

HOBBS OCD

OCT 22 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#711H

OH

Design: OH

Midland PVA

26 August, 2018





Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3508.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3508.0usft
Well:	#711H	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	#711H		
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' 3.584 N
		Longitude:	103° 33' 20.335 W
		Ground Level:	3,483.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	7/30/2018	6.82
			Dip Angle
			(°)
			60.00
			Field Strength
			(nT)
			47,791.00531868

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
			(°)
			358.76



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Survey Program		Date: 8/26/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
181.0	1,163.0	Cartel 41 8' kb + 17' (OH)	MWD	OWSG MWD - Standard	
1,342.0	22,702.0	Drilltech MWD (OH)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
181.0	1.25	195.21	181.0	-1.9	-0.5	0.69	0.69	0.00	0.0	0.0
369.0	0.97	175.17	369.0	-5.5	-0.9	0.25	-0.15	-10.66	0.0	0.0
528.0	0.66	175.52	527.9	-7.7	-0.7	0.19	-0.19	0.22	0.0	0.0
687.0	0.70	175.52	686.9	-9.6	-0.6	0.03	0.03	0.00	0.0	0.0
845.0	0.29	199.60	844.9	-10.9	-0.6	0.29	-0.26	15.24	0.0	0.0
1,004.0	0.22	122.52	1,003.9	-11.5	-0.5	0.20	-0.04	-48.48	0.0	0.0
1,163.0	0.55	133.42	1,162.9	-12.2	0.3	0.21	0.21	6.86	0.0	0.0
1,342.0	0.18	164.70	1,341.9	-13.0	1.0	0.23	-0.21	17.47	0.5	-0.4
1,528.0	0.18	256.11	1,527.9	-13.4	0.8	0.14	0.00	49.15	-1.7	-1.7
1,716.0	0.97	263.75	1,715.9	-13.6	-1.1	0.42	0.42	4.06	-5.0	-2.7
1,906.0	1.76	246.18	1,905.8	-15.0	-5.4	0.47	0.42	-9.25	-9.1	-6.3
2,001.0	1.58	253.82	2,000.8	-15.9	-8.0	0.30	-0.19	8.04	-13.0	-5.6
2,095.0	1.93	237.65	2,094.8	-17.1	-10.5	0.64	0.37	-17.20	-14.0	-10.3
2,190.0	2.55	226.93	2,189.7	-19.4	-13.4	0.78	0.65	-11.28	-15.6	-13.9
2,285.0	2.29	232.64	2,284.6	-22.0	-16.5	0.37	-0.27	6.01	-21.0	-13.0
2,380.0	2.37	233.96	2,379.5	-24.4	-19.6	0.10	0.08	1.39	-25.4	-13.3
2,474.0	2.37	224.55	2,473.4	-26.9	-22.5	0.41	0.00	-10.01	-26.7	-18.5
2,569.0	2.37	212.78	2,568.4	-29.9	-25.0	0.51	0.00	-12.39	-26.1	-24.9
2,664.0	2.11	221.74	2,663.3	-32.9	-27.2	0.46	-0.27	9.43	-33.3	-21.1
2,759.0	1.93	223.94	2,758.2	-35.3	-29.5	0.21	-0.19	2.32	-37.5	-20.7



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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)	
2,854.0	1.67	209.88	2,853.2	-37.7	-31.3	0.54	-0.27	-14.80	-34.0	-30.4	
2,949.0	1.58	191.77	2,948.1	-40.2	-32.2	0.55	-0.09	-19.05	-25.0	-40.7	
3,044.0	1.32	193.00	3,043.1	-42.5	-32.7	0.28	-0.27	1.29	-27.9	-40.9	
3,138.0	0.97	185.27	3,137.1	-44.4	-33.0	0.41	-0.37	-8.22	-23.4	-45.1	
3,233.0	0.79	179.64	3,232.1	-45.8	-33.1	0.21	-0.19	-5.93	-19.7	-48.0	
3,329.0	0.79	149.23	3,328.1	-47.1	-32.8	0.43	0.00	-31.68	6.9	-51.9	
3,423.0	1.06	165.14	3,422.1	-48.5	-32.2	0.39	0.29	16.93	-8.3	-52.1	
3,518.0	1.32	169.80	3,517.0	-50.4	-31.8	0.29	0.27	4.91	-13.7	-51.7	
3,613.0	1.06	194.32	3,612.0	-52.3	-31.8	0.60	-0.27	25.81	-35.4	-41.7	
3,708.0	1.14	212.78	3,707.0	-54.0	-32.5	0.38	0.08	19.43	-48.4	-29.0	
3,803.0	1.23	209.96	3,802.0	-55.6	-33.6	0.11	0.09	-2.97	-48.7	-32.3	
3,898.0	1.85	210.23	3,896.9	-57.8	-34.9	0.65	0.65	0.28	-51.2	-32.9	
3,992.0	1.23	184.30	3,990.9	-60.2	-35.7	0.98	-0.66	-27.59	-33.4	-53.3	
4,087.0	1.58	196.87	4,085.9	-62.4	-36.1	0.49	0.37	13.23	-46.1	-45.4	
4,182.0	1.76	197.75	4,180.8	-65.1	-37.0	0.19	0.19	0.93	-49.2	-45.5	
4,277.0	1.76	199.86	4,275.8	-67.8	-37.9	0.07	0.00	2.22	-53.4	-44.4	
4,372.0	1.76	206.27	4,370.8	-70.5	-39.1	0.21	0.00	6.75	-60.6	-38.9	
4,467.0	1.49	164.88	4,465.7	-73.0	-39.4	1.24	-0.28	-43.57	-21.3	-70.7	
4,562.0	2.64	136.14	4,560.7	-75.8	-37.5	1.59	1.21	-30.25	12.9	-72.9	
4,656.0	2.81	133.41	4,654.5	-78.9	-34.4	0.23	0.18	-2.90	12.8	-72.3	
4,751.0	3.69	135.43	4,749.4	-82.7	-30.5	0.93	0.93	2.13	5.8	-72.7	
4,840.0	5.54	133.32	4,837.8	-93.3	-19.6	0.98	0.98	-1.12	-4.9	-72.6	
5,024.0	4.75	130.42	5,021.4	-98.3	-14.0	0.99	-0.94	-3.45	-8.0	-72.9	
5,115.0	4.31	131.74	5,112.1	-103.1	-8.6	0.50	-0.48	1.45	-16.0	-72.6	
5,209.0	3.61	174.72	5,205.9	-108.4	-5.7	3.16	-0.74	45.72	-64.8	-38.9	
5,304.0	5.10	208.29	5,300.7	-115.1	-7.4	3.04	1.57	35.34	-76.9	5.6	
5,399.0	6.95	221.21	5,395.2	-123.1	-13.2	2.40	1.95	13.60	-75.1	23.1	



Midland PVA



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Site: Hearn 34 State Com
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Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #711H
TVD Reference: KB = 25' @ 3508.0usft
MD Reference: KB = 25' @ 3508.0usft
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)	Bulid (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,494.0	7.39	221.92	5,489.4	-132.0	-21.1	0.47	0.46	0.75	-75.5	23.6	
5,588.0	7.56	221.39	5,582.6	-141.1	-29.2	0.20	0.18	-0.56	-76.5	22.6	
5,683.0	7.30	221.57	5,676.8	-150.3	-37.3	0.27	-0.27	0.19	-77.2	22.4	
5,778.0	7.03	222.18	5,771.1	-159.1	-45.3	0.30	-0.28	0.64	-77.3	22.8	
5,873.0	6.95	222.53	5,865.4	-167.7	-53.0	0.10	-0.08	0.37	-77.2	22.8	
5,968.0	7.12	222.36	5,959.7	-176.3	-60.9	0.18	0.18	-0.18	-77.4	22.0	
6,063.0	6.68	222.45	6,054.0	-184.7	-68.6	0.46	-0.46	0.09	-77.3	21.6	
6,158.0	6.24	220.86	6,148.4	-192.7	-75.7	0.50	-0.46	-1.67	-77.0	19.1	
6,252.0	5.89	219.90	6,241.8	-200.2	-82.1	0.39	-0.37	-1.02	-75.8	17.7	
6,347.0	5.80	219.37	6,336.3	-207.7	-88.3	0.11	-0.09	-0.56	-74.1	17.0	
6,441.0	5.63	219.19	6,429.9	-214.9	-94.2	0.18	-0.18	-0.19	-72.1	16.9	
6,536.0	5.45	217.70	6,524.4	-222.1	-99.9	0.24	-0.19	-1.57	-70.1	15.3	
6,630.0	5.54	218.05	6,618.0	-229.2	-105.5	0.10	0.10	0.37	-67.6	16.1	
6,725.0	5.63	217.87	6,712.5	-236.5	-111.1	0.10	0.09	-0.19	-65.3	16.2	
6,820.0	3.61	223.24	6,807.2	-242.4	-116.1	2.17	-2.13	5.65	-59.6	22.0	
6,914.0	1.58	249.60	6,901.1	-245.0	-119.3	2.45	-2.16	28.04	-37.7	41.8	
7,009.0	0.44	8.26	6,996.1	-245.1	-120.5	1.93	-1.20	124.91	45.2	8.1	
7,104.0	0.35	50.53	7,091.1	-244.5	-120.2	0.31	-0.09	44.49	27.0	-22.0	
7,198.0	0.44	95.00	7,185.1	-244.4	-119.6	0.33	0.10	47.31	-3.2	-25.0	
7,293.0	0.26	95.09	7,280.1	-244.4	-119.0	0.19	-0.19	0.09	-10.4	-15.5	
7,388.0	0.09	18.89	7,375.1	-244.4	-118.8	0.27	-0.18	-60.21	1.8	-18.0	
7,483.0	0.26	82.35	7,470.1	-244.3	-118.6	0.25	0.18	66.80	-22.3	-3.4	
7,577.0	0.44	113.55	7,564.1	-244.4	-118.0	0.27	0.19	33.19	-23.0	14.6	
7,672.0	0.53	156.18	7,659.1	-244.9	-117.5	0.38	0.09	44.87	-6.5	29.2	
7,767.0	0.70	151.61	7,754.1	-245.8	-117.1	0.19	0.18	-4.81	-9.7	28.8	
7,862.0	1.06	158.11	7,849.1	-247.2	-116.5	0.39	0.38	6.84	-7.8	29.8	
7,956.0	0.97	151.25	7,943.1	-248.7	-115.7	0.16	-0.10	-7.30	-13.0	28.5	



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8,051.0	0.97	161.71	8,038.1	-250.1	-115.1	0.19	0.00	11.01	-9.2	30.6
8,146.0	0.79	139.56	8,133.1	-251.4	-114.4	0.40	-0.19	-23.32	-21.4	24.5
8,240.0	0.79	139.92	8,227.0	-252.4	-113.6	0.01	0.00	0.38	-22.6	24.7
8,335.0	0.79	138.93	8,322.0	-253.4	-112.7	0.04	0.00	-3.15	-25.1	23.4
8,430.0	0.88	155.12	8,417.0	-254.5	-112.0	0.29	0.09	19.15	-17.9	30.3
8,525.0	0.97	167.51	8,512.0	-256.0	-111.5	0.23	0.09	13.04	-12.5	33.6
8,619.0	1.14	166.63	8,606.0	-257.7	-111.1	0.18	0.18	-0.94	-14.8	33.4
8,714.0	1.32	173.40	8,701.0	-259.7	-110.8	0.24	0.19	7.13	-12.8	35.0
8,809.0	1.49	173.14	8,795.9	-262.0	-110.5	0.18	0.18	-0.27	-15.3	35.0
8,903.0	1.76	182.45	8,889.9	-264.6	-110.4	0.40	0.29	9.90	-12.0	37.2
8,998.0	1.41	192.30	8,984.9	-267.2	-110.7	0.47	-0.37	10.37	-8.1	38.9
9,093.0	1.49	187.73	9,079.8	-269.6	-111.1	0.15	0.08	-4.81	-13.6	38.1
9,188.0	1.14	199.86	9,174.8	-271.7	-111.6	0.47	-0.37	12.77	-7.4	40.3
9,283.0	0.62	232.20	9,269.8	-272.9	-112.3	0.74	-0.55	34.04	14.0	38.6
9,378.0	0.35	254.79	9,364.8	-273.3	-113.0	0.34	-0.28	23.78	26.9	30.4
9,473.0	0.35	27.42	9,459.8	-273.1	-113.2	0.67	0.00	139.61	4.1	-40.2
9,568.0	0.88	76.99	9,554.8	-272.7	-112.3	0.74	0.56	52.18	-28.9	-28.9
9,663.0	0.88	297.24	9,649.8	-272.2	-112.3	1.74	0.00	-147.11	40.6	2.9
9,758.0	1.49	281.16	9,744.8	-271.6	-114.1	0.73	0.64	-16.93	36.2	13.9
9,853.0	1.23	283.27	9,839.7	-271.2	-116.3	0.28	-0.27	2.22	34.5	12.6
9,948.0	1.14	269.73	9,934.7	-270.9	-118.3	0.31	-0.09	-14.25	28.6	20.1
10,043.0	1.32	225.35	10,029.7	-271.7	-120.0	0.99	0.19	-46.72	4.7	33.7
10,138.0	1.49	268.41	10,124.7	-272.5	-122.0	1.10	0.18	45.33	24.4	22.2
10,232.0	2.02	261.20	10,218.6	-272.8	-124.9	0.61	0.56	-7.67	18.5	24.9
10,327.0	2.02	266.74	10,313.6	-273.1	-128.2	0.21	0.00	5.83	17.5	23.2
10,422.0	1.58	257.34	10,408.5	-273.5	-131.1	0.56	-0.46	-9.89	10.5	25.5
10,517.0	2.02	301.46	10,503.5	-272.9	-133.8	1.49	0.46	46.44	22.7	11.8



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10,612.0	2.11	294.25	10,598.4	-271.3	-136.9	0.29	0.09	-7.59	17.6	14.4	
10,707.0	1.32	278.61	10,693.4	-270.5	-139.5	0.96	-0.83	-16.46	10.3	18.1	
10,802.0	1.41	280.63	10,788.3	-270.1	-141.8	0.11	0.09	2.13	8.7	17.8	
10,896.0	1.93	281.07	10,882.3	-269.6	-144.5	0.55	0.55	0.47	6.1	17.7	
10,990.0	2.37	287.80	10,976.2	-269.3	-148.0	0.70	0.47	-14.12	-1.7	18.3	
11,085.0	2.99	257.60	11,071.1	-269.9	-152.3	0.82	0.65	-10.74	-9.3	17.4	
11,180.0	1.93	243.89	11,166.0	-271.2	-156.2	1.27	-1.12	-14.43	-17.1	14.1	
11,275.0	1.85	218.67	11,261.0	-273.1	-158.6	0.87	-0.08	-26.55	-24.5	4.7	
11,369.0	1.14	311.92	11,355.0	-273.6	-160.2	2.37	-0.76	99.20	5.3	25.7	
11,464.0	2.64	297.77	11,449.9	-272.0	-162.9	1.64	1.58	-14.89	-4.3	26.0	
11,559.0	1.49	317.37	11,544.9	-270.1	-165.6	1.40	-1.21	20.63	1.4	26.6	
11,654.0	1.41	22.05	11,639.8	-268.1	-166.0	1.63	-0.08	68.08	23.0	11.2	
11,749.0	0.97	6.67	11,734.8	-266.2	-165.5	0.57	-0.46	-16.19	17.2	16.6	
11,787.0	0.97	359.64	11,772.8	-265.5	-165.5	0.31	0.00	-18.50	14.4	18.6	
11,882.0	1.06	288.01	11,867.8	-264.5	-166.3	1.25	0.09	-75.40	-14.2	18.8	
11,977.0	1.14	340.39	11,962.8	-263.3	-167.5	1.02	0.08	55.14	4.7	23.4	
12,040.0	3.87	14.05	12,025.7	-260.7	-167.2	4.74	4.33	53.40	14.3	17.2	
KOP 12040.0' MD; 12025.7' TVD; -260.7'; -167.2'; 3.87											
12,072.0	5.36	17.48	12,057.6	-258.2	-166.5	4.74	4.66	10.74	14.2	15.9	
12,119.0	15.39	11.51	12,103.8	-250.0	-164.5	21.43	21.34	-12.70	9.8	15.9	
12,167.0	22.86	4.48	12,149.1	-234.4	-162.5	16.26	15.66	-14.65	2.6	15.3	
12,214.0	27.70	5.09	12,191.6	-214.4	-160.9	10.31	10.30	1.30	-2.7	13.9	
12,241.6	30.43	3.70	12,215.7	-201.0	-159.8	10.18	9.88	-5.04	-5.9	12.9	
FTP Crossing 12241.6' MD; 12215.7' TVD; -201.0'; -159.8'; 30.43											
12,262.0	32.45	2.81	12,233.1	-190.4	-159.2	10.18	9.92	-4.36	-8.1	12.2	
12,309.0	37.46	3.60	12,271.6	-163.5	-157.7	10.70	10.66	1.68	-12.0	10.8	
12,357.0	43.88	1.40	12,308.0	-132.3	-156.4	13.70	13.38	-4.58	-16.3	9.0	



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #711H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #711H
TVD Reference: KB = 25' @ 3508.0usft
MD Reference: KB = 25' @ 3508.0usft
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)	
12,404.0	48.80	357.80	12,340.5	-98.3	-158.7	11.84	10.47	-7.66	-20.4	8.2	
12,451.0	52.50	355.78	12,370.3	-62.0	-158.7	8.54	7.87	-4.30	-23.0	9.4	
12,498.0	54.78	356.30	12,398.1	-24.3	-161.3	4.93	-4.85	1.11	-23.0	12.0	
12,546.0	58.65	357.18	12,424.5	15.8	-163.6	8.21	8.06	1.83	-20.4	14.3	
12,593.0	61.91	357.62	12,447.8	56.5	-165.5	6.98	6.94	0.94	-16.0	16.1	
12,641.0	63.93	358.06	12,469.6	99.2	-167.1	4.29	4.21	0.92	-8.9	17.6	
12,688.0	68.50	359.64	12,488.6	142.2	-167.9	10.20	9.72	3.36	0.1	18.2	
12,736.0	75.71	1.93	12,503.3	187.9	-167.3	15.69	15.02	4.77	8.9	17.2	
12,777.0	82.83	2.89	12,510.9	228.1	-165.6	17.52	17.37	2.34	15.0	15.2	
12,809.0	86.44	2.45	12,513.9	259.9	-164.1	11.36	11.28	-1.38	18.4	13.5	
12,840.0	88.55	2.10	12,515.3	290.8	-162.9	6.90	6.81	-1.13	20.3	12.1	
12,935.0	90.31	1.58	12,516.2	385.8	-159.8	1.93	1.85	-0.55	22.8	8.4	
13,029.0	90.92	359.91	12,515.2	479.8	-158.6	1.89	0.65	-1.78	23.3	6.5	
13,124.0	92.59	0.17	12,512.3	574.7	-158.5	1.78	1.76	0.27	22.0	5.7	
13,219.0	92.42	358.85	12,508.2	669.6	-159.3	1.40	-0.18	-1.39	19.4	5.9	
13,313.0	89.87	358.41	12,506.3	763.6	-161.6	2.75	-2.71	-0.47	19.1	7.5	
13,408.0	90.31	357.97	12,506.1	858.5	-164.6	0.66	0.46	-0.46	20.5	9.8	
13,503.0	90.22	359.64	12,505.7	953.5	-166.6	1.76	-0.09	1.76	21.6	11.1	
13,597.0	91.19	359.47	12,504.5	1,047.5	-167.3	1.05	1.03	-0.18	22.0	11.2	
13,692.0	91.98	358.06	12,501.9	1,142.4	-169.4	1.70	0.83	-1.48	20.9	12.6	
13,787.0	91.98	359.29	12,498.6	1,237.3	-171.5	1.29	0.00	1.29	19.2	14.1	
13,881.0	91.54	359.99	12,495.7	1,331.3	-172.1	0.88	-0.47	0.74	17.8	14.0	
13,976.0	90.92	1.22	12,493.7	1,426.3	-171.1	1.45	-0.65	1.29	17.3	12.4	
14,071.0	89.43	1.05	12,493.4	1,521.2	-169.3	1.58	-1.57	-0.18	18.6	9.8	
14,166.0	89.69	0.81	12,494.1	1,616.2	-167.9	0.54	0.27	-0.46	20.9	7.8	
14,261.0	90.66	0.17	12,493.8	1,711.2	-167.2	1.12	1.02	-0.46	22.2	6.5	
14,356.0	88.72	0.43	12,494.4	1,806.2	-166.7	2.06	-2.04	0.27	24.2	5.3	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3508.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3508.0usft
Well:	#711H	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)	
14,450.0	88.02	358.24	12,497.0	1,900.2	-167.8	2.44	-0.74	-2.33	28.4	5.7	
14,545.0	91.10	358.32	12,497.8	1,995.1	-170.7	3.24	3.24	0.08	30.7	7.9	
14,641.0	90.84	357.97	12,496.1	2,091.0	-173.8	0.45	-0.27	-0.36	30.4	10.3	
14,736.0	90.92	356.74	12,494.7	2,185.9	-178.2	1.30	0.08	-1.29	30.3	14.0	
14,831.0	91.98	358.24	12,492.3	2,280.8	-182.3	1.93	1.12	1.58	29.1	17.5	
14,926.0	91.45	357.97	12,489.4	2,375.7	-185.5	0.63	-0.56	-0.28	27.6	20.0	
15,021.0	91.01	0.43	12,487.4	2,470.7	-186.8	2.63	-0.46	2.59	26.8	20.7	
15,115.0	91.45	0.35	12,485.4	2,564.6	-186.1	0.48	0.47	-0.09	26.0	19.4	
15,210.0	92.68	0.61	12,481.9	2,659.6	-185.4	1.32	1.29	0.27	23.9	18.0	
15,305.0	90.48	0.17	12,479.3	2,754.5	-184.7	2.36	-2.32	-0.46	22.6	16.6	
15,400.0	91.01	359.55	12,478.1	2,849.5	-184.9	0.86	0.56	-0.65	22.6	16.2	
15,495.0	91.71	359.47	12,475.8	2,944.5	-185.8	0.74	0.74	-0.08	21.6	16.3	
15,590.0	88.99	358.32	12,475.3	3,039.5	-187.6	3.11	-2.86	-1.21	22.3	17.5	
15,685.0	89.34	359.82	12,476.6	3,134.4	-189.1	1.62	0.37	1.58	25.0	18.4	
15,780.0	89.69	0.43	12,477.4	3,229.4	-188.9	0.74	0.37	0.64	27.1	17.5	
15,874.0	89.69	358.76	12,478.0	3,323.4	-189.6	1.78	0.00	-1.78	28.9	17.5	
15,969.0	92.24	0.61	12,476.4	3,418.4	-190.1	3.32	2.68	1.95	28.5	17.4	
16,064.0	92.24	359.99	12,472.6	3,513.3	-189.6	0.65	0.00	-0.65	26.1	16.2	
16,190.0	91.36	359.47	12,468.7	3,639.3	-190.2	0.81	-0.70	-0.41	23.9	15.9	
16,284.0	91.36	0.26	12,466.5	3,733.2	-190.4	0.84	0.00	0.84	22.9	15.5	
16,379.0	91.98	0.43	12,463.7	3,828.2	-189.9	0.68	0.65	0.18	21.4	14.2	
16,474.0	89.69	359.82	12,462.3	3,923.2	-189.6	2.49	-2.41	-0.64	21.3	13.4	
16,568.0	89.52	359.38	12,463.0	4,017.2	-190.3	0.50	-0.18	-0.47	23.3	13.4	
16,662.0	89.60	358.68	12,463.7	4,111.2	-191.9	0.75	0.09	-0.74	26.1	14.3	
16,757.0	89.08	358.59	12,464.8	4,206.1	-194.2	0.56	-0.55	-0.09	29.3	15.9	
16,852.0	92.95	359.38	12,463.1	4,301.1	-195.8	4.16	4.07	0.83	29.7	16.9	
16,947.0	94.09	358.59	12,457.3	4,395.9	-197.5	1.46	1.20	-0.83	26.0	17.9	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3508.0usft
Site:	Hearn's 34 State Corn	MD Reference:	KB = 25' @ 3508.0usft
Well:	#711H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
17,041.0	93.21	359.99	12,451.3	4,489.7	-198.7	1.76	-0.94	1.49	22.1	18.4
17,128.0	92.77	0.52	12,446.7	4,576.6	-198.3	0.79	-0.51	0.61	19.5	17.4
17,223.0	91.54	0.26	12,443.2	4,671.5	-197.6	1.32	-1.29	-0.27	18.1	16.1
17,317.0	89.87	0.08	12,442.0	4,765.5	-197.4	1.79	-1.78	-0.19	19.0	15.2
17,412.0	89.34	0.52	12,442.7	4,860.5	-196.9	0.73	-0.56	0.46	21.8	14.0
17,507.0	89.52	359.99	12,443.6	4,955.5	-196.4	0.59	0.19	-0.56	24.9	12.9
17,602.0	89.34	1.93	12,444.5	5,050.4	-194.9	2.05	-0.19	2.04	27.9	10.7
17,697.0	90.31	0.26	12,444.8	5,145.4	-193.0	2.03	1.02	-1.76	30.3	8.2
17,791.0	91.71	1.40	12,443.2	5,239.4	-191.7	1.92	1.49	1.21	30.8	6.2
17,886.0	93.21	359.99	12,439.1	5,334.3	-190.5	2.17	1.58	-1.48	28.8	4.4
17,981.0	93.03	358.68	12,433.9	5,429.1	-191.6	1.39	-0.19	-1.38	25.7	4.8
18,076.0	90.04	356.83	12,431.4	5,524.0	-195.3	3.70	-3.15	-1.95	25.3	7.8
18,171.0	91.19	358.24	12,430.4	5,618.9	-199.4	1.92	1.21	1.48	26.4	11.2
18,266.0	91.63	358.76	12,428.0	5,713.9	-201.9	0.72	0.46	0.55	26.2	13.1
18,361.0	91.98	359.20	12,425.0	5,808.8	-203.6	0.59	0.37	0.46	25.3	14.1
18,455.0	93.30	358.85	12,420.7	5,902.7	-205.2	1.45	1.40	-0.37	23.1	15.0
18,550.0	91.80	359.91	12,416.5	5,997.6	-206.2	1.93	-1.58	1.12	20.4	15.4
18,645.0	90.84	359.64	12,414.3	6,092.5	-206.6	1.05	-1.01	-0.28	19.4	15.1
18,739.0	88.20	359.91	12,415.1	6,186.5	-207.0	2.82	-2.81	0.29	21.3	14.8
18,834.0	90.75	0.43	12,415.9	6,281.5	-206.7	2.74	2.68	0.55	23.3	13.9
18,928.0	90.48	357.97	12,414.9	6,375.5	-208.0	2.63	-0.29	-2.62	23.5	14.5
19,023.0	88.90	356.57	12,415.5	6,470.4	-212.5	2.22	-1.66	-1.47	25.1	18.4
19,117.0	89.60	356.83	12,416.7	6,564.2	-217.9	0.79	0.74	0.28	26.9	23.1
19,212.0	93.47	358.41	12,414.1	6,659.1	-221.9	4.40	4.07	1.66	24.3	26.4
19,307.0	93.12	357.45	12,408.7	6,753.9	-225.3	1.07	-0.37	-1.01	18.9	29.2
19,401.0	90.84	358.41	12,405.4	6,847.7	-228.7	2.63	-2.43	1.02	15.6	31.9
19,496.0	90.13	0.52	12,404.6	6,942.7	-229.6	2.34	-0.75	2.22	14.7	32.1



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #711H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #711H
TVD Reference: KB = 25' @ 3508.0usft
MD Reference: KB = 25' @ 3508.0usft
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)	
19,591.0	85.74	359.12	12,408.0	7,037.6	-229.9	4.85	-4.62	-1.47	18.1	31.8	
19,686.0	88.46	1.40	12,412.9	7,132.5	-229.5	3.73	2.86	2.40	22.9	30.6	
19,781.0	88.64	1.84	12,415.3	7,227.4	-226.8	0.50	0.19	0.46	25.3	27.3	
19,876.0	89.96	1.93	12,416.4	7,322.4	-223.6	1.39	1.39	0.09	26.4	23.5	
19,970.0	90.13	1.14	12,416.3	7,416.3	-221.1	0.86	0.18	-0.84	26.3	20.3	
20,064.0	91.10	1.40	12,415.3	7,510.3	-219.0	1.07	1.03	0.28	23.6	17.6	
20,159.0	91.28	2.02	12,413.4	7,605.2	-216.2	0.68	0.19	0.65	19.6	14.1	
20,254.0	90.75	8.96	12,411.7	7,699.7	-207.1	7.33	-0.56	7.31	16.0	4.3	
20,349.0	90.22	5.09	12,410.9	7,794.0	-195.5	4.11	-0.56	-4.07	13.2	-7.9	
20,444.0	88.72	1.14	12,411.8	7,888.8	-190.4	4.45	-1.58	-4.16	12.1	-13.8	
20,538.0	85.91	357.18	12,416.2	7,982.7	-191.7	5.16	-2.99	-4.21	14.6	-13.0	
20,633.0	83.54	357.01	12,424.9	8,077.2	-196.5	2.50	-2.49	-0.18	21.3	-8.9	
20,728.0	86.35	357.09	12,433.3	8,171.7	-201.4	2.96	2.96	0.08	27.7	-4.7	
20,823.0	88.55	358.06	12,437.5	8,266.5	-205.4	2.53	2.32	1.02	29.9	-1.3	
20,918.0	91.10	358.59	12,437.8	8,361.4	-208.2	2.74	2.68	0.56	28.3	0.8	
21,013.0	91.10	359.64	12,436.0	8,456.4	-209.6	1.11	0.00	1.11	24.4	1.6	
21,107.0	90.40	0.26	12,434.7	8,550.4	-209.7	0.99	-0.74	0.66	21.3	1.0	
21,201.0	91.45	1.22	12,433.2	8,644.4	-208.5	1.51	1.12	1.02	17.8	-0.9	
21,296.0	90.75	359.64	12,431.4	8,739.3	-207.8	1.82	-0.74	-1.66	14.0	-2.3	
21,391.0	89.25	359.20	12,431.4	8,834.3	-208.8	1.65	-1.58	-0.46	12.0	-2.0	
21,486.0	89.52	359.29	12,432.4	8,929.3	-210.0	0.30	0.28	0.09	11.0	-1.4	
21,580.0	91.28	359.12	12,431.7	9,023.3	-211.3	1.88	1.87	-0.18	8.4	-0.7	
21,675.0	89.60	359.38	12,431.0	9,118.3	-212.6	1.79	-1.77	0.27	5.7	-0.2	
21,770.0	87.76	358.24	12,433.2	9,213.2	-214.5	2.28	-1.94	-1.20	5.9	1.1	
21,865.0	88.11	358.68	12,436.6	9,308.1	-217.1	0.59	0.37	0.46	7.3	3.0	
21,960.0	88.72	359.03	12,439.3	9,403.1	-219.0	0.74	0.64	0.37	8.0	4.3	
22,055.0	88.64	356.39	12,441.4	9,498.0	-222.8	2.78	-0.08	-2.78	8.2	7.4	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3508.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3508.0usft
Well:	#711H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
22,150.0	88.90	357.53	12,443.5	9,592.8	-227.8	1.23	0.27	1.20	8.3	11.8
22,245.0	89.43	359.20	12,444.9	9,687.8	-230.5	1.84	0.56	1.76	8.3	13.8
22,339.0	86.79	358.50	12,448.0	9,781.7	-232.4	2.91	-2.81	-0.74	10.1	15.0
22,401.0	86.17	357.80	12,451.8	9,843.5	-234.4	1.51	-1.00	-1.13	13.0	16.6
22,496.0	88.02	358.06	12,456.6	9,938.3	-237.8	1.97	1.95	0.27	16.6	19.4
22,590.0	88.29	358.50	12,459.6	10,032.2	-240.7	0.55	0.29	0.47	18.3	21.5
22,649.0	88.20	358.15	12,461.4	10,091.2	-242.4	0.61	-0.15	-0.59	19.3	22.8
Last MWD Survey (MD = 22649.0)										
22,702.0	88.20	358.15	12,463.1	10,144.1	-244.1	0.00	0.00	0.00	20.2	24.2
Projection to Bit (MD = 22702.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
12,040.0	12,025.7	-260.7	-167.2	KOP 12040.0 MD; 12025.7 TVD; -260.7'; -167.2'; 3.87
12,241.6	12,215.7	-201.0	-159.8	FTP Crossing 12241.6 MD; 12215.7 TVD; -201.0'; -159.8'; 30.43
22,649.0	12,461.4	10,091.2	-242.4	Last MWD Survey (MD = 22649.0)
22,702.0	12,463.1	10,144.1	-244.1	Projection to Bit (MD = 22702.0)

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

Hearns 34 State Com #711H

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: #711H

3483.0
Northing 425600.00 KB = 25' @ 3508.0usft
Easting 781974.00 Latitude 32°10' 3.554 N Longitude 103°33' 20.335 W

SECTION DETAILS

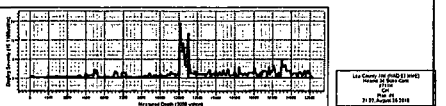
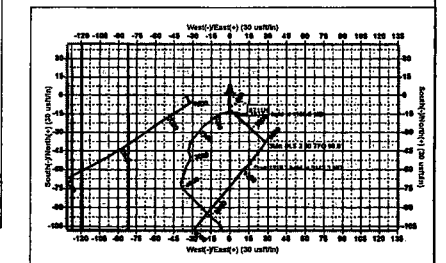
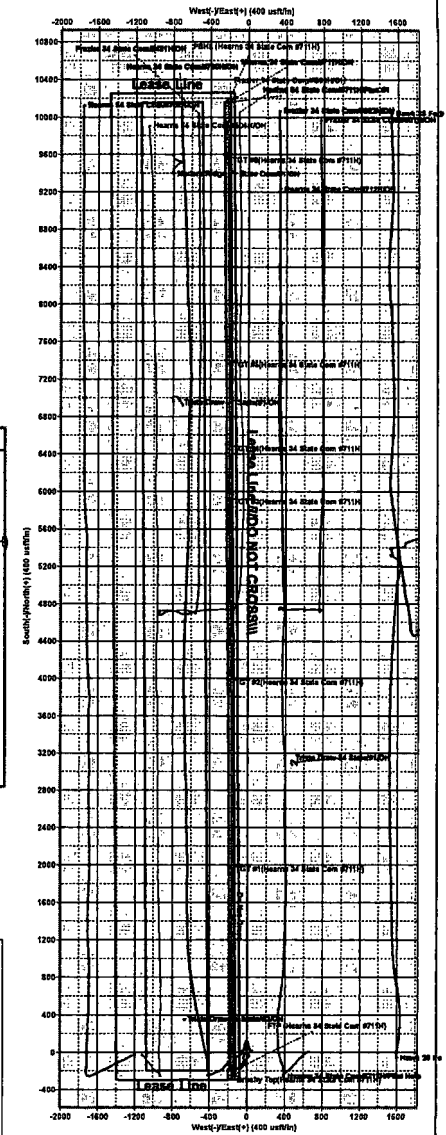
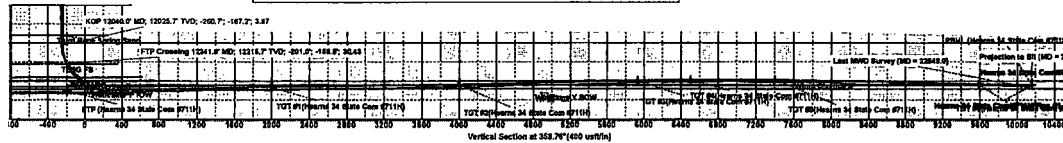
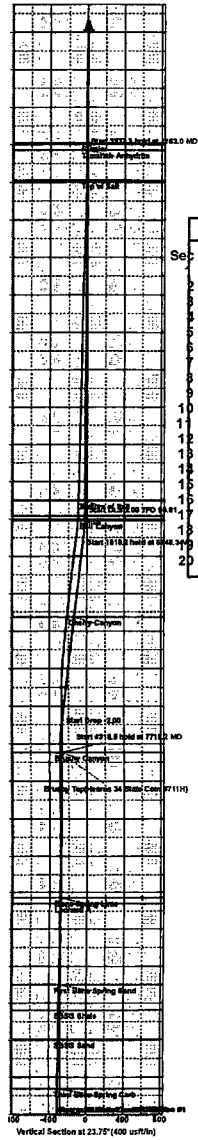
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	1163.0	0.55	133.42	1162.9	-12.2	0.3	0.00	0.00	-12.2	
2	5100.3	0.55	133.42	5100.0	-38.2	27.7	0.00	0.00	-38.7	
3	5448.3	6.97	219.73	5447.2	-55.6	15.4	2.00	90.81	-55.9	
4	7366.5	6.97	219.73	7351.1	-234.7	-133.5	0.00	0.00	-231.8	
5	7715.2	0.00	0.00	7699.0	-251.0	-147.0	2.00	180.00	-247.8	Brushy Top(Hearns 34 State Com #711H)
6	12034.7	0.00	0.00	12018.5	-251.0	-147.0	0.00	0.00	-247.8	
7	12792.5	90.94	359.60	12495.9	234.3	-150.4	12.00	359.60	237.5	
8	14555.4	90.94	359.60	12467.0	1996.9	-162.8	0.00	0.00	2000.0	TGT #1(Hearns 34 State Com #711H)
9	14563.7	90.77	359.60	12466.9	2005.2	-162.8	2.00	180.00	2008.3	
10	16555.9	90.77	359.60	12440.0	3997.1	-176.8	0.00	0.00	4000.0	TGT #2(Hearns 34 State Com #711H)
11	16581.1	91.28	359.60	12439.5	4022.3	-177.0	2.00	0.00	4025.2	
12	18489.6	91.28	359.60	12397.0	5930.3	-190.4	0.00	0.00	5933.0	TGT #3(Hearns 34 State Com #711H)
13	18519.8	90.69	359.60	12396.5	5935.6	-190.5	2.00	180.00	5962.3	
14	19056.6	90.69	359.60	12390.0	6497.3	-194.3	0.00	0.00	6500.0	TGT #4(Hearns 34 State Com #711H)
15	19091.9	89.99	359.60	12389.8	6532.6	-194.6	2.00	-180.00	6535.3	
16	19565.8	89.99	359.60	12390.0	7397.4	-200.7	0.00	0.00	7400.0	TGT #5(Hearns 34 State Com #711H)
17	20015.9	88.80	359.60	12390.6	7456.5	-201.1	2.00	180.00	7459.1	
18	22141.5	88.80	359.60	12435.0	9581.6	-216.0	0.00	0.00	9584.0	TGT #6(Hearns 34 State Com #711H)
19	22161.7	89.21	359.60	12435.4	9601.8	-216.1	2.00	0.00	9604.2	
20	22714.9	89.21	359.60	12443.0	10155.0	-220.0	0.00	0.00	10157.4	PBHL (Hearns 34 State Com #711H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Brushy Top(Hearns 34 State Com #711H)	7698.0	-251.0	-147.0	425349.00	781827.00
TGT #1(Hearns 34 State Com #711H)	12390.0	6497.3	-194.3	432087.30	781779.58
TGT #2(Hearns 34 State Com #711H)	12390.0	7397.4	-200.7	432097.40	781773.35
TGT #3(Hearns 34 State Com #711H)	12397.0	5930.3	-190.4	431530.30	781763.64
TGT #4(Hearns 34 State Com #711H)	12435.0	9581.6	-216.0	435181.60	781768.02
TGT #5(Hearns 34 State Com #711H)	12440.0	3997.1	-176.8	429987.10	781797.30
TGT #6(Hearns 34 State Com #711H)	12443.0	10155.0	-220.0	435765.00	781764.00
PBHL (Hearns 34 State Com #711H)	12467.0	1998.9	-162.8	427686.90	781811.23
FTP (Hearns 34 State Com #711H)	12500.0	-201.0	-147.0	425389.00	781827.00

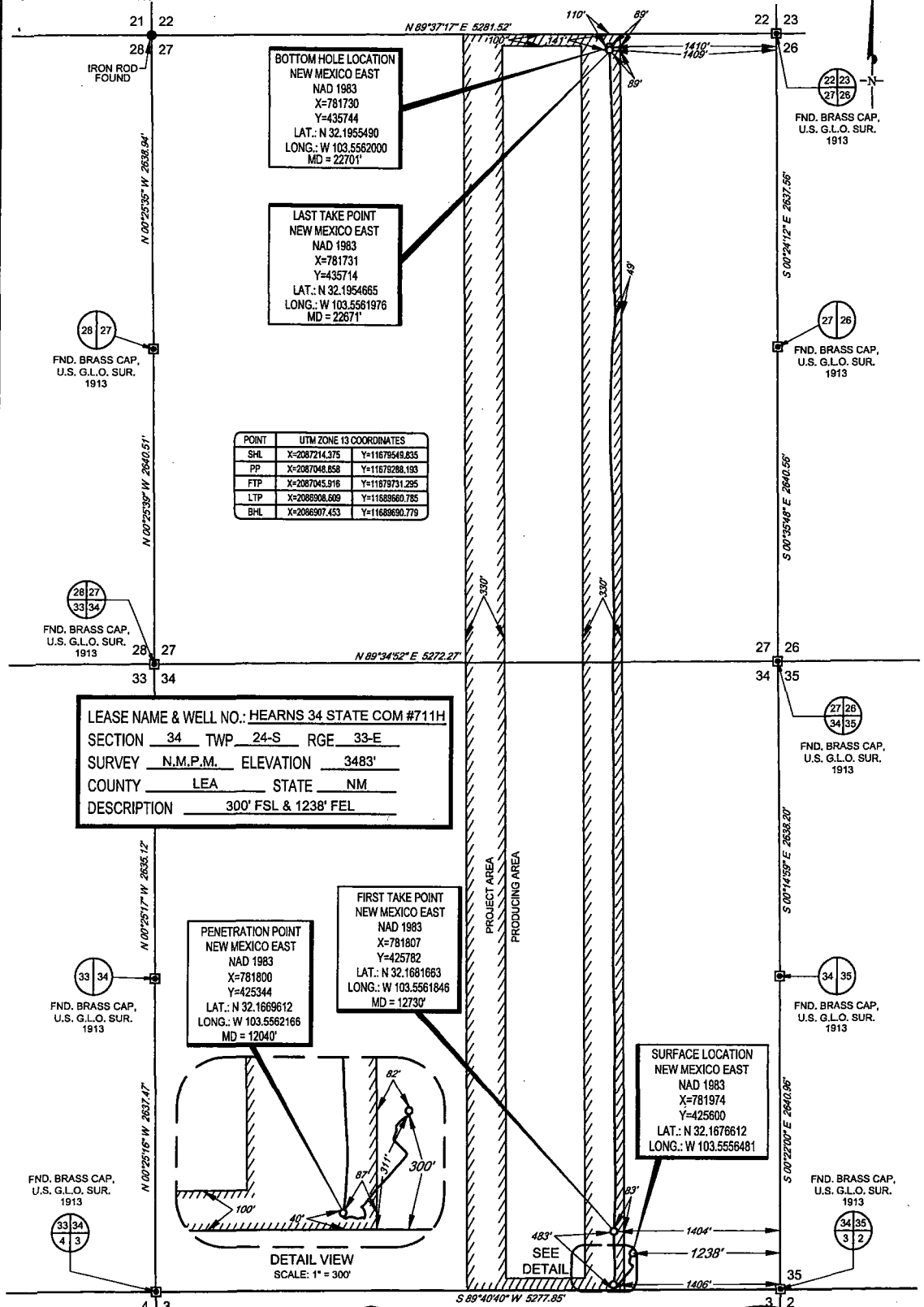
CASING DETAILS

No casing data is available



SCALE: 1" = 1000'

SECTIONS 27 & 34, TOWNSHIP 24-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

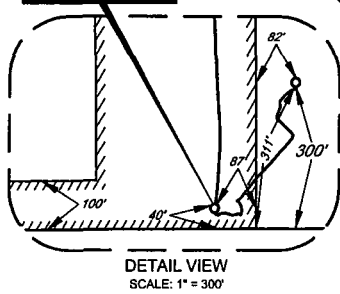


LEASE NAME & WELL NO.: HEARNS 34 STATE COM #711H
SECTION 34 TWP 24-S RGE 33-E
SURVEY N.M.P.M. ELEVATION 3483'
COUNTY LEA STATE NM
DESCRIPTION 300' FSL & 1238' FEL

PENETRATION POINT
NEW MEXICO EAST
NAD 1983
X=781800
Y=425344
LAT.: N 32.1669612
LONG.: W 103.5562166
MD = 12040'

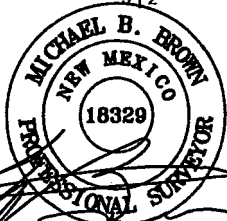
FIRST TAKE POINT
NEW MEXICO EAST
NAD 1983
X=781807
Y=425782
LAT.: N 32.1681663
LONG.: W 103.5561846
MD = 12730'

SURFACE LOCATION
NEW MEXICO EAST
NAD 1983
X=781974
Y=425600
LAT.: N 32.1676612
LONG.: W 103.5556481



Geog resources, Inc.

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HEARNS 34 STATE COM #711H AS-COMPLETED	REVISION:
DATE: 10/05/18	
FILE: AD_HEARNS_34_STATE_COM_711H	
DRAWN BY: AMD	
SHEET: 1 OF 1	

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

Michael Blake Brown, P.S. No. 18329
OCTOBER 5, 2018