



Mack Energy Corporation

Eddy County (NAD27)
Razorback Federal Com
#1
OH

Plan: Plan #2

Pathfinder X & Y Report

22 September, 2011

PATHFINDER

A Schlumberger Company



Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well #1
Project:	Eddy County (NAD27)	TVD Reference:	KB = 18" @ 3772.0usft (TBD)
Site:	Razorback Federal Com	MD Reference:	KB = 18" @ 3772.0usft (TBD)
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Project: Eddy County (NAD27)			
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: Razorback Federal Com					
Site Position:		Northing:	648,423.200 usft	Latitude:	32° 46' 54.209 N
From:	Map	Easting:	644,446.100 usft	Longitude:	103° 51' 48.029 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well:		#1				
Well Position	+N/-S	0.0 usft	Northing:	648,423.200 usft	Latitude:	32° 46' 54.209 N
	+E/-W	0.0 usft	Easting:	644,446.100 usft	Longitude:	103° 51' 48.029 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,754.0 usft

Wellbore:	OH				
Magnetics:	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/31/2011	7.80	60.68	48,989

Design: Plan #2				
Audit Notes:				
Version:		Phase: PLAN	Tie On Depth: 0.0	
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	77.28

Survey Tool Program		Date: 9/22/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	5,692.5	Plan #2 (OH)		



Pathfinder
Pathfinder X & Y Report



Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well #1
Project:	Eddy County (NAD27)	TVD Reference:	KB = 18" @ 3772.0usft (TBD)
Site:	Razorback Federal Com	MD Reference:	KB = 18" @ 3772.0usft (TBD)
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,772.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
100.0	0.00	0.00	100.0	-3,672.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
200.0	0.00	0.00	200.0	-3,572.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
300.0	0.00	0.00	300.0	-3,472.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
400.0	0.00	0.00	400.0	-3,372.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
500.0	0.00	0.00	500.0	-3,272.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
600.0	0.00	0.00	600.0	-3,172.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
700.0	0.00	0.00	700.0	-3,072.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
800.0	0.00	0.00	800.0	-2,972.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
900.0	0.00	0.00	900.0	-2,872.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,000.0	0.00	0.00	1,000.0	-2,772.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,100.0	0.00	0.00	1,100.0	-2,672.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,200.0	0.00	0.00	1,200.0	-2,572.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,300.0	0.00	0.00	1,300.0	-2,472.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,400.0	0.00	0.00	1,400.0	-2,372.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,500.0	0.00	0.00	1,500.0	-2,272.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,600.0	0.00	0.00	1,600.0	-2,172.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,700.0	0.00	0.00	1,700.0	-2,072.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,800.0	0.00	0.00	1,800.0	-1,972.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
1,900.0	0.00	0.00	1,900.0	-1,872.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,000.0	0.00	0.00	2,000.0	-1,772.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,100.0	0.00	0.00	2,100.0	-1,672.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,200.0	0.00	0.00	2,200.0	-1,572.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,300.0	0.00	0.00	2,300.0	-1,472.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,400.0	0.00	0.00	2,400.0	-1,372.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,500.0	0.00	0.00	2,500.0	-1,272.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,600.0	0.00	0.00	2,600.0	-1,172.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	



Pathfinder
Pathfinder X & Y Report



Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well #1:
Project:	Eddy County (NAD27)	TVD Reference:	KB = 18" @ 3772.0usft (TBD)
Site:	Razorback Federal Com	MD Reference:	KB = 18" @ 3772.0usft (TBD)
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,700.0	0.00	0.00	2,700.0	-1,072.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,800.0	0.00	0.00	2,800.0	-972.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
2,900.0	0.00	0.00	2,900.0	-872.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,000.0	0.00	0.00	3,000.0	-772.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,100.0	0.00	0.00	3,100.0	-672.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,200.0	0.00	0.00	3,200.0	-572.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,300.0	0.00	0.00	3,300.0	-472.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,400.0	0.00	0.00	3,400.0	-372.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,500.0	0.00	0.00	3,500.0	-272.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,600.0	0.00	0.00	3,600.0	-172.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,702.0	0.00	0.00	3,702.0	-70.0	0.0	0.0	0.0	0.00	648,423.20	644,446.10	
3,750.0	4.80	77.28	3,749.9	-22.1	0.4	2.0	2.0	10.00	648,423.64	644,448.06	
3,800.0	9.80	77.28	3,799.5	27.5	1.8	8.2	8.4	10.00	648,425.04	644,454.26	
3,850.0	14.80	77.28	3,848.4	76.4	4.2	18.5	19.0	10.00	648,427.39	644,464.64	
3,900.0	19.80	77.28	3,896.1	124.1	7.5	33.0	33.9	10.00	648,430.66	644,479.14	
3,950.0	24.80	77.28	3,942.3	170.3	11.6	51.5	52.8	10.00	648,434.84	644,497.64	
4,000.0	29.80	77.28	3,986.7	214.7	16.7	73.9	75.8	10.00	648,439.88	644,520.01	
4,050.0	34.80	77.28	4,029.0	257.0	22.6	100.0	102.5	10.00	648,445.77	644,546.06	
4,100.0	39.80	77.28	4,068.8	296.8	29.2	129.5	132.8	10.00	648,452.44	644,575.60	
4,150.0	44.80	77.28	4,105.7	333.7	36.6	162.3	166.4	10.00	648,459.84	644,608.42	
4,200.0	49.80	77.28	4,139.6	367.6	44.7	198.2	203.1	10.00	648,467.93	644,644.25	
4,250.0	54.80	77.28	4,170.2	398.2	53.4	236.7	242.7	10.00	648,476.64	644,682.83	
4,300.0	59.80	77.28	4,197.2	425.2	62.7	277.8	284.7	10.00	648,485.90	644,723.86	
4,350.0	64.80	77.28	4,220.4	448.4	72.4	320.9	329.0	10.00	648,495.65	644,767.03	
4,400.0	69.80	77.28	4,239.7	467.7	82.6	365.9	375.1	10.00	648,505.80	644,812.01	
4,450.0	74.80	77.28	4,254.9	482.9	93.1	412.4	422.7	10.00	648,516.29	644,858.46	
4,500.0	79.80	77.28	4,265.9	493.9	103.8	459.9	471.5	10.00	648,527.03	644,906.02	



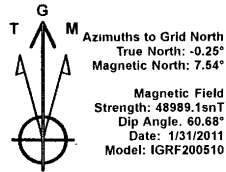
Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well #1
Project:	Eddy County (NAD27)	TVD Reference:	KB = 18" @ 3772.0usft (TBD)
Site:	Razorback Federal Com	MD Reference:	KB = 18" @ 3772.0usft (TBD)
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,550.0	84.80	77.28	4,272.6	500.6	114.7	508.2	521.0	10.00	648,537.93	644,954.34	
4,602.0	90.00	77.28	4,275.0	503.0	126.2	558.9	572.9	10.00	648,549.36	645,004.97	
4,700.0	90.00	77.28	4,275.0	503.0	147.7	654.5	671.0	0.00	648,570.95	645,100.59	
4,800.0	90.00	77.28	4,275.0	503.0	169.8	752.0	771.0	0.00	648,592.97	645,198.13	
4,900.0	90.00	77.28	4,275.0	503.0	191.8	849.6	871.0	0.00	648,614.99	645,295.68	
5,000.0	90.00	77.28	4,275.0	503.0	213.8	947.1	971.0	0.00	648,637.01	645,393.22	
5,100.0	90.00	77.28	4,275.0	503.0	235.8	1,044.7	1,071.0	0.00	648,659.03	645,490.77	
5,200.0	90.00	77.28	4,275.0	503.0	257.9	1,142.2	1,171.0	0.00	648,681.05	645,588.31	
5,300.0	90.00	77.28	4,275.0	503.0	279.9	1,239.8	1,271.0	0.00	648,703.07	645,685.86	
5,400.0	90.00	77.28	4,275.0	503.0	301.9	1,337.3	1,371.0	0.00	648,725.09	645,783.41	
5,500.0	90.00	77.28	4,275.0	503.0	323.9	1,434.9	1,471.0	0.00	648,747.12	645,880.95	
5,600.0	90.00	77.28	4,275.0	503.0	345.9	1,532.4	1,571.0	0.00	648,769.14	645,978.50	
5,692.5	90.00	77.28	4,275.0	503.0	366.3	1,622.6	1,663.4	0.00	648,789.50	646,068.70	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



PATHFINDER

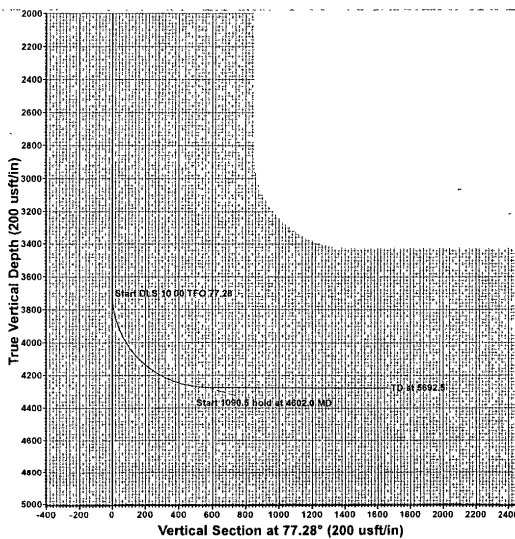
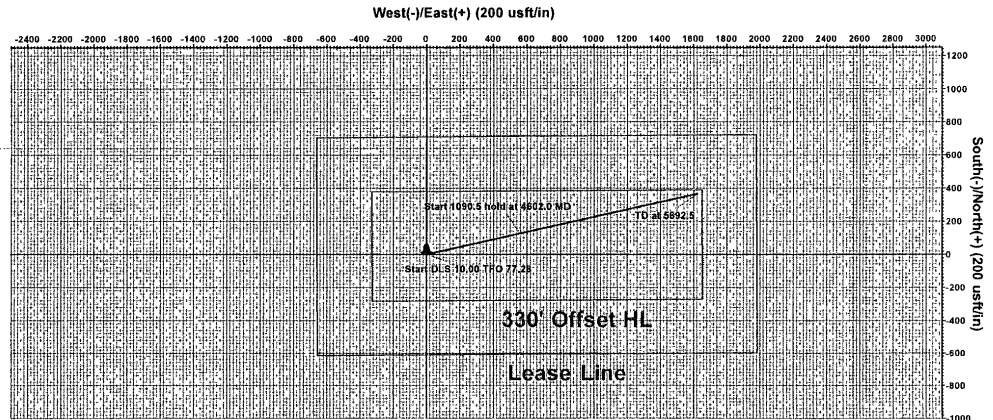
A Schlumberger Company

WELL DETAILS #1						
Ground Elevation: 3754.0						
RKB Elevation: KB = 18" @ 3772.0usft (TBD)						
Rig Name: TBD						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	648423.200	644446.100	32° 45' 54.209 N	103° 51' 48.029 W	

PROJECT DETAILS: Eddy County (NAD27)
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

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3702.0	0.00	0.00	3702.0	0.0	0.0	0.00	0.00	0.0	
3	4602.0	90.00	77.28	4275.0	126.2	588.9	10.00	77.28	572.9	
4	5892.5	90.00	77.28	4275.0	366.3	1622.6	0.00	0.00	1663.4	PBHL(RB#1)

WELLBORE TARGET DETAILS				
TVD	+N/-S	+E/-W	Northing	Easting
4275.0	366.3	1622.6	648789.500	646068.700



Project: Eddy County (NAD27)
Site: Razorback Federal Com
Well: #1
Wellbore: OH
Plan: Plan #2 (#1/OH)

Plan: Plan #2 (#1/OH)	
Created By: Michael Trout	Date: 10/05, September 22, 2011
Checked: _____	Date: _____