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OCT 28 2010
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Mack Energy

Lea County
State GS 16
#2
OH

Plan: Plan #3

Pathfinder X & Y Planning Report

18 October, 2010

PATHFINDER[®]

A Schlumberger Company



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 #3	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
From:	Map	Easting:	737,741.600 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 49' 45.443 N
		Longitude:	103° 33' 33.749 W
		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		07/27/10		7.72		60.79		49,098	

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	8,304.47
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	269.41



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Design:	Plan #3	Database:	Midland Database

Survey Tool Program		Date	10/18/10		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	8,304.47	Plan #1 (S-Well)	MWD	MWD - Standard	
8,304.47	12,596.69	Plan #3 (OH)	MWD	MWD - Standard	

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	



Pathfinder
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Project: Lea County
Site: State GS 16
Well: #2
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #2
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MD Reference: WELL @ 4080.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
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
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



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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	
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	
6,660.00	0.00	0.00	6,660.00	2,580.00	0.00	0.00	0.00	0.00	666,277.30	737,741.60	
6,700.00	0.80	180.00	6,700.00	2,620.00	-0.28	0.00	0.00	2.00	666,277.02	737,741.60	
6,800.00	2.80	180.00	6,799.94	2,719.94	-3.42	0.00	0.04	2.00	666,273.88	737,741.60	
6,909.13	4.98	180.00	6,908.82	2,828.82	-10.83	0.00	0.11	2.00	666,266.47	737,741.60	
7,000.00	4.98	180.00	6,999.34	2,919.34	-18.72	0.00	0.19	0.00	666,258.58	737,741.60	
7,100.00	4.98	180.00	7,098.96	3,018.96	-27.40	0.00	0.28	0.00	666,249.90	737,741.60	
7,200.00	4.98	180.00	7,198.59	3,118.59	-36.09	0.00	0.37	0.00	666,241.21	737,741.60	
7,300.00	4.98	180.00	7,298.21	3,218.21	-44.77	0.00	0.46	0.00	666,232.53	737,741.60	



Pathfinder
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PATHFINDER
A Schlumberger Company

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Site:	State GS 16	MD Reference:	WELL @ 4080.00ft (Original Well Elev)
Well:	#2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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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)	
7,400.00	4.98	180.00	7,397.83	3,317.83	-53.46	0.00	0.55	0.00	666,223.84	737,741.60	
7,500.00	4.98	180.00	7,497.45	3,417.45	-62.14	0.00	0.64	0.00	666,215.16	737,741.60	
7,600.00	4.98	180.00	7,597.08	3,517.08	-70.83	0.00	0.73	0.00	666,206.47	737,741.60	
7,700.00	4.98	180.00	7,696.70	3,616.70	-79.52	0.00	0.82	0.00	666,197.78	737,741.60	
7,800.00	4.98	180.00	7,796.32	3,716.32	-88.20	0.00	0.90	0.00	666,189.10	737,741.60	
7,900.00	4.98	180.00	7,895.94	3,815.94	-96.89	0.00	0.99	0.00	666,180.41	737,741.60	
7,926.34	4.98	180.00	7,922.18	3,842.18	-99.17	0.00	1.02	0.00	666,178.13	737,741.60	
8,000.00	3.51	180.00	7,995.64	3,915.64	-104.63	0.00	1.07	2.00	666,172.67	737,741.60	
8,100.00	1.51	180.00	8,095.54	4,015.54	-109.01	0.00	1.12	2.00	666,168.29	737,741.60	
8,175.47	0.00	0.00	8,171.00	4,091.00	-110.00	0.00	1.13	2.00	666,167.30	737,741.60	
8,200.00	0.00	0.00	8,195.53	4,115.53	-110.00	0.00	1.13	0.00	666,167.30	737,741.60	
8,304.47	0.00	0.00	8,300.00	4,220.00	-110.00	0.00	1.13	0.00	666,167.30	737,741.60	
8,350.00	4.29	271.01	8,345.49	4,265.49	-109.97	-1.70	2.83	9.42	666,167.33	737,739.90	
8,400.00	9.00	271.01	8,395.14	4,315.14	-109.87	-7.49	8.61	9.42	666,167.43	737,734.11	
8,450.00	13.71	271.01	8,444.14	4,364.14	-109.69	-17.33	18.45	9.42	666,167.61	737,724.27	
8,500.00	18.43	271.01	8,492.18	4,412.18	-109.45	-31.16	32.29	9.42	666,167.85	737,710.44	
8,550.00	23.14	271.01	8,538.91	4,458.91	-109.14	-48.90	50.01	9.42	666,168.16	737,692.70	
8,600.00	27.85	271.01	8,584.03	4,504.03	-108.76	-70.41	71.52	9.42	666,168.54	737,671.19	
8,650.00	32.56	271.01	8,627.23	4,547.23	-108.32	-95.55	96.66	9.42	666,168.98	737,646.05	
8,700.00	37.27	271.01	8,668.22	4,588.22	-107.81	-124.16	125.26	9.42	666,169.49	737,617.44	
8,750.00	41.98	271.01	8,706.71	4,626.71	-107.25	-156.03	157.13	9.42	666,170.05	737,585.57	
8,800.00	46.70	271.01	8,742.46	4,662.46	-106.63	-190.97	192.05	9.42	666,170.67	737,550.63	
8,850.00	51.41	271.01	8,775.22	4,695.22	-105.97	-228.71	229.79	9.42	666,171.33	737,512.89	
8,900.00	56.12	271.01	8,804.77	4,724.77	-105.26	-269.03	270.09	9.42	666,172.04	737,472.57	
8,950.00	60.83	271.01	8,830.91	4,750.91	-104.51	-311.63	312.68	9.42	666,172.79	737,429.97	
9,000.00	65.54	271.01	8,853.46	4,773.46	-103.72	-356.23	357.28	9.42	666,173.58	737,385.37	
9,050.00	70.25	271.01	8,872.26	4,792.26	-102.90	-402.54	403.57	9.42	666,174.40	737,339.06	



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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)
9,100.00	74.97	271.01	8,887.20	4,807.20	-102.06	-450.23	451.26	9.42	666,175.24	737,291.37
9,150.00	79.68	271.01	8,898.17	4,818.17	-101.20	-498.99	500.00	9.42	666,176.10	737,242.61
9,200.00	84.39	271.01	8,905.10	4,825.10	-100.33	-548.49	549.49	9.42	666,176.97	737,193.11
9,250.00	89.10	271.01	8,907.94	4,827.94	-99.45	-598.39	599.37	9.42	666,177.85	737,143.21
9,255.92	89.66	271.01	8,908.00	4,828.00	-99.35	-604.31	605.30	9.42	666,177.95	737,137.29
9,300.00	89.66	271.01	8,908.26	4,828.26	-98.57	-648.38	649.35	0.00	666,178.73	737,093.22
9,400.00	89.66	271.01	8,908.85	4,828.85	-96.81	-748.36	749.31	0.00	666,180.49	736,993.24
9,500.00	89.66	271.01	8,909.45	4,829.45	-95.04	-848.34	849.27	0.00	666,182.26	736,893.26
9,600.00	89.66	271.01	8,910.04	4,830.04	-93.28	-948.32	949.23	0.00	666,184.02	736,793.28
9,700.00	89.66	271.01	8,910.64	4,830.64	-91.52	-1,048.31	1,049.19	0.00	666,185.78	736,693.29
9,800.00	89.66	271.01	8,911.23	4,831.23	-89.76	-1,148.29	1,149.15	0.00	666,187.54	736,593.31
9,900.00	89.66	271.01	8,911.82	4,831.82	-87.99	-1,248.27	1,249.11	0.00	666,189.31	736,493.33
10,000.00	89.66	271.01	8,912.42	4,832.42	-86.23	-1,348.26	1,349.07	0.00	666,191.07	736,393.34
10,100.00	89.66	271.01	8,913.01	4,833.01	-84.47	-1,448.24	1,449.03	0.00	666,192.83	736,293.36
10,200.00	89.66	271.01	8,913.60	4,833.60	-82.71	-1,548.22	1,548.99	0.00	666,194.59	736,193.38
10,300.00	89.66	271.01	8,914.20	4,834.20	-80.94	-1,648.20	1,648.95	0.00	666,196.36	736,093.40
10,400.00	89.66	271.01	8,914.79	4,834.79	-79.18	-1,748.19	1,748.91	0.00	666,198.12	735,993.41
10,500.00	89.66	271.01	8,915.38	4,835.38	-77.42	-1,848.17	1,848.87	0.00	666,199.88	735,893.43
10,600.00	89.66	271.01	8,915.98	4,835.98	-75.65	-1,948.15	1,948.83	0.00	666,201.65	735,793.45
10,700.00	89.66	271.01	8,916.57	4,836.57	-73.89	-2,048.13	2,048.78	0.00	666,203.41	735,693.47
10,800.00	89.66	271.01	8,917.16	4,837.16	-72.13	-2,148.12	2,148.74	0.00	666,205.17	735,593.48
10,900.00	89.66	271.01	8,917.76	4,837.76	-70.37	-2,248.10	2,248.70	0.00	666,206.93	735,493.50
11,000.00	89.66	271.01	8,918.35	4,838.35	-68.60	-2,348.08	2,348.66	0.00	666,208.70	735,393.52
11,100.00	89.66	271.01	8,918.94	4,838.94	-66.84	-2,448.07	2,448.62	0.00	666,210.46	735,293.53
11,200.00	89.66	271.01	8,919.54	4,839.54	-65.08	-2,548.05	2,548.58	0.00	666,212.22	735,193.55
11,300.00	89.66	271.01	8,920.13	4,840.13	-63.32	-2,648.03	2,648.54	0.00	666,213.98	735,093.57
11,400.00	89.66	271.01	8,920.72	4,840.72	-61.55	-2,748.01	2,748.50	0.00	666,215.75	734,993.59



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 #3	Database:	Midland Database

Planned Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg (°/100ft)	Northing (ft)	Easting (ft)	
11,500.00	89.66	271.01	8,921.32	4,841.32	-59.79	-2,848.00	2,848.46	0.00	666,217.51	734,893.60	
11,600.00	89.66	271.01	8,921.91	4,841.91	-58.03	-2,947.98	2,948.42	0.00	666,219.27	734,793.62	
11,700.00	89.66	271.01	8,922.50	4,842.50	-56.27	-3,047.96	3,048.38	0.00	666,221.03	734,693.64	
11,800.00	89.66	271.01	8,923.10	4,843.10	-54.50	-3,147.94	3,148.34	0.00	666,222.80	734,593.66	
11,900.00	89.66	271.01	8,923.69	4,843.69	-52.74	-3,247.93	3,248.30	0.00	666,224.56	734,493.67	
12,000.00	89.66	271.01	8,924.28	4,844.28	-50.98	-3,347.91	3,348.26	0.00	666,226.32	734,393.69	
12,100.00	89.66	271.01	8,924.88	4,844.88	-49.21	-3,447.89	3,448.22	0.00	666,228.09	734,293.71	
12,200.00	89.66	271.01	8,925.47	4,845.47	-47.45	-3,547.87	3,548.17	0.00	666,229.85	734,193.73	
12,300.00	89.66	271.01	8,926.06	4,846.06	-45.69	-3,647.86	3,648.13	0.00	666,231.61	734,093.74	
12,400.00	89.66	271.01	8,926.66	4,846.66	-43.93	-3,747.84	3,748.09	0.00	666,233.37	733,993.76	
12,500.00	89.66	271.01	8,927.25	4,847.25	-42.16	-3,847.82	3,848.05	0.00	666,235.14	733,893.78	
12,596.70	89.66	271.01	8,927.82	4,847.82	-40.46	-3,944.50	3,944.71	0.00	666,236.84	733,797.10	

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									
TGT3(GS16)	0.00	0.00	8,933.00	-31.42	-2,999.84	666,245.885	734,741.764	32° 49' 45.348 N	103° 34' 8.906 W
- plan misses target center by 27.86ft at 11652.38ft MD (8922.22 TVD, -57.10 N, -3000.35 E)									
- Point									
TGT1(GS16)	0.00	0.00	8,913.00	-10.47	-999.95	666,266.828	736,741.655	32° 49' 45.412 N	103° 33' 45.468 W
- plan misses target center by 81.93ft at 9653.09ft MD (8910.36 TVD, -92.35 N, -1001.40 E)									
- Point									
PBHL(GS16)	0.00	0.00	8,928.00	-40.70	-3,944.50	666,236.600	733,797.100	32° 49' 45.324 N	103° 34' 19.977 W
- plan hits target center									
- Point									
TGT2(GS16)	0.00	0.00	8,933.00	-20.94	-1,999.89	666,256.356	735,741.710	32° 49' 45.380 N	103° 33' 57.187 W
- plan misses target center by 56.33ft at 10652.80ft MD (8916.29 TVD, -74.72 N, -2000.94 E)									
- Point									



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 #3	Database:	Midland Database

Checked By: _____ Approved By: _____ Date: _____



Project: Lea County
Site: State GS 16
Well: #2
Wellbore: OH
Plan: Plan #3 (#2/OH)

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°

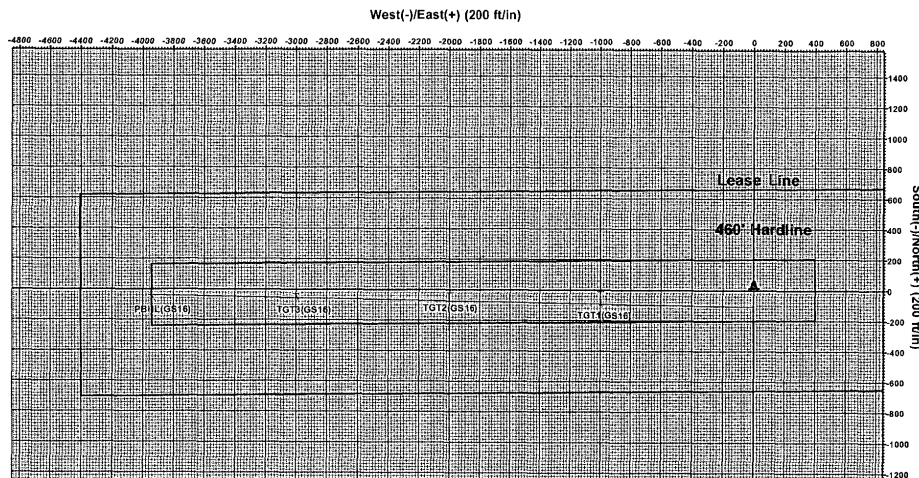
Magnetic Field
Strength: 49097.6snT
Dip Angle: 60.79°
Date: 07/27/2010
Model: IGRF200510



A Schlumberger Company

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLag	TFace	VSec	Target
1	8304.47	0.00	0.00	8300.00	-116.00	0.00	0.00	0.00	1.13	
2	8255.82	89.66	271.01	8908.00	-86.35	-364.21	8.42	271.01	663.30	
3	12566.70	89.66	271.01	8927.82	-40.46	-3944.50	0.00	0.00	3944.71	PBHL(GS16)



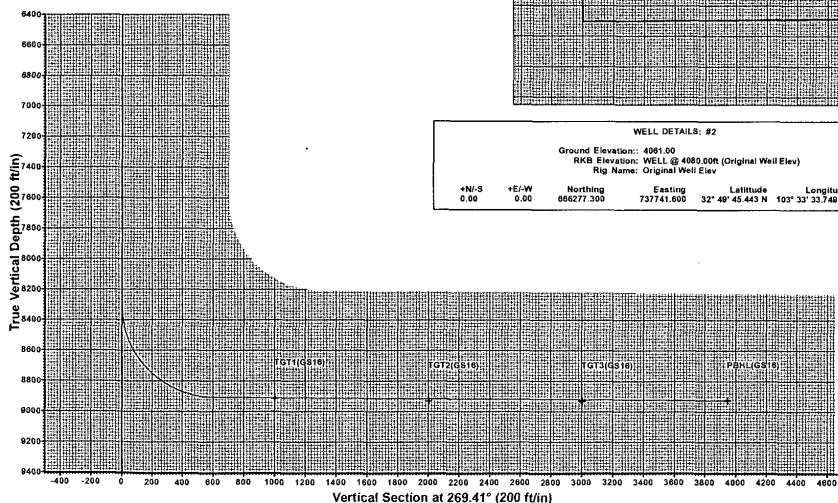
WELL DETAILS: #2

Ground Elevation: 4961.00
RKB Elevation: WELL @ 4985.00 (Original Well Elev)
Rig Name: Original Well Elev

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	866277.300	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)	8913.00	-10.47	-968.95	866268.825	736741.655	Point
PBHL(GS16)	8928.00	-40.70	-3944.50	866236.650	733767.100	Point
TGT2(GS16)	8933.00	-20.94	-1969.89	866256.356	735741.710	Point
TGT3(GS16)	8933.00	-31.42	-2869.84	866245.885	734741.784	Point



Plan: Plan #3 (#2/OH)

Created By: Nate Bingham Date: 17:51, October 18 2010

Checked: _____ Date: _____