

30.005.64057

Mack Energy

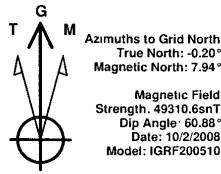
**Chaves County
Conchas State #1H
#1
OH**

Plan: Plan #1

Pathfinder X & Y Survey

02 October, 2008

Mack Energy Corporation



PATHFINDER

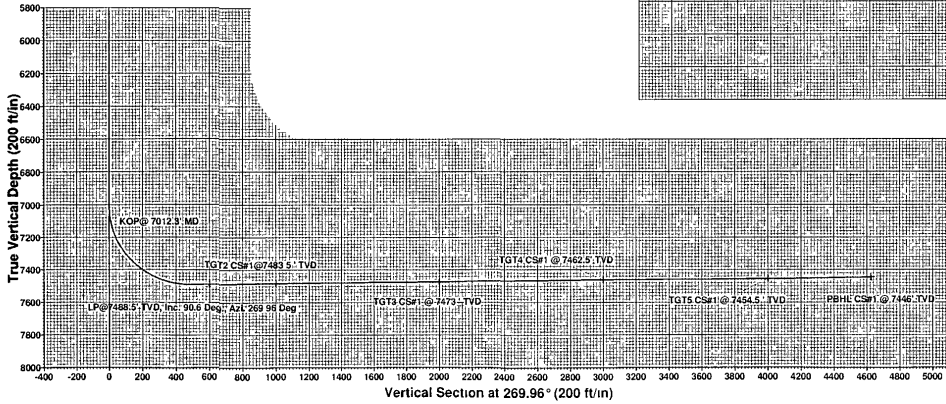
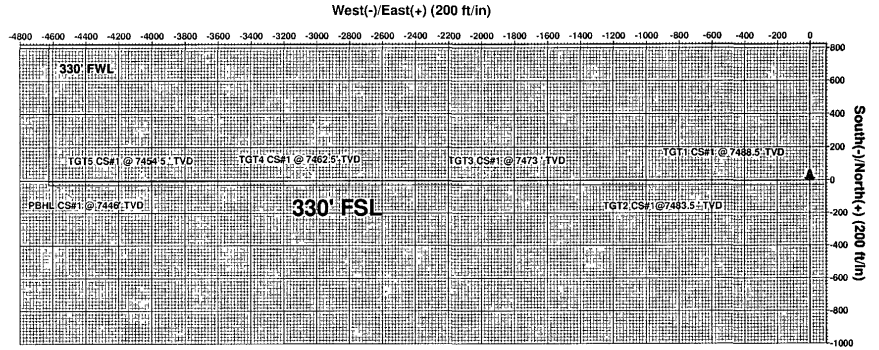
ENERGY SERVICES

WELLBORE TARGET DETAILS				
Name	TVD	+N-S	+E-W	Shape
PBHL CS#1 @ 7446' TVD	7446.00	-3.20	-4624.90	Point
TGT5 CS#1 @ 7454.5' TVD	7454.50	-2.80	-4000.00	Point
TGT4 CS#1 @ 7462.5' TVD	7462.50	-2.10	-3000.00	Point
TGT3 CS#1 @ 7473' TVD	7473.00	-1.40	-2000.00	Point
TGT2 CS#1 @ 7483.5' TVD	7483.50	-0.70	-1000.00	Point
TGT1 CS#1 @ 7488.5' TVD	7488.50	-0.42	-600.00	Point

WELL DETAILS: #1					
Ground Elevation:	3847.00				
RKB Elevation:	WELL @ 3865.00R (EST. RKB=18')				
Rig Name:	EST RKB=18'				
+N-S	+E-W	Northing	Eastings	Latitude	Longitude
0.00	0.00	715368.200	610278.300	32° 57' 57.964 N	103° 50' 25.575 W

PROJECT DETAILS: Chaves 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

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLog	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7012.30	0.00	0.00	7012.30	0.00	0.00	0.00	0.00	0.00	
3	7767.30	90.60	269.96	7489.74	-0.34	-482.46	12.00	269.96	482.46	
4	7804.44	90.60	269.96	7489.35	-0.36	-519.60	0.01	0.00	519.60	
5	7884.64	90.60	269.96	7488.50	-0.42	-600.00	0.00	0.00	600.00	TGT1 CS#1 @ 7488.5' TVD
6	7890.46	90.72	269.96	7488.44	-0.42	-605.62	2.00	0.28	605.62	
7	8284.87	90.72	269.96	7483.50	-0.70	-1000.00	0.00	0.00	1000.00	TGT2 CS#1 @ 7483.5' TVD
8	8290.66	90.60	269.96	7483.43	-0.70	-1005.78	2.00	-180.00	1005.78	
9	9284.63	90.60	269.96	7473.00	-1.40	-2000.00	0.00	0.00	2000.00	TGT3 CS#1 @ 7473' TVD
10	10284.98	90.60	269.96	7462.51	-2.10	-3000.00	0.00	0.00	3000.00	TGT4 CS#1 @ 7462.5' TVD
11	10292.14	90.46	269.96	7462.44	-2.11	-3007.15	2.00	180.00	3007.15	
12	11285.02	90.46	269.96	7454.50	-2.80	-4000.00	0.00	0.00	4000.00	TGT5 CS#1 @ 7454.5' TVD
13	11301.28	90.78	269.96	7454.32	-2.81	-4016.27	2.00	0.61	4016.27	
14	11909.97	90.78	269.96	7446.00	-3.20	-4624.90	0.00	0.00	4624.90	PBHL CS#1 @ 7446' TVD



Project: Chaves County
Site: Conchas State #1H
Well: #1
Wellbore: OH
Plan: Plan #1 (#1/OH)

Plan Plan #1 (#1/OH)			
Created By	Nate Bingham	Date	11 44, October 02 2008
Checked		Date	

Pathfinder X & Y Survey

Company: Mack Energy Project: Chaves County Site: Conchas State #1H Well: #1 Wellbore: OH Design: Plan #1		Local Co-ordinate Reference: TVD Reference: WELL @ 3865.00ft (EST. RKB=18') MD Reference: WELL @ 3865.00ft (EST. RKB=18') North Reference: Grid Survey Calculation Method: Minimum Curvature Database: EDM 2003.16 Single user database													
Project: Chaves 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: Conchas State #1H															
Site Position: From: Map Position Uncertainty: 0.00 ft		Northing: 715,368.200 ft Easting: 610,278.300 ft Slot Radius: "													
		Latitude: 32° 57' 57.964 N Longitude: 103° 58' 25.575 W Grid Convergence: 0.20 °													
Well: #1															
Well Position +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty 0.00 ft		Northing: 715,368.200 ft Easting: 610,278.300 ft Wellhead Elevation: ft													
		Latitude: 32° 57' 57.964 N Longitude: 103° 58' 25.575 W Ground Level: 3,847.00 ft													
Wellbore: OH															
<table border="1"> <thead> <tr> <th>Magnetics</th> <th>Model Name</th> <th>Sample Date</th> <th>Declination (°)</th> <th>Dip Angle (°)</th> <th>Field Strength (nT)</th> </tr> </thead> <tbody> <tr> <td></td> <td>IGRF200510</td> <td>10/2/2008</td> <td>8.14</td> <td>60.88</td> <td>49,311</td> </tr> </tbody> </table>				Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)		IGRF200510	10/2/2008	8.14	60.88	49,311
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)										
	IGRF200510	10/2/2008	8.14	60.88	49,311										
Design: Plan #1															
Audit Notes: Version: Phase: PLAN Tie On Depth: 0.00															
Vertical Section: <table border="1"> <thead> <tr> <th>Depth From (TVD) (ft)</th> <th>+N/-S (ft)</th> <th>+E/-W (ft)</th> <th>Direction (°)</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>269.96</td> </tr> </tbody> </table>				Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	0.00	0.00	0.00	269.96				
Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)												
0.00	0.00	0.00	269.96												
Survey Tool Program Date 10/2/2008															
<table border="1"> <thead> <tr> <th>From (ft)</th> <th>To (ft)</th> <th>Survey (Wellbore)</th> <th>Tool Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>11,909.97</td> <td>Plan #1 (OH)</td> <td>MWD</td> <td>MWD - Standard</td> </tr> </tbody> </table>				From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	0.00	11,909.97	Plan #1 (OH)	MWD	MWD - Standard		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description											
0.00	11,909.97	Plan #1 (OH)	MWD	MWD - Standard											

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
0.00	0.00	0.00	0.00	-3,865.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
100.00	0.00	0.00	100.00	-3,765.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
200.00	0.00	0.00	200.00	-3,665.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
300.00	0.00	0.00	300.00	-3,565.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
400.00	0.00	0.00	400.00	-3,465.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
500.00	0.00	0.00	500.00	-3,365.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
600.00	0.00	0.00	600.00	-3,265.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
700.00	0.00	0.00	700.00	-3,165.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
800.00	0.00	0.00	800.00	-3,065.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
900.00	0.00	0.00	900.00	-2,965.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,000.00	0.00	0.00	1,000.00	-2,865.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,100.00	0.00	0.00	1,100.00	-2,765.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,200.00	0.00	0.00	1,200.00	-2,665.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,300.00	0.00	0.00	1,300.00	-2,565.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,400.00	0.00	0.00	1,400.00	-2,465.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,500.00	0.00	0.00	1,500.00	-2,365.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,600.00	0.00	0.00	1,600.00	-2,265.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,700.00	0.00	0.00	1,700.00	-2,165.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,800.00	0.00	0.00	1,800.00	-2,065.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
1,900.00	0.00	0.00	1,900.00	-1,965.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,000.00	0.00	0.00	2,000.00	-1,865.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,100.00	0.00	0.00	2,100.00	-1,765.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,200.00	0.00	0.00	2,200.00	-1,665.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,300.00	0.00	0.00	2,300.00	-1,565.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,400.00	0.00	0.00	2,400.00	-1,465.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,500.00	0.00	0.00	2,500.00	-1,365.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,600.00	0.00	0.00	2,600.00	-1,265.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
2,700.00	0.00	0.00	2,700.00	-1,165.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,800.00	0.00	0.00	2,800.00	-1,065.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
2,900.00	0.00	0.00	2,900.00	-965.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,000.00	0.00	0.00	3,000.00	-865.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,100.00	0.00	0.00	3,100.00	-765.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,200.00	0.00	0.00	3,200.00	-665.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,300.00	0.00	0.00	3,300.00	-565.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,400.00	0.00	0.00	3,400.00	-465.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,500.00	0.00	0.00	3,500.00	-365.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,600.00	0.00	0.00	3,600.00	-265.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,700.00	0.00	0.00	3,700.00	-165.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,800.00	0.00	0.00	3,800.00	-65.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
3,900.00	0.00	0.00	3,900.00	35.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,000.00	0.00	0.00	4,000.00	135.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,100.00	0.00	0.00	4,100.00	235.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,200.00	0.00	0.00	4,200.00	335.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,300.00	0.00	0.00	4,300.00	435.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,400.00	0.00	0.00	4,400.00	535.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,500.00	0.00	0.00	4,500.00	635.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,600.00	0.00	0.00	4,600.00	735.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,700.00	0.00	0.00	4,700.00	835.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,800.00	0.00	0.00	4,800.00	935.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
4,900.00	0.00	0.00	4,900.00	1,035.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,000.00	0.00	0.00	5,000.00	1,135.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,100.00	0.00	0.00	5,100.00	1,235.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,200.00	0.00	0.00	5,200.00	1,335.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,300.00	0.00	0.00	5,300.00	1,435.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
5,400.00	0.00	0.00	5,400.00	1,535.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,500.00	0.00	0.00	5,500.00	1,635.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,600.00	0.00	0.00	5,600.00	1,735.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,700.00	0.00	0.00	5,700.00	1,835.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,800.00	0.00	0.00	5,800.00	1,935.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
5,900.00	0.00	0.00	5,900.00	2,035.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,000.00	0.00	0.00	6,000.00	2,135.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,100.00	0.00	0.00	6,100.00	2,235.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,200.00	0.00	0.00	6,200.00	2,335.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,300.00	0.00	0.00	6,300.00	2,435.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,400.00	0.00	0.00	6,400.00	2,535.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,500.00	0.00	0.00	6,500.00	2,635.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,600.00	0.00	0.00	6,600.00	2,735.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,700.00	0.00	0.00	6,700.00	2,835.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,800.00	0.00	0.00	6,800.00	2,935.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
6,900.00	0.00	0.00	6,900.00	3,035.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
7,000.00	0.00	0.00	7,000.00	3,135.00	0.00	0.00	0.00	0.00	715,368.20	610,278.30
7,012.30	0.00	0.00	7,012.30	3,147.30	0.00	0.00	0.00	0.00	715,368.20	610,278.30
KOP@ 7012.3' MD										
7,025.00	1.52	269.96	7,025.00	3,160.00	0.00	-0.17	0.17	12.00	715,368.20	610,278.13
7,050.00	4.52	269.96	7,049.96	3,184.96	0.00	-1.49	1.49	12.00	715,368.20	610,276.81
7,075.00	7.52	269.96	7,074.82	3,209.82	0.00	-4.11	4.11	12.00	715,368.20	610,274.19
7,100.00	10.52	269.96	7,099.51	3,234.51	-0.01	-8.03	8.03	12.00	715,368.19	610,270.27
7,125.00	13.52	269.96	7,123.96	3,258.96	-0.01	-13.24	13.24	12.00	715,368.19	610,265.06
7,150.00	16.52	269.96	7,148.10	3,283.10	-0.01	-19.72	19.72	12.00	715,368.19	610,258.58
7,175.00	19.52	269.96	7,171.87	3,306.87	-0.02	-27.45	27.45	12.00	715,368.18	610,250.85
7,200.00	22.52	269.96	7,195.20	3,330.20	-0.03	-36.42	36.42	12.00	715,368.17	610,241.88

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
7,225.00	25.52	269.96	7,218.03	3,353.03	-0.03	-46.60	46.60	12.00	715,368.17	610,231.70
7,250.00	28.52	269.96	7,240.30	3,375.30	-0.04	-57.96	57.96	12.00	715,368.16	610,220.34
7,275.00	31.52	269.96	7,261.95	3,396.95	-0.05	-70.46	70.46	12.00	715,368.15	610,207.84
7,300.00	34.52	269.96	7,282.90	3,417.90	-0.06	-84.09	84.09	12.00	715,368.14	610,194.21
7,325.00	37.52	269.96	7,303.12	3,438.12	-0.07	-98.79	98.79	12.00	715,368.13	610,179.51
7,350.00	40.52	269.96	7,322.54	3,457.54	-0.08	-114.53	114.53	12.00	715,368.12	610,163.77
7,375.00	43.52	269.96	7,341.11	3,476.11	-0.09	-131.26	131.26	12.00	715,368.11	610,147.04
7,400.00	46.52	269.96	7,358.78	3,493.78	-0.10	-148.94	148.94	12.00	715,368.10	610,129.36
7,425.00	49.52	269.96	7,375.50	3,510.50	-0.12	-167.53	167.53	12.00	715,368.08	610,110.77
7,450.00	52.52	269.96	7,391.22	3,526.22	-0.13	-186.96	186.96	12.00	715,368.07	610,091.34
7,475.00	55.52	269.96	7,405.90	3,540.90	-0.14	-207.19	207.19	12.00	715,368.06	610,071.11
7,500.00	58.52	269.96	7,419.51	3,554.51	-0.16	-228.16	228.16	12.00	715,368.04	610,050.14
7,525.00	61.52	269.96	7,432.00	3,567.00	-0.17	-249.81	249.81	12.00	715,368.03	610,028.49
7,550.00	64.52	269.96	7,443.34	3,578.34	-0.19	-272.09	272.09	12.00	715,368.01	610,006.21
7,575.00	67.52	269.96	7,453.50	3,588.50	-0.21	-294.93	294.93	12.00	715,367.99	609,983.37
7,600.00	70.52	269.96	7,462.44	3,597.44	-0.22	-318.27	318.27	12.00	715,367.98	609,960.03
7,625.00	73.52	269.96	7,470.16	3,605.16	-0.24	-342.05	342.05	12.00	715,367.96	609,936.25
7,650.00	76.52	269.96	7,476.62	3,611.62	-0.26	-366.20	366.20	12.00	715,367.94	609,912.10
7,675.00	79.52	269.96	7,481.81	3,616.81	-0.27	-390.65	390.65	12.00	715,367.93	609,887.65
7,700.00	82.52	269.96	7,485.71	3,620.71	-0.29	-415.34	415.34	12.00	715,367.91	609,862.96
7,725.00	85.52	269.96	7,488.31	3,623.31	-0.31	-440.20	440.20	12.00	715,367.89	609,838.10
7,750.00	88.52	269.96	7,489.61	3,624.61	-0.32	-465.17	465.17	12.00	715,367.88	609,813.13
7,767.30	90.60	269.96	7,489.74	3,624.74	-0.34	-482.46	482.46	12.00	715,367.86	609,795.84
7,804.44	90.60	269.96	7,489.35	3,624.35	-0.36	-519.60	519.60	0.01	715,367.84	609,758.70
7,884.84	90.60	269.96	7,488.50	3,623.50	-0.42	-600.00	600.00	0.00	715,367.78	609,678.30
LP@7488.5' TVD, Inc. 90.6 Deg., Azi. 269.96 Deg.										
7,890.46	90.72	269.96	7,488.44	3,623.44	-0.42	-605.62	605.62	2.00	715,367.78	609,672.68

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
7,900.00	90.72	269.96	7,488.32	3,623.32	-0.43	-615.16	615.16	0.00	715,367.77	609,663.14
8,000.00	90.72	269.96	7,487.06	3,622.06	-0.50	-715.15	715.15	0.00	715,367.70	609,563.15
8,100.00	90.72	269.96	7,485.81	3,620.81	-0.57	-815.14	815.14	0.00	715,367.63	609,463.16
8,200.00	90.72	269.96	7,484.56	3,619.56	-0.64	-915.13	915.13	0.00	715,367.56	609,363.17
8,284.87	90.72	269.96	7,483.50	3,618.50	-0.70	-1,000.00	1,000.00	0.00	715,367.50	609,278.30
8,290.66	90.60	269.96	7,483.43	3,618.43	-0.70	-1,005.78	1,005.78	2.00	715,367.50	609,272.52
8,300.00	90.60	269.96	7,483.34	3,618.34	-0.71	-1,015.13	1,015.13	0.00	715,367.49	609,263.17
8,400.00	90.60	269.96	7,482.29	3,617.29	-0.78	-1,115.12	1,115.12	0.00	715,367.42	609,163.18
8,500.00	90.60	269.96	7,481.24	3,616.24	-0.85	-1,215.11	1,215.12	0.00	715,367.35	609,063.19
8,600.00	90.60	269.96	7,480.19	3,615.19	-0.92	-1,315.11	1,315.11	0.00	715,367.28	608,963.19
8,700.00	90.60	269.96	7,479.14	3,614.14	-0.99	-1,415.10	1,415.10	0.00	715,367.21	608,863.20
8,800.00	90.60	269.96	7,478.09	3,613.09	-1.06	-1,515.10	1,515.10	0.00	715,367.14	608,763.20
8,900.00	90.60	269.96	7,477.04	3,612.04	-1.13	-1,615.09	1,615.09	0.00	715,367.07	608,663.21
9,000.00	90.60	269.96	7,475.99	3,610.99	-1.20	-1,715.09	1,715.09	0.00	715,367.00	608,563.21
9,100.00	90.60	269.96	7,474.94	3,609.94	-1.27	-1,815.08	1,815.08	0.00	715,366.93	608,463.22
9,200.00	90.60	269.96	7,473.89	3,608.89	-1.34	-1,915.08	1,915.08	0.00	715,366.86	608,363.22
9,284.93	90.60	269.96	7,473.00	3,608.00	-1.40	-2,000.00	2,000.00	0.00	715,366.80	608,278.30
9,300.00	90.60	269.96	7,472.84	3,607.84	-1.41	-2,015.07	2,015.07	0.00	715,366.79	608,263.23
9,400.00	90.60	269.96	7,471.79	3,606.79	-1.48	-2,115.06	2,115.07	0.00	715,366.72	608,163.24
9,500.00	90.60	269.96	7,470.74	3,605.74	-1.55	-2,215.06	2,215.06	0.00	715,366.65	608,063.24
9,600.00	90.60	269.96	7,469.69	3,604.69	-1.62	-2,315.05	2,315.05	0.00	715,366.58	607,963.25
9,700.00	90.60	269.96	7,468.64	3,603.64	-1.69	-2,415.05	2,415.05	0.00	715,366.51	607,863.25
9,800.00	90.60	269.96	7,467.60	3,602.60	-1.76	-2,515.04	2,515.04	0.00	715,366.44	607,763.26
9,900.00	90.60	269.96	7,466.55	3,601.55	-1.83	-2,615.04	2,615.04	0.00	715,366.37	607,663.26
10,000.00	90.60	269.96	7,465.50	3,600.50	-1.90	-2,715.03	2,715.03	0.00	715,366.30	607,563.27
10,100.00	90.60	269.96	7,464.45	3,599.45	-1.97	-2,815.03	2,815.03	0.00	715,366.23	607,463.27
10,200.00	90.60	269.96	7,463.40	3,598.40	-2.04	-2,915.02	2,915.02	0.00	715,366.16	607,363.28

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user 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)
10,284.98	90.60	269.96	7,462.51	3,597.51	-2.10	-3,000.00	3,000.00	0.00	715,366.10	607,278.30
10,292.14	90.46	269.96	7,462.44	3,597.44	-2.11	-3,007.15	3,007.15	2.00	715,366.09	607,271.15
10,300.00	90.46	269.96	7,462.38	3,597.38	-2.11	-3,015.02	3,015.02	0.00	715,366.09	607,263.28
10,400.00	90.46	269.96	7,461.58	3,596.58	-2.18	-3,115.01	3,115.01	0.00	715,366.02	607,163.29
10,500.00	90.46	269.96	7,460.78	3,595.78	-2.25	-3,215.01	3,215.01	0.00	715,365.95	607,063.29
10,600.00	90.46	269.96	7,459.98	3,594.98	-2.32	-3,315.01	3,315.01	0.00	715,365.88	606,963.29
10,700.00	90.46	269.96	7,459.18	3,594.18	-2.39	-3,415.00	3,415.00	0.00	715,365.81	606,863.30
10,800.00	90.46	269.96	7,458.38	3,593.38	-2.46	-3,515.00	3,515.00	0.00	715,365.74	606,763.30
10,900.00	90.46	269.96	7,457.58	3,592.58	-2.53	-3,615.00	3,615.00	0.00	715,365.67	606,663.30
11,000.00	90.46	269.96	7,456.78	3,591.78	-2.60	-3,714.99	3,714.99	0.00	715,365.60	606,563.31
11,100.00	90.46	269.96	7,455.98	3,590.98	-2.67	-3,814.99	3,814.99	0.00	715,365.53	606,463.31
11,200.00	90.46	269.96	7,455.18	3,590.18	-2.74	-3,914.99	3,914.99	0.00	715,365.46	606,363.31
11,285.02	90.46	269.96	7,454.50	3,589.50	-2.80	-4,000.00	4,000.00	0.00	715,365.40	606,278.30
11,301.28	90.78	269.96	7,454.32	3,589.32	-2.81	-4,016.27	4,016.27	2.00	715,365.39	606,262.03
11,400.00	90.78	269.96	7,452.97	3,587.97	-2.87	-4,114.97	4,114.97	0.00	715,365.33	606,163.33
11,500.00	90.78	269.96	7,451.61	3,586.61	-2.94	-4,214.96	4,214.97	0.00	715,365.26	606,063.34
11,600.00	90.78	269.96	7,450.24	3,585.24	-3.00	-4,314.95	4,314.96	0.00	715,365.20	605,963.35
11,700.00	90.78	269.96	7,448.87	3,583.87	-3.07	-4,414.95	4,414.95	0.00	715,365.13	605,863.35
11,800.00	90.78	269.96	7,447.50	3,582.50	-3.13	-4,514.94	4,514.94	0.00	715,365.07	605,763.36
11,909.90	90.78	269.96	7,446.00	3,581.00	-3.20	-4,624.83	4,624.83	0.00	715,365.00	605,653.47
PBHL@ 7446' TVD										
11,909.97	90.78	269.96	7,446.00	3,581.00	-3.20	-4,624.90	4,624.90	0.00	715,365.00	605,653.40

Pathfinder X & Y Survey

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1
Project:	Chaves County	TVD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Site:	Conchas State #1H	MD Reference:	WELL @ 3865.00ft (EST. RKB=18')
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.16 Single user database

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
TGT4 CS#1 @ 7462.1 - plan hits target - Point	0.00	0.00	7,462.50	-2.10	-3,000.00	715,366.100	607,278.300	32° 57' 58.043 N	103° 59' 0.788 W
TGT1 CS#1 @ 7488.1 - plan hits target - Point	0.00	0.00	7,488.50	-0.42	-600.00	715,367.780	609,678.300	32° 57' 57.980 N	103° 58' 32.617 W
TGT5 CS#1 @ 7454.1 - plan hits target - Point	0.00	0.00	7,454.50	-2.80	-4,000.00	715,365.400	606,278.300	32° 57' 58.069 N	103° 59' 12.525 W
TGT3 CS#1 @ 7473.1 - plan hits target - Point	0.00	0.00	7,473.00	-1.40	-2,000.00	715,366.800	608,278.300	32° 57' 58.017 N	103° 58' 49.050 W
PBHL CS#1 @ 7446.1 - plan hits target - Point	0.00	0.00	7,446.00	-3.20	-4,624.90	715,365.000	605,653.400	32° 57' 58.085 N	103° 59' 19.860 W
TGT2 CS#1 @ 7483.5 - plan hits target - Point	0.00	0.00	7,483.50	-0.70	-1,000.00	715,367.500	609,278.300	32° 57' 57.991 N	103° 58' 37.312 W

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,012.30	7,012.30	0.00	0.00	KOP@ 7012.3' MD
7,884.84	7,488.50	-0.42	-600.00	LP@7488.5' TVD, Inc. 90.6 Deg., Azi. 269.96 Deg.
11,909.90	7,446.00	-3.20	-4,624.83	PBHL@ 7446' TVD

Checked By: _____ Approved By: _____ Date: _____