5	1.08	0.89	-13.28	-67.5	7.4
9,904.0	1.23	270.28	9,834.9	-806.6	372.5	1.27	-1.27	-0.19	-75.4	7.0
10,092.0	1.85	301.22	10,022.9	-805.0	367.9	0.54	0.33	16.46	-65.9	45.8
10,300.0	2.81	282.94	10,230.7	-802.1	360.1	0.58	0.46	-8.79	-85.2	21.8
10,394.0	7.91	0.46	10,324.3	-795.1	357.9	8.30	5.43	82.47	-4.1	90.2
10,488.0	13.45	19.44	10,416.7	-778.3	361.6	6.91	5.89	20.19	8.1	88.7
10,491.3	13.61	20.04	10,419.9	-777.6	361.8	6.33	4.71	18.10	8.2	88.7
KOP (Hearn 34 State Com #503H)										
10,582.0	18.29	32.28	10,507.1	-755.5	373.1	6.33	5.17	13.50	8.6	82.2
10,601.6	20.01	29.38	10,525.6	-750.0	376.4	10.01	8.78	-14.79	1.7	80.2
HL Crossing, MD:10601.6', TVD:10525.6', N/S:-750.0', EW:376.4', INC:20.01										
10,676.0	28.82	21.73	10,593.8	-723.3	388.9	10.01	9.16	-10.28	-16.6	69.0
10,770.0	37.11	14.35	10,673.6	-676.0	403.8	11.69	10.95	-7.85	-29.7	52.1
10,864.0	50.47	14.87	10,741.3	-613.2	420.2	14.22	14.21	0.55	-34.9	35.8
FTP (Hearn 34 State Com #503H)										
10,958.0	64.19	11.89	10,791.9	-536.4	438.3	14.84	14.60	-3.17	-42.4	16.8
11,052.0	78.61	6.08	10,821.8	-448.6	452.0	16.41	15.34	-6.18	-51.2	1.6
11,146.0	75.27	3.45	10,843.1	-357.4	459.6	4.48	-3.55	-2.80	-47.6	-6.2
11,193.0	78.44	1.16	10,853.7	-311.7	461.4	8.25	6.74	-4.87	-38.2	-7.8
11,240.0	80.02	0.46	10,862.5	-265.5	462.1	3.67	3.36	-1.49	-28.8	-8.5
11,288.0	81.69	359.05	10,870.2	-218.1	461.9	4.53	3.48	-2.94	-20.6	-8.6
11,341.0	84.05	359.12	10,876.7	-165.5	461.0	4.45	4.45	0.13	-13.4	-8.1
11,435.0	85.97	1.37	10,884.9	-71.9	461.4	3.14	2.04	2.39	-4.1	-9.1
11,530.0	88.66	3.80	10,889.4	22.9	465.7	3.81	2.83	2.56	1.5	-14.1
11,624.0	87.81	3.99	10,892.3	116.6	472.1	0.93	-0.90	0.20	5.5	-21.2
11,718.0	88.54	2.83	10,895.2	210.4	477.7	1.46	0.78	-1.23	9.7	-27.4
11,812.0	89.55	1.78	10,898.8	304.3	481.5	1.57	1.07	-1.14	12.5	-31.9



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11,806.0	90.17	1.17	10,897.0	398.3	483.9	0.91	0.66	-0.83	13.9	-35.0
12,001.0	89.89	1.13	10,897.0	493.3	485.8	0.30	-0.29	-0.04	15.0	-37.6
12,095.0	89.44	0.41	10,897.5	587.3	487.0	0.90	-0.48	-0.77	16.7	-39.5
12,189.0	90.22	359.24	10,897.8	681.3	486.7	1.50	0.83	-1.24	18.1	-39.9
12,283.0	90.84	358.38	10,897.0	775.2	484.8	1.13	0.66	-0.91	18.4	-38.6
12,377.0	90.67	358.60	10,895.7	869.2	482.3	0.30	-0.18	0.23	18.4	-36.8
12,471.0	92.63	359.32	10,893.0	963.1	480.6	2.22	2.09	0.77	18.8	-35.8
12,565.0	92.35	359.33	10,888.9	1,057.0	479.5	0.30	-0.30	0.01	13.9	-35.4
12,660.0	92.13	358.04	10,885.2	1,151.9	477.3	1.38	-0.23	-1.36	11.3	-33.9
12,754.0	92.30	357.92	10,881.6	1,245.8	474.0	0.22	0.18	-0.13	8.8	-31.3
12,848.0	92.24	358.17	10,877.9	1,339.7	470.8	0.27	-0.06	0.27	6.3	-28.8
12,942.0	92.24	358.12	10,874.2	1,433.6	467.8	0.05	0.00	-0.05	3.8	-26.4
13,036.0	92.07	357.93	10,870.6	1,527.4	464.5	0.27	-0.18	-0.20	1.4	-23.8
13,130.0	91.79	357.80	10,867.5	1,621.3	461.0	0.33	-0.30	-0.14	-0.6	-21.0
13,225.0	90.84	357.42	10,865.3	1,716.2	457.1	1.08	-1.00	-0.40	-1.6	-17.8
13,319.0	90.90	357.89	10,863.9	1,810.1	453.2	0.50	0.08	0.50	-1.8	-14.6
13,413.0	89.94	356.81	10,863.2	1,904.0	448.9	1.54	-1.02	-1.15	-1.4	-10.9
13,507.0	88.94	355.95	10,864.1	1,997.8	442.9	1.40	-1.06	-0.91	0.7	-5.7
13,601.0	88.88	355.48	10,865.9	2,091.5	435.9	0.50	-0.06	-0.50	3.7	0.7
13,619.8	88.89	355.55	10,866.3	2,110.1	434.5	0.39	0.06	0.38	4.3	2.0
TGT 1 (Hearns 34 State Com #503H)										
13,695.0	88.94	355.84	10,867.7	2,185.2	428.8	0.39	0.06	0.38	6.6	7.1
13,789.0	88.77	356.69	10,869.6	2,279.0	422.7	0.92	-0.18	0.90	9.6	12.5
13,883.0	88.37	356.60	10,871.9	2,372.8	417.2	0.44	-0.43	-0.10	13.1	17.3
13,977.0	89.33	357.45	10,873.8	2,466.7	412.3	1.36	1.02	0.90	16.2	21.5
14,072.0	90.95	358.94	10,873.8	2,561.6	407.7	1.79	1.71	-0.54	17.2	25.4
14,166.0	92.02	358.30	10,871.1	2,655.5	403.8	1.84	1.14	1.45	15.9	28.6



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14,260.0	92.35	358.31	10,867.5	2,749.3	401.0	0.35	0.35	0.01	13.5	30.7	
14,353.0	91.96	358.16	10,864.0	2,842.2	398.1	0.45	-0.42	-0.16	11.1	32.9	
14,448.0	91.79	358.79	10,860.9	2,937.2	395.6	0.69	-0.18	0.66	9.2	34.7	
14,542.0	91.18	358.45	10,858.5	3,031.1	393.3	0.74	-0.65	-0.36	7.9	36.3	
14,636.0	91.18	358.46	10,856.6	3,125.0	390.8	0.01	0.00	0.01	7.1	38.1	
14,730.0	91.01	358.73	10,854.8	3,218.0	388.5	0.34	-0.18	0.29	6.5	39.7	
14,824.0	90.90	358.24	10,853.2	3,312.9	386.0	0.53	-0.12	-0.52	6.1	41.5	
14,918.0	90.95	358.86	10,851.7	3,406.9	383.6	0.66	0.05	0.66	5.8	43.2	
15,012.0	91.18	359.18	10,849.9	3,500.9	382.0	0.42	0.24	0.34	5.2	44.1	
15,106.0	91.23	359.24	10,848.0	3,594.8	380.7	0.08	0.05	0.06	4.4	44.7	
15,201.0	90.78	358.84	10,846.3	3,689.8	379.1	0.63	-0.47	-0.42	3.9	45.6	
15,235.9	90.74	359.28	10,845.8	3,724.7	378.6	1.27	-0.12	1.27	3.8	45.9	
TGT 2 (Hearns 34 State Com #503H)											
15,295.0	90.67	0.03	10,845.1	3,783.8	378.2	1.27	-0.12	1.27	3.6	45.8	
15,389.0	90.28	0.66	10,844.3	3,877.8	378.8	0.79	-0.41	0.67	3.6	44.6	
15,483.0	89.72	0.35	10,844.3	3,971.8	379.6	0.68	-0.60	-0.33	4.4	43.1	
15,577.0	90.45	1.32	10,844.2	4,065.8	381.0	1.29	0.78	1.03	5.0	41.0	
15,671.0	90.11	1.05	10,843.7	4,159.8	382.9	0.46	-0.36	-0.29	5.3	38.3	
15,765.0	89.50	1.25	10,844.0	4,253.7	384.8	0.68	-0.65	0.21	6.4	35.8	
15,860.0	89.44	0.89	10,844.9	4,348.7	386.6	0.38	-0.06	-0.38	8.0	33.3	
15,954.0	88.43	1.16	10,846.7	4,442.7	388.3	1.11	-1.07	0.29	10.5	30.9	
16,048.0	88.66	1.56	10,849.1	4,536.6	390.5	0.49	0.24	0.43	13.7	28.0	
16,142.0	88.99	1.73	10,851.0	4,630.6	393.2	0.39	0.35	0.18	16.4	24.6	
16,236.0	92.07	2.48	10,850.1	4,724.5	396.6	3.37	3.28	0.80	18.2	20.5	
16,330.0	92.08	1.67	10,846.7	4,818.4	400.0	0.88	0.01	-0.86	13.6	16.4	
16,424.0	91.91	1.92	10,843.4	4,912.3	403.0	0.32	-0.18	0.27	11.1	12.7	
16,518.0	91.79	1.91	10,840.4	5,006.2	406.1	0.13	-0.13	-0.01	8.8	8.9	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #503H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Site:	Hearns 34 State Com	MD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Well:	#503H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,613.0	91.07	1.68	10,838.0	5,101.1	409.1	0.80	-0.76	-0.24	7.2	5.2	
16,707.0	90.78	1.21	10,836.5	5,195.0	411.5	0.59	-0.31	-0.50	6.5	2.1	
16,801.0	90.78	0.70	10,835.2	5,289.0	413.0	0.54	0.00	-0.54	6.0	-0.1	
16,895.0	90.28	0.81	10,834.4	5,383.0	414.3	0.54	-0.53	0.12	5.9	-2.1	
16,989.0	89.89	0.31	10,834.2	5,477.0	415.2	0.67	-0.41	-0.53	6.5	-3.7	
17,083.0	90.06	0.34	10,834.3	5,571.0	415.7	0.18	0.18	0.03	7.3	-4.9	
17,177.0	90.17	358.98	10,834.1	5,665.0	415.2	1.45	0.12	-1.45	7.9	-5.1	
17,271.0	89.78	359.26	10,834.1	5,759.0	413.7	0.51	-0.41	0.30	8.7	-4.3	
17,365.0	90.11	359.21	10,834.2	5,853.0	412.5	0.36	0.35	-0.05	9.5	-3.7	
17,459.0	90.90	359.76	10,833.4	5,947.0	411.6	1.02	0.84	0.59	9.4	-3.6	
17,554.0	91.01	359.47	10,831.8	6,042.0	411.0	0.33	0.12	-0.31	8.6	-3.7	
17,648.0	90.67	359.83	10,830.4	6,135.9	410.4	0.53	-0.36	0.38	8.0	-3.8	
17,697.9	90.49	359.81	10,828.9	6,185.9	410.2	0.35	-0.35	-0.04	7.9	-4.0	
TGT 3 (Hearns 34 State Com #503H)											
17,742.0	90.34	359.79	10,828.6	6,228.9	410.1	0.35	-0.35	-0.04	8.0	-4.2	
17,836.0	90.22	359.80	10,829.1	6,323.9	409.8	0.13	-0.13	0.01	8.5	-4.5	
17,930.0	89.72	359.97	10,829.2	6,417.9	409.6	0.56	-0.53	0.18	9.5	-5.0	
18,024.0	89.10	0.02	10,830.2	6,511.9	409.6	0.66	-0.66	0.05	11.4	-5.7	
18,118.0	88.54	0.06	10,832.1	6,605.9	409.6	0.60	-0.60	0.04	14.2	-6.5	
18,212.0	88.88	0.27	10,834.2	6,699.9	409.9	0.43	0.36	0.22	17.3	-7.5	
18,306.0	90.62	0.26	10,834.6	6,793.9	410.3	1.85	1.85	-0.01	18.6	-8.6	
18,400.0	90.50	359.88	10,833.7	6,887.9	410.4	0.44	-0.13	-0.43	18.6	-9.4	
18,494.0	90.67	359.74	10,832.7	6,981.9	410.1	0.22	0.18	-0.13	18.6	-9.7	
18,588.0	90.90	359.90	10,831.4	7,075.9	409.8	0.30	0.24	0.17	18.2	-10.1	
18,682.0	91.29	359.32	10,829.6	7,169.8	409.2	0.74	0.41	-0.62	17.4	-10.2	
18,776.0	91.85	359.01	10,827.1	7,263.8	407.8	0.68	0.60	-0.33	15.7	-9.5	
18,870.0	91.23	358.93	10,824.5	7,357.7	408.1	0.67	-0.66	-0.09	14.1	-8.5	



Final PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hears 34 State Com
Well: #503H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #503H
TVD Reference: KB = 22' @ 3481.0usft (Nabors M7502)
MD Reference: KB = 22' @ 3481.0usft (Nabors M7502)
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)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
18,984.0	90.80	358.93	10,822.8	7,451.7	404.4	0.35	-0.35	0.00	13.3	-7.5	
19,058.0	90.50	359.12	10,821.7	7,545.7	402.8	0.47	-0.43	0.20	13.1	-8.6	
19,152.0	90.45	359.22	10,820.9	7,639.7	401.4	0.12	-0.05	0.11	13.3	-5.9	
19,247.0	90.11	359.57	10,820.4	7,734.7	400.4	0.51	-0.36	0.37	13.7	-5.6	
19,341.0	89.83	0.12	10,820.5	7,828.7	400.1	0.66	-0.30	0.59	14.7	-6.1	
19,435.0	89.33	359.77	10,821.1	7,922.7	400.0	0.65	-0.53	-0.37	16.3	-6.7	
19,529.0	90.95	359.79	10,820.9	8,016.7	399.7	1.72	1.72	0.02	17.0	-7.0	
19,623.0	90.67	359.57	10,819.6	8,110.7	399.2	0.38	-0.30	-0.23	16.6	-7.2	
19,717.0	90.34	0.30	10,818.8	8,204.6	399.1	0.85	-0.35	0.78	16.7	-7.8	
19,720.3	90.35	0.30	10,818.7	8,208.0	399.1	0.25	0.23	0.09	16.7	-7.8	
TGT 4 (Hears 34 State Com #503H)											
19,811.0	90.56	0.38	10,818.0	8,298.6	399.6	0.25	0.23	0.09	15.9	-9.0	
19,905.0	90.62	0.29	10,817.1	8,392.6	400.2	0.12	0.06	-0.10	14.5	-10.3	
20,000.0	90.50	0.50	10,816.1	8,487.6	400.8	0.25	-0.13	0.22	13.2	-11.6	
20,094.0	90.45	0.01	10,815.3	8,581.6	401.2	0.52	-0.05	-0.52	12.0	-12.7	
20,188.0	89.94	359.78	10,815.0	8,675.6	401.1	0.60	-0.54	-0.24	11.3	-13.3	
20,248.9	90.20	359.97	10,815.0	8,736.5	400.9	0.53	0.43	0.32	11.0	-13.6	
TGT 5 (Hears 34 State Com #503H)											
20,282.0	90.34	0.08	10,814.8	8,769.6	400.9	0.53	0.43	0.32	10.8	-13.8	
20,376.0	90.22	0.64	10,814.3	8,863.6	401.5	0.61	-0.13	0.60	10.6	-15.1	
20,470.0	89.89	0.89	10,814.2	8,957.6	402.8	0.44	-0.35	0.27	10.8	-17.1	
20,565.0	89.61	0.75	10,814.7	9,052.6	404.1	0.33	-0.29	-0.15	11.5	-18.1	
20,659.0	90.17	0.48	10,814.8	9,146.6	405.2	0.66	0.60	-0.29	12.0	-20.8	
20,753.0	89.94	0.54	10,814.8	9,240.6	406.0	0.25	-0.24	0.08	12.2	-22.4	
20,847.0	89.55	359.22	10,815.2	9,334.6	405.8	1.46	-0.41	-1.40	12.9	-22.9	
20,940.7	89.16	0.23	10,816.2	9,428.3	405.3	1.15	-0.41	1.07	14.2	-23.1	
TGT 6 (Hears 34 State Com #503H)											



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #503H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Site:	Hearns 34 State Com	MD Reference:	KB = 22' @ 3481.0usft (Nabors M7502)
Well:	#503H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)
20,941.0	89.16	0.23	10,816.2	9,428.6	405.3	1.15	-0.41	1.07	14.2	-23.1
20,992.0	89.38	0.60	10,816.9	9,479.6	405.7	0.84	0.43	0.73	15.5	-23.9
Final MWD Survey (MD=20992.0)										
21,073.0	89.38	0.60	10,817.8	9,560.6	406.6	0.00	0.00	0.00	19.2	-25.3
Final Projection to Bit (MD=21073.0) - PBHL (Hearns 34 State Com #503H)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E/W (usft)	
10,601.6	10,525.6	-750.0	376.4	HL Crossing, MD:10601.6', TVD:10525.6', N/S:-750.0', E/W:376.4', INC:20.01
20,992.0	10,816.9	9,479.6	405.7	Final MWD Survey (MD=20992.0')
21,073.0	10,817.8	9,560.6	406.6	Final Projection to Bit (MD=21073.0')

Checked By: _____	Approved By: _____	Date: _____
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Lea County, NM (NAD 83 NME)

Hearns 34 State Com #503H

Nabors M7502

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: #503H

KB = 22' @ 3481.0' (Nabors M7502) 3459.0
Northing 426139.00 Easting 779707.00 32° 10' 5.079 N 103° 33' 48.563 W

To convert a Magnetic Direction to a Grid Direction, Add 6.36°
To convert a Magnetic Direction to a True Direction, Add 6.77° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	Tface	Vsect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	1410.0	0.00	0.00	1410.0	0.0	0.0	0.00	0.00	0.0
3	1859.9	9.00	150.75	1858.1	-30.8	17.2	2.00	150.75	-30.1
4	7271.4	9.00	150.75	7202.9	-769.2	430.8	0.00	0.00	-751.5
5	7721.3	0.00	359.58	7651.0	-800.0	448.0	2.00	180.00	-781.6
6	10484.9	0.00	359.58	10414.6	-800.0	448.0	0.00	0.00	-781.6
7	11240.8	90.71	0.68	10892.0	-316.7	453.7	12.00	0.68	-288.4
8	11277.4	90.71	359.58	10891.6	-280.1	453.8	3.00	-90.05	-261.9
9	13668.0	90.71	359.58	10862.0	2110.3	436.4	0.00	0.00	2126.0
10	13668.4	90.71	359.58	10862.0	2110.7	436.4	2.00	-84.67	2126.3
11	15283.0	90.71	359.58	10842.0	3725.1	424.5	0.00	0.00	3739.0
12	15295.2	90.47	359.58	10841.9	3737.3	424.4	2.00	180.00	3751.2
13	17743.8	90.47	359.58	10822.0	6185.8	406.2	0.00	0.00	6197.0
14	17748.9	90.57	359.58	10822.0	6190.9	406.2	2.00	0.00	6202.1
15	19766.1	90.57	359.58	10802.0	8207.9	391.3	0.00	0.00	8217.0
16	19806.8	89.75	359.58	10801.9	8248.6	391.0	2.00	180.00	8257.7
17	20294.7	89.75	359.58	10804.0	8736.5	387.4	0.00	0.00	8745.0
18	20315.7	90.17	359.58	10804.0	8757.5	387.2	2.00	0.00	8766.0
19	20986.5	90.17	359.58	10802.0	9428.3	382.2	0.00	0.00	9436.0
20	21111.3	92.67	359.58	10798.9	9553.0	381.3	2.00	0.00	9560.6
21	21152.3	92.67	359.58	10797.0	9594.0	381.0	0.00	0.00	9601.6

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Hearns 34 State Com #503H)	10414.8	804.0	448.0	425333.00	780108.00
PGH (Hearns 34 State Com #503H)	10797.0	834.0	448.0	425333.00	780088.00
TOT 1 (Hearns 34 State Com #503H)	10802.0	8207.8	391.3	434348.90	780088.27
TOT 6 (Hearns 34 State Com #503H)	10802.0	9428.3	382.2	435087.30	780088.23
TOT 9 (Hearns 34 State Com #503H)	10804.0	8736.5	387.4	434575.60	780084.33
TOT 3 (Hearns 34 State Com #503H)	10822.0	6185.8	406.2	432324.80	780113.25
TOT 2 (Hearns 34 State Com #503H)	10842.0	3725.1	424.5	428964.10	780131.49
TOT 1 (Hearns 34 State Com #503H)	10892.0	2110.3	436.4	429243.30	780143.44
FTP (Hearns 34 State Com #503H)	10892.0	-765.0	458.0	429333.00	780185.00

