

30-015-36579

EOG Resources, Inc.

Eddy County

Sand Tank 18 Fed Com #3H

Sand Tank #3H

OH

Survey: MWD

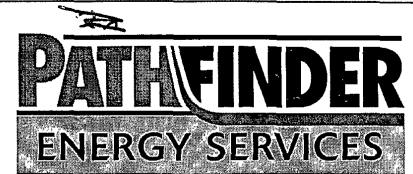
Pathfinder X & Y Survey Report

07 January, 2009



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.94°

Magnetic Field
Strength: 49160.5nT
Dip Angle: 60.67°
Date: 12/9/2008
Model: IGRF200510



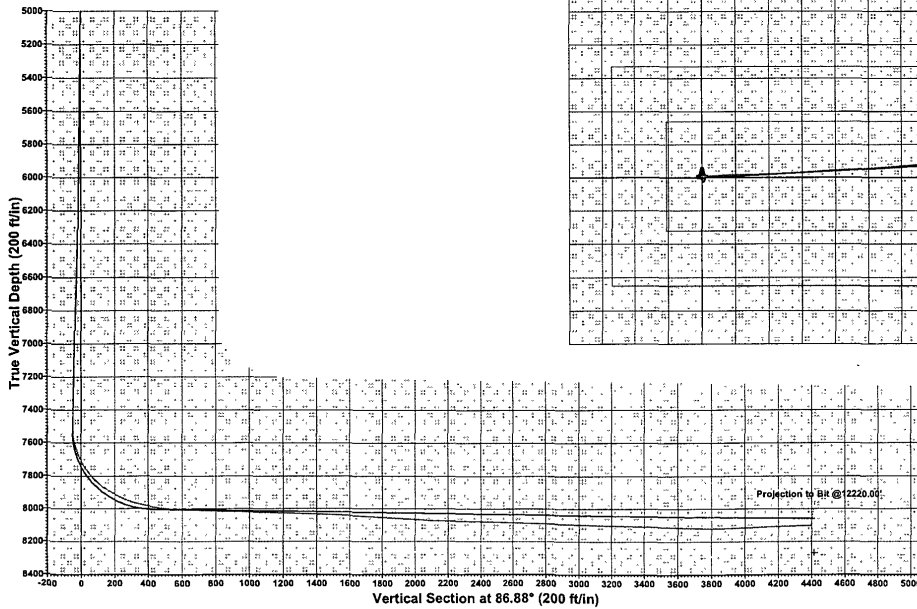
EOW

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLog	TFace	VSec
1	7518.00	1.39	237.85	7516.91	-0.77	-51.25	0.00	0.00	-51.21
2	8270.79	89.20	86.82	8004.00	19.67	418.59	12.01	-151.03	419.04
3	8271.04	89.20	86.83	8004.00	19.68	418.54	4.00	90.00	419.29
4	12267.69	89.20	86.83	8059.81	240.67	4408.98	0.00	0.00	4415.54
5	12267.91	89.20	86.83	8059.81	240.68	4409.21	0.00	0.00	4415.78
PBHL(Sand Tank #3H)									

WELL DETAILS: Sand Tank #3H						
Ground Elevation: 3521.40						
RKB Elevation: WELL @ 3539.40ft (McVay 4 RKB= 18')						
Rig Name: McVay 4 RKB= 18'						
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	636421.700	599702.100	32° 44' 57.112 N	104° 0' 32.560 W	

Project: Eddy County
Site: Sand Tank 18 Fed Com #3H
Well: Sand Tank #3H
Wellbore: OH
Plan: Plan #2 (Sand Tank #3H/OH)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N-S	+E-W	Northing	Easting	Shape
PBHL(Sand Tank #3H)	8268.00	240.90	4409.20	636662.600	604111.300	Point



PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Plan, Plan #2 (Sand Tank #3H/OH)	
Created By: Aaron Pullin	Date: 14.35, January 07 2009
Checked: _____	Date: _____

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well Sand Tank #3H
Project:	Eddy County	TVD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Site:	Sand Tank 18 Fed Com #3H	MD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Well:	Sand Tank #3H	North Reference:	Grid:
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Single User Db

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		Sand Tank 18 Fed Com #3H			
Site Position:		Northing:	636,421.700 ft	Latitude:	32° 44' 57.112 N
From:	Map	Easting:	599,702.100 ft	Longitude:	104° 0' 32.560 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.18 °

Well:		Sand Tank #3H				
Well Position	+N/-S	0.00 ft	Northing:	636,421.700 ft	Latitude:	32° 44' 57.112 N
	+E/-W	0.00 ft	Easting:	599,702.100 ft	Longitude:	104° 0' 32.560 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	3,521.40 ft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/9/2008	8.12	60.67	49,160

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	86.88	

Pathfinder Energy Services

Pathfinder X & Y Survey Report

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Project:	Eddy County	TVD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Site:	Sand Tank 18 Fed Com #3H	MD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Well:	Sand Tank #3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Single User Db

Survey Program		Date 1/7/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	7,400.00	GYRO (OH)	CT_GYRO_MS	Continuous Gyro Multishot
7,460.00	12,220.00	MWD (OH)	MWD	MWD - Standard

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
7,400.00	1.37	271.39	7,398.94	3,859.54	0.10	-48.76	-48.68	0.00	636,421.80	599,653.34	
7,460.00	0.88	237.72	7,458.93	3,919.53	-0.13	-49.87	-49.80	1.34	636,421.57	599,652.23	
7,492.00	0.53	99.84	7,490.93	3,951.53	-0.29	-49.93	-49.87	4.13	636,421.41	599,652.17	
7,523.00	3.34	82.41	7,521.91	3,982.51	-0.19	-48.89	-48.83	9.16	636,421.51	599,653.21	
7,554.00	6.95	79.83	7,552.78	4,013.38	0.26	-46.15	-46.07	11.67	636,421.96	599,655.95	
7,586.00	10.64	79.72	7,584.40	4,045.00	1.13	-41.34	-41.21	11.53	636,422.83	599,660.76	
7,617.00	14.60	79.32	7,614.64	4,075.24	2.36	-34.68	-34.50	12.78	636,424.06	599,667.42	
7,649.00	18.47	79.66	7,645.31	4,105.91	4.02	-25.73	-25.47	12.10	636,425.72	599,676.37	
7,681.00	22.25	81.60	7,675.31	4,135.91	5.82	-14.74	-14.40	12.00	636,427.52	599,687.36	
7,712.00	25.94	84.42	7,703.60	4,164.20	7.33	-2.18	-1.78	12.47	636,429.03	599,699.92	
7,743.00	29.63	87.03	7,731.03	4,191.63	8.39	12.22	12.66	12.53	636,430.09	599,714.32	
7,774.00	33.33	88.06	7,757.46	4,218.06	9.08	28.39	28.85	12.06	636,430.78	599,730.49	
7,805.00	37.02	86.72	7,782.79	4,243.39	9.90	46.23	46.70	12.16	636,431.60	599,748.33	
7,836.00	40.89	86.38	7,806.90	4,267.50	11.07	65.68	66.19	12.50	636,432.77	599,767.78	
7,867.00	45.11	86.59	7,829.56	4,290.16	12.37	86.78	87.32	13.62	636,434.07	599,788.88	
7,899.00	49.15	86.93	7,851.33	4,311.93	13.69	110.19	110.77	12.65	636,435.39	599,812.29	
7,930.00	53.29	87.80	7,870.74	4,331.34	14.80	134.32	134.93	13.53	636,436.50	599,836.42	
7,961.00	56.45	88.06	7,888.58	4,349.18	15.71	159.66	160.28	10.22	636,437.41	599,861.76	
7,992.00	59.00	88.43	7,905.13	4,365.73	16.51	185.85	186.48	8.29	636,438.21	599,887.95	
8,022.00	61.64	88.51	7,919.98	4,380.58	17.21	211.91	212.53	8.80	636,438.91	599,914.01	
8,054.00	64.28	88.30	7,934.53	4,395.13	18.00	240.39	241.02	8.27	636,439.70	599,942.49	

Pathfinder Energy Services
Pathfinder X & Y Survey Report

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well: Sand Tank #3H
Project:	Eddy County	TVD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Site:	Sand Tank 18 Fed Com #3H	MD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Well:	Sand Tank #3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Single User Db

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,086.00	67.53	88.79	7,947.59	4,408.19	18.74	269.59	270.21	10.25	636,440.44	599,971.69
8,117.00	71.14	89.51	7,958.53	4,419.13	19.17	298.59	299.19	11.85	636,440.87	600,000.69
8,148.00	75.27	89.47	7,967.49	4,428.09	19.43	328.26	328.83	13.32	636,441.13	600,030.36
8,179.00	77.65	88.33	7,974.74	4,435.34	20.01	358.39	358.95	8.47	636,441.71	600,060.49
8,210.00	78.88	87.94	7,981.05	4,441.65	21.00	388.73	389.29	4.15	636,442.70	600,090.83
8,241.00	78.96	87.81	7,987.01	4,447.61	22.13	419.13	419.71	0.49	636,443.83	600,121.23
8,273.00	80.81	87.94	7,992.63	4,453.23	23.30	450.61	451.21	5.80	636,445.00	600,152.71
8,303.00	83.10	87.03	7,996.82	4,457.42	24.60	480.28	480.91	8.20	636,446.30	600,182.38
8,397.00	87.58	86.68	8,004.46	4,465.06	29.74	573.80	574.57	4.78	636,451.44	600,275.90
8,490.00	86.97	85.29	8,008.88	4,469.48	36.24	666.47	667.45	1.63	636,457.94	600,368.57
8,583.00	87.58	85.81	8,013.30	4,473.90	43.45	759.08	760.32	0.86	636,465.15	600,461.18
8,676.00	88.55	87.66	8,016.44	4,477.04	48.75	851.87	853.26	2.25	636,470.45	600,553.97
8,769.00	88.37	86.78	8,018.94	4,479.54	53.25	944.73	946.23	0.97	636,474.95	600,646.83
8,862.00	88.55	86.11	8,021.44	4,482.04	59.02	1,037.52	1,039.19	0.75	636,480.72	600,739.62
8,956.00	88.55	85.40	8,023.82	4,484.42	65.97	1,131.23	1,133.14	0.76	636,487.67	600,833.33
9,049.00	88.02	86.19	8,026.60	4,487.20	72.79	1,223.93	1,226.08	1.02	636,494.49	600,926.03
9,141.00	87.93	85.93	8,029.85	4,490.45	79.11	1,315.66	1,318.02	0.30	636,500.81	601,017.76
9,233.00	88.29	85.31	8,032.89	4,493.49	86.13	1,407.34	1,409.94	0.78	636,507.83	601,109.44
9,326.00	87.58	84.90	8,036.24	4,496.84	94.06	1,499.94	1,502.84	0.88	636,515.76	601,202.04
9,420.00	86.26	84.36	8,041.29	4,501.89	102.84	1,593.39	1,596.63	1.52	636,524.54	601,295.49
9,513.00	86.35	83.77	8,047.28	4,507.88	112.44	1,685.70	1,689.32	0.64	636,534.14	601,387.80
9,607.00	87.23	83.82	8,052.55	4,513.15	122.59	1,779.00	1,783.04	0.94	636,544.29	601,481.10
9,700.00	86.26	84.44	8,057.83	4,518.43	132.08	1,871.36	1,875.78	1.24	636,553.78	601,573.46
9,794.00	86.53	84.65	8,063.74	4,524.34	141.00	1,964.75	1,969.51	0.36	636,562.70	601,666.85
9,888.00	86.44	85.32	8,069.50	4,530.10	149.20	2,058.21	2,063.28	0.72	636,570.90	601,760.31
9,982.00	88.20	86.50	8,073.90	4,534.50	155.90	2,151.87	2,157.16	2.25	636,577.60	601,853.97
10,076.00	88.64	86.44	8,076.49	4,537.09	161.68	2,245.65	2,251.12	0.47	636,583.38	601,947.75

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Pathfinder X & Y Survey Report

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Project:	Eddy County	TVD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Site:	Sand Tank 18 Fed Com #3H	MD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Well:	Sand Tank #3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Single User.Db

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
10,170.00	89.43	86.03	8,078.07	4,538.67	167.85	2,339.44	2,345.10	0.95	636,589.55	602,041.54	
10,263.00	88.72	86.88	8,079.57	4,540.17	173.60	2,432.24	2,438.09	1.19	636,595.30	602,134.34	
10,356.00	88.11	88.71	8,082.14	4,542.74	177.18	2,525.14	2,531.04	2.07	636,598.88	602,227.24	
10,450.00	87.93	88.66	8,085.39	4,545.99	179.34	2,619.06	2,624.93	0.20	636,601.04	602,321.16	
10,574.00	88.55	88.12	8,089.20	4,549.80	182.82	2,742.95	2,748.83	0.66	636,604.52	602,445.05	
10,697.00	88.46	89.15	8,092.41	4,553.01	185.75	2,865.87	2,871.73	0.84	636,607.45	602,567.97	
10,822.00	88.02	88.68	8,096.25	4,556.85	188.11	2,990.79	2,996.59	0.51	636,609.81	602,692.89	
10,947.00	88.11	84.77	8,100.47	4,561.07	195.25	3,115.49	3,121.50	3.13	636,616.95	602,817.59	
11,008.00	88.37	85.21	8,102.34	4,562.94	200.57	3,176.22	3,182.43	0.84	636,622.27	602,878.32	
11,133.00	88.46	85.40	8,105.80	4,566.40	210.80	3,300.76	3,307.34	0.17	636,632.50	603,002.86	
11,256.00	88.81	85.85	8,108.73	4,569.33	220.18	3,423.36	3,430.27	0.46	636,641.88	603,125.46	
11,383.00	87.93	85.86	8,112.34	4,572.94	229.36	3,549.98	3,557.20	0.69	636,651.06	603,252.08	
11,511.00	87.23	86.31	8,117.75	4,578.35	238.09	3,677.57	3,685.07	0.65	636,659.79	603,379.67	
11,604.00	89.34	86.03	8,120.53	4,581.13	244.30	3,770.31	3,778.02	2.29	636,666.00	603,472.41	
11,698.00	91.63	87.39	8,119.74	4,580.34	249.69	3,864.14	3,872.01	2.83	636,671.39	603,566.24	
11,793.00	92.33	87.84	8,116.45	4,577.05	253.64	3,959.00	3,966.94	0.88	636,675.34	603,661.10	
11,920.00	91.89	88.35	8,111.78	4,572.38	257.86	4,085.85	4,093.83	0.53	636,679.56	603,787.95	
12,048.00	91.98	88.57	8,107.46	4,568.06	261.30	4,213.73	4,221.70	0.19	636,683.00	603,915.83	
12,142.00	91.89	88.32	8,104.28	4,564.88	263.85	4,307.64	4,315.62	0.28	636,685.55	604,009.74	
12,220.00	91.89	88.32	8,101.71	4,562.31	266.14	4,385.56	4,393.55	0.00	636,687.84	604,087.66	
Projection to Bit @ 12220.00'											

Pathfinder Energy Services

Pathfinder X & Y Survey Report

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Project:	Eddy County	TVD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Site:	Sand Tank 18 Fed Com #3H	MD Reference:	WELL @ 3539.40ft (McVay 4 RKB= 18')
Well:	Sand Tank #3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-2003.16 Single User.Db

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
IPBHL(Sand Tank #3H	0.00	0.00	8,268.00	240.90	4,409.20	636,662.600	604,111.300	32° 44' 59.359 N	103° 59' 40.923 W
- survey misses by 169.85ft at 12220.00ft MD (8101.71 TVD, 266.14 N, 4385.56 E)									
- Point									

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
12,220.00	8,101.71	266.14	4,385.56	Projection to Bit @12220.00'

Checked By: _____ Approved By: _____ Date: _____