

EOG Resources, Inc.

Lea County
Lusk 23 Federal
#3H
OH

Design: OH

Pathfinder X & Y Report

06 September, 2011

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HOBBS OCD

30-025-40166

DEC 07 2011

Pathfinder
Pathfinder X & Y Report

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #3H
Project:	Lea County	TVD Reference:	RKB-30' @ 3639.10usft (Cactus #123)
Site:	Lusk 23 Federal	MD Reference:	RKB-30' @ 3639.10usft (Cactus #123)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project: Lea County			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:		Lusk 23 Federal			
Site Position:		Northing:		599,803.000 usft	
From:		Easting:		681,437.400 usft	
Position Uncertainty:		Slot Radius:		13-3/16 "	
Map				Latitude: 32° 38' 51.275 N	
				Longitude: 103° 44' 37.915 W	
0.00 usft				Grid Convergence: 0.32 °	

Well:		#3H				
Well Position	+N/-S	0.00 usft	Northing:	599,803.000 usft	Latitude:	32° 38' 51.275 N
	+E/-W	0.00 usft	Easting:	681,437.400 usft	Longitude:	103° 44' 37.915 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,609.10 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/17/2011	7.68	60.55	48,834

Design:	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	89.92	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey Program:		Date: 9/6/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	4,730.00	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
4,863.00	9,068.00	Survey #2 - MWD (OH)	MWD	MWD - Standard
9,143.00	14,000.00	Survey #3 (OH)	MWD	MWD - Standard

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	-3,639.10	0.00	0.00	0.00	0.00	599,803.00	681,437.40
100.00	0.19	141.70	100.00	-3,539.10	-0.13	0.10	0.10	0.19	599,802.87	681,437.50
200.00	0.14	134.36	200.00	-3,439.10	-0.35	0.29	0.29	0.05	599,802.65	681,437.69
300.00	0.19	136.99	300.00	-3,339.10	-0.55	0.49	0.49	0.05	599,802.45	681,437.89
400.00	0.17	136.09	400.00	-3,239.10	-0.78	0.71	0.71	0.02	599,802.22	681,438.11
500.00	0.18	132.56	500.00	-3,139.10	-0.99	0.93	0.93	0.01	599,802.01	681,438.33
600.00	0.24	134.13	600.00	-3,039.10	-1.25	1.19	1.19	0.06	599,801.75	681,438.59
700.00	0.24	166.26	700.00	-2,939.10	-1.59	1.39	1.39	0.13	599,801.41	681,438.79
800.00	0.36	176.25	800.00	-2,839.10	-2.11	1.46	1.46	0.13	599,800.89	681,438.86
900.00	0.26	184.41	899.99	-2,739.11	-2.65	1.47	1.46	0.11	599,800.35	681,438.87
1,000.00	0.33	210.57	999.99	-2,639.11	-3.13	1.30	1.30	0.15	599,799.87	681,438.70
1,100.00	0.23	203.64	1,099.99	-2,539.11	-3.56	1.08	1.07	0.11	599,799.44	681,438.48
1,200.00	0.21	176.86	1,199.99	-2,439.11	-3.92	1.01	1.00	0.10	599,799.08	681,438.41
1,300.00	0.42	156.36	1,299.99	-2,339.11	-4.44	1.16	1.16	0.24	599,798.56	681,438.56
1,400.00	0.55	159.39	1,399.99	-2,239.11	-5.23	1.48	1.47	0.13	599,797.77	681,438.88
1,500.00	0.72	161.83	1,499.98	-2,139.12	-6.27	1.84	1.84	0.17	599,796.73	681,439.24
1,600.00	0.84	150.39	1,599.97	-2,039.13	-7.51	2.40	2.39	0.20	599,795.49	681,439.80
1,700.00	1.02	145.08	1,699.96	-1,939.14	-8.88	3.27	3.26	0.20	599,794.12	681,440.67
1,800.00	0.99	140.52	1,799.94	-1,839.16	-10.27	4.33	4.32	0.09	599,792.73	681,441.73
1,900.00	1.11	136.93	1,899.92	-1,739.18	-11.65	5.54	5.53	0.14	599,791.35	681,442.94

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Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V-Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,000.00	1.13	129.38	1,999.91	-1,639.19	-12.98	6.97	6.95	0.15	599,790.02	681,444.37
2,100.00	1.42	114.23	2,099.88	-1,539.22	-14.11	8.86	8.84	0.44	599,788.89	681,446.26
2,200.00	1.97	97.50	2,199.84	-1,439.26	-14.85	11.69	11.67	0.73	599,788.15	681,449.09
2,300.00	2.45	89.22	2,299.76	-1,339.34	-15.04	15.53	15.51	0.58	599,787.96	681,452.93
2,400.00	2.84	83.48	2,399.66	-1,239.44	-14.73	20.13	20.11	0.47	599,788.27	681,457.53
2,500.00	3.13	80.20	2,499.52	-1,139.58	-13.99	25.28	25.26	0.34	599,789.01	681,462.68
2,600.00	3.22	78.74	2,599.37	-1,039.73	-12.97	30.73	30.71	0.12	599,790.03	681,468.13
2,700.00	3.00	77.74	2,699.22	-939.88	-11.87	36.04	36.02	0.23	599,791.13	681,473.44
2,800.00	2.57	79.59	2,799.10	-840.00	-10.91	40.80	40.79	0.44	599,792.09	681,478.20
2,900.00	2.42	79.98	2,899.01	-740.09	-10.14	45.09	45.07	0.15	599,792.86	681,482.49
3,000.00	2.40	82.10	2,998.92	-640.18	-9.48	49.24	49.23	0.09	599,793.52	681,486.64
3,100.00	2.43	79.65	3,098.83	-540.27	-8.81	53.40	53.39	0.11	599,794.19	681,490.80
3,200.00	2.29	81.68	3,198.74	-440.36	-8.14	57.46	57.45	0.16	599,794.86	681,494.86
3,300.00	2.33	80.74	3,298.66	-340.44	-7.53	61.44	61.43	0.06	599,795.47	681,498.84
3,400.00	2.50	79.76	3,398.57	-240.53	-6.81	65.60	65.59	0.17	599,796.19	681,503.00
3,500.00	2.60	78.90	3,498.48	-140.62	-5.99	69.97	69.96	0.11	599,797.01	681,507.37
3,600.00	2.63	78.17	3,598.37	-40.73	-5.08	74.44	74.43	0.04	599,797.92	681,511.84
3,700.00	2.38	75.84	3,698.28	59.18	-4.10	78.70	78.69	0.27	599,798.90	681,516.10
3,800.00	2.33	72.81	3,798.19	159.09	-2.99	82.65	82.65	0.13	599,800.01	681,520.05
3,900.00	2.13	76.56	3,898.12	259.02	-1.96	86.40	86.40	0.25	599,801.04	681,523.80
4,000.00	2.25	77.85	3,998.04	358.94	-1.11	90.13	90.13	0.13	599,801.89	681,527.53
4,100.00	2.22	78.29	4,097.97	458.87	-0.31	93.95	93.95	0.03	599,802.69	681,531.35
4,200.00	1.77	74.66	4,197.91	558.81	0.49	97.33	97.33	0.47	599,803.49	681,534.73
4,300.00	1.73	75.76	4,297.86	658.76	1.27	100.28	100.29	0.05	599,804.27	681,537.68
4,400.00	1.95	75.10	4,397.81	758.71	2.08	103.39	103.39	0.22	599,805.08	681,540.79
4,500.00	2.07	78.35	4,497.75	858.65	2.88	106.80	106.81	0.17	599,805.88	681,544.20
4,600.00	2.20	82.90	4,597.68	958.58	3.49	110.48	110.48	0.21	599,806.49	681,547.88

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Well:	#3H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,700.00	2.14	79.30	4,697.60	1,058.50	4.07	114.22	114.22	0.15	599,807.07	681,551.62	
4,730.00	2.03	83.89	4,727.59	1,088.49	4.23	115.30	115.30	0.67	599,807.23	681,552.70	
4,863.00	3.87	50.26	4,860.41	1,221.31	7.35	121.09	121.10	1.84	599,810.35	681,558.49	
5,054.00	1.14	38.22	5,051.21	1,412.11	12.97	127.22	127.24	1.45	599,815.97	681,564.62	
5,245.00	0.88	36.46	5,242.18	1,603.08	15.64	129.27	129.29	0.14	599,818.64	681,566.67	
5,437.00	1.58	41.03	5,434.14	1,795.04	18.82	131.88	131.91	0.37	599,821.82	681,569.28	
5,628.00	0.97	14.23	5,625.09	1,985.99	22.37	134.01	134.04	0.44	599,825.37	681,571.41	
5,818.00	0.35	316.92	5,815.08	2,175.98	24.36	134.01	134.04	0.44	599,827.36	681,571.41	
6,009.00	0.35	229.82	6,006.08	2,366.98	24.41	133.17	133.20	0.25	599,827.41	681,570.57	
6,201.00	0.79	288.97	6,198.07	2,558.97	24.46	131.47	131.50	0.35	599,827.46	681,568.87	
6,393.00	0.88	258.21	6,390.05	2,750.95	24.59	128.77	128.80	0.24	599,827.59	681,566.17	
6,584.00	1.58	263.48	6,581.00	2,941.90	23.99	124.72	124.75	0.37	599,826.99	681,562.12	
6,775.00	0.97	277.02	6,771.95	3,132.85	23.89	120.50	120.53	0.35	599,826.89	681,557.90	
6,966.00	1.14	274.29	6,962.92	3,323.82	24.23	117.00	117.03	0.09	599,827.23	681,554.40	
7,157.00	1.32	270.43	7,153.88	3,514.78	24.39	112.90	112.94	0.10	599,827.39	681,550.30	
7,349.00	1.41	275.61	7,345.82	3,706.72	24.63	108.34	108.38	0.08	599,827.63	681,545.74	
7,540.00	1.67	267.18	7,536.76	3,897.66	24.73	103.22	103.26	0.18	599,827.73	681,540.62	
7,732.00	1.76	275.88	7,728.67	4,089.57	24.89	97.50	97.53	0.14	599,827.89	681,534.90	
7,923.00	2.99	269.64	7,919.50	4,280.40	25.16	89.60	89.63	0.66	599,828.16	681,527.00	
8,115.00	2.11	192.47	8,111.36	4,472.26	21.68	83.82	83.85	1.69	599,824.68	681,521.22	
8,306.00	2.11	248.10	8,302.25	4,663.15	16.93	79.80	79.83	1.03	599,819.93	681,517.20	
8,495.00	1.32	231.76	8,491.16	4,852.06	14.29	74.86	74.88	0.49	599,817.29	681,512.26	
8,687.00	1.76	202.49	8,683.10	5,044.00	10.19	72.00	72.01	0.46	599,813.19	681,509.40	
8,877.00	1.85	226.92	8,873.00	5,233.90	5.40	68.64	68.65	0.40	599,808.40	681,506.04	
9,068.00	1.32	237.73	9,063.93	5,424.83	2.12	64.53	64.53	0.32	599,805.12	681,501.93	
9,143.00	1.49	202.22	9,138.91	5,499.81	0.76	63.43	63.43	1.16	599,803.76	681,500.83	
9,175.00	1.85	198.36	9,170.90	5,531.80	-0.12	63.11	63.11	1.18	599,802.88	681,500.51	

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Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,207.00	2.02	162.76	9,202.88	5,563.78	-1.15	63.12	63.11	3.73	599,801.85	681,500.52
9,239.00	4.66	117.58	9,234.83	5,595.73	-2.29	64.44	64.43	11.06	599,800.71	681,501.84
9,271.00	8.88	103.43	9,266.60	5,627.50	-3.46	67.99	67.99	14.08	599,799.54	681,505.39
9,303.00	12.57	100.71	9,298.03	5,658.93	-4.68	73.82	73.81	11.64	599,798.32	681,511.22
9,335.00	16.09	97.72	9,329.03	5,689.93	-5.93	81.64	81.63	11.24	599,797.07	681,519.04
9,367.00	18.91	96.67	9,359.55	5,720.45	-7.13	91.18	91.17	8.87	599,795.87	681,528.58
9,399.00	21.98	95.70	9,389.53	5,750.43	-8.32	102.29	102.28	9.65	599,794.68	681,539.89
9,431.00	25.76	94.03	9,418.79	5,779.69	-9.41	115.19	115.18	12.00	599,793.59	681,552.59
9,463.00	29.28	92.36	9,447.16	5,808.06	-10.22	129.95	129.94	11.26	599,792.78	681,567.35
9,494.00	32.71	90.87	9,473.73	5,834.63	-10.66	145.91	145.89	11.34	599,792.34	681,583.31
9,526.00	36.58	90.25	9,500.05	5,860.95	-10.83	164.10	164.08	12.14	599,792.17	681,601.50
9,558.00	40.36	90.56	9,525.10	5,886.00	-10.97	184.00	183.98	11.83	599,792.03	681,621.40
9,590.00	43.35	90.78	9,548.94	5,909.84	-11.22	205.35	205.33	9.35	599,791.78	681,642.75
9,622.00	47.40	91.04	9,571.41	5,932.31	-11.59	228.11	228.10	12.67	599,791.41	681,665.51
9,654.00	51.53	90.95	9,592.20	5,953.10	-12.01	252.43	252.41	12.91	599,790.99	681,689.83
9,686.00	55.22	90.87	9,611.29	5,972.19	-12.42	278.10	278.08	11.53	599,790.58	681,715.50
9,717.00	59.79	90.43	9,627.94	5,988.84	-12.71	304.24	304.22	14.79	599,790.29	681,741.64
9,749.00	64.10	90.43	9,642.99	6,003.89	-12.92	332.47	332.45	13.47	599,790.08	681,769.87
9,781.00	68.24	90.51	9,655.91	6,016.81	-13.16	361.73	361.72	12.94	599,789.84	681,799.13
9,812.00	72.63	90.51	9,666.29	6,027.19	-13.42	390.94	390.92	14.16	599,789.58	681,828.34
9,844.00	76.94	90.25	9,674.69	6,035.59	-13.63	421.81	421.79	13.49	599,789.37	681,859.21
9,876.00	81.43	90.08	9,680.69	6,041.59	-13.72	453.23	453.21	14.04	599,789.28	681,890.63
9,918.00	87.58	88.49	9,684.71	6,045.61	-13.19	495.01	494.99	15.12	599,789.81	681,932.41
9,950.00	89.69	87.17	9,685.47	6,046.37	-11.98	526.98	526.96	7.78	599,791.02	681,964.38
10,108.00	90.40	86.74	9,685.35	6,046.25	-3.59	684.75	684.75	0.53	599,799.41	682,122.15
10,300.00	89.96	86.65	9,684.74	6,045.64	7.48	876.43	876.44	0.23	599,810.48	682,313.83
10,490.00	90.92	89.11	9,683.29	6,044.19	14.51	1,066.28	1,066.30	1.39	599,817.51	682,503.68

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Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User.Db

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLog (°/100usft)	Northing (usft)	Easting (usft)
10,681.00	89.60	88.41	9,682.42	6,043.32	18.64	1,257.23	1,257.25	0.78	599,821.64	682,694.63
10,868.00	86.61	89.29	9,688.60	6,049.50	22.39	1,444.07	1,444.10	1.67	599,825.39	682,881.47
11,059.00	83.62	89.90	9,704.86	6,065.76	23.74	1,634.34	1,634.38	1.60	599,826.74	683,071.74
11,251.00	84.24	88.84	9,725.17	6,086.07	25.84	1,825.25	1,825.29	0.64	599,828.84	683,262.65
11,443.00	85.21	86.74	9,742.82	6,103.72	33.22	2,016.28	2,016.33	1.20	599,836.22	683,453.68
11,634.00	86.79	88.49	9,756.15	6,117.05	41.14	2,206.64	2,206.70	1.23	599,844.14	683,644.04
11,800.00	83.71	90.25	9,769.89	6,130.79	42.97	2,372.03	2,372.09	2.14	599,845.97	683,809.43
11,992.00	88.11	90.43	9,783.58	6,144.48	41.83	2,563.49	2,563.55	2.29	599,844.83	684,000.89
12,183.00	88.11	91.57	9,789.88	6,150.78	38.50	2,754.36	2,754.41	0.60	599,841.50	684,191.76
12,375.00	88.64	93.59	9,795.33	6,156.23	29.86	2,946.08	2,946.11	1.09	599,832.86	684,383.48
12,566.00	88.20	93.10	9,800.59	6,161.49	18.72	3,136.68	3,136.70	0.34	599,821.72	684,574.08
12,758.00	88.55	90.60	9,806.04	6,166.94	12.52	3,328.48	3,328.50	1.31	599,815.52	684,765.88
12,949.00	89.52	90.25	9,809.26	6,170.16	11.11	3,519.45	3,519.46	0.54	599,814.11	684,956.85
13,139.00	89.52	89.20	9,810.85	6,171.75	12.02	3,709.44	3,709.45	0.55	599,815.02	685,146.84
13,330.00	89.34	88.32	9,812.75	6,173.65	16.15	3,900.38	3,900.40	0.47	599,819.15	685,337.78
13,521.00	88.72	87.26	9,815.98	6,176.88	23.52	4,091.21	4,091.24	0.64	599,826.52	685,528.61
13,712.00	89.52	88.58	9,818.91	6,179.81	30.45	4,282.05	4,282.09	0.81	599,833.45	685,719.45
13,904.00	88.99	88.05	9,821.41	6,182.31	36.09	4,473.95	4,474.00	0.39	599,839.09	685,911.35
14,000.00	88.99	88.05	9,823.10	6,184.00	39.36	4,569.88	4,569.93	0.00	599,842.36	686,007.28

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,239.00	9,234.83	-2.29	64.44	KOP - 9239.00 'MD, 9234.83 'TVD, -2.29 'N, 64.44 'E
9,960.00	9,685.52	-11.49	536.97	LP - 9960.00 'MD, 9685.52 'TVD, -11.49 'N, 536.97 'E
14,000.00	9,823.10	39.36	4,569.88	BHL - 14000.00 'MD, 9823.10 'TVD, 39.36 'N, 4569.88 'E

Pathfinder
Pathfinder X & Y Report

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #3H
Project:	Lea County	TVD Reference:	RKB-30' @ 3639.10usft (Cactus #123)
Site:	Lusk 23 Federal	MD Reference:	RKB-30' @ 3639.10usft (Cactus #123)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Checked By: _____	Approved By: _____	Date: _____
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CURRENT WELL SKETCH

