



Marbob

Eddy County
Wild Ride
#1H
OH

30-015-36678

Survey: MWD #1

Pathfinder X & Y Survey Report

17 May, 2010

PATHFINDER



Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
 Project: Eddy County
 Site: Wild Ride
 Well: #1H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #1H
 TVD Reference: WELL @ 3815.00ft (Patriot #6)
 MD Reference: WELL @ 3815.00ft (Patriot #6)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: 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: Wild Ride

Site Position: Northing: 369,591.900 ft Latitude: 32° 0' 57.924 N
 Easting: 472,046.100 ft Longitude: 104° 25' 24.688 W
 Position Uncertainty: Slot Radius: 0.00 ft Grid Convergence: -0.05°

Well: #1H
 Well Position: +N/-S 0.00 ft Latitude: 32° 0' 57.924 N
 +E/-W 0.00 ft Longitude: 104° 25' 24.688 W
 Position Uncertainty: Wellhead Elevation: 0.00 ft Ground Level: 3,798.00 ft

Wellbore: OH

Magnetics: Model Name: IGRF200510 Sample Date: 05/11/2010 Declination (°): 8.07 Dip Angle (°): 59.89 Field Strength (nT): 48,532

Design: OH

Audit Notes:

Version: 1.0

Phase: ACTUAL

Tie On Depth: 0.00

Vertical Section:

Depth From (TVD) (ft): 0.00
 +N/-S (ft): 0.00

+E/-W (ft): 0.00
 Direction (°): 179.97



Pathfinder

Pathfinder X & Y Survey Report



Company: Maribob
Project: Eddy County
Site: Wild Ride
Well: #1H
Wellbore: OH
Design: OH

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

Well #1H
WELL @ 3815.00ft (Patriot #6)
WELL @ 3815.00ft (Patriot #6)
Grid
Minimum Curvature
Midland Database

Survey Program Date 05/17/2010

From (ft)	To (ft)	Survey (Wellbore)
100.00	7,000.00	GYRO (OH)
7,099.00	10,505.00	MWD #1 (OH)

Tool Name	Description
CT_GYRO_MS	Continuous Gyro Multishot
MWD	MWD - Standard

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,000.00	0.74	30.74	6,999.34	3,184.34	19.20	15.21	-19.19	0.00	369,611.10	472,061.31
7,099.00	0.70	20.73	7,098.33	3,283.33	20.31	15.75	-20.30	0.13	369,612.21	472,061.85
7,145.00	2.02	151.04	7,144.32	3,329.32	19.87	16.25	-19.86	5.50	369,611.77	472,062.35
7,168.00	5.01	162.02	7,167.28	3,352.28	18.55	16.75	-18.55	13.27	369,610.45	472,062.85
7,200.00	9.94	166.06	7,199.00	3,384.00	14.54	17.85	-14.53	15.48	369,606.44	472,063.95
7,232.00	14.42	169.34	7,230.27	3,415.27	7.94	19.25	-7.93	14.16	369,599.84	472,065.35
7,264.00	18.20	171.71	7,260.98	3,445.98	-0.92	20.71	0.93	11.99	369,590.98	472,066.81
7,295.00	21.81	175.05	7,290.10	3,475.10	-11.45	21.91	11.46	12.21	369,580.45	472,068.01
7,327.00	24.97	178.24	7,319.47	3,504.47	-24.13	22.63	24.14	10.64	369,567.77	472,068.73
7,359.00	28.31	180.92	7,348.07	3,533.07	-38.47	22.71	38.48	11.09	369,553.43	472,068.81
7,391.00	31.57	182.38	7,375.80	3,560.80	-54.43	22.24	54.44	10.44	369,537.47	472,068.34
7,423.00	34.56	183.58	7,402.61	3,587.61	-71.87	21.33	71.88	9.56	369,520.03	472,067.43
7,453.00	37.64	183.54	7,426.85	3,611.85	-89.51	20.23	89.52	10.27	369,502.39	472,066.33
7,486.00	41.24	183.62	7,452.33	3,637.33	-110.42	18.92	110.43	10.91	369,481.48	472,065.02
7,518.00	44.58	182.91	7,475.76	3,660.76	-132.17	17.69	132.18	10.55	369,459.73	472,063.79
7,550.00	48.01	182.21	7,497.87	3,682.87	-155.28	16.66	155.29	10.83	369,436.62	472,062.76
7,582.00	51.70	181.68	7,518.50	3,703.50	-179.72	15.83	179.73	11.60	369,412.18	472,061.93
7,614.00	55.31	180.96	7,537.53	3,722.53	-205.44	15.24	205.44	11.43	369,386.46	472,061.34
7,645.00	59.18	180.22	7,554.30	3,739.30	-231.50	14.98	231.51	12.64	369,360.40	472,061.08
7,677.00	63.22	179.69	7,569.71	3,754.71	-259.54	15.00	259.54	12.71	369,332.36	472,061.10
7,709.00	67.18	179.52	7,583.13	3,768.13	-288.58	15.20	288.59	12.38	369,303.32	472,061.30



Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Wild Ride
Well: #1H
Wellbore: OH
Design: OH

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

Well #1H
WELL @ 3815.00ft (Patriot #6)
WELL @ 3815.00ft (Patriot #6)
Grid
Minimum Curvature
Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,741.00	71.23	179.24	7,594.49	3,779.49	-318.49	15.53	318.49	12.68	369,273.41	472,061.63
7,772.00	75.71	179.68	7,603.31	3,788.31	-348.20	15.80	348.20	14.52	369,243.70	472,061.90
7,804.00	80.37	179.81	7,609.93	3,794.93	-379.49	15.94	379.50	14.57	369,212.41	472,062.04
7,830.00	84.50	179.84	7,613.36	3,798.36	-405.26	16.02	405.27	15.89	369,186.64	472,062.12
7,868.00	89.43	179.96	7,615.37	3,800.37	-443.20	16.09	443.20	12.98	369,148.70	472,062.19
7,900.00	90.84	179.96	7,615.29	3,800.29	-475.19	16.11	475.20	4.41	369,116.71	472,062.21
7,931.00	91.10	180.04	7,614.77	3,799.77	-506.19	16.11	506.20	0.88	369,085.71	472,062.21
7,995.00	91.28	180.13	7,613.44	3,798.44	-570.18	16.02	570.18	0.31	369,021.72	472,062.12
8,090.00	91.63	180.57	7,611.03	3,796.03	-665.14	15.44	665.15	0.59	368,926.76	472,061.54
8,186.00	91.45	181.01	7,608.45	3,793.45	-761.10	14.11	761.11	0.50	368,830.80	472,060.21
8,281.00	91.89	181.01	7,605.68	3,790.68	-856.04	12.44	856.05	0.46	368,735.86	472,058.54
8,345.00	90.75	181.45	7,604.20	3,789.20	-920.01	11.07	920.02	1.91	368,671.89	472,057.17
8,440.00	89.09	181.19	7,604.34	3,789.34	-1,014.98	8.88	1,014.99	1.77	368,576.92	472,054.98
8,535.00	89.69	180.92	7,605.35	3,790.35	-1,109.96	7.13	1,109.96	0.69	368,481.94	472,053.23
8,631.00	90.22	180.48	7,605.42	3,790.42	-1,205.95	5.95	1,205.96	0.72	368,385.95	472,052.05
8,727.00	88.90	180.48	7,606.16	3,791.16	-1,301.94	5.15	1,301.95	1.37	368,289.96	472,051.25
8,822.00	89.96	180.57	7,607.11	3,792.11	-1,396.93	4.28	1,396.94	1.12	368,194.97	472,050.38
8,917.00	88.45	180.92	7,608.42	3,793.42	-1,491.91	3.05	1,491.92	1.63	368,099.99	472,049.15
9,045.00	88.90	181.36	7,611.38	3,796.38	-1,619.85	0.50	1,619.85	0.49	367,972.05	472,046.60
9,140.00	89.25	181.45	7,612.92	3,797.92	-1,714.81	-1.83	1,714.81	0.38	367,877.09	472,044.27
9,235.00	89.87	181.45	7,613.65	3,798.65	-1,809.78	-4.23	1,809.78	0.65	367,782.12	472,041.87
9,362.00	90.57	181.54	7,613.16	3,798.16	-1,936.73	-7.55	1,936.73	0.56	367,655.17	472,038.55
9,458.00	91.10	181.80	7,611.76	3,796.76	-2,032.68	-10.34	2,032.68	0.61	367,559.22	472,035.76
9,553.00	89.52	181.71	7,611.25	3,796.25	-2,127.63	-13.25	2,127.63	1.67	367,464.27	472,032.85
9,680.00	89.78	181.54	7,612.02	3,797.02	-2,254.58	-16.85	2,254.57	0.24	367,337.32	472,029.25
9,808.00	90.40	181.89	7,611.82	3,796.82	-2,382.52	-20.69	2,382.51	0.56	367,209.38	472,025.41
9,935.00	89.16	181.27	7,612.31	3,797.31	-2,509.47	-24.19	2,509.46	1.09	367,082.43	472,021.91



Pathfinder
Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Wild Ride
Well: #1H
Wellbore: OH
Design: OH

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

Well #1H
WELL @ 3815.00ft (Patriot #6)
WELL @ 3815.00ft (Patriot #6)
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)
10,062.00	89.34	181.27	7,613.97	3,798.97	-2,636.43	-27.00	2,636.41	0.14	366,955.47	472,019.10
10,189.00	90.40	181.71	7,614.26	3,799.26	-2,763.38	-30.30	2,763.37	0.90	366,828.52	472,015.80
10,317.00	91.10	181.80	7,612.58	3,797.58	-2,891.31	-34.22	2,891.29	0.55	366,700.59	472,011.88
10,444.00	91.89	182.15	7,609.27	3,794.27	-3,018.19	-38.60	3,018.17	0.68	366,573.71	472,007.50
10,505.00	91.89	182.15	7,607.26	3,792.26	-3,079.11	-40.89	3,079.09	0.00	366,512.79	472,005.21

BHL-10505.00'MD,91.89°INC,182.15°AZI, 7607.26'TVD, 3079.09'VS, -3079.11'N, -40.89'E

Targets

Target Name
- hit/miss target
- Shape

Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
0.00	360.00	7,610.00	-3,082.00	1.60	366,509.900	472,047.700	32° 0' 27.423 N	104° 25' 24.640 W

PBHL(wild ride #1)
- survey misses target center by 42.67ft at 10505.00ft MD (7607.26 TVD, -3079.11 N, -40.89 E)
- Point

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
10,505.00	7,607.26	-3,079.11	-40.89	BHL-10505.00'MD,91.89°INC,182.15°AZI, 7607.26'TVD, 3079.09'VS, -

Checked By: _____

Approved By: _____

Date: _____

Surf: 1600' FWL, 720' FWL
EOL: 601' FSL, 679' FWL