

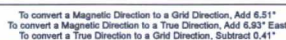
S:\SURVEY\EOG_MIDLAND\HEARNS_34_STATE_COM\FINAL_PRODUCTS\IAD_HEARNS_34_STATE_COM_504H.DWG 1/5/2018 9:51:11 AM echoa



Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

North	East	Lat	Long
425568.00	780850.00	32° 10' 3.348 N	103° 33' 33.414 W



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	3200.0	0.00	0.00	3200.0	0.0	0.0	0.00	0.00	0.0
3	3400.0	4.00	137.70	3399.8	-5.2	4.7	2.00	137.70	-5.1
4	7409.9	4.00	137.70	7400.0	-212.1	193.0	0.00	0.00	-210.2
5	7609.9	0.00	0.00	7599.8	-217.2	197.6	2.00	180.00	-215.3
6	10712.7	0.00	0.00	10702.6	-217.2	197.6	0.00	0.00	-215.3
7	11471.3	91.03	359.59	11180.0	268.8	194.1	12.00	359.59	270.7
8	13700.9	91.03	359.59	11140.0	2498.0	178.0	0.00	0.00	2499.6
9	13729.5	90.45	359.59	11139.6	2526.6	177.8	2.00	179.64	2528.2
10	16201.4	90.45	359.59	11120.0	4998.4	160.2	0.00	0.00	4999.7
11	16235.9	89.77	359.59	11119.9	5032.8	159.9	2.00	-180.00	5034.1
12	18701.9	89.77	359.59	11130.0	7498.8	142.3	0.00	0.00	7499.8
13	18745.6	89.66	358.72	11130.2	7542.5	141.6	2.00	-96.83	7543.5
14	20611.6	89.66	358.72	11141.2	9408.0	100.0	0.00	0.00	9408.5
15	20655.0	89.66	359.59	11141.5	9451.4	99.4	2.00	90.15	9451.9
16	21154.9	89.66	359.59	11144.4	9951.3	95.8	0.00	0.00	9951.7

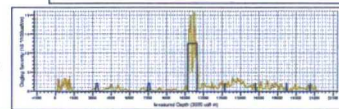
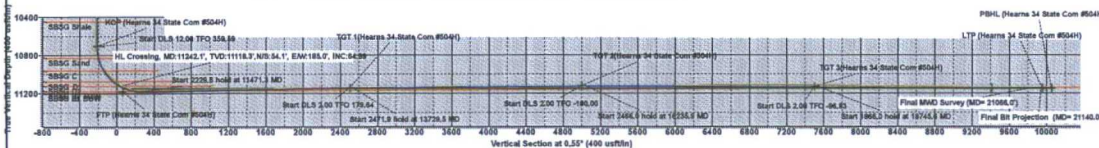
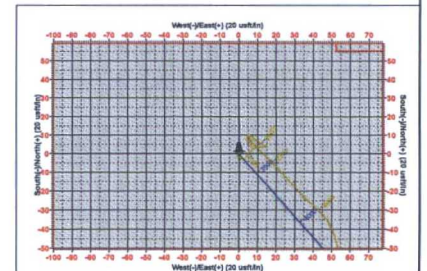
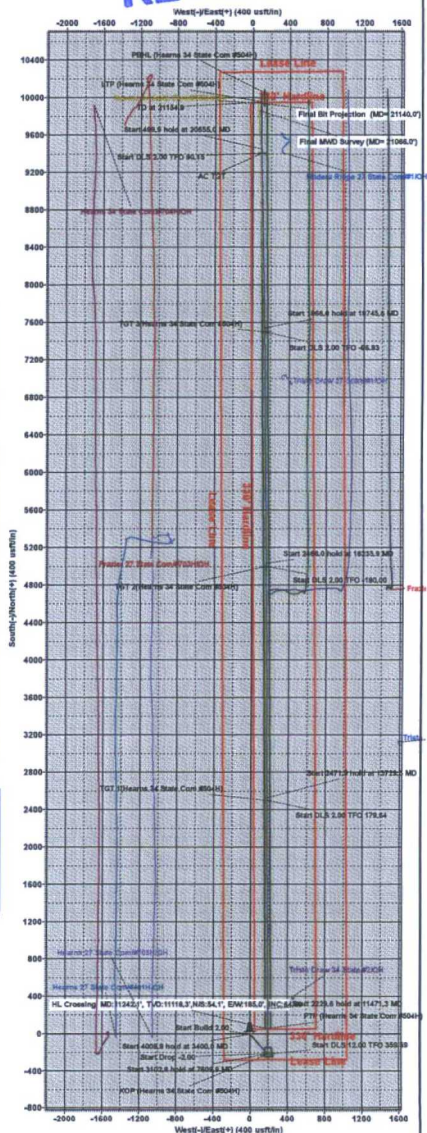
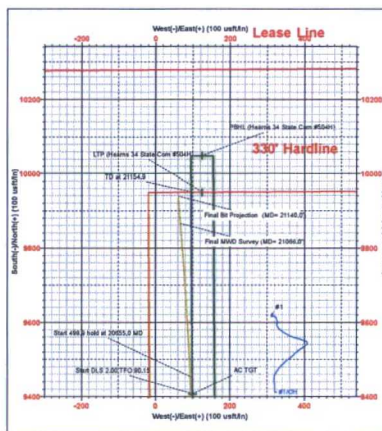
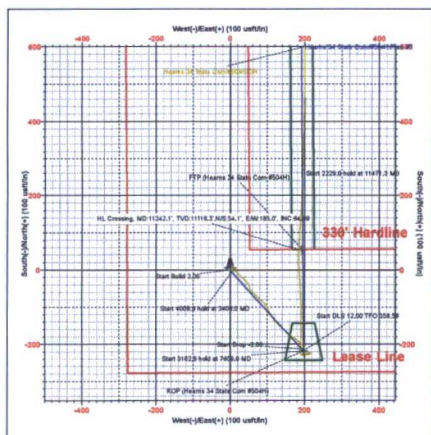
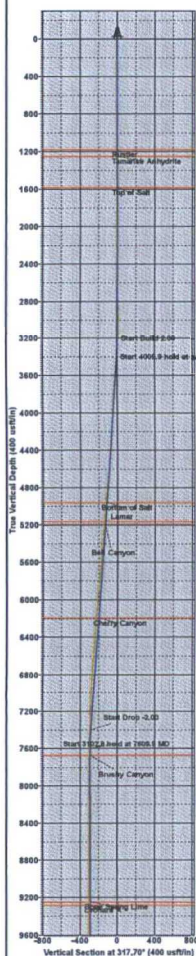
SECTION DETAILS

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

NAME	TYD	+NUS	+E/W	Northing	Easting
TGP (Hearns 34 State Com #504H)	10702.0	-217.2	18.7	425350.7	781047.5
TGT 2(Hearns 34 State Com #504H)	11120.0	4988.4	16.2	430566.4	781010.16
TGT 3(Hearns 34 State Com #504H)	11123.0	7488.8	140.3	430660.8	780882.26
TGT 1(Hearns 34 State Com #504H)	11140.0	2488.0	178.0	428668.0	781028.05
AG TGT	11141.2	9408.0	100.0	434876.0	780850.50
LTP (Hearns 34 State Com #504H)	11144.4	8951.0	124.7	435818.0	780974.72
LTP 2(Hearns 34 State Com #504H)	11145.0	8951.0	124.7	435818.0	780974.72
TGP (Hearns 34 State Com #504H)	11180.0	55.0	184.0	42674.0	781044.00



Lee County, MS 39403-8330
Housing for State Court
#3640
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#504H

OH

Design: OH

PVA Report

18 September, 2017

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #504H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3493.0usft (HP 610)
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3493.0usft (HP 610)
Well:	#504H	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	#504H		
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' 3.348 N
		Longitude:	103° 33' 33.414 W
		Ground Level:	3,468.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	8/15/2017	6.93
			Dip Angle (°)
			60.01
			Field Strength (nT)
			47,888.97266700

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)
	0.0	0.0	0.0
		Direction (°)	0.71



PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hearn's 34 State Com
 Well: #504H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #504H
 TVD Reference: KB = 25' @ 3493.0usft (HP 610)
 MD Reference: KB = 25' @ 3493.0usft (HP 610)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey Program Date 9/18/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
165.0	1,200.0	Invictus MWD (OH)	MWD	MWD - Standard
1,331.0	21,140.0	Intrepid MWD (OH)	MWD	MWD - Standard

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
165.0	0.70	238.54	165.0	-0.5	-0.9	0.42	0.42	0.00	-1.0	0.0
196.0	0.30	56.54	196.0	-0.6	-1.0	3.23	-1.29	574.19	1.1	0.0
225.0	0.60	218.54	225.0	-0.7	-1.0	3.07	1.03	558.62	-1.1	-0.4
253.0	0.60	129.54	253.0	-0.9	-1.0	3.00	0.00	-317.86	0.2	-1.3
282.0	0.60	100.54	282.0	-1.0	-0.7	1.04	0.00	-100.00	0.5	-1.1
406.0	0.60	144.54	406.0	-1.6	0.3	0.36	0.00	35.48	-1.5	-0.7
437.0	0.60	191.54	437.0	-1.9	0.4	1.54	0.00	151.61	-1.8	0.8
469.0	0.60	158.54	469.0	-2.2	0.4	1.07	0.00	-103.12	-2.2	-0.4
499.0	0.70	142.54	499.0	-2.5	0.6	0.69	0.33	-53.33	-2.4	-1.1
531.0	0.90	79.54	531.0	-2.6	0.9	2.67	0.62	-196.87	-0.4	-2.8
562.0	0.50	42.54	562.0	-2.5	1.3	1.88	-1.29	-119.35	1.0	-2.6
625.0	0.70	132.54	625.0	-2.6	1.7	1.37	0.32	142.86	-3.0	-0.7
657.0	1.00	86.54	657.0	-2.7	2.2	2.25	0.94	-143.75	-2.0	-2.8
689.0	0.50	5.54	689.0	-2.5	2.5	3.27	-1.56	-253.12	2.3	-2.7
720.0	1.00	81.54	720.0	-2.3	2.7	3.24	1.61	245.16	-2.4	-2.7
751.0	0.50	2.54	751.0	-2.2	3.0	3.32	-1.61	-254.84	2.0	-3.1
814.0	0.90	71.54	814.0	-1.7	3.5	1.36	0.63	109.52	-2.8	-2.8
845.0	0.90	2.54	845.0	-1.4	3.7	3.29	0.00	-222.58	1.3	-3.8
876.0	1.30	30.54	876.0	-0.9	3.9	2.12	1.29	90.32	-1.2	-3.8
908.0	1.00	57.54	907.9	-0.4	4.3	1.91	-0.94	84.37	-3.4	-2.7



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #504H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #504H
TVD Reference: KB = 25' @ 3493.0usft (HP 610)
MD Reference: KB = 25' @ 3493.0usft (HP 610)
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)	
939.0	0.90	67.54	938.9	-0.2	4.8	0.62	-0.32	32.26	-4.4	-2.0	
970.0	1.10	27.54	969.9	0.2	5.2	2.29	0.65	-129.03	-2.5	-4.5	
1,001.0	0.50	54.54	1,000.9	0.5	5.4	2.23	-1.94	87.10	-4.7	-2.7	
1,032.0	1.40	38.54	1,031.9	0.9	5.8	3.00	2.90	-51.61	-4.3	-3.9	
1,095.0	1.30	44.54	1,094.9	2.0	6.7	0.27	-0.16	9.52	-6.2	-3.4	
1,127.0	1.30	27.54	1,126.9	2.6	7.2	1.20	0.00	-53.12	-5.6	-5.1	
1,159.0	0.60	82.54	1,158.9	2.9	7.5	3.36	-2.19	171.87	-7.8	1.9	
1,200.0	1.00	59.54	1,199.9	3.1	8.0	1.23	0.98	-56.10	-8.5	-1.4	
1,331.0	0.50	81.60	1,330.9	3.8	9.6	0.43	-0.38	16.84	-10.0	2.4	
1,516.0	0.70	84.60	1,515.9	4.0	11.5	0.11	0.11	1.62	-11.8	2.9	
1,704.0	0.60	99.20	1,703.9	4.0	13.6	0.10	-0.05	7.77	-12.8	6.1	
1,892.0	0.20	61.00	1,891.9	4.0	14.9	0.24	-0.21	-20.32	-14.9	-3.7	
2,080.0	0.10	322.30	2,079.9	4.3	15.0	0.13	-0.05	-52.50	5.8	-14.5	
2,267.0	0.40	287.70	2,266.9	4.6	14.3	0.17	0.16	-18.50	12.2	-8.7	
2,454.0	0.70	301.30	2,453.8	5.4	12.7	0.17	0.16	7.27	8.1	-11.2	
2,642.0	1.20	307.20	2,641.8	7.2	10.2	0.27	0.27	3.14	3.8	-11.9	
2,829.0	1.40	303.60	2,828.8	9.6	6.7	0.12	0.11	-1.93	0.3	-11.7	
3,017.0	0.40	217.30	3,016.8	10.4	4.4	0.76	-0.53	-45.90	10.9	-2.8	
3,204.0	1.60	138.10	3,203.7	7.9	5.8	0.84	0.64	-42.35	2.0	9.6	
3,391.0	4.20	135.80	3,390.5	1.1	12.3	1.39	1.39	-1.23	-1.5	9.7	
3,578.0	3.90	134.40	3,577.0	-8.3	21.6	0.17	-0.16	-0.75	-1.9	10.3	
3,765.0	4.20	141.00	3,763.5	-18.1	30.4	0.30	0.16	3.53	-0.8	10.4	
3,951.0	4.20	126.80	3,949.0	-27.4	40.2	0.56	0.00	-7.63	-4.0	10.7	
4,139.0	3.60	149.90	4,136.6	-36.7	48.7	0.89	-0.32	12.29	1.0	11.3	
4,326.0	3.00	169.50	4,323.3	-46.6	52.5	0.68	-0.32	10.48	5.5	5.4	
4,515.0	5.70	134.70	4,511.8	-58.0	60.1	1.94	1.43	-18.41	1.1	5.4	
4,703.0	5.80	132.50	4,698.8	-71.0	73.7	0.13	0.05	-1.17	-4.9	6.3	



PVA Report

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

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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)
4,890.0	6.50	132.40	4,884.8	-84.5	88.5	0.37	0.37	-0.05	-12.0	7.5
5,077.0	4.30	157.50	5,070.9	-98.2	99.0	1.70	-1.18	13.42	-12.0	11.9
5,265.0	3.90	152.80	5,258.5	-110.4	104.6	0.28	-0.21	-2.50	-13.7	6.9
5,452.0	4.40	150.90	5,445.0	-122.3	111.0	0.28	0.27	-1.02	-14.8	3.3
5,639.0	5.30	138.60	5,631.3	-135.0	120.2	0.73	0.48	-6.58	-17.7	-1.7
5,826.0	5.10	134.80	5,817.5	-147.4	131.8	0.21	-0.11	-2.03	-21.5	-2.8
6,014.0	5.20	130.70	6,004.8	-158.8	144.2	0.20	0.05	-2.18	-25.1	-3.3
6,201.0	4.70	130.30	6,191.1	-169.3	156.5	0.27	-0.27	-0.21	-28.3	-1.8
6,389.0	4.40	128.30	6,378.5	-178.7	168.0	0.18	-0.16	-1.06	-30.2	-1.0
6,576.0	4.10	126.90	6,565.0	-187.2	179.0	0.17	-0.16	-0.75	-31.2	0.6
6,764.0	4.00	127.90	6,752.5	-195.3	189.5	0.07	-0.05	0.53	-31.5	3.5
6,953.0	2.80	141.90	6,941.2	-202.9	197.6	0.77	-0.63	7.41	-27.6	11.6
7,139.0	2.30	181.80	7,127.0	-210.2	200.3	0.97	-0.27	21.45	-11.7	20.5
7,326.0	2.40	180.60	7,313.8	-217.9	200.1	0.06	0.05	-0.64	-10.2	11.3
7,513.0	1.10	170.80	7,500.7	-223.6	200.4	0.71	-0.70	-5.24	-8.2	2.6
7,700.0	0.00	163.00	7,687.7	-225.4	200.6	0.59	-0.59	0.00	8.2	-3.0
7,888.0	0.60	57.00	7,875.7	-224.8	201.5	0.32	0.32	0.00	0.9	-8.5
8,075.0	0.60	71.50	8,062.7	-224.0	203.2	0.08	0.00	7.75	-3.1	-8.2
8,263.0	0.40	222.30	8,250.7	-224.2	203.7	0.52	-0.11	80.21	-1.1	9.2
8,450.0	1.40	70.90	8,437.7	-223.9	205.4	0.94	0.53	-80.96	-5.2	-8.9
8,639.0	1.10	70.90	8,626.7	-222.6	209.3	0.16	-0.16	0.00	-9.3	-8.9
8,808.0	1.30	88.90	8,795.6	-222.0	212.8	0.25	0.12	10.65	-15.0	-5.1
8,995.0	0.40	114.40	8,982.6	-222.2	215.5	0.51	-0.48	13.64	-18.3	2.8
9,182.0	0.70	209.70	9,169.6	-223.5	215.5	0.45	0.16	50.96	3.4	18.6
9,370.0	1.00	234.80	9,357.6	-225.4	213.6	0.25	0.16	13.35	8.3	15.9
9,556.0	2.00	272.30	9,543.5	-226.2	209.0	0.73	0.54	20.16	11.7	8.6
9,744.0	1.10	250.80	9,731.4	-226.7	204.1	0.56	-0.48	-11.44	2.9	11.1

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

Local Co-ordinate Reference: Well #504H
TVD Reference: KB = 25' @ 3493.0usft (HP 610)
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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)
9,930.0	0.70	256.60	9,917.4	-227.5	201.3	0.22	-0.22	3.12	1.1	10.9
10,118.0	0.60	260.20	10,105.4	-228.0	199.2	0.06	-0.05	1.91	-0.3	10.9
10,305.0	1.00	250.20	10,292.4	-228.7	196.7	0.23	0.21	-5.35	-4.8	10.5
10,492.0	1.90	285.80	10,479.3	-228.4	192.2	0.66	0.48	19.04	-2.2	12.3
10,597.0	1.10	343.30	10,584.3	-227.0	190.2	1.53	-0.76	54.76	7.2	9.9
10,655.0	1.20	352.70	10,642.3	-225.8	190.0	0.37	0.17	16.21	7.6	8.7
10,715.5	2.00	337.85	10,702.7	-224.2	189.5	1.47	1.32	-24.57	3.4	10.2
KOP (Hearn's 34 State Com #504H)										
10,723.0	2.10	336.80	10,710.3	-224.0	189.4	1.47	1.39	-13.89	3.0	10.3
10,770.0	5.70	352.60	10,757.1	-220.9	188.7	7.92	7.66	33.62	5.5	9.7
10,816.0	12.60	8.40	10,802.5	-213.6	189.2	15.83	15.00	34.35	8.0	7.3
10,863.0	19.50	5.90	10,847.7	-200.7	190.7	14.75	14.68	-5.32	6.4	6.2
10,911.0	27.30	1.10	10,891.7	-181.7	191.8	16.72	16.25	-10.00	3.4	5.5
10,958.0	36.20	359.80	10,931.6	-157.0	191.9	18.99	18.94	-2.77	-1.5	5.3
11,005.0	41.90	359.50	10,968.1	-127.4	191.7	12.13	12.13	-0.64	-7.6	5.3
11,052.0	44.10	358.10	11,002.5	-95.4	191.1	5.10	4.68	-2.98	-12.4	5.5
11,099.0	48.00	357.00	11,035.1	-61.6	189.6	8.47	8.30	-2.34	-15.0	6.5
11,146.0	50.80	356.30	11,065.7	-26.0	187.5	6.06	5.96	-1.49	-15.5	8.2
11,192.0	55.30	357.50	11,093.3	10.7	185.5	10.00	9.78	2.61	-14.1	10.2
11,239.0	64.20	0.80	11,117.0	51.3	185.0	19.88	18.94	7.02	-13.3	10.8
11,242.1	64.69	0.97	11,118.3	54.1	185.0	16.50	15.70	5.60	-13.3	10.8
HL Crossing, MD:11242.1', TVD:11118.3', N/S:54.1', E/W:185.0', INC:64.69										
11,267.2	68.63	2.33	11,128.3	77.1	185.7	16.50	15.73	5.41	-13.9	10.1
FTP (Hearn's 34 State Com #504H)										
11,286.0	71.60	3.30	11,134.7	94.8	186.6	16.50	15.77	5.15	-14.6	9.1
11,333.0	75.50	4.20	11,148.0	139.7	189.5	8.50	8.30	1.91	-16.0	5.9
11,379.0	81.10	2.90	11,157.3	184.7	192.3	12.48	12.17	-2.83	-16.5	2.6
11,427.0	85.40	2.10	11,162.9	232.3	194.4	9.11	8.96	-1.67	-16.3	0.1

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn's 34 State Com
Well: #504H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #504H
TVD Reference: KB = 25' @ 3493.0usft (HP 610)
MD Reference: KB = 25' @ 3493.0usft (HP 610)
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)
11,474.0	91.10	1.60	11,164.4	279.2	195.9	12.17	12.13	-1.06	-15.4	-1.8
11,567.0	92.00	1.50	11,161.8	372.1	198.4	0.97	0.97	-0.11	-16.3	-5.0
11,661.0	91.90	0.50	11,158.6	466.1	200.1	1.07	-0.11	-1.06	-17.8	-7.3
11,755.0	91.60	359.80	11,155.8	560.0	200.3	0.81	-0.32	-0.74	-19.0	-8.3
11,849.0	90.10	359.60	11,154.4	654.0	199.8	1.61	-1.60	-0.21	-18.7	-8.5
11,942.0	92.00	0.20	11,152.7	747.0	199.6	2.14	2.04	0.65	-18.7	-9.0
12,035.0	90.70	358.60	11,150.5	840.0	198.7	2.22	-1.40	-1.72	-19.3	-8.6
12,129.0	89.40	358.40	11,150.4	933.9	196.2	1.40	-1.38	-0.21	-17.6	-6.9
12,223.0	90.70	358.40	11,150.3	1,027.9	193.6	1.38	1.38	0.00	-16.0	-4.9
12,317.0	89.60	358.60	11,150.1	1,121.9	191.1	1.19	-1.17	0.21	-14.6	-3.1
12,410.0	90.90	358.90	11,149.7	1,214.8	189.1	1.43	1.40	0.32	-13.3	-1.8
12,503.0	90.20	358.20	11,148.8	1,307.8	186.7	1.06	-0.75	-0.75	-12.6	-0.1
12,597.0	91.20	358.20	11,147.6	1,401.7	183.8	1.06	1.06	0.00	-12.0	2.2
12,690.0	89.40	359.10	11,147.1	1,494.7	181.6	2.16	-1.94	0.97	-10.8	3.7
12,784.0	89.90	358.60	11,147.7	1,588.7	179.7	0.75	0.53	-0.53	-8.6	4.9
12,878.0	91.10	358.00	11,146.9	1,682.6	176.9	1.43	1.28	-0.64	-7.7	7.0
12,971.0	90.50	359.10	11,145.6	1,775.6	174.6	1.35	-0.65	1.18	-7.4	8.7
13,064.0	91.30	359.20	11,144.1	1,868.6	173.2	0.87	0.86	0.11	-7.1	9.4
13,158.0	90.50	359.30	11,142.7	1,962.6	172.0	0.86	-0.85	0.11	-6.9	10.0
13,251.0	91.50	358.90	11,141.0	2,055.5	170.5	1.16	1.08	-0.43	-6.9	10.7
13,345.0	92.00	1.00	11,138.2	2,149.5	170.4	2.30	0.53	2.23	-8.1	10.1
13,439.0	90.50	0.40	11,136.1	2,243.4	171.6	1.72	-1.60	-0.64	-8.4	8.3
13,533.0	88.80	358.40	11,136.7	2,337.4	170.6	2.79	-1.81	-2.13	-6.2	8.6
13,627.0	89.50	358.20	11,138.1	2,431.4	167.8	0.77	0.74	-0.21	-3.1	10.7
13,693.2	90.71	357.92	11,138.0	2,497.6	165.6	1.88	1.83	-0.43	-2.0	12.5
TGT 1(Hearn's 34 State Com #504H)										
13,720.0	91.20	357.80	11,137.5	2,524.3	164.6	1.88	1.83	-0.43	-2.1	13.3



PVA Report

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 TVD Reference: KB = 25' @ 3493.0usft (HP 610)
 MD Reference: KB = 25' @ 3493.0usft (HP 610)
 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)
13,813.0	92.00	359.70	11,134.9	2,617.3	162.5	2.22	0.86	2.04	-4.0	14.7
13,907.0	91.20	0.50	11,132.3	2,711.2	162.7	1.20	-0.85	0.85	-5.9	13.8
14,001.0	88.80	1.10	11,132.3	2,805.2	164.0	2.63	-2.55	0.64	-5.1	11.9
14,095.0	88.10	0.10	11,134.8	2,899.2	165.0	1.30	-0.74	-1.06	-1.8	10.2
14,188.0	89.40	0.70	11,136.9	2,992.1	165.6	1.54	1.40	0.65	0.9	8.9
14,282.0	89.50	359.00	11,137.8	3,086.1	165.4	1.81	0.11	-1.81	2.6	8.5
14,376.0	92.70	359.70	11,136.0	3,180.1	164.3	3.48	3.40	0.74	1.5	8.8
14,490.0	90.50	357.50	11,132.8	3,294.0	161.5	2.73	-1.93	-1.93	-0.7	10.8
14,584.0	91.40	359.70	11,131.2	3,387.9	159.2	2.53	0.96	2.34	-1.6	12.4
14,677.0	93.40	0.30	11,127.3	3,480.9	159.2	2.25	2.15	0.65	-4.7	11.8
14,771.0	90.20	0.50	11,124.4	3,574.8	159.9	3.41	-3.40	0.21	-6.9	10.4
14,864.0	87.90	359.80	11,125.9	3,667.8	160.1	2.59	-2.47	-0.75	-4.6	9.5
14,958.0	85.50	358.60	11,131.3	3,761.6	158.8	2.85	-2.55	-1.28	1.5	10.2
15,051.0	87.20	357.60	11,137.3	3,854.4	155.8	2.12	1.83	-1.08	8.1	12.6
15,145.0	89.10	357.10	11,140.3	3,948.2	151.4	2.09	2.02	-0.53	11.9	16.3
15,239.0	90.90	358.80	11,140.3	4,042.1	148.0	2.63	1.91	1.81	12.7	19.0
15,332.0	91.30	0.40	11,138.5	4,135.1	147.4	1.77	0.43	1.72	11.6	18.9
15,426.0	91.30	1.70	11,136.4	4,229.1	149.1	1.38	0.00	1.38	10.3	16.5
15,520.0	90.40	1.30	11,135.0	4,323.0	151.6	1.05	-0.96	-0.43	9.6	13.4
15,613.0	91.20	1.90	11,133.7	4,416.0	154.2	1.08	0.86	0.65	9.0	10.2
15,707.0	90.40	0.90	11,132.4	4,509.9	156.5	1.36	-0.85	-1.06	8.5	7.2
15,800.0	91.20	359.90	11,131.1	4,602.9	157.1	1.38	0.86	-1.08	7.9	5.9
15,893.0	92.20	1.10	11,128.3	4,695.9	157.9	1.68	1.08	1.29	5.9	4.4
15,987.0	92.70	0.90	11,124.3	4,789.8	159.6	0.57	0.53	-0.21	2.6	2.1
16,080.0	90.80	1.20	11,121.4	4,882.7	161.3	2.07	-2.04	0.32	0.5	-0.3
16,174.0	89.90	1.00	11,120.9	4,976.7	163.1	0.98	-0.96	-0.21	0.7	-2.8

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #504H
Wellbore: OH
Design: OH

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TVD Reference: KB = 25' @ 3493.0usft (HP 610)
MD Reference: KB = 25' @ 3493.0usft (HP 610)
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)
16,195.7	89.74	0.81	11,120.9	4,998.4	163.4	1.14	-0.75	-0.86	0.9	-3.3
TGT 2(Hearn 34 State Com #504H)										
16,267.0	89.20	0.20	11,121.6	5,069.7	164.1	1.14	-0.75	-0.86	1.5	-4.4
16,359.0	89.80	0.50	11,122.4	5,161.7	164.6	0.73	0.65	0.33	1.9	-5.6
16,453.0	89.80	0.40	11,122.7	5,255.7	165.4	0.11	0.00	-0.11	1.9	-7.0
16,547.0	89.20	359.60	11,123.6	5,349.7	165.4	1.06	-0.64	-0.85	2.3	-7.7
16,640.0	91.40	358.90	11,123.1	5,442.7	164.1	2.48	2.37	-0.75	1.5	-7.2
16,734.0	90.70	358.40	11,121.3	5,536.6	161.9	0.92	-0.74	-0.53	-0.6	-5.6
16,826.0	90.00	358.00	11,120.8	5,628.6	159.0	0.88	-0.76	-0.43	-1.6	-3.4
16,920.0	89.50	357.50	11,121.2	5,722.5	155.3	0.75	-0.53	-0.53	-1.6	-0.4
17,013.0	89.90	356.80	11,121.7	5,815.4	150.7	0.87	0.43	-0.75	-1.4	3.6
17,107.0	91.70	356.80	11,120.4	5,909.2	145.5	1.91	1.91	0.00	-3.1	8.2
17,200.0	91.40	359.30	11,117.9	6,002.1	142.3	2.71	-0.32	2.69	-6.0	10.7
17,294.0	91.70	359.80	11,115.3	6,096.1	141.6	0.62	0.32	0.53	-9.0	10.7
17,388.0	92.00	0.40	11,112.3	6,190.0	141.7	0.71	0.32	0.64	-12.4	9.9
17,481.0	92.00	1.10	11,109.0	6,283.0	142.9	0.75	0.00	0.75	-16.0	8.0
17,575.0	90.00	1.30	11,107.4	6,376.9	144.9	2.14	-2.13	0.21	-18.0	5.4
17,669.0	88.90	0.90	11,108.3	6,470.9	146.7	1.25	-1.17	-0.43	-17.5	2.9
17,762.0	89.10	359.70	11,109.9	6,563.9	147.2	1.31	0.22	-1.29	-16.3	1.7
17,855.0	91.20	0.30	11,109.7	6,656.9	147.2	2.35	2.26	0.65	-16.9	1.1
17,949.0	90.10	359.40	11,108.6	6,750.9	147.0	1.51	-1.17	-0.96	-18.3	0.7
18,043.0	91.40	0.10	11,107.4	6,844.9	146.6	1.57	1.38	0.74	-20.0	0.4
18,137.0	91.60	359.90	11,104.9	6,938.8	146.6	0.30	0.21	-0.21	-22.8	-0.3
18,230.0	90.00	359.00	11,103.6	7,031.8	145.7	1.97	-1.72	-0.97	-24.5	-0.1
18,324.0	88.40	358.30	11,104.9	7,125.7	143.4	1.86	-1.70	-0.74	-23.5	1.5
18,418.0	89.20	359.00	11,106.9	7,219.7	141.2	1.13	0.85	0.74	-22.0	3.0
18,512.0	89.60	358.80	11,107.9	7,313.7	139.4	0.48	0.43	-0.21	-21.4	4.2



PVA Report

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Site: Hearn 34 State Com
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Design: OH

Local Co-ordinate Reference: Well #504H
TVD Reference: KB = 25' @ 3493.0usft (HP 610)
MD Reference: KB = 25' @ 3493.0usft (HP 610)
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)
18,605.0	89.40	357.70	11,108.7	7,406.6	136.6	1.20	-0.22	-1.18	-20.9	6.3
18,697.0	89.99	358.59	11,109.2	7,498.6	133.6	1.16	0.65	0.97	-20.8	8.7
TGT 3(Hearn 34 State Com #504H)										
18,698.0	90.00	358.60	11,109.2	7,499.6	133.6	1.16	0.65	0.97	-20.8	8.7
18,792.0	89.40	358.70	11,109.7	7,593.5	131.4	0.65	-0.64	0.11	-20.8	9.1
18,885.0	89.50	358.40	11,110.6	7,686.5	129.0	0.34	0.11	-0.32	-20.5	9.4
18,978.0	89.10	358.20	11,111.7	7,779.5	126.3	0.48	-0.43	-0.22	-19.9	10.1
19,072.0	88.40	357.80	11,113.8	7,873.4	123.0	0.86	-0.74	-0.43	-18.4	11.3
19,165.0	88.50	357.50	11,116.3	7,966.3	119.2	0.34	0.11	-0.32	-16.5	13.0
19,258.0	89.20	357.70	11,118.1	8,059.2	115.3	0.78	0.75	0.22	-15.1	14.8
19,351.0	89.80	358.20	11,118.9	8,152.1	111.9	0.84	0.65	0.54	-14.9	16.1
19,444.0	90.90	359.60	11,118.4	8,245.1	110.2	1.91	1.18	1.51	-16.0	15.8
19,538.0	90.40	359.70	11,117.3	8,339.1	109.6	0.54	-0.53	0.11	-17.6	14.3
19,632.0	90.00	359.40	11,117.0	8,433.1	108.8	0.53	-0.43	-0.32	-18.5	12.9
19,725.0	88.90	359.00	11,117.9	8,526.1	107.6	1.26	-1.18	-0.43	-18.1	12.1
19,818.0	88.00	358.90	11,120.4	8,619.0	105.8	0.97	-0.97	-0.11	-16.2	11.8
19,911.0	88.80	358.40	11,123.0	8,711.9	103.7	1.01	0.86	-0.54	-14.1	11.9
20,005.0	88.70	359.20	11,125.0	8,805.9	101.7	0.86	-0.11	0.85	-12.6	11.7
20,098.0	89.60	359.80	11,126.4	8,898.9	100.9	1.16	0.97	0.64	-11.8	10.5
20,192.0	89.30	359.30	11,127.3	8,992.9	100.1	0.62	-0.32	-0.53	-11.5	9.1
20,286.0	88.70	359.10	11,129.0	9,086.9	98.8	0.67	-0.64	-0.21	-10.4	8.3
20,380.0	88.50	359.10	11,131.3	9,180.8	97.4	0.21	-0.21	0.00	-8.6	7.7
20,473.0	90.00	359.60	11,132.5	9,273.8	96.3	1.70	1.61	0.54	-8.0	6.7
20,567.0	89.70	359.10	11,132.7	9,367.8	95.2	0.62	-0.32	-0.53	-8.3	5.7
20,607.1	89.27	358.50	11,133.1	9,408.0	94.4	1.83	-1.06	-1.49	-8.1	5.6
AC TGT										
20,661.0	88.70	357.70	11,134.0	9,461.8	92.6	1.83	-1.06	-1.49	-7.5	6.7

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hearn's 34 State Com
 Well: #504H
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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)
20,754.0	90.00	356.80	11,135.1	9,554.7	88.1	1.70	1.40	-0.97	-7.0	10.5
20,849.0	90.30	356.20	11,134.8	9,649.5	82.3	0.71	0.32	-0.63	-7.8	15.6
20,943.0	90.10	356.00	11,134.5	9,743.3	76.0	0.30	-0.21	-0.21	-8.7	21.3
21,066.0	88.70	355.10	11,135.8	9,865.9	66.4	1.35	-1.14	-0.73	-8.2	30.0
Final MWD Survey (MD= 21066.0')										
21,140.0	88.70	355.10	11,137.5	9,939.6	60.1	0.00	0.00	0.00	-7.0	35.8
Final Bit Projection (MD= 21140.0') - LTP (Hearn's 34 State Com #504H) - PBHL (Hearn's 34 State Com #504H)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,242.1	11,118.3	54.1	185.0	HL Crossing, MD:11242.1', TVD:11118.3', N/S:54.1', E/W:185.0', INC:64.69
21,066.0	11,135.8	9,865.9	66.4	Final MWD Survey (MD= 21066.0')
21,140.0	11,137.5	9,939.6	60.1	Final Bit Projection (MD= 21140.0')

Checked By: _____ Approved By: _____ Date: _____