

New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240

RECEIVED

Form 3160-3
(April 2004)

JUL 27 2010

HOBBSDO

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JUL 27 2010

HOBBSDO

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work - ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-119274	
1b. Type of Well - ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Mack Energy Corporation		7. If Unit or CA Agreement, Name and No.	
3a. Address P.O. Box 960 Artesia, NM 88211-0960		8. Lease Name and Well No. Peery Federal #12 H	
3b. Phone No. (include area code) (575) 748-1288		9. API Well No. 30-005-29141	
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface 965 FSL & 1980 FEL At proposed prod zone 965 FSL & 330 FWL		10. Field and Pool, or Exploratory Little Lucky Lake; Wolfcamp	
14. Distance in miles and direction from nearest town or post office* 15 miles north of Loco Hills, NM		11. Sec., T., R. M. or Blk. and Survey or Area Sec. 29 T15S R30E	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any) 330		12. County or Parish Chaves	
16. No. of acres in lease 640		13. State NM	
17. Spacing Unit dedicated to this well 120			
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 1650'		20. BLM/BIA Bond No. on file NMB000286	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3961' GR		23. Estimated duration 35 days	
22. Approximate date work will start* 6/15/2010			

24. Attachments

ROSWELL CONTROLLED WATER BASIN

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above), |
| 2. A Drilling Plan | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer |

25. Signature <i>Jerry W. Sherrell</i>	Name (Printed/Typed) Jerry W. Sherrell	Date 5/17/10
Title Production Clerk		
Approved by (Signature) <i>Angel Mayes</i>	Name (Printed/Typed) <i>Angel Mayes</i>	Date 07-22-10
Title Assistant Field Manager, Lands And Minerals	Office ROSWELL FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon
Conditions of approval, if any, are attached

APPROVED FOR 2 YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

*(Instructions on page 2)

DECLARED WATER BASIN

CEMENT BEHIND THE 95"
CASING MUST BE CIRCULATED

WITNESS

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED

RECEIVED

JUL 27 2010

State of New Mexico

DISTRICT I

1625 N. FRENCH DR., HOBBS, NM 88240

HOBBSOCD

Energy, Minerals and Natural Resources Department

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-005-29141	Pool Code 97247	Pool Name Little Lucky Lake; Wolfcamp
Property Code 303941	Property Name PEERY FEDERAL	Well Number 12
GRID No. 013837	Operator Name MACK ENERGY CORPORATION	Elevation 3961'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	29	15-S	30-E		965	SOUTH	1980	EAST	CHAVES

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	15-S	30-E		965	SOUTH	330	WEST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=721273.6 N X=619172.8 E LAT.=32.982246° N LONG.=103.944700° W BOTTOM HOLE LOCATION Y=721267.5 N X=616199.5 E		DETAIL
330' B.H. GRID. AZ.-269°53'01" HORZ. DIST.-2974.2' S.L. SEE DETAIL 1980'		OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Jerry W. Sherrell</i> 5/17/10 Signature Date Jerry W. Sherrell Printed Name
330' B.H. GRID. AZ.-269°53'01" HORZ. DIST.-2974.2' S.L. SEE DETAIL 1980'		SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. GARY EIDSON MARCH 8, 2010 Date Surveyed Signature & Seal of Professional Surveyor LA <i>Gary E. Eidson</i> 3/16/10 101110298 Certificate No. GARY EIDSON 12841 RONALD EIDSON 3239

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Yates	1480'	Tubb	5710'
Queen	2240'	Abo	6510'
San Andres	2920'	WC	7900'
Glorieta	4520'	Strawn	9725'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
San Andres	2920'	Oil/Gas
Abo	6510'	Oil/Gas
WC	7900'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 9 5/8" casing to 450' and circulating cement back to surface will protect the surface fresh water sand. ~~An optional intermediate string of 7" casing set @ 2300' should not be run.~~ Salt Section and any shallower zones above production zone, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing a combination string of 5 1/2" and 4 1/2" production casing thru a ported collar @ 8100', sufficient cement will be pumped to circulate back to surface.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
14 3/4"	0-450'	9 5/8"	36#, J-55, ST&C, New, 9.18/6.84/7.04
8 3/4"	0-7800'	7"	26#,HCP-110, LT&C, New, 1.73/2.01/2.78
8 3/4"	7800-8550'	7"	26#,HCP-110,Buttress,New, 1.73/38.93/33.16
6 1/8"	7700-11,361	4 1/2"	11.6# HCP-110, LT&C, New, 1.52/3.56/3.56

5. Cement Program:

9 5/8" Surface Casing: Class C, 500sx yield 1.34
7" Intermediate Casing: Class H, Lead 1050sx, yld 2.15, tail 200sx, yld 1.19.
4 1/2" Production Casing: Set with isolation packers.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The BOP will be nipped up on the 9 5/8" surface casing and tested to 2000 psi by a 3rd party and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of surface casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 3000 psi WP rating.

7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-450'	Fresh Water	8.5	28	N.C.
450-3050'	Brine	10	30	N.C.
3050'-TD	Cut Brine	9.1	29	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

8. Auxiliary Well Control and Monitoring Equipment:

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program:

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log from T.D. to 8 5/8 casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined at TD.

10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 2250 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H₂S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is June 15, 2010. Once commenced, the drilling operation should be finished in approximately 30 days. If the well is productive, an additional 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

1. Well Site Layout:

- A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #6. Dimensions of the pad are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- B. Diagram below shows the proposed orientation of the location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

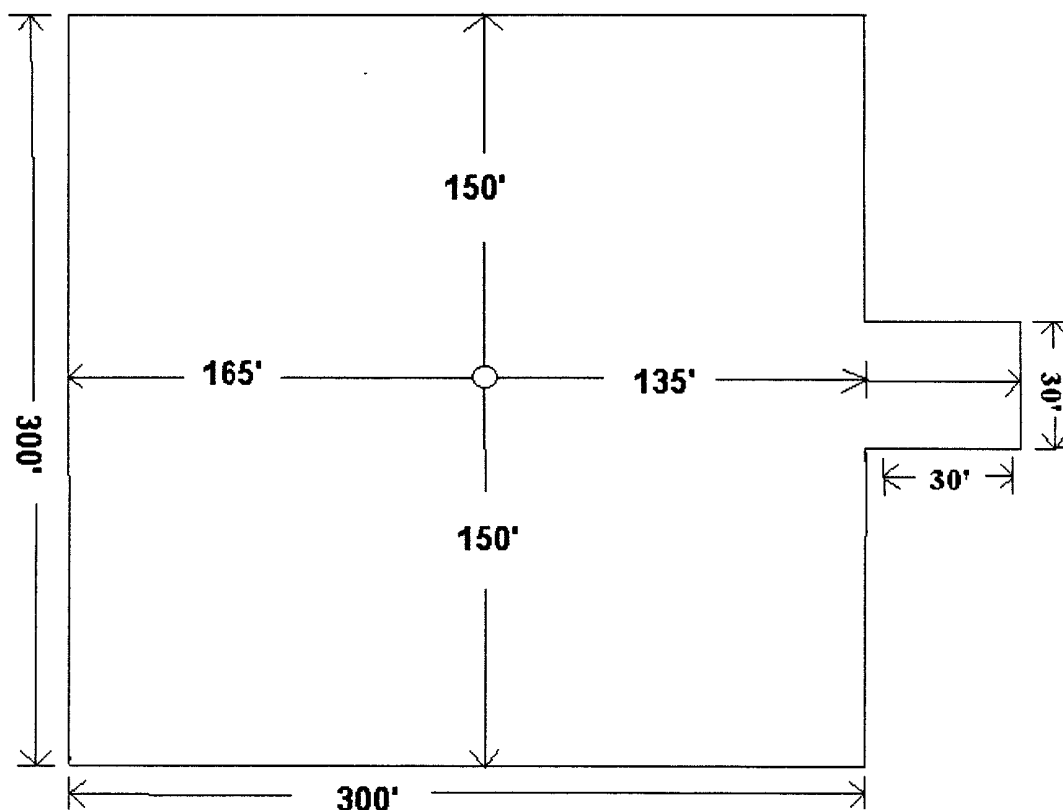


Exhibit #6

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Peery Federal #12
Chaves County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

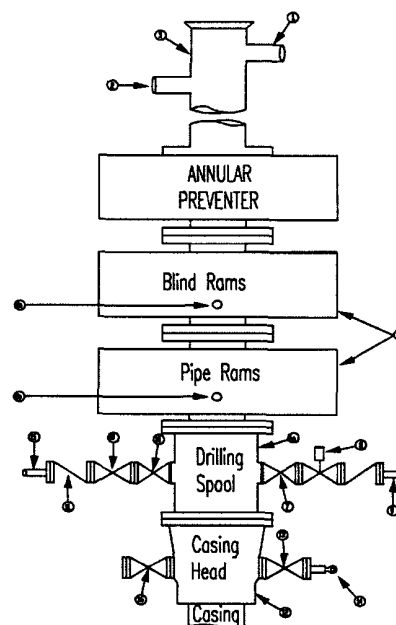
Mack Energy Corporation
Minimum Blowout Preventer Requirements
 3000 psi Working Pressure
 3 MWP
 EXHIBIT #10

Stack Requirements

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL

16	Flanged Valve	1 13/16	
----	---------------	---------	--



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

10.

ME

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.

5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

Mack Energy Corporation

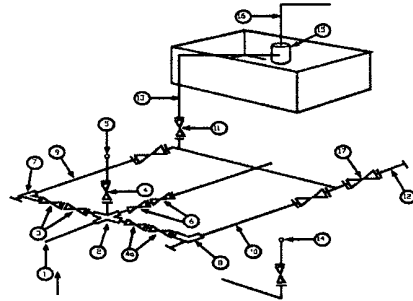
Exhibit #11

MINIMUM CHOKE MANIFOLD

3,000, 5,000, and 10,000 PSI Working Pressure

3M will be used

3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

* Location of separator optional

Below Substructure

Minimum requirements

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	Nominal	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 3M

(2) Gate valves only shall be used for Class 10 M

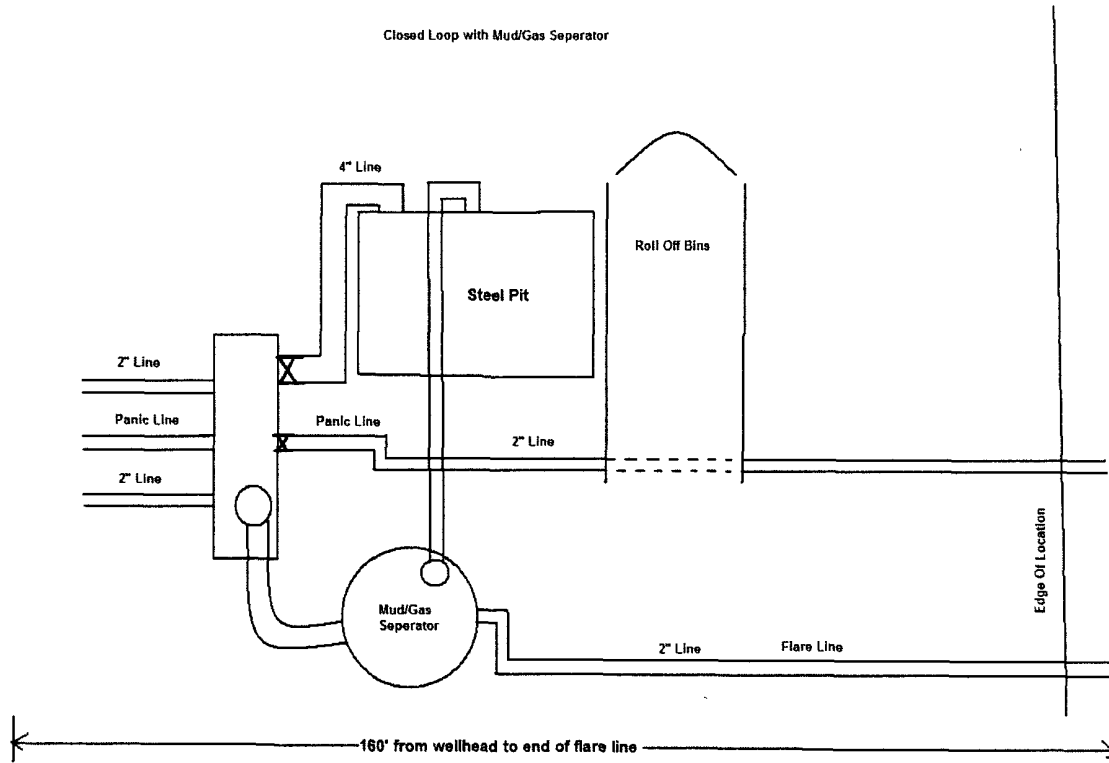
(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation

MANIFOLD SCHEMATIC



Note: In view of potential H₂S presence, the flare line(s) discharge shall be located not less than 150 feet from the wellhead, having straight lines unless turns are targeted with running tees, and shall be positioned downwind from the prevailing wind direction and shall be anchored.



Mack Energy

Chaves County

Peery Federal

#12

OH

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JUL 27 2010

HOBBSOCD

Plan: Plan #1

Pathfinder X & Y Planning Report

28 April, 2010

PATHFINDER



Pathfinder Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #12
Project:	Chaves County	TVD Reference:	WELL @ 3979.00ft (18' KB Correction)
Site:	Peery Federal	MD Reference:	WELL @ 3979.00ft (18' KB Correction)
Well:	#12	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Project:	Chaves County	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Peery Federal		
Site Position:		Northing:	721,535.600 ft
From:	Map	Easting:	620,821.500 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 58' 58.617 N
		Longitude:	103° 56' 21.552 W
		Grid Convergence:	0.21 °

Well	#12				
Well Position	+N/-S	0.00 ft	Northing:	721,273.600 ft	Latitude: 32° 58' 56.085 N
	+E/-W	0.00 ft	Easting:	619,172.800 ft	Longitude: 103° 56' 40.919 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level: 3,961.00 ft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	05/12/2010	7.94	60.87	49,167

Design		Plan #1		
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	269.88

Survey Tool Program	Date	04/28/2010		
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
0.00	11,361.47	Plan #1 (OH)	MWD	MWD - Standard



Pathfinder

Pathfinder X & Y Planning Report



Company: Mack Energy
Project: Chaves County
Site: Peery Federal
Well: #12
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #12
TVD Reference: WELL @ 3979.00ft (18' KB Correction)
MD Reference: WELL @ 3979.00ft (18' KB Correction)
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)
0.00	0.00	0.00	0.00	-3,979.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
100.00	0.00	0.00	100.00	-3,879.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
200.00	0.00	0.00	200.00	-3,779.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
300.00	0.00	0.00	300.00	-3,679.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
400.00	0.00	0.00	400.00	-3,579.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
500.00	0.00	0.00	500.00	-3,479.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
600.00	0.00	0.00	600.00	-3,379.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
700.00	0.00	0.00	700.00	-3,279.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
800.00	0.00	0.00	800.00	-3,179.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
900.00	0.00	0.00	900.00	-3,079.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,000.00	0.00	0.00	1,000.00	-2,979.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,100.00	0.00	0.00	1,100.00	-2,879.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,200.00	0.00	0.00	1,200.00	-2,779.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,300.00	0.00	0.00	1,300.00	-2,679.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,400.00	0.00	0.00	1,400.00	-2,579.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,500.00	0.00	0.00	1,500.00	-2,479.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,600.00	0.00	0.00	1,600.00	-2,379.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,700.00	0.00	0.00	1,700.00	-2,279.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,800.00	0.00	0.00	1,800.00	-2,179.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
1,900.00	0.00	0.00	1,900.00	-2,079.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,000.00	0.00	0.00	2,000.00	-1,979.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,100.00	0.00	0.00	2,100.00	-1,879.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,200.00	0.00	0.00	2,200.00	-1,779.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,300.00	0.00	0.00	2,300.00	-1,679.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,400.00	0.00	0.00	2,400.00	-1,579.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,500.00	0.00	0.00	2,500.00	-1,479.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
2,600.00	0.00	0.00	2,600.00	-1,379.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80



Pathfinder

Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #12
Project:	Chaves County	TVD Reference:	WELL @ 3979.00ft (18' KB Correction)
Site:	Peery Federal	MD Reference:	WELL @ 3979.00ft (18' KB Correction)
Well:	#12	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)	
2,700.00	0.00	0.00	2,700.00	-1,279.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
2,800.00	0.00	0.00	2,800.00	-1,179.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
2,900.00	0.00	0.00	2,900.00	-1,079.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,000.00	0.00	0.00	3,000.00	-979.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,100.00	0.00	0.00	3,100.00	-879.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,200.00	0.00	0.00	3,200.00	-779.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,300.00	0.00	0.00	3,300.00	-679.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,400.00	0.00	0.00	3,400.00	-579.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,500.00	0.00	0.00	3,500.00	-479.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,600.00	0.00	0.00	3,600.00	-379.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,700.00	0.00	0.00	3,700.00	-279.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,800.00	0.00	0.00	3,800.00	-179.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
3,900.00	0.00	0.00	3,900.00	-79.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,000.00	0.00	0.00	4,000.00	21.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,100.00	0.00	0.00	4,100.00	121.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,200.00	0.00	0.00	4,200.00	221.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,300.00	0.00	0.00	4,300.00	321.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,400.00	0.00	0.00	4,400.00	421.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,500.00	0.00	0.00	4,500.00	521.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,600.00	0.00	0.00	4,600.00	621.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,700.00	0.00	0.00	4,700.00	721.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,800.00	0.00	0.00	4,800.00	821.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
4,900.00	0.00	0.00	4,900.00	921.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
5,000.00	0.00	0.00	5,000.00	1,021.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
5,100.00	0.00	0.00	5,100.00	1,121.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
5,200.00	0.00	0.00	5,200.00	1,221.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	
5,300.00	0.00	0.00	5,300.00	1,321.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80	



Pathfinder

Pathfinder X & Y Planning Report



Company: Mack Energy
Project: Chaves County
Site: Peery Federal
Well: #12
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #12
TVD Reference: WELL @ 3979.00ft (18' KB Correction)
MD Reference: WELL @ 3979.00ft (18' KB Correction)
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)
5,400.00	0.00	0.00	5,400.00	1,421.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
5,500.00	0.00	0.00	5,500.00	1,521.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
5,600.00	0.00	0.00	5,600.00	1,621.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
5,700.00	0.00	0.00	5,700.00	1,721.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
5,800.00	0.00	0.00	5,800.00	1,821.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
5,900.00	0.00	0.00	5,900.00	1,921.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,000.00	0.00	0.00	6,000.00	2,021.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,100.00	0.00	0.00	6,100.00	2,121.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,200.00	0.00	0.00	6,200.00	2,221.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,300.00	0.00	0.00	6,300.00	2,321.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,400.00	0.00	0.00	6,400.00	2,421.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,500.00	0.00	0.00	6,500.00	2,521.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,600.00	0.00	0.00	6,600.00	2,621.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,700.00	0.00	0.00	6,700.00	2,721.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,800.00	0.00	0.00	6,800.00	2,821.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
6,900.00	0.00	0.00	6,900.00	2,921.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,000.00	0.00	0.00	7,000.00	3,021.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,100.00	0.00	0.00	7,100.00	3,121.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,200.00	0.00	0.00	7,200.00	3,221.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,300.00	0.00	0.00	7,300.00	3,321.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,400.00	0.00	0.00	7,400.00	3,421.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,500.00	0.00	0.00	7,500.00	3,521.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,600.00	0.00	0.00	7,600.00	3,621.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,700.00	0.00	0.00	7,700.00	3,721.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,800.00	0.00	0.00	7,800.00	3,821.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
7,900.00	0.00	0.00	7,900.00	3,921.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
8,000.00	0.00	0.00	8,000.00	4,021.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80



Pathfinder

Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #12
Project:	Chaves County	TVD Reference:	WELL @ 3979.00ft (18' KB Correction)
Site:	Peery Federal	MD Reference:	WELL @ 3979.00ft (18' KB Correction)
Well:	#12	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)
8,049.00	0.00	0.00	8,049.00	4,070.00	0.00	0.00	0.00	0.00	721,273.60	619,172.80
8,050.00	0.10	269.88	8,050.00	4,071.00	0.00	0.00	0.00	9.65	721,273.60	619,172.80
8,100.00	4.92	269.88	8,099.94	4,120.94	0.00	-2.19	2.19	9.65	721,273.60	619,170.61
8,150.00	9.74	269.88	8,149.51	4,170.51	-0.02	-8.57	8.57	9.65	721,273.58	619,164.23
8,200.00	14.56	269.88	8,198.38	4,219.38	-0.04	-19.09	19.09	9.65	721,273.56	619,153.71
8,250.00	19.39	269.88	8,246.19	4,267.19	-0.07	-33.68	33.68	9.65	721,273.53	619,139.12
8,300.00	24.21	269.88	8,292.60	4,313.60	-0.11	-52.24	52.24	9.65	721,273.49	619,120.56
8,350.00	29.03	269.88	8,337.28	4,358.28	-0.16	-74.64	74.64	9.65	721,273.44	619,098.16
8,400.00	33.85	269.88	8,379.93	4,400.93	-0.21	-100.72	100.72	9.65	721,273.39	619,072.08
8,450.00	38.68	269.88	8,420.23	4,441.23	-0.27	-130.28	130.29	9.65	721,273.33	619,042.52
8,500.00	43.50	269.88	8,457.90	4,478.90	-0.34	-163.14	163.14	9.65	721,273.26	619,009.66
8,550.00	48.32	269.88	8,492.68	4,513.68	-0.42	-199.04	199.04	9.65	721,273.18	618,973.76
8,600.00	53.15	269.88	8,524.32	4,545.32	-0.50	-237.74	237.74	9.65	721,273.10	618,935.06
8,650.00	57.97	269.88	8,552.59	4,573.59	-0.58	-278.96	278.96	9.65	721,273.02	618,893.84
8,700.00	62.79	269.88	8,577.30	4,598.30	-0.68	-322.41	322.41	9.65	721,272.92	618,850.39
8,750.00	67.61	269.88	8,598.26	4,619.26	-0.77	-367.79	367.79	9.65	721,272.83	618,805.01
8,800.00	72.44	269.88	8,615.34	4,636.34	-0.87	-414.77	414.77	9.65	721,272.73	618,758.03
8,850.00	77.26	269.88	8,628.40	4,649.40	-0.97	-463.01	463.02	9.65	721,272.63	618,709.79
8,900.00	82.08	269.88	8,637.37	4,658.37	-1.07	-512.19	512.19	9.65	721,272.53	618,660.61
8,950.00	86.90	269.88	8,642.16	4,663.16	-1.18	-561.94	561.95	9.65	721,272.42	618,610.86
8,988.11	90.58	269.88	8,643.00	4,664.00	-1.26	-600.04	600.04	9.65	721,272.34	618,572.76
8,988.27	90.58	269.88	8,643.00	4,664.00	-1.26	-600.20	600.20	0.00	721,272.34	618,572.60
9,000.00	90.58	269.88	8,642.88	4,663.88	-1.28	-611.93	611.93	0.00	721,272.32	618,560.87
9,100.00	90.58	269.88	8,641.87	4,662.87	-1.49	-711.92	711.92	0.00	721,272.11	618,460.88
9,200.00	90.58	269.88	8,640.86	4,661.86	-1.70	-811.92	811.92	0.00	721,271.90	618,360.88
9,300.00	90.58	269.88	8,639.84	4,660.84	-1.91	-911.91	911.91	0.00	721,271.69	618,260.89
9,388.09	90.58	269.88	8,639.00	4,660.00	-2.07	-1,000.00	1,000.00	0.00	721,271.53	618,172.80



Pathfinder

Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #12
Project:	Chaves County	TVD Reference:	WELL @ 3979.00ft (18' KB Correction)
Site:	Peery Federal	MD Reference:	WELL @ 3979.00ft (18' KB Correction)
Well:	#12	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)	
9,405.95	90.22	269.88	8,638.87	4,659.87	-2.11	-1,017.86	1,017.86	2.00	721,271.49	618,154.94	
9,500.00	90.22	269.88	8,638.51	4,659.51	-2.30	-1,111.91	1,111.91	0.00	721,271.30	618,060.89	
9,600.00	90.22	269.88	8,638.12	4,659.12	-2.50	-1,211.90	1,211.91	0.00	721,271.10	617,960.90	
9,700.00	90.22	269.88	8,637.73	4,658.73	-2.71	-1,311.90	1,311.91	0.00	721,270.89	617,860.90	
9,800.00	90.22	269.88	8,637.34	4,658.34	-2.91	-1,411.90	1,411.91	0.00	721,270.69	617,760.90	
9,888.10	90.22	269.88	8,637.00	4,658.00	-3.09	-1,500.00	1,500.00	0.00	721,270.51	617,672.80	
9,893.54	90.11	269.88	8,636.98	4,657.98	-3.10	-1,505.44	1,505.44	2.00	721,270.50	617,667.36	
9,900.00	90.11	269.88	8,636.97	4,657.97	-3.11	-1,511.90	1,511.91	0.00	721,270.49	617,660.90	
10,000.00	90.11	269.88	8,636.77	4,657.77	-3.32	-1,611.90	1,611.91	0.00	721,270.28	617,560.90	
10,100.00	90.11	269.88	8,636.57	4,657.57	-3.52	-1,711.90	1,711.90	0.00	721,270.08	617,460.90	
10,200.00	90.11	269.88	8,636.37	4,657.37	-3.73	-1,811.90	1,811.90	0.00	721,269.87	617,360.90	
10,300.00	90.11	269.88	8,636.18	4,657.18	-3.93	-1,911.90	1,911.90	0.00	721,269.67	617,260.90	
10,388.10	90.11	269.88	8,636.00	4,657.00	-4.11	-2,000.00	2,000.00	0.00	721,269.49	617,172.80	
10,400.00	89.88	269.88	8,636.00	4,657.00	-4.13	-2,011.90	2,011.90	2.00	721,269.47	617,160.90	
10,426.95	89.34	269.88	8,636.19	4,657.19	-4.19	-2,038.85	2,038.85	2.00	721,269.41	617,133.95	
10,500.00	89.34	269.88	8,637.03	4,658.03	-4.34	-2,111.89	2,111.90	0.00	721,269.26	617,060.91	
10,600.00	89.34	269.88	8,638.19	4,659.19	-4.54	-2,211.89	2,211.89	0.00	721,269.06	616,960.91	
10,700.00	89.34	269.88	8,639.35	4,660.35	-4.75	-2,311.88	2,311.89	0.00	721,268.85	616,860.92	
10,800.00	89.34	269.88	8,640.50	4,661.50	-4.95	-2,411.87	2,411.88	0.00	721,268.65	616,760.93	
10,900.00	89.34	269.88	8,641.66	4,662.66	-5.16	-2,511.87	2,511.87	0.00	721,268.44	616,660.93	
11,000.00	89.34	269.88	8,642.82	4,663.82	-5.36	-2,611.86	2,611.87	0.00	721,268.24	616,560.94	
11,100.00	89.34	269.88	8,643.97	4,664.97	-5.57	-2,711.85	2,711.86	0.00	721,268.03	616,460.95	
11,200.00	89.34	269.88	8,645.13	4,666.13	-5.77	-2,811.85	2,811.85	0.00	721,267.83	616,360.95	
11,300.00	89.34	269.88	8,646.29	4,667.29	-5.97	-2,911.84	2,911.85	0.00	721,267.63	616,260.96	
11,361.47	89.34	269.88	8,647.00	4,668.00	-6.10	-2,973.30	2,973.31	0.00	721,267.50	616,199.50	



Pathfinder
Pathfinder X & Y Planning Report



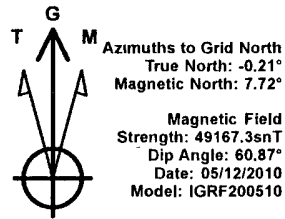
Company: Mack Energy
Project: Chaves County
Site: Peery Federal
Well: #12
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #12
TVD Reference: WELL @ 3979.00ft (18' KB Correction)
MD Reference: WELL @ 3979.00ft (18' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland 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
PBHL(#12H) - plan hits target center - Point	0.00	0.00	8,647.00	-6.10	-2,973.30	721,267.500	616,199.500	32° 58' 56.132 N	103° 57' 15.825 W
TGT3(#12H) - plan hits target center - Point	0.00	0.00	8,636.00	-4.11	-2,000.00	721,269.490	617,172.800	32° 58' 56.117 N	103° 57' 4.399 W
Tgt2(#12H) - plan hits target center - Point	0.00	0.00	8,637.00	-3.09	-1,500.00	721,270.510	617,672.800	32° 58' 56.109 N	103° 56' 58.529 W
TGT1(#12H) - plan hits target center - Point	0.00	0.00	8,639.00	-2.07	-1,000.00	721,271.530	618,172.800	32° 58' 56.101 N	103° 56' 52.659 W

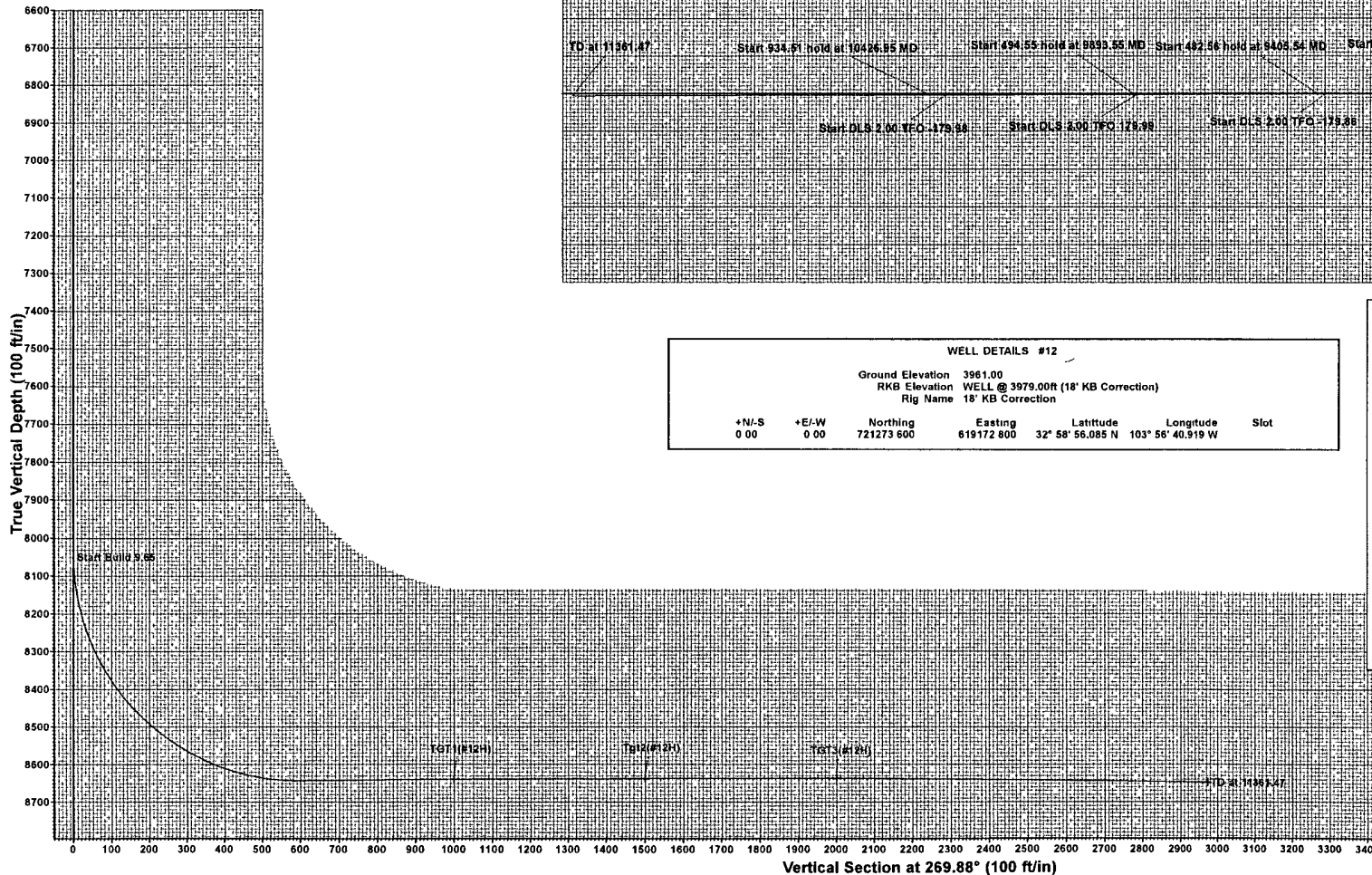
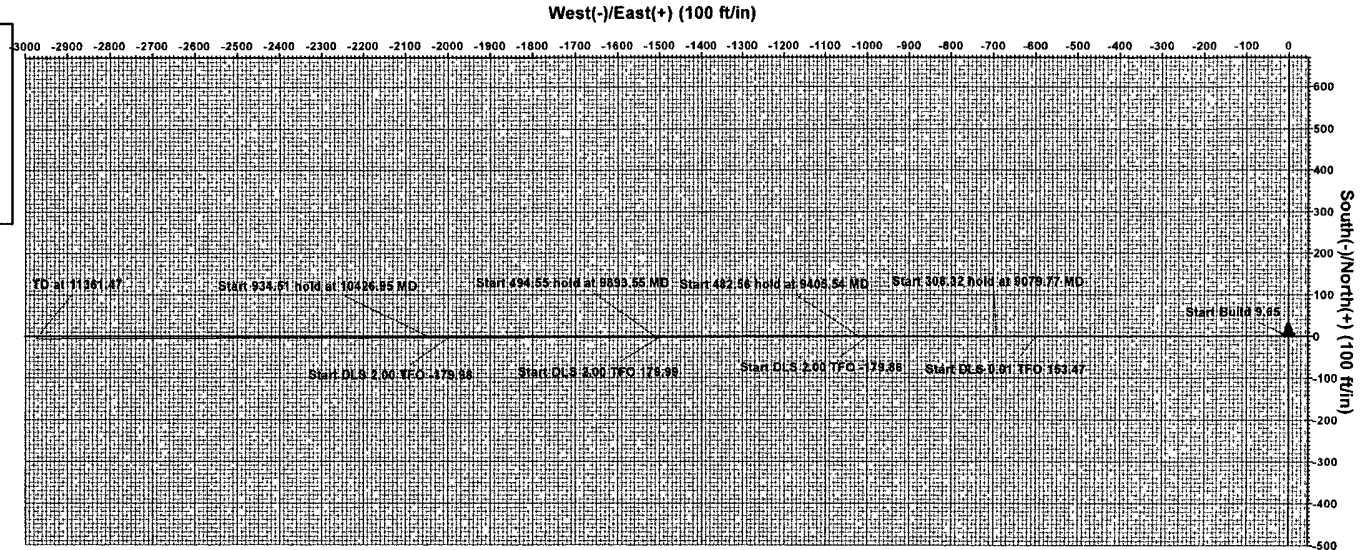
Checked By: _____ Approved By: _____ Date: _____



PATHFINDER

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	8049 00	0 00	0 00	8049 00	0 00	0 00	0 00	0 00	0 00	
3	8988 11	90 58	269 88	8643 00	-1 26	-600 04	9 65	269.88	800 04	
4	8988 27	90 58	269 88	8643 00	-1 26	-600 20	0 00	0 00	800 20	
5	9268 09	90 58	269 88	8639 00	-2 07	-1000 00	0 00	0 00	1000 00	TGT1(#12H)
6	9405 95	90 22	269 88	8638 97	-2 11	-1017 86	2 00	179 49	1017 86	
7	9888 10	90 22	269 88	8637 00	-3 09	-1500 00	0 00	0 00	1500 00	Tgt2(#12H)
8	9893 54	90 11	269 88	8636 98	-3 10	-1505 44	2 00	-179 97	1505 44	
9	10388 10	90 11	269 88	8636 00	-4 11	-2000 00	0 00	0 00	2000 00	TGT3(#12H)
10	10426 95	89 34	269 88	8636 19	-4 19	-2038 85	2 00	-179 98	2038 85	
11	11361 47	89 34	269 88	8647 00	-6 10	-2973 30	0 00	0 00	2973 31	PBHL(#12H)



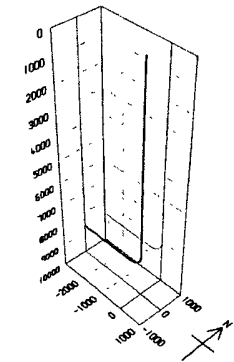
WELL DETAILS #12

Ground Elevation3961.00

RKB ElevationWELL @ 3979.00ft (18' KB Correction)

Rig Name18' KB Correction

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	721273 600	619172 800	32° 58' 56.085 N	103° 56' 40.919 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

Plan Plan #1 (#12/OH)

Created By: Nate Bingham Date: 10 48, April 28 2010

Checked: _____ Date: _____