



30-025-39868

Mack Energy

Lea County
Hawk State
#1H
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

04 August, 2010

RECEIVED

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PATHFINDER



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4354.00ft (19' KB)
Site:	Hawk State	MD Reference:	WELL @ 4354.00ft (19' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Project	Lea 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: Hawk State					
Site Position:		Northing:	721,234.600 ft	Latitude:	32° 58' 52.975 N
From:	Map	Easting:	678,802.100 ft	Longitude:	103° 45' 0.903 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	#1H					
Well Position	+N/-S	0.00 ft	Northing:	721,234.600 ft	Latitude:	32° 58' 52.975 N
	+E/-W	0.00 ft	Easting:	678,802.100 ft	Longitude:	103° 45' 0.903 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	4,335.00 ft

Wellbore:	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	08/04/2010	7.82	60.90	49,163

Design:	Plan #1
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Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	359.69

Survey Tool Program		Date 08/04/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	13,370.98	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	-4,354.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
100.00	0.00	0.00	100.00	-4,254.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
200.00	0.00	0.00	200.00	-4,154.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
300.00	0.00	0.00	300.00	-4,054.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
400.00	0.00	0.00	400.00	-3,954.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
500.00	0.00	0.00	500.00	-3,854.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
600.00	0.00	0.00	600.00	-3,754.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
700.00	0.00	0.00	700.00	-3,654.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
800.00	0.00	0.00	800.00	-3,554.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
900.00	0.00	0.00	900.00	-3,454.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,000.00	0.00	0.00	1,000.00	-3,354.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,100.00	0.00	0.00	1,100.00	-3,254.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,200.00	0.00	0.00	1,200.00	-3,154.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,300.00	0.00	0.00	1,300.00	-3,054.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,400.00	0.00	0.00	1,400.00	-2,954.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,500.00	0.00	0.00	1,500.00	-2,854.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,600.00	0.00	0.00	1,600.00	-2,754.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,700.00	0.00	0.00	1,700.00	-2,654.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,800.00	0.00	0.00	1,800.00	-2,554.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
1,900.00	0.00	0.00	1,900.00	-2,454.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,000.00	0.00	0.00	2,000.00	-2,354.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,100.00	0.00	0.00	2,100.00	-2,254.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,200.00	0.00	0.00	2,200.00	-2,154.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,300.00	0.00	0.00	2,300.00	-2,054.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,400.00	0.00	0.00	2,400.00	-1,954.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,500.00	0.00	0.00	2,500.00	-1,854.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,600.00	0.00	0.00	2,600.00	-1,754.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10



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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	-1,654.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,800.00	0.00	0.00	2,800.00	-1,554.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
2,900.00	0.00	0.00	2,900.00	-1,454.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,000.00	0.00	0.00	3,000.00	-1,354.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,100.00	0.00	0.00	3,100.00	-1,254.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,200.00	0.00	0.00	3,200.00	-1,154.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,300.00	0.00	0.00	3,300.00	-1,054.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,400.00	0.00	0.00	3,400.00	-954.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,500.00	0.00	0.00	3,500.00	-854.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,600.00	0.00	0.00	3,600.00	-754.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,700.00	0.00	0.00	3,700.00	-654.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,800.00	0.00	0.00	3,800.00	-554.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
3,900.00	0.00	0.00	3,900.00	-454.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,000.00	0.00	0.00	4,000.00	-354.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,100.00	0.00	0.00	4,100.00	-254.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,200.00	0.00	0.00	4,200.00	-154.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,300.00	0.00	0.00	4,300.00	-54.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,400.00	0.00	0.00	4,400.00	46.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,500.00	0.00	0.00	4,500.00	146.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,600.00	0.00	0.00	4,600.00	246.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,700.00	0.00	0.00	4,700.00	346.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,800.00	0.00	0.00	4,800.00	446.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
4,900.00	0.00	0.00	4,900.00	546.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,000.00	0.00	0.00	5,000.00	646.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,100.00	0.00	0.00	5,100.00	746.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,200.00	0.00	0.00	5,200.00	846.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,300.00	0.00	0.00	5,300.00	946.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10



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5,400.00	0.00	0.00	5,400.00	1,046.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,500.00	0.00	0.00	5,500.00	1,146.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,600.00	0.00	0.00	5,600.00	1,246.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,700.00	0.00	0.00	5,700.00	1,346.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,800.00	0.00	0.00	5,800.00	1,446.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
5,900.00	0.00	0.00	5,900.00	1,546.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,000.00	0.00	0.00	6,000.00	1,646.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,100.00	0.00	0.00	6,100.00	1,746.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,200.00	0.00	0.00	6,200.00	1,846.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,300.00	0.00	0.00	6,300.00	1,946.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,400.00	0.00	0.00	6,400.00	2,046.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,500.00	0.00	0.00	6,500.00	2,146.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,600.00	0.00	0.00	6,600.00	2,246.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,700.00	0.00	0.00	6,700.00	2,346.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,800.00	0.00	0.00	6,800.00	2,446.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
6,900.00	0.00	0.00	6,900.00	2,546.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,000.00	0.00	0.00	7,000.00	2,646.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,100.00	0.00	0.00	7,100.00	2,746.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,200.00	0.00	0.00	7,200.00	2,846.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,300.00	0.00	0.00	7,300.00	2,946.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,400.00	0.00	0.00	7,400.00	3,046.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,500.00	0.00	0.00	7,500.00	3,146.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,600.00	0.00	0.00	7,600.00	3,246.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,700.00	0.00	0.00	7,700.00	3,346.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,800.00	0.00	0.00	7,800.00	3,446.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
7,900.00	0.00	0.00	7,900.00	3,546.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10
8,000.00	0.00	0.00	8,000.00	3,646.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10



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Planned Survey											
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8,100.00	0.00	0.00	8,100.00	3,746.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10	
8,200.00	0.00	0.00	8,200.00	3,846.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10	
8,300.00	0.00	0.00	8,300.00	3,946.00	0.00	0.00	0.00	0.00	721,234.60	678,802.10	
8,407.50	0.00	0.00	8,407.50	4,053.50	0.00	0.00	0.00	0.00	721,234.60	678,802.10	
8,450.00	4.06	359.68	8,449.96	4,095.96	1.50	-0.01	1.50	9.55	721,236.10	678,802.09	
8,500.00	8.83	359.68	8,499.63	4,145.63	7.12	-0.04	7.12	9.55	721,241.72	678,802.06	
8,550.00	13.61	359.68	8,548.66	4,194.66	16.84	-0.09	16.84	9.55	721,251.44	678,802.01	
8,600.00	18.38	359.68	8,596.71	4,242.71	30.62	-0.17	30.62	9.55	721,265.22	678,801.93	
8,650.00	23.16	359.68	8,643.45	4,289.45	48.34	-0.27	48.34	9.55	721,282.94	678,801.83	
8,700.00	27.93	359.68	8,688.55	4,334.55	69.89	-0.39	69.90	9.55	721,304.49	678,801.71	
8,750.00	32.71	359.68	8,731.70	4,377.70	95.13	-0.53	95.13	9.55	721,329.73	678,801.57	
8,800.00	37.48	359.68	8,772.60	4,418.60	123.86	-0.69	123.87	9.55	721,358.46	678,801.41	
8,850.00	42.26	359.68	8,810.96	4,456.96	155.91	-0.87	155.91	9.55	721,390.51	678,801.23	
8,900.00	47.03	359.68	8,846.53	4,492.53	191.03	-1.07	191.03	9.55	721,425.63	678,801.03	
8,950.00	51.80	359.68	8,879.05	4,525.05	228.99	-1.28	229.00	9.55	721,463.59	678,800.82	
9,000.00	56.58	359.68	8,908.29	4,554.29	269.53	-1.51	269.53	9.55	721,504.13	678,800.59	
9,050.00	61.35	359.68	8,934.06	4,580.06	312.36	-1.74	312.36	9.55	721,546.96	678,800.36	
9,100.00	66.13	359.68	8,956.17	4,602.17	357.19	-1.99	357.19	9.55	721,591.79	678,800.11	
9,150.00	70.90	359.68	8,974.48	4,620.48	403.70	-2.25	403.70	9.55	721,638.30	678,799.85	
9,200.00	75.68	359.68	8,988.85	4,634.85	451.57	-2.52	451.58	9.55	721,686.17	678,799.58	
9,250.00	80.45	359.68	8,999.19	4,645.19	500.48	-2.80	500.48	9.55	721,735.08	678,799.30	
9,300.00	85.23	359.68	9,005.42	4,651.42	550.07	-3.07	550.08	9.55	721,784.67	678,799.03	
9,349.98	90.00	359.68	9,007.50	4,653.50	599.99	-3.35	600.00	9.55	721,834.59	678,798.75	
9,360.87	89.78	359.68	9,007.52	4,653.52	610.88	-3.41	610.89	2.00	721,845.48	678,798.69	
9,400.00	89.78	359.68	9,007.67	4,653.67	650.01	-3.63	650.02	0.00	721,884.61	678,798.47	
9,500.00	89.78	359.68	9,008.05	4,654.05	750.01	-4.19	750.02	0.00	721,984.61	678,797.91	
9,600.00	89.78	359.68	9,008.43	4,654.43	850.01	-4.75	850.02	0.00	722,084.61	678,797.35	



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9,700.00	89.78	359.68	9,008.81	4,654.81	950.00	-5.31	950.02	0.00	722,184.60	678,796.79
9,749.98	89.78	359.68	9,009.00	4,655.00	999.98	-5.59	1,000.00	0.00	722,234.58	678,796.51
9,750.55	89.77	359.68	9,009.00	4,655.00	1,000.55	-5.59	1,000.57	2.00	722,235.15	678,796.51
9,800.00	89.77	359.68	9,009.20	4,655.20	1,050.00	-5.86	1,050.02	0.00	722,284.60	678,796.24
9,900.00	89.77	359.68	9,009.60	4,655.60	1,150.00	-6.42	1,150.02	0.00	722,384.60	678,795.68
10,000.00	89.77	359.68	9,010.00	4,656.00	1,250.00	-6.98	1,250.02	0.00	722,484.60	678,795.12
10,100.00	89.77	359.68	9,010.40	4,656.40	1,350.00	-7.54	1,350.02	0.00	722,584.60	678,794.56
10,200.00	89.77	359.68	9,010.80	4,656.80	1,449.99	-8.10	1,450.02	0.00	722,684.59	678,794.00
10,300.00	89.77	359.68	9,011.20	4,657.20	1,549.99	-8.66	1,550.01	0.00	722,784.59	678,793.44
10,400.00	89.77	359.68	9,011.60	4,657.60	1,649.99	-9.22	1,650.01	0.00	722,884.59	678,792.88
10,500.00	89.77	359.68	9,012.00	4,658.00	1,749.99	-9.77	1,750.01	0.00	722,984.59	678,792.33
10,600.00	89.77	359.68	9,012.40	4,658.40	1,849.98	-10.33	1,850.01	0.00	723,084.58	678,791.77
10,700.00	89.77	359.68	9,012.80	4,658.80	1,949.98	-10.89	1,950.01	0.00	723,184.58	678,791.21
10,749.99	89.77	359.68	9,013.00	4,659.00	1,999.97	-11.17	2,000.00	0.00	723,234.57	678,790.93
10,752.06	89.74	359.71	9,013.01	4,659.01	2,002.04	-11.18	2,002.08	2.00	723,236.64	678,790.92
10,800.00	89.74	359.71	9,013.22	4,659.22	2,049.98	-11.42	2,050.01	0.00	723,284.58	678,790.68
10,900.00	89.74	359.71	9,013.67	4,659.67	2,149.98	-11.93	2,150.01	0.00	723,384.58	678,790.17
11,000.00	89.74	359.71	9,014.12	4,660.12	2,249.97	-12.44	2,250.01	0.00	723,484.57	678,789.66
11,100.00	89.74	359.71	9,014.57	4,660.57	2,349.97	-12.94	2,350.01	0.00	723,584.57	678,789.16
11,200.00	89.74	359.71	9,015.02	4,661.02	2,449.97	-13.45	2,450.01	0.00	723,684.57	678,788.65
11,300.00	89.74	359.71	9,015.47	4,661.47	2,549.97	-13.95	2,550.01	0.00	723,784.57	678,788.15
11,400.00	89.74	359.71	9,015.92	4,661.92	2,649.97	-14.46	2,650.00	0.00	723,884.57	678,787.64
11,500.00	89.74	359.71	9,016.37	4,662.37	2,749.96	-14.97	2,750.00	0.00	723,984.56	678,787.13
11,600.00	89.74	359.71	9,016.82	4,662.82	2,849.96	-15.47	2,850.00	0.00	724,084.56	678,786.63
11,700.00	89.74	359.71	9,017.27	4,663.27	2,949.96	-15.98	2,950.00	0.00	724,184.56	678,786.12
11,750.00	89.74	359.71	9,017.50	4,663.50	2,999.96	-16.23	3,000.00	0.00	724,234.56	678,785.87
11,751.00	89.74	359.69	9,017.50	4,663.50	3,000.96	-16.24	3,001.00	2.00	724,235.56	678,785.86



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4354.00ft (19' KB)
Site:	Hawk State	MD Reference:	WELL @ 4354.00ft (19' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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)	
11,800.00	89.74	359.69	9,017.73	4,663.73	3,049.96	-16.50	3,050.00	0.00	724,284.56	678,785.60	
11,900.00	89.74	359.69	9,018.17	4,664.17	3,149.95	-17.04	3,150.00	0.00	724,384.55	678,785.06	
12,000.00	89.74	359.69	9,018.62	4,664.62	3,249.95	-17.58	3,250.00	0.00	724,484.55	678,784.52	
12,100.00	89.74	359.69	9,019.07	4,665.07	3,349.95	-18.13	3,350.00	0.00	724,584.55	678,783.97	
12,200.00	89.74	359.69	9,019.52	4,665.52	3,449.95	-18.67	3,450.00	0.00	724,684.55	678,783.43	
12,300.00	89.74	359.69	9,019.97	4,665.97	3,549.94	-19.21	3,550.00	0.00	724,784.54	678,782.89	
12,400.00	89.74	359.69	9,020.42	4,666.42	3,649.94	-19.75	3,649.99	0.00	724,884.54	678,782.35	
12,500.00	89.74	359.69	9,020.87	4,666.87	3,749.94	-20.29	3,749.99	0.00	724,984.54	678,781.81	
12,600.00	89.74	359.69	9,021.32	4,667.32	3,849.94	-20.83	3,849.99	0.00	725,084.54	678,781.27	
12,700.00	89.74	359.69	9,021.77	4,667.77	3,949.93	-21.37	3,949.99	0.00	725,184.53	678,780.73	
12,750.01	89.74	359.69	9,022.00	4,668.00	3,999.94	-21.64	4,000.00	0.00	725,234.54	678,780.46	
12,758.55	89.91	359.65	9,022.03	4,668.03	4,008.48	-21.69	4,008.54	2.00	725,243.08	678,780.41	
12,800.00	89.91	359.65	9,022.09	4,668.09	4,049.93	-21.94	4,049.99	0.00	725,284.53	678,780.16	
12,900.00	89.91	359.65	9,022.25	4,668.25	4,149.93	-22.55	4,149.99	0.00	725,384.53	678,779.55	
13,000.00	89.91	359.65	9,022.41	4,668.41	4,249.93	-23.15	4,249.99	0.00	725,484.53	678,778.95	
13,100.00	89.91	359.65	9,022.57	4,668.57	4,349.93	-23.76	4,349.99	0.00	725,584.53	678,778.34	
13,200.00	89.91	359.65	9,022.73	4,668.73	4,449.92	-24.36	4,449.99	0.00	725,684.52	678,777.74	
13,300.00	89.91	359.65	9,022.89	4,668.89	4,549.92	-24.97	4,549.99	0.00	725,784.52	678,777.13	
13,370.98	89.91	359.65	9,023.00	4,669.00	4,620.90	-25.40	4,620.97	0.00	725,855.50	678,776.70	



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H:
Project:	Lea County	TVD Reference:	WELL @ 4354.00ft (19' KB)
Site:	Hawk State	MD Reference:	WELL @ 4354.00ft (19' KB)
Well:	#1H	North Reference:	Grid:
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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									
TGT4(Hawk#1)	0.00	0.00	9,022.00	3,999.94	-21.64	725,234.541	678,780.458	32° 59' 32.555 N	103° 45' 0.897 W
- plan hits target center									
- Point									
TGT2(Hawk#1)	0.00	0.00	9,013.00	1,999.97	-11.17	723,234.569	678,790.930	32° 59' 12.765 N	103° 45' 0.905 W
- plan hits target center									
- Point									
PBHL(Hawk #1)	0.00	0.00	9,023.00	4,620.90	-25.40	725,855.500	678,776.700	32° 59' 38.699 N	103° 45' 0.901 W
- plan hits target center									
- Point									
TGT3(Hawk#1)	0.00	0.00	9,017.50	2,999.96	-16.23	724,234.556	678,785.869	32° 59' 22.660 N	103° 45' 0.899 W
- plan hits target center									
- Point									
TGT1(Hawk#1)	0.00	0.00	9,009.00	999.98	-5.59	722,234.584	678,796.515	32° 59' 2.870 N	103° 45' 0.904 W
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____



PROJECT DETAILS: Lea 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

Project: Lea County
Site: Hawk State
Well: #1H
Wellbore: OH
Plan: Plan #1 (#1H/OH)



Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.50°

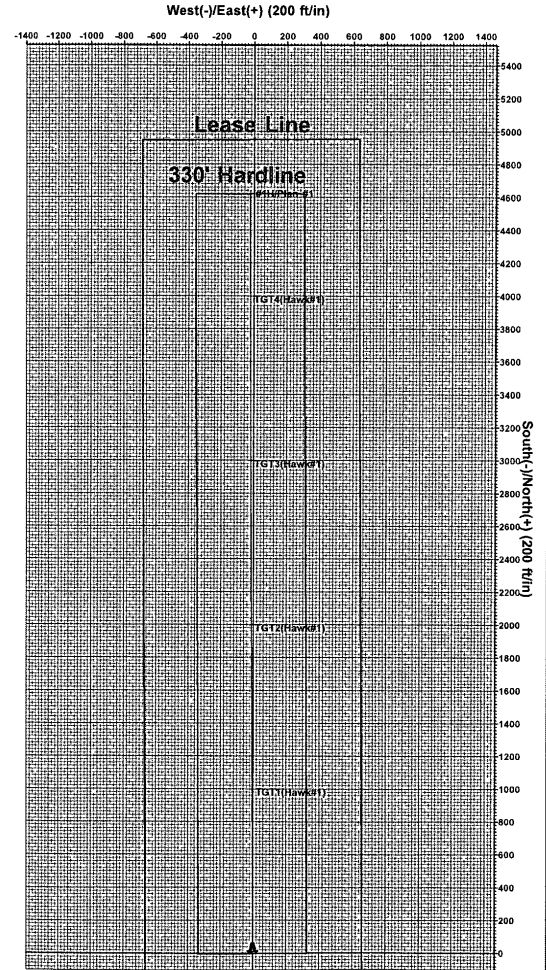
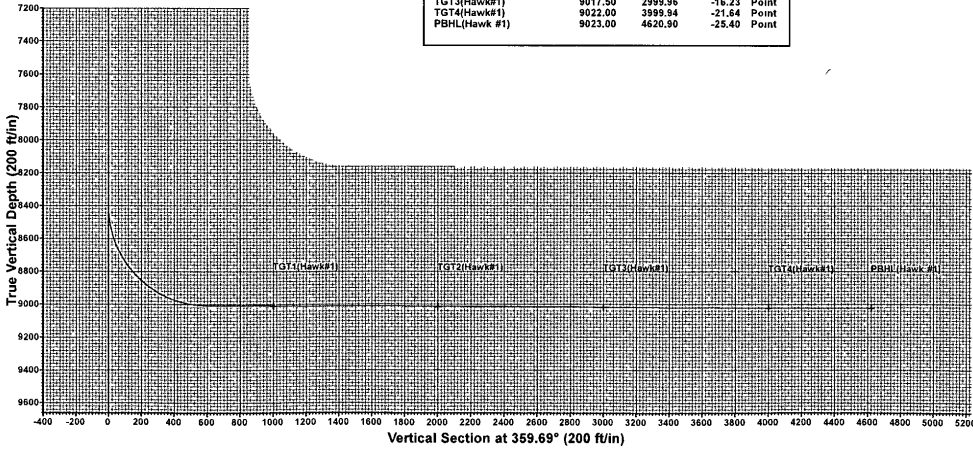
Magnetic Field
Strength: 49163.4snT
Dip Angle: 60.90°
Date: 08/04/2010
Model: IGRF200510

PATHFINDER

WELL DETAILS #1H							
Ground Elevation		4335.00					
RKB Elevation		WELL @ 4354.00ft (19' KB)					
Rig Name		19' KB					
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	721234.600	678802.100	32° 58' 52.975 N	103° 45' 0.903 W		

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	8407.50	0.00	0.00	8407.50	0.00	0.00	0.00	0.00	0.00	
3	9349.98	90.00	359.68	9007.50	599.99	-3.35	9.55	359.68	600.00	
4	9350.87	89.78	359.68	9007.52	610.98	-3.41	2.00	180.00	610.89	
5	9749.98	89.78	359.68	9009.00	999.98	-5.59	0.00	0.00	1000.00	TGT1(Hawk#1)
6	9750.55	89.77	359.68	9009.00	1000.55	-5.59	2.00	-180.00	1000.57	
7	10749.99	89.77	359.68	9013.00	1999.97	-11.17	0.00	0.00	2000.00	TGT2(Hawk#1)
8	10752.06	89.74	359.71	9013.01	2002.04	-11.18	2.00	133.68	2002.08	
9	11750.00	89.74	359.71	9017.50	2999.96	-16.23	0.00	0.00	3000.00	TGT3(Hawk#1)
10	11751.00	89.74	359.69	9017.50	3000.96	-16.24	2.00	-49.91	3001.00	
11	12750.01	89.74	359.69	9022.00	3999.94	-21.64	0.00	0.00	4000.00	TGT4(Hawk#1)
12	12758.55	89.91	359.85	9022.03	4008.48	-21.69	2.00	-12.51	4008.54	
13	13370.98	89.91	359.65	9023.00	4620.90	-25.40	0.00	0.00	4620.97	PBHL(Hawk #1)

WELLBORE TARGET DETAILS				
Name	TVD	+N-S	+E-W	Shape
TGT1(Hawk#1)	9009.00	599.98	-5.59	Point
TGT2(Hawk#1)	9013.00	1999.97	-11.17	Point
TGT3(Hawk#1)	9017.50	2999.96	-16.23	Point
TGT4(Hawk#1)	9022.00	3999.94	-21.64	Point
PBHL(Hawk #1)	9023.00	4620.90	-25.40	Point



Plan Plan #1 (#1H/OH)
Created By: Nate Bingham Date: 14 36, August 04 2010
Checked: _____ Date: _____