

30-015-37904

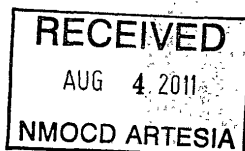


Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
 Project: Eddy County
 Site: J.R. Horz Fed Com
 Well: #6H
 Wellbore: OH
 Design: OH



Local Co-ordinate Reference: Well #6H
 TVD Reference: WELL @ 3006.00ft (Original Well Elev)
 MD Reference: WELL @ 3006.00ft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

Survey/Program	Date 08/04/2010				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	6,800.50	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot	
6,837.00	11,912.00	MWD #1 (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)
	6,800.50	1.86	217.07	6,798.86	3,792.86	-7.76	-8.85	7.85	0.00	386,916.64	611,491.75
	6,837.00	1.93	209.91	6,835.34	3,829.34	-8.77	-9.51	8.86	0.67	386,915.63	611,491.09
	6,868.00	4.04	195.37	6,866.29	3,860.29	-10.27	-10.06	10.37	7.18	386,914.13	611,490.54
	6,899.00	10.20	190.61	6,897.04	3,891.04	-14.03	-10.86	14.13	19.94	386,910.37	611,489.74
	6,931.00	13.10	189.30	6,928.38	3,922.38	-20.39	-11.97	20.51	9.10	386,904.01	611,488.63
	6,962.00	12.84	188.45	6,958.59	3,952.59	-27.27	-13.04	27.39	1.04	386,897.13	611,487.56
	6,993.00	12.40	187.04	6,988.84	3,982.84	-33.98	-13.96	34.11	1.73	386,890.42	611,486.64
	7,024.00	12.66	187.67	7,019.10	4,013.10	-40.65	-14.82	40.79	0.95	386,883.75	611,485.78
	7,056.00	12.31	188.77	7,050.34	4,044.34	-47.49	-15.80	47.64	1.32	386,876.91	611,484.80
	7,087.00	13.72	187.22	7,080.55	4,074.55	-54.41	-16.77	54.57	4.69	386,869.99	611,483.83
	7,119.00	16.88	185.39	7,111.41	4,105.41	-62.80	-17.68	62.97	9.99	386,861.60	611,482.92
	7,150.00	20.14	184.62	7,140.80	4,134.80	-72.60	-18.54	72.78	10.55	386,851.80	611,482.06
	7,182.00	23.39	183.30	7,170.52	4,164.52	-84.44	-19.35	84.62	10.27	386,839.96	611,481.25
	7,213.00	26.12	180.71	7,198.67	4,192.67	-97.41	-19.79	97.60	9.47	386,826.99	611,480.81
	7,245.00	29.02	178.07	7,227.03	4,221.03	-112.21	-19.61	112.40	9.83	386,812.19	611,480.99
	7,276.00	32.10	176.88	7,253.72	4,247.72	-127.95	-18.91	128.13	10.12	386,796.45	611,481.69
	7,307.00	35.35	176.55	7,279.50	4,273.50	-145.14	-17.92	145.30	10.50	386,779.26	611,482.68
	7,338.00	39.04	176.51	7,304.19	4,298.19	-163.84	-16.79	163.99	11.90	386,760.56	611,483.81
	7,369.00	42.82	176.00	7,327.61	4,321.61	-184.10	-15.46	184.24	12.24	386,740.30	611,485.14
	7,401.00	46.17	175.41	7,350.43	4,344.43	-206.46	-13.77	206.59	10.55	386,717.94	611,486.83
	7,432.00	49.77	174.32	7,371.18	4,365.18	-229.39	-11.71	229.49	11.90	386,695.01	611,488.89



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Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,464.00	53.64	173.88	7,391.01	4,385.01	-254.37	-9.12	254.44	12.14	386,670.03	611,491.48
7,495.00	57.68	174.85	7,408.49	4,402.49	-279.83	-6.62	279.89	13.29	386,644.57	611,493.98
7,526.00	62.87	175.90	7,423.86	4,417.86	-306.66	-4.45	306.69	17.00	386,617.74	611,496.15
7,558.00	67.88	176.87	7,437.19	4,431.19	-335.68	-2.62	335.69	15.90	386,588.72	611,497.98
7,589.00	73.25	177.57	7,447.50	4,441.50	-364.87	-1.21	364.86	17.45	386,559.53	611,499.39
7,621.00	79.05	178.54	7,455.16	4,449.16	-395.91	-0.16	395.89	18.36	386,528.49	611,500.44
7,646.00	83.89	179.16	7,458.86	4,452.86	-420.62	0.34	420.59	19.51	386,503.78	611,500.94
7,678.00	91.10	180.32	7,460.26	4,454.26	-452.57	0.48	452.54	22.82	386,471.83	611,501.08
7,709.00	93.13	181.11	7,459.12	4,453.12	-483.54	0.09	483.52	7.03	386,440.86	611,500.69
7,741.00	90.40	179.73	7,458.13	4,452.13	-515.52	-0.14	515.50	9.56	386,408.88	611,500.46
7,773.00	88.37	179.32	7,458.48	4,452.48	-547.52	0.12	547.49	6.47	386,376.88	611,500.72
7,805.00	90.04	180.58	7,458.92	4,452.92	-579.51	0.15	579.48	6.54	386,344.89	611,500.75
7,836.00	90.92	181.86	7,458.66	4,452.66	-610.50	-0.51	610.48	5.01	386,313.90	611,500.09
7,899.00	87.76	180.46	7,459.39	4,453.39	-673.47	-1.78	673.46	5.49	386,250.93	611,498.82
7,993.00	88.29	181.98	7,462.63	4,456.63	-767.39	-3.78	767.40	1.71	386,157.01	611,496.82
8,086.00	93.47	183.19	7,461.20	4,455.20	-860.26	-7.97	860.29	5.72	386,064.14	611,492.63
8,181.00	92.68	183.42	7,456.10	4,450.10	-954.96	-13.44	955.05	0.87	385,969.44	611,487.16
8,276.00	91.63	179.70	7,452.53	4,446.53	-1,049.84	-16.03	1,049.95	4.07	385,874.56	611,484.57
8,372.00	90.22	179.47	7,450.98	4,444.98	-1,145.82	-15.33	1,145.92	1.49	385,778.58	611,485.27
8,467.00	89.25	178.35	7,451.42	4,445.42	-1,240.80	-13.52	1,240.87	1.56	385,683.60	611,487.08
8,563.00	89.96	178.02	7,452.08	4,446.08	-1,336.75	-10.48	1,336.79	0.82	385,587.65	611,490.12
8,657.00	88.02	175.78	7,453.74	4,447.74	-1,430.59	-5.40	1,430.57	3.15	385,493.81	611,495.20
8,753.00	87.67	176.12	7,457.35	4,451.35	-1,526.28	1.37	1,526.19	0.51	385,398.12	611,501.97
8,848.00	87.05	175.55	7,461.72	4,455.72	-1,620.93	8.27	1,620.77	0.89	385,303.47	611,508.87
8,943.00	88.90	176.79	7,465.08	4,459.08	-1,715.65	14.61	1,715.43	2.34	385,208.75	611,515.21
9,038.00	90.13	178.99	7,465.88	4,459.88	-1,810.58	18.10	1,810.31	2.65	385,113.82	611,518.70
9,134.00	87.93	178.88	7,467.51	4,461.51	-1,906.54	19.89	1,906.25	2.29	385,017.86	611,520.49



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9,228.00	89.60	180.02	7,469.53	4,463.53	-2,000.51	20.79	2,000.21	2.15	384,923.89	611,521.39
9,323.00	89.52	179.45	7,470.26	4,464.26	-2,095.50	21.23	2,095.20	0.61	384,828.90	611,521.83
9,418.00	92.95	180.25	7,468.22	4,462.22	-2,190.47	21.48	2,190.15	3.71	384,733.93	611,522.08
9,514.00	92.86	181.29	7,463.35	4,457.35	-2,286.33	20.19	2,286.03	1.09	384,638.07	611,520.79
9,609.00	91.36	181.24	7,459.85	4,453.85	-2,381.24	18.09	2,380.95	1.58	384,543.16	611,518.69
9,705.00	92.15	182.04	7,456.91	4,450.91	-2,477.16	15.35	2,476.89	1.17	384,447.24	611,515.95
9,769.00	90.48	181.02	7,455.44	4,449.44	-2,541.11	13.64	2,540.86	3.06	384,383.29	611,514.24
9,801.00	89.43	180.67	7,455.47	4,449.47	-2,573.11	13.17	2,572.86	3.46	384,351.29	611,513.77
9,896.00	86.88	182.10	7,458.53	4,452.53	-2,668.02	10.87	2,667.79	3.08	384,256.38	611,511.47
9,991.00	88.55	181.49	7,462.32	4,456.32	-2,762.90	7.90	2,762.69	1.87	384,161.50	611,509.50
10,023.00	89.96	182.18	7,462.73	4,456.73	-2,794.88	6.88	2,794.68	4.91	384,129.52	611,507.48
10,087.00	90.75	182.16	7,462.34	4,456.34	-2,858.83	4.45	2,858.65	1.23	384,065.57	611,505.05
10,180.00	91.10	182.38	7,460.83	4,454.83	-2,951.74	0.77	2,951.60	0.44	383,972.66	611,501.37
10,273.00	91.19	182.34	7,458.98	4,452.98	-3,044.65	-3.06	3,044.53	0.11	383,879.75	611,497.54
10,365.00	91.45	182.07	7,456.86	4,450.86	-3,136.55	-6.60	3,136.47	0.41	383,787.85	611,494.00
10,458.00	89.87	182.73	7,455.78	4,449.78	-3,229.46	-10.49	3,229.41	1.84	383,694.94	611,490.11
10,550.00	89.60	183.00	7,456.21	4,450.21	-3,321.35	-15.09	3,321.34	0.42	383,603.05	611,485.51
10,643.00	90.66	184.97	7,456.00	4,450.00	-3,414.12	-21.55	3,414.16	2.41	383,510.28	611,479.05
10,737.00	89.16	184.95	7,456.15	4,450.15	-3,507.76	-29.68	3,507.88	1.60	383,416.64	611,470.92
10,829.00	91.36	187.13	7,455.73	4,449.73	-3,599.24	-39.36	3,599.45	3.37	383,325.16	611,461.24
10,922.00	90.66	185.05	7,454.09	4,448.09	-3,691.69	-49.22	3,692.00	2.36	383,232.71	611,451.38
11,014.00	90.84	183.11	7,452.89	4,446.89	-3,783.45	-55.77	3,783.81	2.12	383,140.95	611,444.83
11,106.00	87.85	180.84	7,453.94	4,447.94	-3,875.37	-58.94	3,875.76	4.08	383,049.03	611,441.66
11,199.00	88.20	180.54	7,457.14	4,451.14	-3,968.31	-60.06	3,968.71	0.50	382,956.09	611,440.54
11,291.00	89.60	181.24	7,458.91	4,452.91	-4,060.28	-61.49	4,060.68	1.70	382,864.12	611,439.11
11,384.00	89.25	181.09	7,459.84	4,453.84	-4,153.25	-63.38	4,153.67	0.41	382,771.15	611,437.22
11,477.00	90.31	180.39	7,460.20	4,454.20	-4,246.24	-64.58	4,246.67	1.37	382,678.16	611,436.02



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Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,569.00	90.40	180.60	7,459.63	4,453.63	-4,338.24	-65.37	4,338.67	0.25	382,586.16	611,435.23
11,661.00	91.71	180.60	7,457.94	4,451.94	-4,430.21	-66.34	4,430.65	1.42	382,494.19	611,434.26
11,754.00	89.69	179.89	7,456.80	4,450.80	-4,523.20	-66.73	4,523.64	2.30	382,401.20	611,433.87
11,846.00	88.99	179.77	7,457.86	4,451.86	-4,615.19	-66.46	4,615.62	0.77	382,309.21	611,434.14
11,912.00	88.99	179.77	7,459.02	4,453.02	-4,681.18	-66.20	4,681.61	0.00	382,243.22	611,434.40

BHL-11912.00' MD, 88.99° INC, 179.77° AZI, 7459.02' TVD, 4681.61' VS, -4681.18' N, -66.20' E - PBHL(JRHORZ#6H)

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
PBHL(JRHORZ#6H)	0.00	0.00	7,459.50	-4,681.70	-33.30	382,242.700	611,467.300	32° 3' 1.403 N	103° 58' 24.814 W
- survey misses target center by 32.90ft at 11912.00ft MD (7459.02 TVD, -4681.18 N, -66.20 E)									
- Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,912.00	7,459.02	-4,681.18	-66.20	BHL-11912 00' MD, 88.99° INC, 179.77° AZI, 7459.02' TVD, 4681.61' VS, -

Checked By: _____ Approved By: _____ Date: _____

Surf: 330' FNL, 1980' FNL
 EOL: 269' FSL, 1914' FNL (Bound on 5360' tall station)