



EOG Resources, Inc.

Eddy County
Bailout BOA Fed Com
#1H
OH

Survey: MWD #1

Pathfinder X & Y Survey Report

28 August, 2009

PATHFINDER

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3541.00ft (19' Kb Correction McVay #4)
Site:	Bailout BOA Fed Com	MD Reference:	WELL @ 3541.00ft (19' Kb Correction McVay #4)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Project:	Eddy 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: Bailout BOA Fed Com					
Site Position:		Northing:	640,176.300 ft	Latitude:	32° 45' 34.370 N
From:	Map	Easting:	596,167.400 ft	Longitude:	104° 1' 13.818 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.17 °

Well		#1H				
Well Position	+N/-S	0.00 ft	Northing:	640,176.300 ft	Latitude:	32° 45' 34.370 N
	+E/-W	0.00 ft	Easting:	596,167.400 ft	Longitude:	104° 1' 13.818 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,522.00 ft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	07/22/2009	8.05	60.67	49,106

Design:	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	272.31	

Survey Program		Date 08/28/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
368.00	12,050.00	MWD #1 (OH)	MWD	MWD - Standard

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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
268.00	0.00	0.00	268.00	-3,273.00	0.00	0.00	0.00	0.00	640,176.30	596,167.40
368.00	0.35	298.12	368.00	-3,173.00	0.14	-0.27	0.27	0.35	640,176.44	596,167.13
542.00	0.09	255.67	542.00	-2,999.00	0.36	-0.87	0.88	0.17	640,176.66	596,166.53
728.00	0.35	347.68	728.00	-2,813.00	0.88	-1.13	1.17	0.20	640,177.18	596,166.27
915.00	0.62	57.73	914.99	-2,626.01	1.98	-0.40	0.48	0.32	640,178.28	596,167.00
1,102.00	1.32	70.21	1,101.96	-2,439.04	3.25	2.48	-2.35	0.39	640,179.55	596,169.88
1,226.00	1.41	72.15	1,225.93	-2,315.07	4.20	5.28	-5.11	0.08	640,180.50	596,172.68
1,320.00	0.53	62.00	1,319.91	-2,221.09	4.76	6.76	-6.57	0.95	640,181.06	596,174.16
1,507.00	0.35	17.53	1,506.91	-2,034.09	5.71	7.70	-7.46	0.20	640,182.01	596,175.10
1,694.00	0.26	55.73	1,693.91	-1,847.09	6.49	8.22	-7.95	0.12	640,182.79	596,175.62
1,881.00	0.26	19.30	1,880.90	-1,660.10	7.13	8.71	-8.42	0.09	640,183.43	596,176.11
2,068.00	0.18	242.75	2,067.90	-1,473.10	7.40	8.59	-8.29	0.22	640,183.70	596,175.99
2,254.00	0.35	286.75	2,253.90	-1,287.10	7.43	7.79	-7.48	0.14	640,183.73	596,175.19
2,442.00	0.70	278.41	2,441.89	-1,099.11	7.76	6.10	-5.78	0.19	640,184.06	596,173.50
2,629.00	0.62	281.76	2,628.88	-912.12	8.13	3.98	-3.65	0.05	640,184.43	596,171.38
2,815.00	0.62	269.79	2,814.87	-726.13	8.33	1.99	-1.65	0.07	640,184.63	596,169.39
3,002.00	0.79	262.74	3,001.86	-539.14	8.17	-0.30	0.63	0.10	640,184.47	596,167.10
3,190.00	0.88	266.23	3,189.84	-351.16	7.91	-3.03	3.34	0.05	640,184.21	596,164.37
3,383.00	0.79	251.38	3,382.82	-158.18	7.39	-5.77	6.06	0.12	640,183.69	596,161.63
3,570.00	0.70	230.03	3,569.80	28.80	6.24	-7.86	8.11	0.15	640,182.54	596,159.54
3,757.00	0.88	264.94	3,756.78	215.78	5.38	-10.17	10.38	0.27	640,181.68	596,157.23
3,944.00	0.97	267.00	3,943.76	402.76	5.17	-13.18	13.38	0.05	640,181.47	596,154.22
4,131.00	1.23	255.99	4,130.73	589.73	4.60	-16.71	16.88	0.18	640,180.90	596,150.69
4,318.00	1.41	267.77	4,317.68	776.68	4.03	-20.95	21.10	0.17	640,180.33	596,146.45
4,505.00	1.41	260.17	4,504.62	963.62	3.55	-25.52	25.64	0.10	640,179.85	596,141.88
4,692.00	1.67	259.88	4,691.55	1,150.55	2.67	-30.47	30.55	0.14	640,178.97	596,136.93
4,879.00	0.97	267.27	4,878.50	1,337.50	2.12	-34.73	34.79	0.38	640,178.42	596,132.67

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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg (°/100ft)	Northing (ft)	Easting (ft)	
5,066.00	1.23	265.55	5,065.47	1,524.47	1.89	-38.32	38.36	0.14	640,178.19	596,129.08	
5,253.00	1.58	258.62	5,252.41	1,711.41	1.22	-42.84	42.86	0.21	640,177.52	596,124.56	
5,440.00	1.06	215.55	5,439.36	1,898.36	-0.69	-46.38	46.31	0.58	640,175.61	596,121.02	
5,627.00	2.29	183.78	5,626.28	2,085.28	-5.83	-47.63	47.36	0.80	640,170.47	596,119.77	
5,721.00	2.20	189.77	5,720.21	2,179.21	-9.48	-48.06	47.64	0.27	640,166.82	596,119.34	
5,814.00	1.14	239.26	5,813.18	2,272.18	-11.71	-49.16	48.65	1.83	640,164.59	596,118.24	
5,908.00	0.70	304.60	5,907.17	2,366.17	-11.86	-50.43	49.91	1.13	640,164.44	596,116.97	
6,001.00	1.06	297.48	6,000.15	2,459.15	-11.14	-51.66	51.17	0.40	640,165.16	596,115.74	
6,188.00	1.58	286.19	6,187.10	2,646.10	-9.63	-55.68	55.24	0.31	640,166.67	596,111.72	
6,281.00	1.76	345.48	6,280.07	2,739.07	-7.89	-57.26	56.90	1.78	640,168.41	596,110.14	
6,375.00	1.14	331.21	6,374.04	2,833.04	-5.67	-58.08	57.80	0.76	640,170.63	596,109.32	
6,469.00	0.35	29.45	6,468.03	2,927.03	-4.60	-58.39	58.15	1.06	640,171.70	596,109.01	
6,562.00	0.88	35.15	6,561.03	3,020.03	-3.77	-57.84	57.64	0.57	640,172.53	596,109.56	
6,655.00	0.79	12.93	6,654.02	3,113.02	-2.56	-57.28	57.13	0.36	640,173.74	596,110.12	
6,843.00	0.97	348.99	6,842.00	3,301.00	0.26	-57.29	57.26	0.22	640,176.56	596,110.11	
7,030.00	1.06	352.60	7,028.97	3,487.97	3.53	-57.82	57.92	0.06	640,179.83	596,109.58	
7,217.00	1.41	2.98	7,215.92	3,674.92	7.55	-57.92	58.18	0.22	640,183.85	596,109.48	
7,305.00	0.62	56.14	7,303.91	3,762.91	8.89	-57.47	57.78	1.31	640,185.19	596,109.93	
7,337.00	0.26	57.31	7,335.91	3,794.91	9.03	-57.27	57.58	1.13	640,185.33	596,110.13	
7,399.00	0.26	70.91	7,397.91	3,856.91	9.15	-57.01	57.34	0.10	640,185.45	596,110.39	
7,430.00	1.93	262.85	7,428.90	3,887.90	9.11	-57.47	57.79	7.05	640,185.41	596,109.93	
7,461.00	5.89	259.37	7,459.83	3,918.83	8.75	-59.55	59.85	12.79	640,185.05	596,107.85	
7,492.00	10.38	261.01	7,490.51	3,949.51	8.02	-63.87	64.14	14.50	640,184.32	596,103.53	
7,524.00	14.77	259.54	7,521.73	3,980.73	6.83	-70.73	70.95	13.75	640,183.13	596,096.67	
7,555.00	18.99	260.31	7,551.39	4,010.39	5.26	-79.60	79.74	13.63	640,181.56	596,087.80	
7,587.00	23.13	261.94	7,581.24	4,040.24	3.50	-90.96	91.02	13.07	640,179.80	596,076.44	
7,618.00	27.35	263.31	7,609.28	4,068.28	1.82	-104.06	104.05	13.74	640,178.12	596,063.34	

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Design:	OH	Database:	Midland Database

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg (°/100ft)	Northing (ft)	Easting (ft)
7,649.00	31.30	264.70	7,636.30	4,095.30	0.25	-119.16	119.07	12.93	640,176.55	596,048.24
7,680.00	35.70	265.73	7,662.15	4,121.15	-1.17	-136.21	136.05	14.31	640,175.13	596,031.19
7,711.00	39.92	266.65	7,686.63	4,145.63	-2.43	-155.17	154.94	13.73	640,173.87	596,012.23
7,743.00	44.49	267.31	7,710.33	4,169.33	-3.56	-176.63	176.34	14.35	640,172.74	595,990.77
7,773.00	49.07	268.54	7,730.87	4,189.87	-4.34	-198.47	198.13	15.56	640,171.96	595,968.93
7,805.00	53.73	270.00	7,750.83	4,209.83	-4.65	-223.47	223.10	14.99	640,171.65	595,943.93
7,835.00	57.86	270.53	7,767.69	4,226.69	-4.53	-248.27	247.89	13.84	640,171.77	595,919.13
7,867.00	61.91	270.94	7,783.74	4,242.74	-4.17	-275.94	275.55	12.70	640,172.13	595,891.46
7,889.00	65.60	270.54	7,793.47	4,252.47	-3.92	-295.67	295.27	16.85	640,172.38	595,871.73
7,920.00	69.56	270.51	7,805.29	4,264.29	-3.66	-324.32	323.91	12.77	640,172.64	595,843.08
7,951.00	72.37	271.90	7,815.40	4,274.40	-3.04	-353.62	353.21	10.01	640,173.26	595,813.78
7,983.00	75.36	273.18	7,824.29	4,283.29	-1.67	-384.32	383.94	10.10	640,174.63	595,783.08
8,014.00	77.56	273.55	7,831.55	4,290.55	0.10	-414.41	414.07	7.19	640,176.40	595,752.99
8,045.00	80.72	273.80	7,837.39	4,296.39	2.05	-444.78	444.50	10.22	640,178.35	595,722.62
8,076.00	83.98	274.09	7,841.51	4,300.51	4.16	-475.43	475.21	10.56	640,180.46	595,691.97
8,138.00	89.60	273.39	7,844.98	4,303.98	8.20	-537.18	537.07	9.13	640,184.50	595,630.22
8,231.00	90.22	274.09	7,845.13	4,304.13	14.26	-629.98	630.04	1.01	640,190.56	595,537.42
8,324.00	91.01	275.13	7,844.13	4,303.13	21.74	-722.67	722.96	1.40	640,198.04	595,444.73
8,418.00	90.04	273.09	7,843.27	4,302.27	28.48	-816.42	816.90	2.40	640,204.78	595,350.98
8,511.00	90.04	273.00	7,843.21	4,302.21	33.42	-909.29	909.89	0.10	640,209.72	595,258.11
8,604.00	90.40	273.13	7,842.85	4,301.85	38.39	-1,002.15	1,002.88	0.41	640,214.69	595,165.25
8,697.00	91.36	272.93	7,841.42	4,300.42	43.30	-1,095.01	1,095.87	1.05	640,219.60	595,072.39
8,789.00	92.07	272.73	7,838.67	4,297.67	47.84	-1,186.86	1,187.82	0.80	640,224.14	594,980.54
8,850.00	92.51	272.68	7,836.23	4,295.23	50.72	-1,247.74	1,248.77	0.73	640,227.02	594,919.66
8,944.00	91.45	271.93	7,832.98	4,291.98	54.50	-1,341.60	1,342.71	1.38	640,230.80	594,825.80
9,037.00	90.48	271.89	7,831.42	4,290.42	57.60	-1,434.54	1,435.69	1.04	640,233.90	594,732.86
9,131.00	91.19	271.63	7,830.05	4,289.05	60.48	-1,528.48	1,529.68	0.80	640,236.78	594,638.92

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Design:	OH	Database:	Midland Database

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,225.00	91.98	271.98	7,827.45	4,286.45	63.44	-1,622.40	1,623.64	0.92	640,239.74	594,545.00
9,318.00	92.42	271.66	7,823.88	4,282.88	66.39	-1,715.28	1,716.57	0.58	640,242.69	594,452.12
9,410.00	92.86	271.06	7,819.64	4,278.64	68.58	-1,807.16	1,808.46	0.81	640,244.88	594,360.24
9,503.00	92.51	270.43	7,815.28	4,274.28	69.78	-1,900.05	1,901.32	0.77	640,246.08	594,267.35
9,597.00	92.42	270.86	7,811.24	4,270.24	70.84	-1,993.96	1,995.19	0.47	640,247.14	594,173.44
9,691.00	92.07	270.84	7,807.56	4,266.56	72.23	-2,087.87	2,089.09	0.37	640,248.53	594,079.53
9,787.00	91.71	270.84	7,804.39	4,263.39	73.64	-2,183.81	2,185.01	0.37	640,249.94	593,983.59
9,878.00	91.45	271.15	7,801.88	4,260.88	75.22	-2,274.76	2,275.95	0.44	640,251.52	593,892.64
9,971.00	90.66	271.31	7,800.17	4,259.17	77.22	-2,367.73	2,368.91	0.87	640,253.52	593,799.67
10,065.00	89.65	271.42	7,799.92	4,258.92	79.46	-2,461.70	2,462.90	1.08	640,255.76	593,705.70
10,158.00	91.28	272.27	7,799.16	4,258.16	82.45	-2,554.64	2,555.89	1.98	640,258.75	593,612.76
10,252.00	93.74	274.32	7,795.04	4,254.04	87.85	-2,648.38	2,649.77	3.41	640,264.15	593,519.02
10,345.00	93.47	274.65	7,789.20	4,248.20	95.10	-2,740.92	2,742.52	0.46	640,271.40	593,426.48
10,439.00	92.07	273.81	7,784.65	4,243.65	102.03	-2,834.55	2,836.36	1.74	640,278.33	593,332.85
10,532.00	92.24	273.81	7,781.16	4,240.16	108.20	-2,927.28	2,929.26	0.18	640,284.50	593,240.12
10,626.00	91.45	273.26	7,778.13	4,237.13	114.00	-3,021.05	3,023.19	1.02	640,290.30	593,146.35
10,721.00	92.15	273.61	7,775.15	4,234.15	119.69	-3,115.83	3,118.12	0.82	640,295.99	593,051.57
10,813.00	91.71	273.62	7,772.05	4,231.05	125.48	-3,207.59	3,210.04	0.48	640,301.78	592,959.81
10,906.00	91.45	273.72	7,769.48	4,228.48	131.43	-3,300.37	3,302.98	0.30	640,307.73	592,867.03
10,999.00	90.84	273.18	7,767.62	4,226.62	137.03	-3,393.18	3,395.95	0.88	640,313.33	592,774.22
11,094.00	91.54	272.98	7,765.65	4,224.65	142.13	-3,488.02	3,490.92	0.77	640,318.43	592,679.38
11,187.00	93.21	273.51	7,761.80	4,220.80	147.39	-3,580.79	3,583.82	1.88	640,323.69	592,586.61
11,281.00	93.03	273.25	7,756.68	4,215.68	152.93	-3,674.49	3,677.66	0.34	640,329.23	592,492.91
11,375.00	92.86	273.74	7,751.85	4,210.85	158.65	-3,768.19	3,771.52	0.55	640,334.95	592,399.21
11,468.00	92.59	273.03	7,747.43	4,206.43	164.13	-3,860.92	3,864.40	0.82	640,340.43	592,306.48
11,562.00	93.03	273.92	7,742.82	4,201.82	169.82	-3,954.63	3,958.26	1.06	640,346.12	592,212.77
11,656.00	91.45	272.23	7,739.15	4,198.15	174.86	-4,048.42	4,052.18	2.46	640,351.16	592,118.98

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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,750.00	91.01	271.95	7,737.13	4,196.13	178.29	-4,142.33	4,146.15	0.55	640,354.59	592,025.07
11,845.00	90.84	271.78	7,735.60	4,194.60	181.38	-4,237.27	4,241.14	0.25	640,357.68	591,930.13
11,972.00	90.57	271.98	7,734.03	4,193.03	185.55	-4,364.19	4,368.13	0.26	640,361.85	591,803.21
12,050.00	90.57	271.98	7,733.26	4,192.26	188.24	-4,442.14	4,446.12	0.00	640,364.54	591,725.26
Proj To Bit-12050.00'MD,90.57°INC,271.98°AZI, 7733.26'TVD, 4446.12'VS, 188.24'N, -4442.14'E										

Targets										
Target Name	hit/miss/target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LT#2(BOA#1H)	-	0.00	0.00	7,781.00	80.61	-1,998.37	640,256.912	594,169.025	32° 45' 35.226 N	104° 1' 37.217 W
- survey misses by 31.55ft at 9602.74ft MD (7811.00 TVD, 70.93 N, -1999.69 E)										
- Point										
LT#4(BOA#1H)	-	0.00	0.00	7,731.00	161.22	-3,996.75	640,337.525	592,170.650	32° 45' 36.080 N	104° 2' 0.617 W
- survey misses by 14.92ft at 11604.03ft MD (7740.86 TVD, 172.42 N, -3996.53 E)										
- Point										
LT#3(BOA#1H)	-	0.00	0.00	7,756.00	120.92	-2,997.56	640,297.219	593,169.838	32° 45' 35.653 N	104° 1' 48.917 W
- survey misses by 24.20ft at 10603.71ft MD (7778.73 TVD, 112.70 N, -2998.80 E)										
- Point										
PBHL(BOA#1)	-	0.00	0.00	7,753.48	182.80	-4,535.70	640,359.100	591,631.700	32° 45' 36.309 N	104° 2' 6.928 W
- survey misses by 95.87ft at 12050.00ft MD (7733.26 TVD, 188.24 N, -4442.14 E)										
- Point										

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/S (ft)	+E/-W (ft)	
12,050.00	7,733.26	188.24	-4,442.14	Proj To Bit-12050.00'MD,90.57°INC,271.98°AZI, 7733.26'TVD, 4446.12

Checked By: _____	Approved By: _____	Date: _____
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