

30-015-37394



Marbob

**Eddy County
Boyles Fee Com
#1H
OH**

Plan: Plan #1

Pathfinder X & Y Planning Report

24 November, 2009

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: Boyles Fee Com
Well: #1H
Wellbore: OH
Design: Plan #1

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

Well #1H
WELL @ 2907.00ft (Original Well Elev)
WELL @ 2907.00ft (Original Well Elev)
Gnd
Minimum Curvature
Midland Database

Project: Eddy County

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: Boyles Fee Com

Site Position:
From: Map
Position Uncertainty: 0.00 ft
Northing: 386,911.300 ft
Easting: 599,103.800 ft
Slot Radius:
Latitude: 32° 3' 47.990 N
Longitude: 104° 0' 48.308 W
Grid Convergence: 0.17 °

Well: #1H
Well Position: +N/-S 0.00 ft
+E/-W 0.00 ft
Position Uncertainty: 0.00 ft
Northing: 386,911.300 ft
Easting: 599,103.800 ft
Wellhead Elevation: ft
Latitude: 32° 3' 47.990 N
Longitude: 104° 0' 48.308 W
Ground Level: 2,885.00 ft

Wellbore: OH
Magnetics: Model Name Sample Date Declination (°) Dip Angle (°) Field Strength (nT)
IGRF200510 11/17/2009 7.95 60.01 48,660

Design: Plan #1

Audit Notes:
Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section: Depth From (TVD) (ft) +N/-S (ft) +E/-W (ft) Direction (°)
0.00 0.00 0.00 95.14

Survey Tool Program Date 11/24/2009

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	6,655.19	Plan #1 (OH)	MWD	MWD - Standard



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Planned Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
0.00	0.00	0.00	0.00	-2,907.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
100.00	0.00	0.00	100.00	-2,807.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
200.00	0.00	0.00	200.00	-2,707.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
300.00	0.00	0.00	300.00	-2,607.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
400.00	0.00	0.00	400.00	-2,507.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
500.00	0.00	0.00	500.00	-2,407.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
600.00	0.00	0.00	600.00	-2,307.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
700.00	0.00	0.00	700.00	-2,207.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
800.00	0.00	0.00	800.00	-2,107.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
900.00	0.00	0.00	900.00	-2,007.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,000.00	0.00	0.00	1,000.00	-1,907.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,100.00	0.00	0.00	1,100.00	-1,807.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,200.00	0.00	0.00	1,200.00	-1,707.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,300.00	0.00	0.00	1,300.00	-1,607.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,400.00	0.00	0.00	1,400.00	-1,507.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,500.00	0.00	0.00	1,500.00	-1,407.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,600.00	0.00	0.00	1,600.00	-1,307.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,700.00	0.00	0.00	1,700.00	-1,207.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,800.00	0.00	0.00	1,800.00	-1,107.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
1,900.00	0.00	0.00	1,900.00	-1,007.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,000.00	0.00	0.00	2,000.00	-907.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,100.00	0.00	0.00	2,100.00	-807.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,200.00	0.00	0.00	2,200.00	-707.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,300.00	0.00	0.00	2,300.00	-607.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,400.00	0.00	0.00	2,400.00	-507.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,500.00	0.00	0.00	2,500.00	-407.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	
2,600.00	0.00	0.00	2,600.00	-307.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80	



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Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	2,700.00	-207.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80
2,800.00	0.00	0.00	2,800.00	-107.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80
2,900.00	0.00	0.00	2,900.00	-7.00	0.00	0.00	0.00	0.00	386,911.30	599,103.80
2,972.50	0.00	0.00	2,972.50	65.50	0.00	0.00	0.00	0.00	386,911.30	599,103.80
2,975.00	0.30	95.14	2,975.00	68.00	0.00	0.01	0.01	12.00	386,911.30	599,103.81
3,000.00	3.30	95.14	2,999.98	92.98	-0.07	0.79	0.79	12.00	386,911.23	599,104.59
3,025.00	6.30	95.14	3,024.89	117.89	-0.26	2.87	2.88	12.00	386,911.04	599,106.67
3,050.00	9.30	95.14	3,049.66	142.66	-0.56	6.25	6.28	12.00	386,910.74	599,110.05
3,075.00	12.30	95.14	3,074.21	167.21	-0.98	10.92	10.96	12.00	386,910.32	599,114.72
3,100.00	15.30	95.14	3,098.49	191.49	-1.52	16.85	16.92	12.00	386,909.78	599,120.65
3,125.00	18.30	95.14	3,122.42	215.42	-2.16	24.05	24.15	12.00	386,909.14	599,127.85
3,150.00	21.30	95.14	3,145.94	238.94	-2.92	32.48	32.61	12.00	386,908.38	599,136.28
3,175.00	24.30	95.14	3,168.98	261.98	-3.79	42.13	42.30	12.00	386,907.51	599,145.93
3,200.00	27.30	95.14	3,191.49	284.49	-4.76	52.96	53.18	12.00	386,906.54	599,156.76
3,225.00	30.30	95.14	3,213.40	306.40	-5.84	64.96	65.22	12.00	386,905.46	599,168.76
3,250.00	33.30	95.14	3,234.64	327.64	-7.02	78.08	78.39	12.00	386,904.28	599,181.88
3,275.00	36.30	95.14	3,255.17	348.17	-8.30	92.28	92.66	12.00	386,903.00	599,196.08
3,300.00	39.30	95.14	3,274.92	367.92	-9.67	107.54	107.98	12.00	386,901.63	599,211.34
3,325.00	42.30	95.14	3,293.84	386.84	-11.14	123.81	124.31	12.00	386,900.16	599,227.61
3,350.00	45.30	95.14	3,311.89	404.89	-12.69	141.04	141.61	12.00	386,898.61	599,244.84
3,375.00	48.30	95.14	3,329.00	422.00	-14.32	159.19	159.83	12.00	386,896.98	599,262.99
3,400.00	51.30	95.14	3,345.14	438.14	-16.03	178.20	178.92	12.00	386,895.27	599,282.00
3,425.00	54.30	95.14	3,360.25	453.25	-17.81	198.03	198.83	12.00	386,893.49	599,301.83
3,450.00	57.30	95.14	3,374.30	467.30	-19.67	218.62	219.51	12.00	386,891.63	599,322.42
3,475.00	60.30	95.14	3,387.25	480.25	-21.58	239.92	240.89	12.00	386,889.72	599,343.72
3,500.00	63.30	95.14	3,399.07	492.07	-23.55	261.86	262.92	12.00	386,887.75	599,365.66
3,525.00	66.30	95.14	3,409.71	502.71	-25.58	284.38	285.53	12.00	386,885.72	599,388.18



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3,550.00	69.29	95.14	3,419.16	512.16	-27.65	307.43	308.68	12.00	386,883.65	599,411.23
3,575.00	72.29	95.14	3,427.38	520.38	-29.77	330.95	332.28	12.00	386,881.53	599,434.75
3,600.00	75.29	95.14	3,434.36	527.36	-31.92	354.85	356.29	12.00	386,879.38	599,458.65
3,625.00	78.29	95.14	3,440.07	533.07	-34.10	379.09	380.62	12.00	386,877.20	599,482.89
3,650.00	81.29	95.14	3,444.50	537.50	-36.30	403.59	405.22	12.00	386,875.00	599,507.39
3,675.00	84.29	95.14	3,447.63	540.63	-38.53	428.29	430.02	12.00	386,872.77	599,532.09
3,700.00	87.29	95.14	3,449.47	542.47	-40.76	453.12	454.95	12.00	386,870.54	599,556.92
3,722.56	90.00	95.14	3,450.00	543.00	-42.78	475.58	477.50	12.00	386,868.52	599,579.38
3,800.00	90.00	95.14	3,450.00	543.00	-49.72	552.71	554.94	0.00	386,861.58	599,656.51
3,900.00	90.00	95.14	3,450.00	543.00	-58.68	652.31	654.94	0.00	386,852.62	599,756.11
4,000.00	90.00	95.14	3,450.00	543.00	-67.64	751.91	754.94	0.00	386,843.66	599,855.71
4,100.00	90.00	95.14	3,450.00	543.00	-76.59	851.51	854.94	0.00	386,834.71	599,955.31
4,200.00	90.00	95.14	3,450.00	543.00	-85.55	951.10	954.94	0.00	386,825.75	600,054.90
4,300.00	90.00	95.14	3,450.00	543.00	-94.51	1,050.70	1,054.94	0.00	386,816.79	600,154.50
4,400.00	90.00	95.14	3,450.00	543.00	-103.47	1,150.30	1,154.94	0.00	386,807.83	600,254.10
4,500.00	90.00	95.14	3,450.00	543.00	-112.43	1,249.90	1,254.94	0.00	386,798.87	600,353.70
4,600.00	90.00	95.14	3,450.00	543.00	-121.39	1,349.50	1,354.94	0.00	386,789.91	600,453.30
4,700.00	90.00	95.14	3,450.00	543.00	-130.35	1,449.09	1,454.94	0.00	386,780.95	600,552.89
4,800.00	90.00	95.14	3,450.00	543.00	-139.31	1,548.69	1,554.94	0.00	386,771.99	600,652.49
4,900.00	90.00	95.14	3,450.00	543.00	-148.27	1,648.29	1,654.94	0.00	386,763.03	600,752.09
5,000.00	90.00	95.14	3,450.00	543.00	-157.22	1,747.89	1,754.94	0.00	386,754.08	600,851.69
5,100.00	90.00	95.14	3,450.00	543.00	-166.18	1,847.49	1,854.94	0.00	386,745.12	600,951.29
5,200.00	90.00	95.14	3,450.00	543.00	-175.14	1,947.08	1,954.94	0.00	386,736.16	601,050.88
5,300.00	90.00	95.14	3,450.00	543.00	-184.10	2,046.68	2,054.94	0.00	386,727.20	601,150.48
5,400.00	90.00	95.14	3,450.00	543.00	-193.06	2,146.28	2,154.94	0.00	386,718.24	601,250.08
5,500.00	90.00	95.14	3,450.00	543.00	-202.02	2,245.88	2,254.94	0.00	386,709.28	601,349.68
5,600.00	90.00	95.14	3,450.00	543.00	-210.98	2,345.47	2,354.94	0.00	386,700.32	601,449.27



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5,700.00	90.00	95.14	3,450.00	543.00	-219.94	2,445.07	2,454.94	0.00	386,691.36	601,548.87
5,800.00	90.00	95.14	3,450.00	543.00	-228.90	2,544.67	2,554.94	0.00	386,682.40	601,648.47
5,900.00	90.00	95.14	3,450.00	543.00	-237.86	2,644.27	2,654.94	0.00	386,673.44	601,748.07
6,000.00	90.00	95.14	3,450.00	543.00	-246.81	2,743.87	2,754.94	0.00	386,664.49	601,847.67
6,100.00	90.00	95.14	3,450.00	543.00	-255.77	2,843.46	2,854.94	0.00	386,655.53	601,947.26
6,200.00	90.00	95.14	3,450.00	543.00	-264.73	2,943.06	2,954.94	0.00	386,646.57	602,046.86
6,300.00	90.00	95.14	3,450.00	543.00	-273.69	3,042.66	3,054.94	0.00	386,637.61	602,146.46
6,400.00	90.00	95.14	3,450.00	543.00	-282.65	3,142.26	3,154.94	0.00	386,628.65	602,246.06
6,500.00	90.00	95.14	3,450.00	543.00	-291.61	3,241.86	3,254.94	0.00	386,619.69	602,345.66
6,600.00	90.00	95.14	3,450.00	543.00	-300.57	3,341.45	3,354.94	0.00	386,610.73	602,445.25
6,655.19	90.00	95.14	3,450.00	543.00	-305.51	3,396.42	3,410.13	0.00	386,605.79	602,500.22

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(BFC#1H)	0.00	0.00	3,450.00	-305.80	3,396.40	386,605.500	602,500.200	32° 3' 44.863 N	104° 0' 8.849 W
- plan hits target									
- Point									

Checked By: _____ Approved By: _____ Date: _____

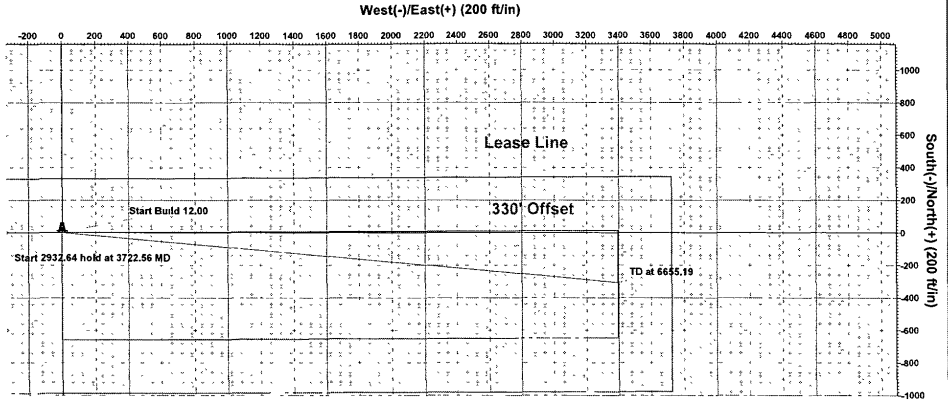
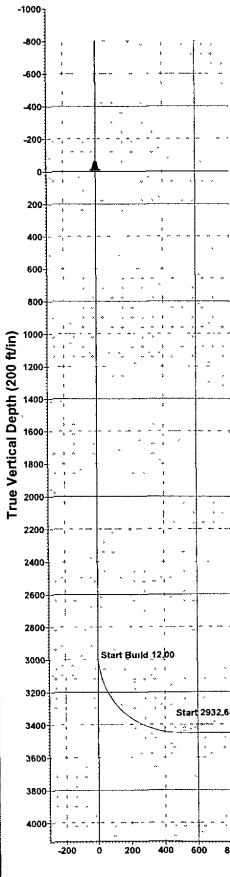


Project: Eddy County
Site: Boyles Fee Com
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Wellbore: OH
Plan: Plan #1 (#1H/OH)



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.78°
Magnetic Field
Strength: 48660.2snT
Dip Angle: 60.04°

PATHFINDER



SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2972.56	0.00	0.00	2972.56	0.00	0.00	0.00	0.00	0.00
3	3722.56	90.00	95.14	3450.00	-42.78	475.58	12.00	95.14	477.50
4	6655.19	90.00	95.14	3450.00	-305.51	3396.42	0.00	0.00	3410.13 PBHL(BFC#1H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL(BFC#1H)	3450.00	-305.80	3396.40	386605.500	602560.200
				Point	

WELL DETAILS #1H						
Ground Elevation	2885.00					
RKB Elevation	WELL @ 2907.00ft (Original Well Elev)					
Rig Name	Original Well Elev					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	386911.300	599103.800	32° 3' 47.990 N	104° 0' 48.308 W	

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: Gnd

Plan Plan #1 (#1H/OH)	
Created By: Nate Bingham	Date: 10/18, November 24, 2009
Checked: _____	Date: _____