



30.025-39890

Mack Energy

Lea County
State GS 16
#2 H
OH

Plan: Plan #2

Pathfinder X & Y Planning Report

26 August, 2010

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PATHFINDER



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2
Project:	Lea County	TVD Reference:	WELL @ 4080.00ft (Original Well Elev)
Site:	State GS 16	MD Reference:	WELL @ 4080.00ft (Original Well Elev)
Well:	#2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	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		State GS 16			
Site Position:		Northing:	666,277.300 ft	Latitude:	32° 49' 45.443 N
From:	Map	Easting:	737,741.600 ft	Longitude:	103° 33' 33.749 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.42 °

Well	#2					
Well Position	+N/-S	0.00 ft	Northing:	666,277.300 ft	Latitude:	32° 49' 45.443 N
	+E/-W	0.00 ft	Easting:	737,741.600 ft	Longitude:	103° 33' 33.749 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	4,061.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	07/27/2010	7.72	60.79	49,128

Design		Plan #2		
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	269.41

Survey Tool/Program		Date 08/26/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	12,593.07	Plan #2 (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	-4,080.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
100.00	0.00	0.00	100.00	-3,980.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
200.00	0.00	0.00	200.00	-3,880.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
300.00	0.00	0.00	300.00	-3,780.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
400.00	0.00	0.00	400.00	-3,680.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
500.00	0.00	0.00	500.00	-3,580.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
600.00	0.00	0.00	600.00	-3,480.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
700.00	0.00	0.00	700.00	-3,380.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
800.00	0.00	0.00	800.00	-3,280.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
900.00	0.00	0.00	900.00	-3,180.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,000.00	0.00	0.00	1,000.00	-3,080.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,100.00	0.00	0.00	1,100.00	-2,980.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,200.00	0.00	0.00	1,200.00	-2,880.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,300.00	0.00	0.00	1,300.00	-2,780.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,400.00	0.00	0.00	1,400.00	-2,680.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,500.00	0.00	0.00	1,500.00	-2,580.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,600.00	0.00	0.00	1,600.00	-2,480.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,700.00	0.00	0.00	1,700.00	-2,380.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,800.00	0.00	0.00	1,800.00	-2,280.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
1,900.00	0.00	0.00	1,900.00	-2,180.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,000.00	0.00	0.00	2,000.00	-2,080.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,100.00	0.00	0.00	2,100.00	-1,980.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,200.00	0.00	0.00	2,200.00	-1,880.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,300.00	0.00	0.00	2,300.00	-1,780.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,400.00	0.00	0.00	2,400.00	-1,680.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,500.00	0.00	0.00	2,500.00	-1,580.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
2,600.00	0.00	0.00	2,600.00	-1,480.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	



Pathfinder
Pathfinder X & Y Planning Report



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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	-1,380.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
2,800.00	0.00	0.00	2,800.00	-1,280.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
2,900.00	0.00	0.00	2,900.00	-1,180.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,000.00	0.00	0.00	3,000.00	-1,080.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,100.00	0.00	0.00	3,100.00	-980.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,200.00	0.00	0.00	3,200.00	-880.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,300.00	0.00	0.00	3,300.00	-780.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,400.00	0.00	0.00	3,400.00	-680.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,500.00	0.00	0.00	3,500.00	-580.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,600.00	0.00	0.00	3,600.00	-480.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,700.00	0.00	0.00	3,700.00	-380.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,800.00	0.00	0.00	3,800.00	-280.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
3,900.00	0.00	0.00	3,900.00	-180.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,000.00	0.00	0.00	4,000.00	-80.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,100.00	0.00	0.00	4,100.00	20.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,200.00	0.00	0.00	4,200.00	120.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,300.00	0.00	0.00	4,300.00	220.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,400.00	0.00	0.00	4,400.00	320.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,500.00	0.00	0.00	4,500.00	420.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,600.00	0.00	0.00	4,600.00	520.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,700.00	0.00	0.00	4,700.00	620.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,800.00	0.00	0.00	4,800.00	720.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
4,900.00	0.00	0.00	4,900.00	820.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,000.00	0.00	0.00	5,000.00	920.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,100.00	0.00	0.00	5,100.00	1,020.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,200.00	0.00	0.00	5,200.00	1,120.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,300.00	0.00	0.00	5,300.00	1,220.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60



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5,400.00	0.00	0.00	5,400.00	1,320.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,500.00	0.00	0.00	5,500.00	1,420.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,600.00	0.00	0.00	5,600.00	1,520.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,700.00	0.00	0.00	5,700.00	1,620.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,800.00	0.00	0.00	5,800.00	1,720.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
5,900.00	0.00	0.00	5,900.00	1,820.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,000.00	0.00	0.00	6,000.00	1,920.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,100.00	0.00	0.00	6,100.00	2,020.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,200.00	0.00	0.00	6,200.00	2,120.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,300.00	0.00	0.00	6,300.00	2,220.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,400.00	0.00	0.00	6,400.00	2,320.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,500.00	0.00	0.00	6,500.00	2,420.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,600.00	0.00	0.00	6,600.00	2,520.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,700.00	0.00	0.00	6,700.00	2,620.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,800.00	0.00	0.00	6,800.00	2,720.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
6,900.00	0.00	0.00	6,900.00	2,820.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,000.00	0.00	0.00	7,000.00	2,920.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,100.00	0.00	0.00	7,100.00	3,020.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,200.00	0.00	0.00	7,200.00	3,120.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,300.00	0.00	0.00	7,300.00	3,220.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,400.00	0.00	0.00	7,400.00	3,320.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,500.00	0.00	0.00	7,500.00	3,420.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,600.00	0.00	0.00	7,600.00	3,520.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,700.00	0.00	0.00	7,700.00	3,620.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,800.00	0.00	0.00	7,800.00	3,720.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
7,900.00	0.00	0.00	7,900.00	3,820.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60
8,000.00	0.00	0.00	8,000.00	3,920.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60



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8,100.00	0.00	0.00	8,100.00	4,020.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
8,200.00	0.00	0.00	8,200.00	4,120.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
8,298.00	0.00	0.00	8,298.00	4,218.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
8,300.00	0.19	269.40	8,300.00	4,220.00	0.00	0.00	0.00	9.34	666,277.30	737,741.60	
8,350.00	4.86	269.40	8,349.94	4,269.94	-0.02	-2.20	2.20	9.34	666,277.28	737,739.40	
8,400.00	9.53	269.40	8,399.53	4,319.53	-0.09	-8.46	8.46	9.34	666,277.21	737,733.14	
8,450.00	14.20	269.40	8,448.45	4,368.45	-0.20	-18.74	18.74	9.34	666,277.10	737,722.86	
8,500.00	18.87	269.40	8,496.37	4,416.37	-0.35	-32.97	32.97	9.34	666,276.95	737,708.63	
8,550.00	23.55	269.40	8,542.97	4,462.97	-0.53	-51.05	51.06	9.34	666,276.77	737,690.55	
8,600.00	28.22	269.40	8,587.94	4,507.94	-0.76	-72.87	72.88	9.34	666,276.54	737,668.73	
8,650.00	32.89	269.40	8,630.98	4,550.98	-1.03	-98.28	98.29	9.34	666,276.27	737,643.32	
8,700.00	37.56	269.40	8,671.82	4,591.82	-1.33	-127.11	127.12	9.34	666,275.97	737,614.49	
8,750.00	42.23	269.40	8,710.16	4,630.16	-1.67	-159.17	159.18	9.34	666,275.63	737,582.43	
8,800.00	46.91	269.40	8,745.77	4,665.77	-2.03	-194.25	194.26	9.34	666,275.27	737,547.35	
8,850.00	51.58	269.40	8,778.41	4,698.41	-2.43	-232.11	232.13	9.34	666,274.87	737,509.49	
8,900.00	56.25	269.40	8,807.85	4,727.85	-2.85	-272.51	272.52	9.34	666,274.45	737,469.09	
8,950.00	60.92	269.40	8,833.90	4,753.90	-3.30	-315.16	315.18	9.34	666,274.00	737,426.44	
9,000.00	65.59	269.40	8,856.40	4,776.40	-3.77	-359.80	359.82	9.34	666,273.53	737,381.80	
9,050.00	70.27	269.40	8,875.18	4,795.18	-4.25	-406.12	406.15	9.34	666,273.05	737,335.48	
9,100.00	74.94	269.40	8,890.12	4,810.12	-4.75	-453.82	453.84	9.34	666,272.55	737,287.78	
9,150.00	79.61	269.40	8,901.13	4,821.13	-5.26	-502.58	502.60	9.34	666,272.04	737,239.02	
9,200.00	84.28	269.40	8,908.14	4,828.14	-5.78	-552.07	552.10	9.34	666,271.52	737,189.53	
9,246.00	88.58	269.40	8,911.00	4,831.00	-6.26	-597.96	597.99	9.34	666,271.04	737,143.64	
9,246.24	88.58	269.40	8,911.01	4,831.01	-6.26	-598.21	598.24	0.00	666,271.04	737,143.39	
9,300.00	88.58	269.40	8,912.34	4,832.34	-6.83	-651.94	651.98	0.00	666,270.47	737,089.66	
9,400.00	88.58	269.40	8,914.82	4,834.82	-7.87	-751.91	751.95	0.00	666,269.43	736,989.69	
9,500.00	88.58	269.40	8,917.29	4,837.29	-8.92	-851.87	851.92	0.00	666,268.38	736,889.73	



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9,600.00	88.58	269.40	8,919.77	4,839.77	-9.97	-951.84	951.89	0.00	666,267.33	736,789.76
9,648.13	88.58	269.40	8,921.00	4,841.00	-10.47	-999.95	1,000.00	0.00	666,266.83	736,741.65
9,670.69	89.03	269.40	8,921.47	4,841.47	-10.71	-1,022.50	1,022.55	2.00	666,266.59	736,719.10
9,700.00	89.03	269.40	8,921.97	4,841.97	-11.01	-1,051.80	1,051.86	0.00	666,266.29	736,689.80
9,800.00	89.03	269.40	8,923.66	4,843.66	-12.06	-1,151.78	1,151.85	0.00	666,265.24	736,589.82
9,900.00	89.03	269.40	8,925.35	4,845.35	-13.11	-1,251.77	1,251.83	0.00	666,264.19	736,489.83
10,000.00	89.03	269.40	8,927.04	4,847.04	-14.16	-1,351.75	1,351.82	0.00	666,263.14	736,389.85
10,100.00	89.03	269.40	8,928.73	4,848.73	-15.20	-1,451.73	1,451.81	0.00	666,262.10	736,289.87
10,200.00	89.03	269.40	8,930.42	4,850.42	-16.25	-1,551.71	1,551.79	0.00	666,261.05	736,189.89
10,300.00	89.03	269.40	8,932.11	4,852.11	-17.30	-1,651.69	1,651.78	0.00	666,260.00	736,089.91
10,400.00	89.03	269.40	8,933.80	4,853.80	-18.34	-1,751.67	1,751.76	0.00	666,258.96	735,989.93
10,500.00	89.03	269.40	8,935.49	4,855.49	-19.39	-1,851.65	1,851.75	0.00	666,257.91	735,889.95
10,600.00	89.03	269.40	8,937.18	4,857.18	-20.44	-1,951.63	1,951.73	0.00	666,256.86	735,789.97
10,648.27	89.03	269.40	8,938.00	4,858.00	-20.94	-1,999.89	2,000.00	0.00	666,256.36	735,741.71
10,659.54	89.26	269.40	8,938.17	4,858.17	-21.06	-2,011.15	2,011.26	2.00	666,256.24	735,730.45
10,700.00	89.26	269.40	8,938.69	4,858.69	-21.49	-2,051.61	2,051.72	0.00	666,255.81	735,689.99
10,800.00	89.26	269.40	8,939.99	4,859.99	-22.53	-2,151.60	2,151.71	0.00	666,254.77	735,590.00
10,900.00	89.26	269.40	8,941.29	4,861.29	-23.58	-2,251.58	2,251.71	0.00	666,253.72	735,490.02
11,000.00	89.26	269.40	8,942.59	4,862.59	-24.63	-2,351.57	2,351.70	0.00	666,252.67	735,390.03
11,100.00	89.26	269.40	8,943.88	4,863.88	-25.67	-2,451.55	2,451.69	0.00	666,251.63	735,290.05
11,200.00	89.26	269.40	8,945.18	4,865.18	-26.72	-2,551.54	2,551.68	0.00	666,250.58	735,190.06
11,300.00	89.26	269.40	8,946.48	4,866.48	-27.77	-2,651.53	2,651.67	0.00	666,249.53	735,090.07
11,400.00	89.26	269.40	8,947.78	4,867.78	-28.81	-2,751.51	2,751.66	0.00	666,248.49	734,990.09
11,500.00	89.26	269.40	8,949.07	4,869.07	-29.86	-2,851.50	2,851.65	0.00	666,247.44	734,890.10
11,600.00	89.26	269.40	8,950.37	4,870.37	-30.91	-2,951.48	2,951.65	0.00	666,246.39	734,790.12
11,648.36	89.26	269.40	8,951.00	4,871.00	-31.42	-2,999.84	3,000.00	0.00	666,245.88	734,741.76
11,700.00	90.29	269.43	8,951.20	4,871.20	-31.94	-3,051.47	3,051.64	2.00	666,245.36	734,690.13



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2
Project:	Lea County	TVD Reference:	WELL @ 4080.00ft (Original Well Elev)
Site:	State GS.16	MD Reference:	WELL @ 4080.00ft (Original Well Elev)
Well:	#2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	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)
11,711.96	90.53	269.44	8,951.12	4,871.12	-32.06	-3,063.44	3,063.60	2.00	666,245.24	734,678.16
11,800.00	90.53	269.44	8,950.31	4,870.31	-32.92	-3,151.47	3,151.64	0.00	666,244.38	734,590.13
11,900.00	90.53	269.44	8,949.39	4,869.39	-33.90	-3,251.46	3,251.63	0.00	666,243.40	734,490.14
12,000.00	90.53	269.44	8,948.47	4,868.47	-34.88	-3,351.45	3,351.63	0.00	666,242.42	734,390.15
12,100.00	90.53	269.44	8,947.54	4,867.54	-35.86	-3,451.44	3,451.62	0.00	666,241.44	734,290.16
12,200.00	90.53	269.44	8,946.62	4,866.62	-36.85	-3,551.43	3,551.62	0.00	666,240.45	734,190.17
12,300.00	90.53	269.44	8,945.70	4,865.70	-37.83	-3,651.42	3,651.62	0.00	666,239.47	734,090.18
12,400.00	90.53	269.44	8,944.78	4,864.78	-38.81	-3,751.41	3,751.61	0.00	666,238.49	733,990.19
12,500.00	90.53	269.44	8,943.86	4,863.86	-39.79	-3,851.40	3,851.61	0.00	666,237.51	733,890.20
12,593.11	90.53	269.44	8,943.00	4,863.00	-40.70	-3,944.50	3,944.71	0.00	666,236.60	733,797.10

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
TGT3(GS16) - plan hits target center - Point	0.00	0.00	8,951.00	-31.42	-2,999.84	666,245.885	734,741.764	32° 49' 45.348 N	103° 34' 8.906 W
TGT4(GS16) - plan misses target center by 305.37ft at 12118.76ft MD (8947.37 TVD, -36.05 N, -3470.19 E) - Point	0.00	0.00	8,956.00	-341.29	-3,467.28	665,936.013	734,274.319	32° 49' 42.316 N	103° 34' 14.410 W
TGT1(GS16) - plan hits target center - Point	0.00	0.00	8,921.00	-10.47	-999.95	666,266.828	736,741.655	32° 49' 45.412 N	103° 33' 45.468 W
PBHL(GS16) - plan hits target center - Point	0.00	0.00	8,943.00	-40.70	-3,944.50	666,236.600	733,797.100	32° 49' 45.324 N	103° 34' 19.977 W
TGT2(GS16) - plan hits target center - Point	0.00	0.00	8,938.00	-20.94	-1,999.89	666,256.356	735,741.710	32° 49' 45.380 N	103° 33' 57.187 W



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2
Project:	Lea County	TVD Reference:	WELL @ 4080.00ft (Original Well Elev)
Site:	State GS 16	MD Reference:	WELL @ 4080.00ft (Original Well Elev)
Well:	#2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	Midland Database

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



Azimuths to Grid North
True North: -0.42°
Magnetic North: 7.30°

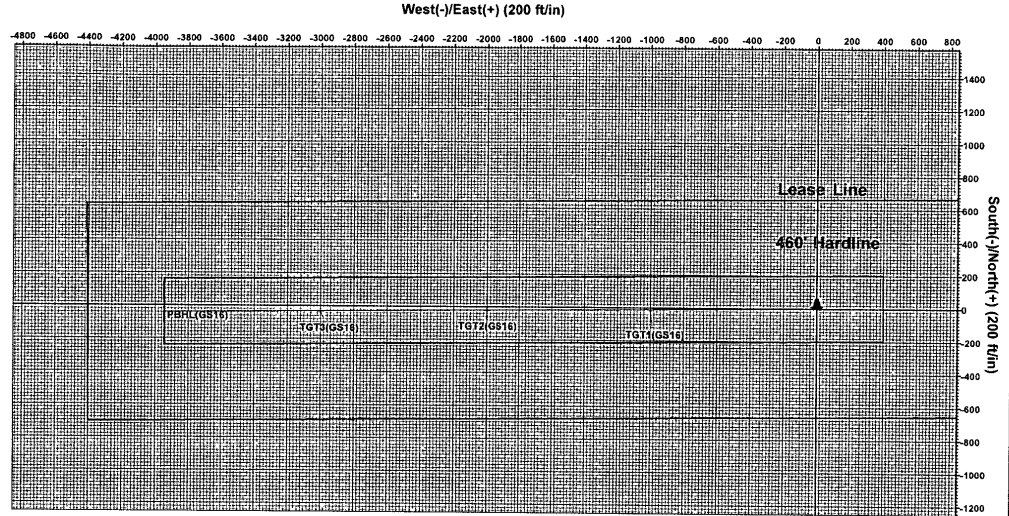
Magnetic Field
Strength: 49128.4nT
Dip Angle: 60.79°
Date: 07/27/2010
Model: IGRF200510

PATHFINDER

Project: Lea County
Site: State GS 16
Well: #2
Wellbore: OH
Plan: Plan #2 (#2/OH)

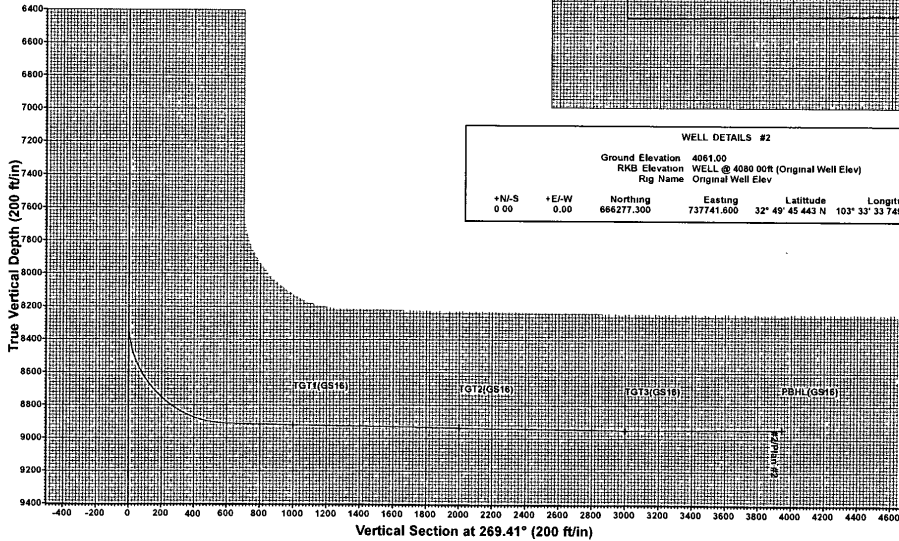
SECTION DETAILS

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	8298.00	0.00	0.00	8298.00	0.00	0.00	0.00	0.00	0.00	
3	9246.00	88.58	269.40	8911.00	-6.26	-597.96	9.34	269.40	597.99	
4	9311.50	88.57	269.40	8912.63	-6.95	-663.74	0.01	-180.00	663.77	
5	9648.13	88.57	269.40	8921.00	-10.47	-999.95	0.00	0.00	1000.00	TGT1(GS16)
6	9670.96	89.03	269.40	8921.48	-10.71	-1022.77	2.00	0.00	1022.83	TGT2(GS16)
7	10648.77	89.03	269.40	8938.00	-20.94	-1999.89	0.00	0.00	2000.00	TGT3(GS16)
8	10659.53	89.26	269.40	8938.17	-21.06	-2011.15	2.00	0.00	2011.26	
9	11648.36	89.26	269.40	8951.00	-31.42	-2999.84	0.00	0.00	3000.00	TGT3(GS16)
10	11711.96	90.53	269.44	8951.12	-32.06	-3063.44	2.00	1.72	3063.60	
11	12593.11	90.53	269.44	8943.00	-40.70	-3944.50	0.00	0.00	3944.71	PBHL(GS16)



WELL DETAILS #2

		Ground Elevation	4061.00				
		RKB Elevation	WELL @ 4080.00ft (Original Well Elev)				
		Rig Name	Original Well Elev				
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	666277.300	737741.600	32° 49' 45.443 N	103° 33' 33.749 W		



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
TGT1(GS16)	8921.00	-10.47	-999.95	666266.828	736741.655	Point
TGT2(GS16)	8928.00	-20.94	-1999.89	666256.356	735741.710	Point
PBHL(GS16)	8943.00	-40.70	-3944.50	666236.600	733797.100	Point
TGT3(GS16)	8951.00	-31.42	-2999.84	666245.885	734741.764	Point

Plan Plan #2 (#2/OH)

Created By: Nate Bingham Date: 8/55, August 26 2010
Checked: _____ Date: _____