



30-015-37105

EOG Resources, Inc.

Eddy County
Lucky Wolf 30 Fed Com
#1H
OH

Survey: MWD #1

Pathfinder X & Y Survey Report

27 July, 2009

PATHFINDER

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
Site:	Lucky Wolf 30 Fed Com	MD Reference:	WELL @ 3523.80ft (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	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Lucky Wolf 30 Fed Com		
Site Position:		Northing:	686,637.400 ft
From:	Map	Easting:	533,847.200 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 53' 15.353 N
		Longitude:	104° 13' 23.058 W
		Grid Convergence:	0.06 °

Well		#1H				
Well Position	+N/-S	0.00 ft	Northing:	686,637.400 ft	Latitude:	32° 53' 15.353 N
	+E/-W	0.00 ft	Easting:	533,847.200 ft	Longitude:	104° 13' 23.058 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,504.80 ft	

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	06/26/2009	8.16	60.75	49,166

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	88.04

Survey Program	Date	07/27/2009			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
5,707.00	10,980.00	MWD #1 (OH)	MWD	MWD - Standard	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
Site:	Lucky Wolf 30 Fed.Com	MD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
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)	
5,486.00	0.56	62.59	5,485.55	1,961.75	31.44	-37.07	-35.97	0.00	686,668.84	533,810.13	
5,707.00	0.97	56.10	5,706.53	2,182.73	32.98	-34.56	-33.41	0.19	686,670.38	533,812.64	
5,808.00	1.14	81.49	5,807.51	2,283.71	33.60	-32.85	-31.68	0.49	686,671.00	533,814.35	
5,871.00	3.25	81.80	5,870.46	2,346.66	33.95	-30.47	-29.29	3.35	686,671.35	533,816.73	
5,903.00	7.74	78.14	5,902.30	2,378.50	34.52	-27.46	-26.26	14.07	686,671.92	533,819.74	
5,935.00	12.93	80.44	5,933.77	2,409.97	35.56	-21.81	-20.59	16.27	686,672.96	533,825.39	
5,966.00	17.41	85.86	5,963.69	2,439.89	36.47	-13.76	-12.51	15.14	686,673.87	533,833.44	
5,998.00	22.16	93.02	5,993.79	2,469.99	36.50	-2.95	-1.70	16.64	686,673.90	533,844.25	
6,030.00	26.47	94.71	6,022.95	2,499.15	35.60	10.19	11.40	13.64	686,673.00	533,857.39	
6,061.00	30.34	93.87	6,050.21	2,526.41	34.50	24.89	26.05	12.55	686,671.90	533,872.09	
6,093.00	33.94	92.56	6,077.30	2,553.50	33.56	41.88	43.01	11.46	686,670.96	533,889.08	
6,125.00	37.37	92.65	6,103.30	2,579.50	32.71	60.51	61.60	10.72	686,670.11	533,907.71	
6,157.00	41.24	93.28	6,128.06	2,604.26	31.66	80.75	81.79	12.16	686,669.06	533,927.95	
6,189.00	44.85	91.89	6,151.44	2,627.64	30.68	102.57	103.56	11.66	686,668.08	533,949.77	
6,220.00	48.45	90.16	6,172.72	2,648.92	30.29	125.10	126.06	12.30	686,667.69	533,972.30	
6,252.00	51.88	89.09	6,193.21	2,669.41	30.45	149.67	150.62	11.02	686,667.85	533,996.87	
6,284.00	54.52	89.11	6,212.38	2,688.58	30.86	175.29	176.24	8.25	686,668.26	534,022.49	
6,316.00	57.68	88.74	6,230.23	2,706.43	31.36	201.84	202.79	9.92	686,668.76	534,049.04	
6,348.00	61.29	88.76	6,246.47	2,722.67	31.96	229.40	230.35	11.28	686,669.36	534,076.60	
6,380.00	64.19	89.15	6,261.13	2,737.33	32.47	257.83	258.79	9.13	686,669.87	534,105.03	
6,412.00	66.13	88.84	6,274.57	2,750.77	32.98	286.87	287.83	6.13	686,670.38	534,134.07	
6,443.00	67.36	88.78	6,286.81	2,763.01	33.58	315.34	316.31	3.97	686,670.98	534,162.54	
6,475.00	70.00	89.27	6,298.44	2,774.64	34.08	345.15	346.11	8.37	686,671.48	534,192.35	
6,479.58	70.24	89.23	6,300.00	2,776.20	34.14	349.45	350.41	5.29	686,671.54	534,196.65	
Top of Wolfcamp(As-Drilled)-6479.58°MD,70.24°INC,89.23°AZI, 6300.00°TVD, 350.42°VS, 34.14°N, 349.45°E											
6,507.00	71.67	88.97	6,308.95	2,785.15	34.55	375.37	376.33	5.29	686,671.95	534,222.57	
6,538.00	73.25	88.13	6,318.29	2,794.49	35.29	404.92	405.89	5.71	686,672.69	534,252.12	

Company: EOG Resources, Inc.
Project: Eddy County
Site: Lucky Wolf 30 Fed-Com
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H:
WELL @ 3523.80ft (19'KB Correction McVay #4)
WELL @ 3523.80ft (19'KB Correction McVay #4)
Grid:
Minimum Curvature
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)	
6,570.00	75.10	87.71	6,327.02	2,803.22	36.41	435.68	436.67	5.92	686,673.81	534,282.88	
6,602.00	79.58	87.01	6,334.03	2,810.23	37.85	466.86	467.88	14.16	686,675.25	534,314.06	
6,665.00	86.53	88.12	6,341.64	2,817.84	40.50	529.30	530.38	11.17	686,677.90	534,376.50	
6,729.00	87.23	89.27	6,345.12	2,821.32	41.96	593.19	594.28	2.10	686,679.36	534,440.39	
6,825.00	88.99	89.83	6,348.29	2,824.49	42.71	689.13	690.19	1.92	686,680.11	534,536.33	
6,920.00	89.16	89.91	6,349.82	2,826.02	42.93	784.12	785.13	0.20	686,680.33	534,631.32	
7,016.00	86.97	90.65	6,353.07	2,829.27	42.46	880.06	880.99	2.41	686,679.86	534,727.26	
7,111.00	87.49	90.76	6,357.66	2,833.86	41.29	974.94	975.78	0.56	686,678.69	534,822.14	
7,207.00	87.32	90.72	6,362.00	2,838.20	40.05	1,070.83	1,071.57	0.18	686,677.45	534,918.03	
7,302.00	87.93	90.19	6,365.94	2,842.14	39.30	1,165.75	1,166.41	0.85	686,676.70	535,012.95	
7,398.00	87.23	89.08	6,369.99	2,846.19	39.91	1,261.66	1,262.28	1.37	686,677.31	535,108.86	
7,494.00	85.47	89.67	6,376.11	2,852.31	40.95	1,357.45	1,358.06	1.93	686,678.35	535,204.65	
7,589.00	84.68	89.66	6,384.26	2,860.46	41.51	1,452.10	1,452.67	0.83	686,678.91	535,299.30	
7,684.00	87.67	89.89	6,390.60	2,866.80	41.88	1,546.88	1,547.40	3.16	686,679.28	535,394.08	
7,779.00	88.64	89.74	6,393.66	2,869.86	42.19	1,641.82	1,642.31	1.03	686,679.59	535,489.02	
7,875.00	89.43	89.28	6,395.27	2,871.47	43.01	1,737.81	1,738.26	0.95	686,680.41	535,585.01	
7,970.00	88.64	89.72	6,396.87	2,873.07	43.84	1,832.79	1,833.22	0.95	686,681.24	535,679.99	
8,066.00	88.29	88.77	6,399.44	2,875.64	45.10	1,928.74	1,929.16	1.05	686,682.50	535,775.94	
8,162.00	88.99	88.30	6,401.72	2,877.92	47.55	2,024.68	2,025.13	0.88	686,684.95	535,871.88	
8,257.00	88.72	88.79	6,403.62	2,879.82	49.97	2,119.63	2,120.10	0.59	686,687.37	535,966.83	
8,353.00	88.90	88.74	6,405.62	2,881.82	52.04	2,215.59	2,216.08	0.19	686,689.44	536,062.79	
8,448.00	90.84	89.00	6,405.83	2,882.03	53.91	2,310.57	2,311.06	2.06	686,691.31	536,157.77	
8,544.00	90.48	88.62	6,404.73	2,880.93	55.90	2,406.54	2,407.05	0.55	686,693.30	536,253.74	
8,639.00	88.11	88.84	6,405.89	2,882.09	58.01	2,501.50	2,502.02	2.51	686,695.41	536,348.70	
8,734.00	86.44	88.89	6,410.41	2,886.61	59.89	2,596.37	2,596.90	1.76	686,697.29	536,443.57	
8,830.00	87.05	88.62	6,415.86	2,892.06	61.97	2,692.20	2,692.74	0.69	686,699.37	536,539.40	
8,925.00	88.29	89.60	6,419.72	2,895.92	63.44	2,787.10	2,787.64	1.66	686,700.84	536,634.30	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
Site:	Lucky Wolf 30 Fed Com	MD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
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)	
9,020.00	87.76	90.60	6,423.00	2,899.20	63.28	2,882.05	2,882.52	1.19	686,700.68	536,729.25	
9,116.00	90.40	90.04	6,424.54	2,900.74	62.74	2,978.02	2,978.43	2.81	686,700.14	536,825.22	
9,211.00	89.34	89.81	6,424.75	2,900.95	62.87	3,073.02	3,073.37	1.14	686,700.27	536,920.22	
9,305.00	90.84	90.02	6,424.61	2,900.81	63.01	3,167.02	3,167.32	1.61	686,700.41	537,014.22	
9,401.00	89.78	89.39	6,424.09	2,900.29	63.50	3,263.01	3,263.28	1.28	686,700.90	537,110.21	
9,496.00	89.96	89.18	6,424.30	2,900.50	64.69	3,358.01	3,358.25	0.29	686,702.09	537,205.21	
9,591.00	88.64	89.12	6,425.46	2,901.66	66.09	3,452.99	3,453.23	1.39	686,703.49	537,300.19	
9,686.00	87.76	88.97	6,428.45	2,904.65	67.68	3,547.92	3,548.16	0.94	686,705.08	537,395.12	
9,781.00	90.40	89.32	6,429.97	2,906.17	69.09	3,642.89	3,643.13	2.80	686,706.49	537,490.09	
9,876.00	91.10	89.29	6,428.73	2,904.93	70.25	3,737.88	3,738.09	0.74	686,707.65	537,585.08	
9,972.00	91.71	89.45	6,426.38	2,902.58	71.30	3,833.84	3,834.04	0.66	686,708.70	537,681.04	
10,067.00	91.10	89.60	6,424.05	2,900.25	72.09	3,928.81	3,928.98	0.66	686,709.49	537,776.01	
10,162.00	89.78	87.95	6,423.32	2,899.52	74.12	4,023.78	4,023.96	2.22	686,711.52	537,870.98	
10,257.00	88.90	88.14	6,424.41	2,900.61	77.36	4,118.72	4,118.95	0.95	686,714.76	537,965.92	
10,353.00	89.60	88.13	6,425.67	2,901.87	80.48	4,214.66	4,214.95	0.73	686,717.88	538,061.86	
10,448.00	88.81	86.71	6,426.99	2,903.19	84.76	4,309.55	4,309.93	1.71	686,722.16	538,156.75	
10,544.00	90.40	86.25	6,427.65	2,903.85	90.65	4,405.36	4,405.89	1.72	686,728.05	538,252.56	
10,639.00	90.92	86.76	6,426.55	2,902.75	96.45	4,500.18	4,500.84	0.77	686,733.85	538,347.38	
10,735.00	89.60	86.21	6,426.12	2,902.32	102.33	4,596.00	4,596.81	1.49	686,739.73	538,443.20	
10,830.00	89.78	86.27	6,426.63	2,902.83	108.56	4,690.79	4,691.76	0.20	686,745.96	538,537.99	
10,920.00	90.48	86.15	6,426.43	2,902.63	114.51	4,780.59	4,781.71	0.79	686,751.91	538,627.79	
10,980.00	90.48	86.15	6,425.92	2,902.12	118.54	4,840.45	4,841.68	0.00	686,755.94	538,687.65	
Proj To Bit @ 10980' MD											

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
Site:	Lucky Wolf 30 Fed Com	MD Reference:	WELL @ 3523.80ft (19'KB Correction McVay #4)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
LT2(#1H)	- survey misses by 45.90ft at 8137.01ft MD (6401.24 TVD, 46.84 N, 1999.71 E)	0.00	0.00	6,385.00	89.76	1,999.00	686,727.160	535,846.200	32° 53' 16.220 N 104° 12' 59.614 W
	- Point								
LT4(#1H)	- survey misses by 70.13ft at 10137.73ft MD (6423.29 TVD, 73.34 N, 3999.52 E)	0.00	0.00	6,420.00	143.38	3,998.00	686,780.780	537,845.200	32° 53' 16.728 N 104° 12' 36.170 W
	- Point								
PBHL(LW#1)	- survey misses by 75.25ft at 10980.00ft MD (6425.92 TVD, 118.54 N, 4840.45 E)	0.00	0.00	6,433.47	167.50	4,897.10	686,804.900	538,744.300	32° 53' 16.957 N 104° 12' 25.625 W
	- Point								
LT1(#1H)	- survey misses by 22.38ft at 7135.00ft MD (6358.72 TVD, 40.97 N, 998.91 E)	0.00	0.00	6,363.00	62.94	999.00	686,700.340	534,846.200	32° 53' 15.966 N 104° 13' 11.341 W
	- Point								
LT3(#1H)	- survey misses by 57.23ft at 9136.00ft MD (6424.44 TVD, 62.74 N, 2998.03 E)	0.00	0.00	6,405.00	116.56	2,998.00	686,753.960	536,845.200	32° 53' 16.474 N 104° 12' 47.897 W
	- Point								

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,479.58	6,300.00	34.14	349.45	Top of Wolfcamp(As-Drilled)-6479.58'MD,70.24°INC,89.23°AZI, 6300.0
10,980.00	6,425.92	118.54	4,840.45	Proj To Bit @ 10980' MD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------