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1625 N. French Drive  
Hobbs, NM 88240Form 3160-3  
(April 2004)

AUG 06 2009

HOBBSDO

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 20075. Lease Serial No  
NMNM-32409

6. If Indian, Allottee or Tribe Name

1a. Type of work- ☒ DRILL☐ REENTER

7. If Unit or CA Agreement, Name and No

1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other☐ Single Zone ☐ Multiple Zone8. Lease Name and Well No. **<306347>**  
Sam Federal #3

2. Name of Operator

Mack Energy Corporation

9. API Well No.

**30-005-29104**

3a. Address

P.O. Box 960 Artesia, NM 88211-0960

3b. Phone No. (include area code)

(575)748-1288

10. Field and Pool, or Exploratory

Little Lucky Lake; Wolfcamp

4. Location of Well (Report location clearly and in accordance with any State requirements\*)

At surface

1779 FSL & 436 FEL **Unit I**

At proposed prod zone

1675 FSL & 330 FWL **Unit L**

11. Sec, T R M or Blk and Survey or Area

Sec. 28 T15S R30E

14. Distance in miles and direction from nearest town or post office\*

10 miles north/northeast of Loco Hills, NM

12. County or Parish

Chaves

13. State

NM

15. Distance from proposed\*

location to nearest  
property or lease line, ft.

(Also to nearest drlg unit line, if any) 330

16. No. of acres in lease

1520

17. Spacing Unit dedicated to this well

160

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.

1320

19. Proposed Depth

MD 13,345'

VD 9015'

20. BLM/BIA Bond No. on file

NMB000286

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

4010' GR

22. Approximate date work will start\*

5/17/09

23. Estimated duration

40 days

## 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.

2. A Drilling Plan.

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)4. Bond to cover the operations unless covered by an existing bond on file (see  
Item 20 above),

5. Operator certification

6. Such other site specific information and/or plans as may be required by the  
authorized officer.

25. Signature

*Jerry W. Sherrell*

Name (Printed/Typed)

Jerry W. Sherrell

Date

4/17/09

Title

Production Clerk

Approved by (Signature)

*Angel Mayes*

Name (Printed/Typed)

*Angel Mayes*

Date

AUG 03 2009

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 **133"**  
CASING MUST BE CIRCULATED  
WITNESSAPPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS ATTACHED

## State of New Mexico

## DISTRICT I

1625 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## 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

## DISTRICT IV

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

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-005-2104</b>	Pool Code 97247 ✓	Pool Name Little Lucky Lake; Wolfcamp
Property Code 306347 ✓	Property Name SAM FEDERAL	Well Number 3H
GRID No. 013837 ✓	Operator Name MACK ENERGY CORPORATION	Elevation 4010'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	28	15-S	30-E		1779	SOUTH	436	EAST	CHAVES

## Bottom Hole Location If Different From Surface

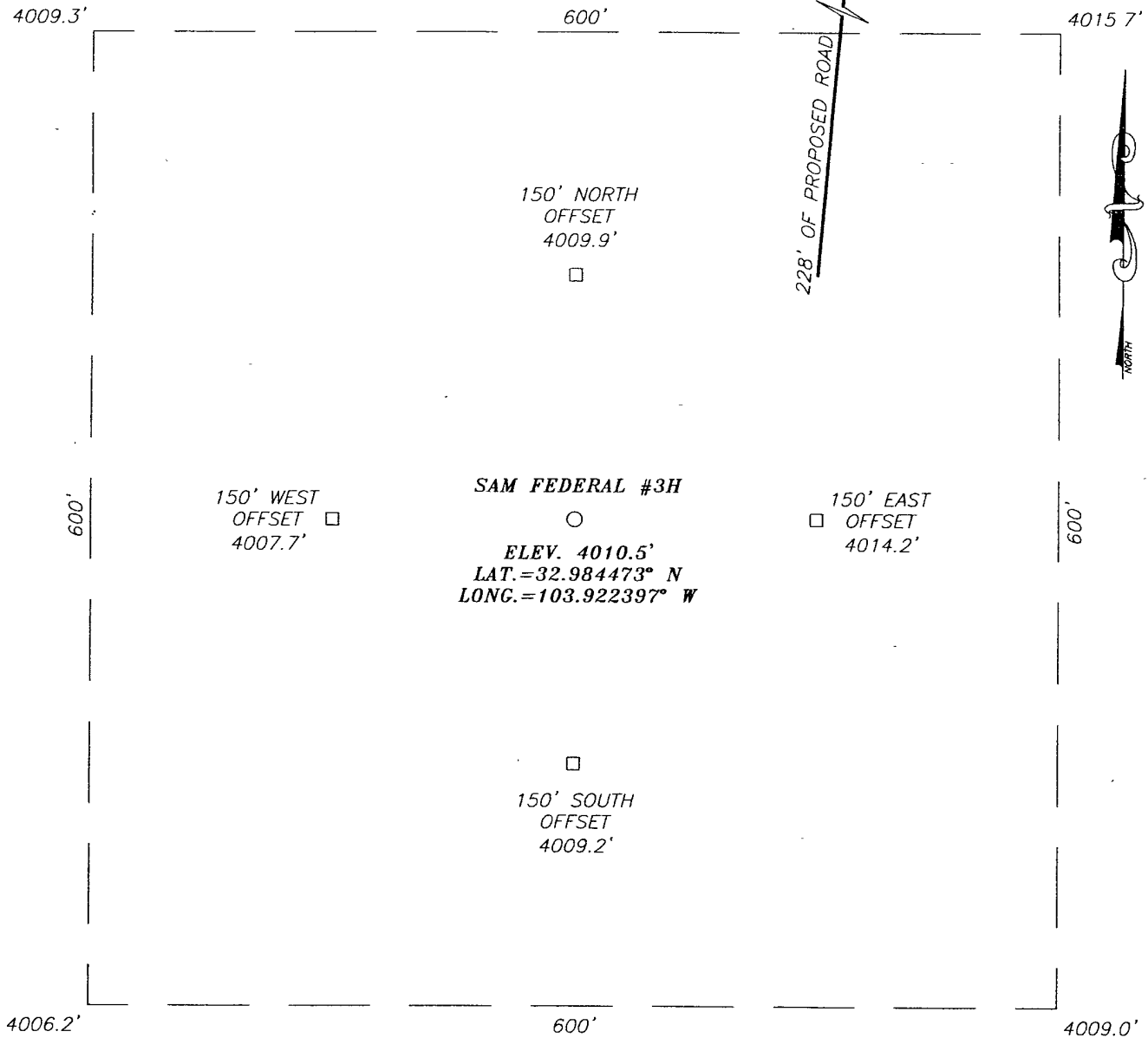
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	28	15-S	30-E		1675	SOUTH	330	WEST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160 ✓			

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

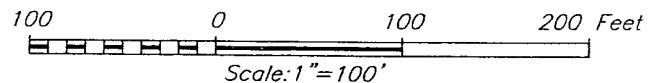
		<b>OPERATOR CERTIFICATION</b>  I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill 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> Signature Date Jerry W. Sherrell Printed Name
<b>DETAIL</b> 4009.3' 4015.7' 4006.2' 4009.0' 600' 600'		<b>SURVEYOR CERTIFICATION</b>  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.   Date Surveyed: FEBRUARY 19, 2009 Signature & Seal of Professional Surveyor: Ronald J. Eidson Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239

**SECTION 28, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.,**  
 CHAVES COUNTY, NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF HWY. #249 AND CO. RD. #217, GO SOUTH ON CO. RD. #217 APPROX. 5.0 MILES. TURN LEFT AND GO EAST APPROX. 1.5 MILES. VEER RIGHT AND GO SOUTH APPROX. 0.2 MILES. VEER LEFT AND GO EAST APPROX. 0.6 MILES. TURN LEFT AND GO NORTH APPROX. 1.0 MILE. TURN RIGHT AND GO EAST APPROX. 0.4 MILES. TURN RIGHT AND GO SOUTH APPROX. 0.8 MILES TO PEERY #4 WELL PAD AND PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY SOUTHEAST APPROX. 228.0 FEET TO THIS LOCATION.



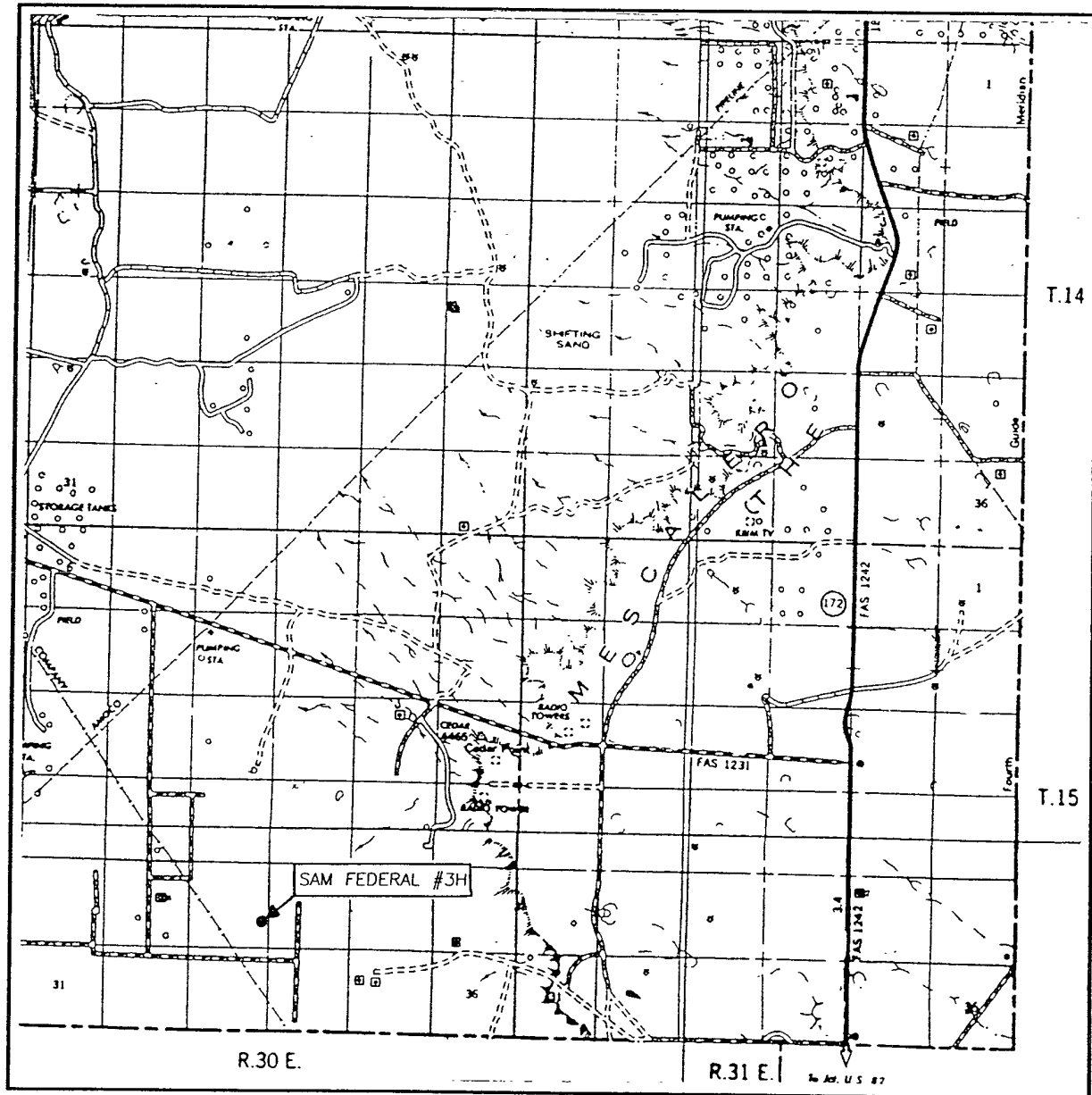
**MACK ENERGY CORPORATION**

SAM FEDERAL #3H WELL  
 LOCATED 1779 FEET FROM THE SOUTH LINE  
 AND 436 FEET FROM THE EAST LINE OF SECTION 28,  
 TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.,  
 CHAVES COUNTY, NEW MEXICO.

PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO  
 HOBBS, N.M. 88240  
 (575) 393-3117

Survey Date: 2/19/09	Sheet 1 of 1 Sheets
W.O. Number: 09.11.0163	Dr By: AR
Date: 3/02/09	Disk: 09110163
	Rev 1: N/A
	Scale: 1"=100'

# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 28 TWP. 15-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY CHAVES STATE NEW MEXICO

DESCRIPTION 1779' FSL & 436' FEL

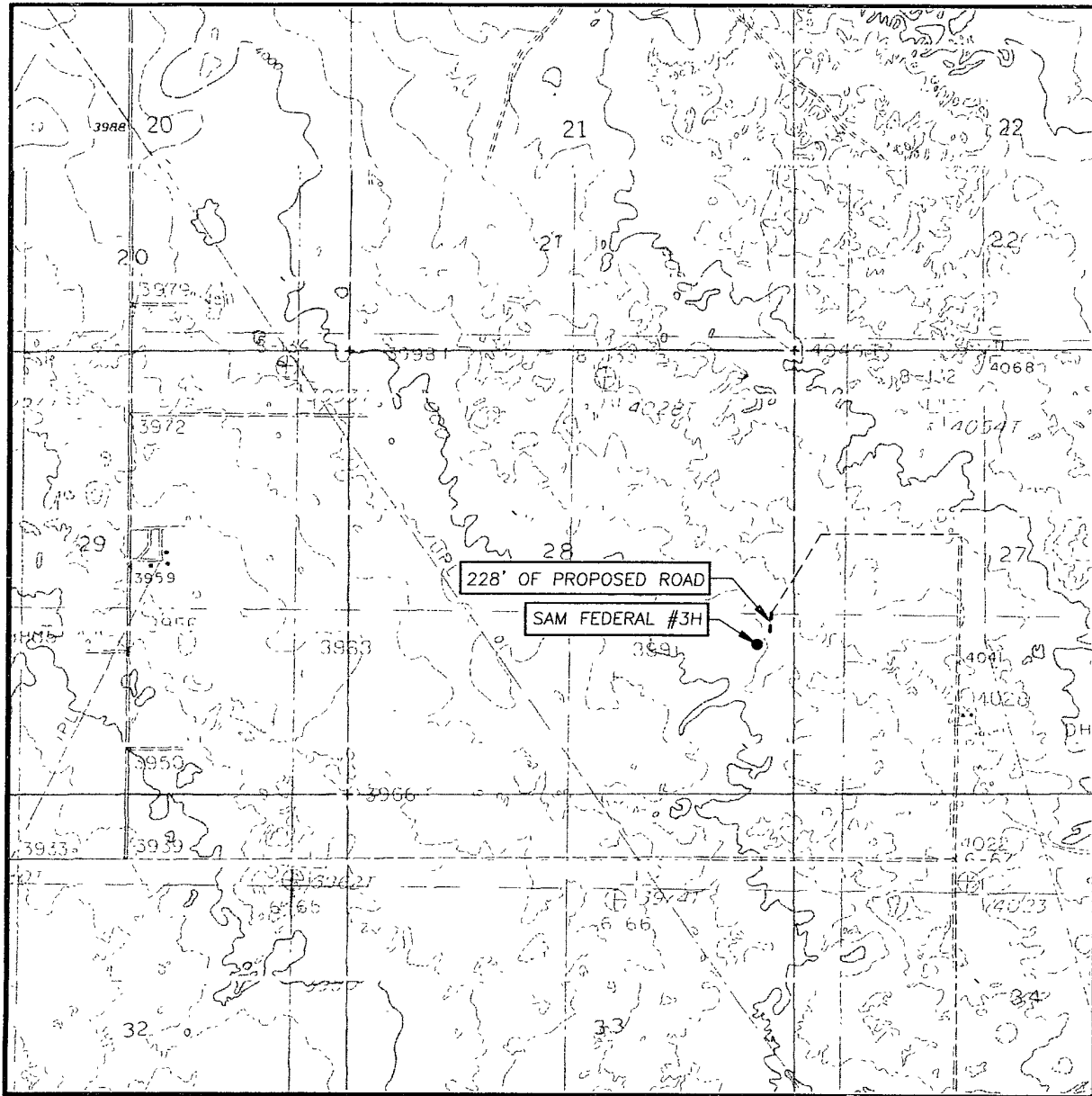
ELEVATION 4010'

OPERATOR MACK ENERGY CORPORATION

LEASE SAM FEDERAL

PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
HOBBS, N.M. 88240  
(575) 393-3117

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HENSHAW TANK, N.M. - 10'

SEC. 28 TWP. 15-S RGE. 30-E

SURVEY \_\_\_\_\_ N.M.P.M.

COUNTY CHAVES STATE NEW MEXICO

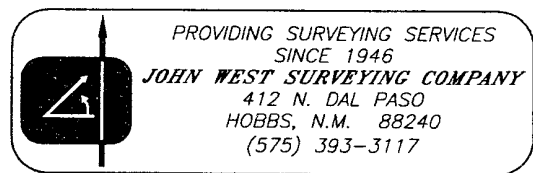
DESCRIPTION 1779' FSL & 436' FEL

ELEVATION \_\_\_\_\_ 4010'

OPERATOR \_\_\_\_\_ MACK ENERGY CORPORATION

LEASE \_\_\_\_\_ SAM FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
HENSHAW TANK, N.M.



## DRILLING PROGRAM

### 1. Geologic Name of Surface Formation

Quaternary

### 2. Estimated Tops of Important Geologic Markers:

Yates	1550'	Tubb	5825'
Queen	2350'	Abo	6630'
San Andres	3025'	WC	7800'
Glorieta	4640'	Strawn	9825'

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

Water Sand	150'	Fresh Water
San Andres	3025'	Oil/Gas
Abo	6630'	Oil/Gas
WC	7800'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 450' and circulating cement back to surface will protect the surface fresh water sand. Salt Section will be protected by setting 8 5/8" casing to 3050' and circulating cement back to surface. Any shallower zones above TD, 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
17 1/2"	0-450'	13 3/8"	48#, H-40, ST&C, New, 3.364/3.365/3.460
12 1/4"	0-3050'	8 5/8"	32#, J-55, ST&C, New, 1.633/13.806/13.100
7 7/8"	0-7850'	5 1/2"	17#, HCP-110, LT&C, New, 2.189/3.364/3.547
6 1/8"	7850-13,345'	4 1/2"	11.6# HCP-110, LT&C, New, 1.422/3.286/3.56

### 5. Cement Program:

13 3/8" Surface Casing: Class C, 350sx yield 1.34  
8 5/8" Intermediate Casing: Class C, 1250sx, yield 1.34.  
5 1/2" Production Casing: Class C, 1000sx, yield 1.34.  
4 1/2" Production Casing: Set with isolation packers.

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**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 13 3/8" surface casing and tested to 1000 psi using the rig pump.** The BOP will then be nipped up on the 8 5/8" intermediate casing and tested by a 3<sup>rd</sup> party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate 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:**

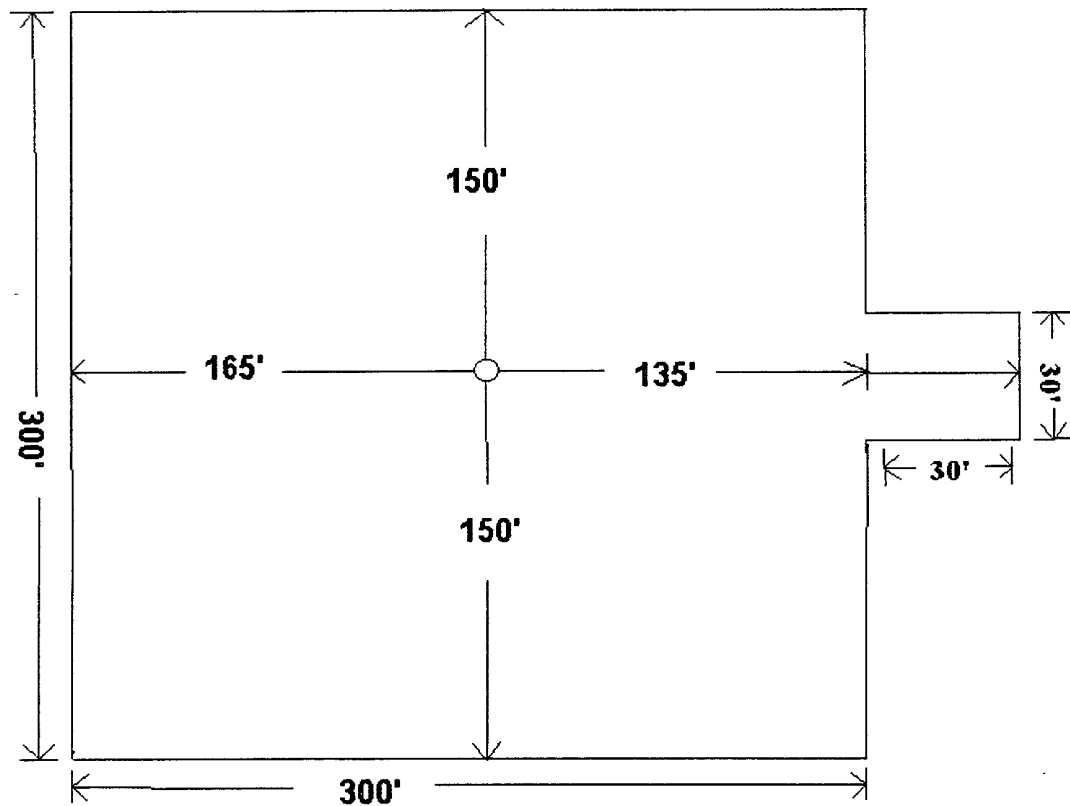
No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 2250 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well; a plan is 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 May 17, 2009. Once commenced, the drilling operation should be finished in approximately 12 days. If the well is productive, an additional 30 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*



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**Attachment to Exhibit #9**  
**NOTES REGARDING THE BLOWOUT PREVENTERS**  
**Sam Federal #3**  
**Eddy 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.

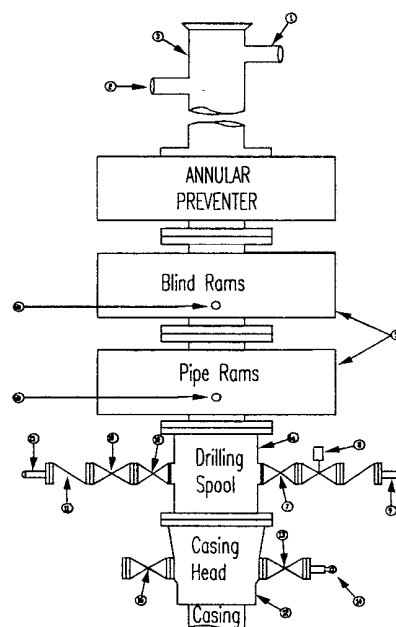
**Mack Energy Corporation**  
**Minimum Blowout Preventer Requirements**  
**3000 psi Working Pressure**  
**3 MWP**  
**EXHIBIT #10**

**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	
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**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.

**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

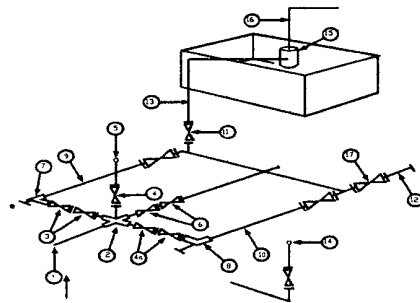
Exhibit #11

## 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

3,000 MWP

5,000 MWP

10,000 MWP

No.		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' x 5'			2' x 5'			2' x 5'	
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

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**Mack Energy Corporation  
Onshore Order #6  
Hydrogen Sulfide Drilling Operation Plan**

**I. HYDROGEN SULFIDE TRAINING**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H<sub>2</sub>S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

## II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

### 1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

### 2. Protective equipment for essential personnel:

- A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

### 3. H2S detection and monitoring equipment:

- A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

### 5. Mud program:

- A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

**6. Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- B. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

**7. Communication:**

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

**8. Well testing:**

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

**EXHIBIT #7**

**WARNING**  
**YOU ARE ENTERING AN H<sub>2</sub>S**  
**AUTHORIZED PERSONNEL ONLY**

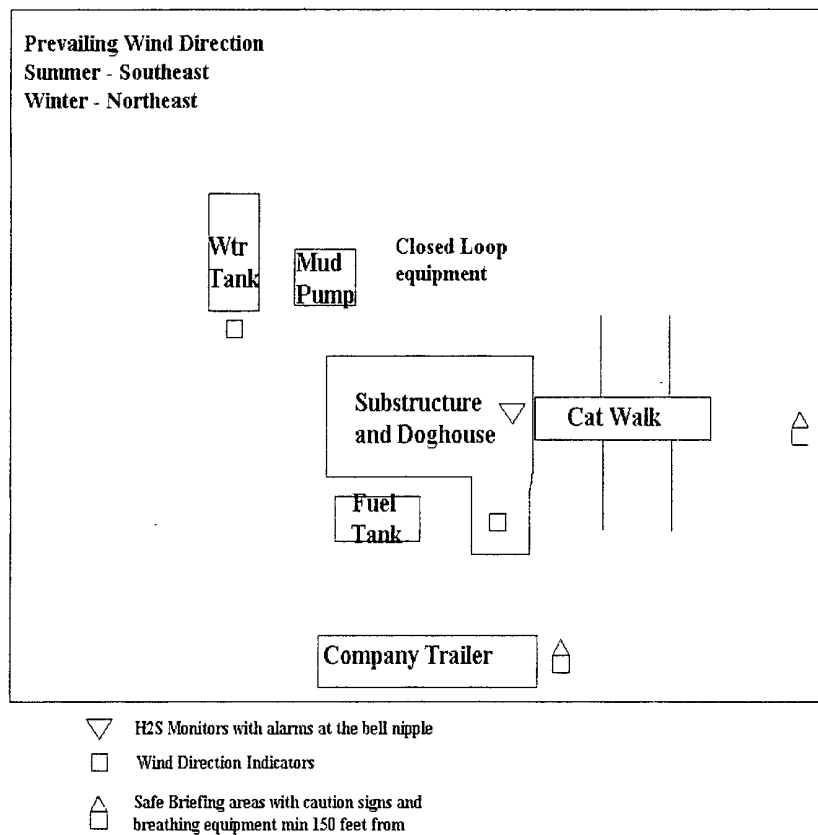
- 1. BEARDS OR CONTACT LENSES NOT ALLOWED**
- 2. HARD HATS REQUIRED**
- 3. SMOKING IN DESIGNATED AREAS ONLY**
- 4. BE WIND CONSCIOUS AT ALL TIMES**
- 5. CHECK WITH MACK ENERGY FOREMAN AT OFFICE**

**MACK ENERGY CORPORATION**

**1-575-748-1288**

**DRILLING LOCATION H2S SAFETY EQUIPMENT**

Exhibit # 8



**Mack Energy Corporation Call List, Chaves County**

<b>Artesia (575)</b>	<b>Cellular</b>	<b>Office</b>	<b>Home</b>
Jim Krogman.....	746-5515.....	748-1288.....	746-2674
Lonnie Archer.....	746-7889.....	748-1288.....	365-2998
Donald Archer.....	748-7875.....	748-1288.....	748-2287
Chris Davis.....	746-7132.....	748-1288.....	
Kevin Garrett.....	746-7423.....	748-1288.....	

**Agency Call List (575)****Roswell**

State Police.....	622-7200
City Police.....	624-6770
Sheriff's Office.....	624-7590
Ambulance.....	624-7590
Fire Department.....	624-7590
LEPC (Local Emergency Planning Committee).....	624-6770
NMOCD.....	748-1283
Bureau of Land Management.....	627-0272

**Emergency Services**

Boots & Coots IWC.....	1-800-256-9688 or (281)931-8884
Cudd pressure Control.....	(915)699-0139 or (915)563-3356
Halliburton.....	746-2757
B. J. Services.....	746-3569
Flight For Life-Lubbock, TX.....	(806)743-9911
Aerocare-Lubbock, TX.....	(806)747-8923
Med Flight Air Amb-Albuquerque, NM.....	(505)842-4433
Lifeguard Air Med Svc. Albuquerque, NM.....	(505)272-3115





## **Mack Energy**

Chaves County

Sam Federal

#3H

OH

Plan: Plan #1

## **Pathfinder X & Y Survey Report**

16 April, 2009

**RECEIVED**

AUG 06 2009

HOBBSOCD

# **PATHFINDER**



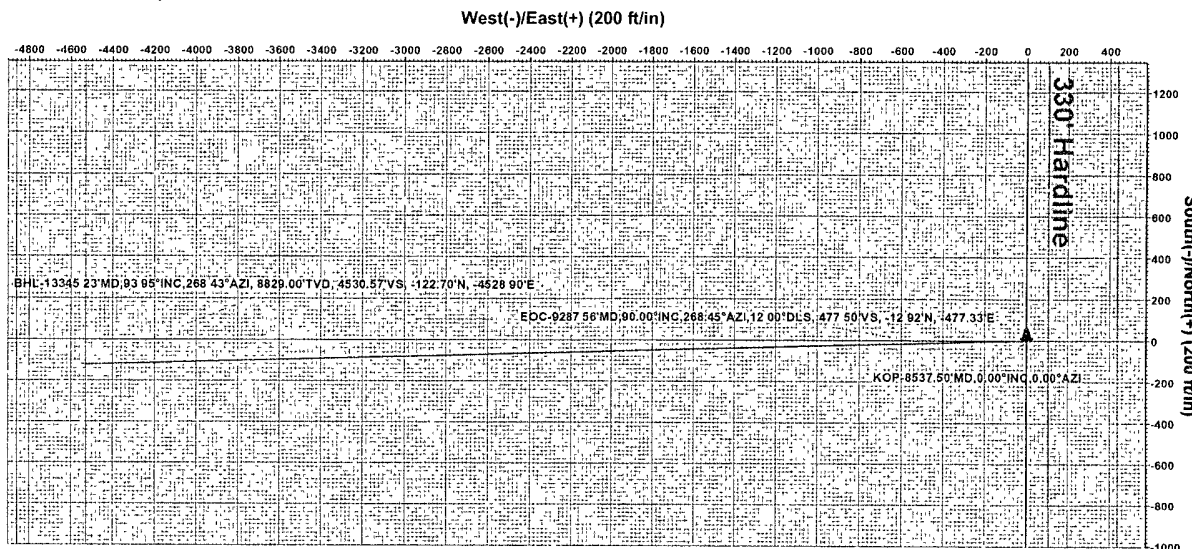
Azinuths to Grid North  
True North: -0.22°  
Magnetic North: 7.83°

Magnetic Field  
Strength: 49274.5nT  
Dip Angle: 60.90°  
Date: 04/16/2009  
Model: IGRF200510

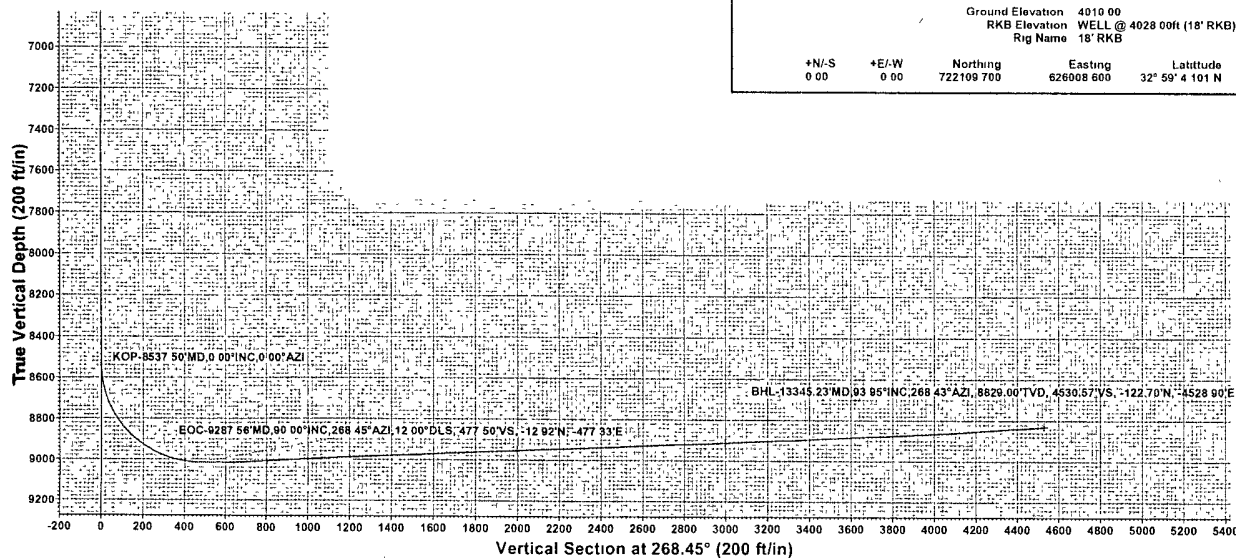
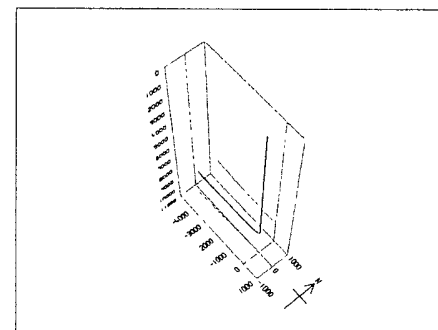
# PATHFINDER

WELLBORE TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Shape	
PBHL(3H)	8929 00	-122 70	-4528 90	Point	
LT#4(3H)	8865 00	-108 20	-3998 54	Point	
LT#3(3H)	8913 00	-81 15	-2998 90	Point	
LT#2(3H)	8953 00	-54 10	-1999 27	Point	
LT#1(3H)	8997 00	-27 05	-999 63	Point	

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	8537 50	0 00	0 00	8537 50	0 00	0 00	0 00	0 00	0 00			
3	9287 56	90 00	268 45	9015 00	-12 92	-477 33	12 00	268 45	477 50			
4	9410 56	90 00	268 45	9015 00	-16 24	-800 28	0 00	0 00	600 50			
5	9572 21	93 23	268 45	9010 44	-20 61	-761 79	2 00	0 00	762 07			
6	9810 52	93 23	268 45	8997 00	-27 05	-999 63	0 00	0 00	1000 00	LT#1(3H)		
7	9846 87	92 51	268 45	8995 18	-28 03	-1035 92	2 00	-180 00	1036 30			
8	10811 49	92 51	268 45	8953 00	-54 10	-1999 27	0 00	0 00	2000 00	LT#2(3H)		
9	10822 33	92 29	268 45	8952 55	-54 39	-2010 09	2 00	180 00	2010 83			
10	11812 29	92 29	268 45	8913 00	-81 15	-2998 90	0 00	0 00	3000 00	LT#3(3H)		
11	11835 49	92 75	268 45	8911 98	-81 77	-3022 07	2 00	0 00	3023 18			
12	12813 44	92 75	268 45	8865 00	-108 20	-3998 54	0 00	0 00	4000 00	LT#4(3H)		
13	12873 22	93 05	268 43	8861 51	-108 82	-4058 19	2 00	-0 83	4059 67			
14	13345 23	93 95	268 43	8829 00	-122 70	-4528 90	0 00	0 00	4530 56	PBHL(3H)		



WELL DETAILS, #3H							
Ground Elevation		4010 00					
RKB Elevation		WELL @ 4028 00ft (18' RKB)					
Rig Name		18' RKB					
+N/-S	+E/-W	Northing	Eastng	Latitude	Longitude	Slot	
0 00	0 00	722109 700	626908 600	32° 59' 4 101 N	103° 55' 20 630 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 (83H/OH)	
Created By	Nate Bingham
Date	12.22, April 16 2009
Checked	
Date	



Pathfinder Energy Services  
Pathfinder X & Y Survey Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #3H:
Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland 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	Sam Federal				
Site Position:		Northing:	720,718.100 ft	Latitude:	32° 58' 50.496 N
From:	Map	Easting:	621,684.500 ft	Longitude:	103° 56' 11.457 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.22 °

Well		#3H				
Well Position	+N/-S	0.00 ft	Northing:	722,109.700 ft	Latitude:	32° 59' 4.101 N
	+E/-W	0.00 ft	Easting:	626,008.600 ft	Longitude:	103° 55' 20.630 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,010.00 ft

Wellbore:	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/16/2009	8.05	60.90	49,274

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	268.45

Survey Tool Program		Date 04/16/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	13,345.23	Plan #1 (OH)	MWD	MWD - Standard



Pathfinder Energy Services  
Pathfinder X & Y Survey Report



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Site:	Sam Federal	MD Reference:	WELL: @ 4028.00ft (18' RKB)
Well:	#3H	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)	
0.00	0.00	0.00	0.00	-4,028.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
100.00	0.00	0.00	100.00	-3,928.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
200.00	0.00	0.00	200.00	-3,828.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
300.00	0.00	0.00	300.00	-3,728.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
400.00	0.00	0.00	400.00	-3,628.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
500.00	0.00	0.00	500.00	-3,528.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
600.00	0.00	0.00	600.00	-3,428.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
700.00	0.00	0.00	700.00	-3,328.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
800.00	0.00	0.00	800.00	-3,228.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
900.00	0.00	0.00	900.00	-3,128.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,000.00	0.00	0.00	1,000.00	-3,028.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,100.00	0.00	0.00	1,100.00	-2,928.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,200.00	0.00	0.00	1,200.00	-2,828.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,300.00	0.00	0.00	1,300.00	-2,728.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,400.00	0.00	0.00	1,400.00	-2,628.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,500.00	0.00	0.00	1,500.00	-2,528.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,600.00	0.00	0.00	1,600.00	-2,428.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,700.00	0.00	0.00	1,700.00	-2,328.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,800.00	0.00	0.00	1,800.00	-2,228.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
1,900.00	0.00	0.00	1,900.00	-2,128.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,000.00	0.00	0.00	2,000.00	-2,028.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,100.00	0.00	0.00	2,100.00	-1,928.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,200.00	0.00	0.00	2,200.00	-1,828.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,300.00	0.00	0.00	2,300.00	-1,728.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,400.00	0.00	0.00	2,400.00	-1,628.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,500.00	0.00	0.00	2,500.00	-1,528.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,600.00	0.00	0.00	2,600.00	-1,428.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	



Pathfinder Energy Services  
Pathfinder X & Y Survey Report



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Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	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	-1,328.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,800.00	0.00	0.00	2,800.00	-1,228.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
2,900.00	0.00	0.00	2,900.00	-1,128.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,000.00	0.00	0.00	3,000.00	-1,028.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,100.00	0.00	0.00	3,100.00	-928.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,200.00	0.00	0.00	3,200.00	-828.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,300.00	0.00	0.00	3,300.00	-728.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,400.00	0.00	0.00	3,400.00	-628.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,500.00	0.00	0.00	3,500.00	-528.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,600.00	0.00	0.00	3,600.00	-428.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,700.00	0.00	0.00	3,700.00	-328.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,800.00	0.00	0.00	3,800.00	-228.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
3,900.00	0.00	0.00	3,900.00	-128.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,000.00	0.00	0.00	4,000.00	-28.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,100.00	0.00	0.00	4,100.00	72.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,200.00	0.00	0.00	4,200.00	172.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,300.00	0.00	0.00	4,300.00	272.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,400.00	0.00	0.00	4,400.00	372.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,500.00	0.00	0.00	4,500.00	472.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,600.00	0.00	0.00	4,600.00	572.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,700.00	0.00	0.00	4,700.00	672.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,800.00	0.00	0.00	4,800.00	772.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
4,900.00	0.00	0.00	4,900.00	872.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,000.00	0.00	0.00	5,000.00	972.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,100.00	0.00	0.00	5,100.00	1,072.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,200.00	0.00	0.00	5,200.00	1,172.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,300.00	0.00	0.00	5,300.00	1,272.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	



Pathfinder Energy Services  
Pathfinder X & Y Survey Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #3H
Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	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)	
5,400.00	0.00	0.00	5,400.00	1,372.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,500.00	0.00	0.00	5,500.00	1,472.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,600.00	0.00	0.00	5,600.00	1,572.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,700.00	0.00	0.00	5,700.00	1,672.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,800.00	0.00	0.00	5,800.00	1,772.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
5,900.00	0.00	0.00	5,900.00	1,872.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,000.00	0.00	0.00	6,000.00	1,972.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,100.00	0.00	0.00	6,100.00	2,072.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,200.00	0.00	0.00	6,200.00	2,172.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,300.00	0.00	0.00	6,300.00	2,272.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,400.00	0.00	0.00	6,400.00	2,372.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,500.00	0.00	0.00	6,500.00	2,472.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,600.00	0.00	0.00	6,600.00	2,572.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,700.00	0.00	0.00	6,700.00	2,672.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,800.00	0.00	0.00	6,800.00	2,772.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
6,900.00	0.00	0.00	6,900.00	2,872.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,000.00	0.00	0.00	7,000.00	2,972.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,100.00	0.00	0.00	7,100.00	3,072.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,200.00	0.00	0.00	7,200.00	3,172.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,300.00	0.00	0.00	7,300.00	3,272.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,400.00	0.00	0.00	7,400.00	3,372.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,500.00	0.00	0.00	7,500.00	3,472.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,600.00	0.00	0.00	7,600.00	3,572.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,700.00	0.00	0.00	7,700.00	3,672.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,800.00	0.00	0.00	7,800.00	3,772.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
7,900.00	0.00	0.00	7,900.00	3,872.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,000.00	0.00	0.00	8,000.00	3,972.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	





Pathfinder Energy Services  
Pathfinder X & Y Survey Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #3H
Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
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Well:	#3H	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)	
8,100.00	0.00	0.00	8,100.00	4,072.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,200.00	0.00	0.00	8,200.00	4,172.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,300.00	0.00	0.00	8,300.00	4,272.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,400.00	0.00	0.00	8,400.00	4,372.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,500.00	0.00	0.00	8,500.00	4,472.00	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
8,537.50	0.00	0.00	8,537.50	4,509.50	0.00	0.00	0.00	0.00	722,109.70	626,008.60	
KOP-8537.50°MD,0.00°INC,0.00°AZI											
8,550.00	1.50	268.45	8,550.00	4,522.00	0.00	-0.16	0.16	12.00	722,109.70	626,008.44	
8,575.00	4.50	268.45	8,574.96	4,546.96	-0.04	-1.47	1.47	12.00	722,109.66	626,007.13	
8,600.00	7.50	268.45	8,599.82	4,571.82	-0.11	-4.08	4.08	12.00	722,109.59	626,004.52	
8,625.00	10.50	268.45	8,624.51	4,596.51	-0.22	-7.99	7.99	12.00	722,109.48	626,000.61	
8,650.00	13.50	268.45	8,648.96	4,620.96	-0.36	-13.19	13.19	12.00	722,109.34	625,995.41	
8,675.00	16.50	268.45	8,673.11	4,645.11	-0.53	-19.65	19.66	12.00	722,109.17	625,988.95	
8,700.00	19.50	268.45	8,696.88	4,668.88	-0.74	-27.37	27.38	12.00	722,108.96	625,981.23	
8,725.00	22.50	268.45	8,720.22	4,692.22	-0.98	-36.33	36.34	12.00	722,108.72	625,972.27	
8,750.00	25.50	268.45	8,743.05	4,715.05	-1.26	-46.49	46.51	12.00	722,108.44	625,962.11	
8,775.00	28.50	268.45	8,765.33	4,737.33	-1.56	-57.84	57.86	12.00	722,108.14	625,950.76	
8,800.00	31.50	268.45	8,786.98	4,758.98	-1.90	-70.33	70.35	12.00	722,107.80	625,938.27	
8,825.00	34.50	268.45	8,807.94	4,779.94	-2.27	-83.94	83.97	12.00	722,107.43	625,924.66	
8,850.00	37.50	268.45	8,828.17	4,800.17	-2.67	-98.62	98.66	12.00	722,107.03	625,909.98	
8,875.00	40.50	268.45	8,847.59	4,819.59	-3.09	-114.35	114.39	12.00	722,106.61	625,894.25	
8,900.00	43.50	268.45	8,866.17	4,838.17	-3.55	-131.07	131.12	12.00	722,106.15	625,877.53	
8,925.00	46.50	268.45	8,883.85	4,855.85	-4.02	-148.74	148.79	12.00	722,105.68	625,859.86	
8,950.00	49.50	268.45	8,900.57	4,872.57	-4.53	-167.30	167.37	12.00	722,105.17	625,841.30	
8,975.00	52.50	268.45	8,916.31	4,888.31	-5.05	-186.72	186.79	12.00	722,104.65	625,821.88	
9,000.00	55.50	268.45	8,931.00	4,903.00	-5.60	-206.94	207.01	12.00	722,104.10	625,801.66	
9,025.00	58.50	268.45	8,944.62	4,916.62	-6.17	-227.89	227.98	12.00	722,103.53	625,780.71	



# Pathfinder Energy Services

## Pathfinder X & Y Survey Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #3H
Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	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)	
9,050.00	61.50	268.45	8,957.12	4,929.12	-6.75	-249.53	249.62	12.00	722,102.95	625,759.07	
9,075.00	64.50	268.45	8,968.47	4,940.47	-7.35	-271.80	271.90	12.00	722,102.35	625,736.80	
9,100.00	67.50	268.45	8,978.64	4,950.64	-7.97	-294.62	294.73	12.00	722,101.73	625,713.98	
9,125.00	70.49	268.45	8,987.60	4,959.60	-8.60	-317.95	318.07	12.00	722,101.10	625,690.65	
9,150.00	73.49	268.45	8,995.32	4,967.32	-9.25	-341.71	341.84	12.00	722,100.45	625,666.89	
9,175.00	76.49	268.45	9,001.80	4,973.80	-9.90	-365.85	365.98	12.00	722,099.80	625,642.75	
9,200.00	79.49	268.45	9,007.00	4,979.00	-10.56	-390.29	390.43	12.00	722,099.14	625,618.31	
9,225.00	82.49	268.45	9,010.91	4,982.91	-11.23	-414.97	415.12	12.00	722,098.47	625,593.63	
9,250.00	85.49	268.45	9,013.52	4,985.52	-11.90	-439.82	439.98	12.00	722,097.80	625,568.78	
9,275.00	88.49	268.45	9,014.83	4,986.83	-12.58	-464.78	464.95	12.00	722,097.12	625,543.82	
9,287.56	90.00	268.45	9,015.00	4,987.00	-12.92	-477.33	477.50	12.00	722,096.78	625,531.27	
EOC-9287.56°MD,90.00°INC,268.45°AZI,12.00°DLS, 477.50°VS, -12.92°N, -477.33°E											
9,300.00	90.00	268.45	9,015.00	4,987.00	-13.25	-489.77	489.94	0.00	722,096.45	625,518.83	
9,400.00	90.00	268.45	9,015.00	4,987.00	-15.96	-589.73	589.94	0.00	722,093.74	625,418.87	
9,410.56	90.00	268.45	9,015.00	4,987.00	-16.24	-600.28	600.50	0.00	722,093.46	625,408.32	
9,500.00	91.79	268.45	9,013.60	4,985.60	-18.66	-689.68	689.93	2.00	722,091.04	625,318.92	
9,572.21	93.23	268.45	9,010.44	4,982.44	-20.61	-761.79	762.07	2.00	722,089.09	625,246.81	
9,600.00	93.23	268.45	9,008.87	4,980.87	-21.36	-789.53	789.81	0.00	722,088.34	625,219.07	
9,700.00	93.23	268.45	9,003.23	4,975.23	-24.06	-889.33	889.66	0.00	722,085.64	625,119.27	
9,800.00	93.23	268.45	8,997.59	4,969.59	-26.77	-989.13	989.50	0.00	722,082.93	625,019.47	
9,810.52	93.23	268.45	8,997.00	4,969.00	-27.05	-999.63	1,000.00	0.00	722,082.65	625,008.97	
LT#1(#3H)											
9,846.87	92.51	268.45	8,995.18	4,967.18	-28.03	-1,035.92	1,036.30	2.00	722,081.67	624,972.68	
9,900.00	92.51	268.45	8,992.86	4,964.86	-29.47	-1,088.98	1,089.38	0.00	722,080.23	624,919.62	
10,000.00	92.51	268.45	8,988.48	4,960.48	-32.17	-1,188.85	1,189.29	0.00	722,077.53	624,819.75	
10,100.00	92.51	268.45	8,984.11	4,956.11	-34.87	-1,288.72	1,289.19	0.00	722,074.83	624,719.88	
10,200.00	92.51	268.45	8,979.74	4,951.74	-37.57	-1,388.59	1,389.10	0.00	722,072.13	624,620.01	





Pathfinder Energy Services  
Pathfinder X & Y Survey Report



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Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	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)	D Leg (°/100ft)	Northing (ft)	Easting (ft)	
10,300.00	92.51	268.45	8,975.37	4,947.37	-40.28	-1,488.46	1,489.00	0.00	722,069.42	624,520.14	
10,400.00	92.51	268.45	8,970.99	4,942.99	-42.98	-1,588.32	1,588.90	0.00	722,066.72	624,420.28	
10,500.00	92.51	268.45	8,966.62	4,938.62	-45.68	-1,688.19	1,688.81	0.00	722,064.02	624,320.41	
10,600.00	92.51	268.45	8,962.25	4,934.25	-48.38	-1,788.06	1,788.71	0.00	722,061.32	624,220.54	
10,700.00	92.51	268.45	8,957.88	4,929.88	-51.09	-1,887.93	1,888.62	0.00	722,058.61	624,120.67	
10,800.00	92.51	268.45	8,953.50	4,925.50	-53.79	-1,987.79	1,988.52	0.00	722,055.91	624,020.81	
10,811.49	92.51	268.45	8,953.00	4,925.00	-54.10	-1,999.27	2,000.00	0.00	722,055.60	624,009.33	
LT#2(#3H)											
10,822.33	92.29	268.45	8,952.55	4,924.55	-54.39	-2,010.09	2,010.83	2.00	722,055.31	623,998.51	
10,900.00	92.29	268.45	8,949.44	4,921.44	-56.49	-2,087.68	2,088.44	0.00	722,053.21	623,920.92	
11,000.00	92.29	268.45	8,945.45	4,917.45	-59.19	-2,187.56	2,188.36	0.00	722,050.51	623,821.04	
11,100.00	92.29	268.45	8,941.45	4,913.45	-61.90	-2,287.44	2,288.28	0.00	722,047.80	623,721.16	
11,200.00	92.29	268.45	8,937.46	4,909.46	-64.60	-2,387.33	2,388.20	0.00	722,045.10	623,621.27	
11,300.00	92.29	268.45	8,933.46	4,905.46	-67.30	-2,487.21	2,488.12	0.00	722,042.40	623,521.39	
11,400.00	92.29	268.45	8,929.47	4,901.47	-70.00	-2,587.09	2,588.04	0.00	722,039.70	623,421.51	
11,500.00	92.29	268.45	8,925.48	4,897.48	-72.71	-2,686.98	2,687.96	0.00	722,036.99	623,321.62	
11,600.00	92.29	268.45	8,921.48	4,893.48	-75.41	-2,786.86	2,787.88	0.00	722,034.29	623,221.74	
11,700.00	92.29	268.45	8,917.49	4,889.49	-78.11	-2,886.74	2,887.80	0.00	722,031.59	623,121.86	
11,800.00	92.29	268.45	8,913.49	4,885.49	-80.82	-2,986.63	2,987.72	0.00	722,028.88	623,021.97	
11,812.29	92.29	268.45	8,913.00	4,885.00	-81.15	-2,998.90	3,000.00	0.00	722,028.55	623,009.70	
LT#3(#3H)											
11,835.49	92.75	268.45	8,911.98	4,883.98	-81.77	-3,022.07	3,023.18	2.00	722,027.93	622,986.53	
11,900.00	92.75	268.45	8,908.88	4,880.88	-83.52	-3,086.48	3,087.61	0.00	722,026.18	622,922.12	
12,000.00	92.75	268.45	8,904.08	4,876.08	-86.22	-3,186.33	3,187.50	0.00	722,023.48	622,822.27	
12,100.00	92.75	268.45	8,899.27	4,871.27	-88.92	-3,286.18	3,287.38	0.00	722,020.78	622,722.42	
12,200.00	92.75	268.45	8,894.47	4,866.47	-91.62	-3,386.03	3,387.27	0.00	722,018.08	622,622.57	
12,300.00	92.75	268.45	8,889.66	4,861.66	-94.33	-3,485.88	3,487.15	0.00	722,015.37	622,522.72	



Pathfinder Energy Services  
Pathfinder X & Y Survey Report



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Project:	Chaves County	TVD Reference:	WELL @ 4028.00ft (18' RKB)
Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18' RKB)
Well:	#3H	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)	D Leg (°/100ft)	Northing (ft)	Easting (ft)
12,400.00	92.75	268.45	8,884.86	4,856.86	-97.03	-3,585.72	3,587.04	0.00	722,012.67	622,422.88
12,500.00	92.75	268.45	8,880.06	4,852.06	-99.73	-3,685.57	3,686.92	0.00	722,009.97	622,323.03
12,600.00	92.75	268.45	8,875.25	4,847.25	-102.43	-3,785.42	3,786.81	0.00	722,007.27	622,223.18
12,700.00	92.75	268.45	8,870.45	4,842.45	-105.13	-3,885.27	3,886.69	0.00	722,004.57	622,123.33
12,800.00	92.75	268.45	8,865.65	4,837.65	-107.83	-3,985.12	3,986.58	0.00	722,001.87	622,023.48
12,813.44	92.75	268.45	8,865.00	4,837.00	-108.20	-3,998.54	4,000.00	0.00	722,001.50	622,010.06
LT#4(#3H)										
12,873.22	93.95	268.43	8,861.51	4,833.51	-109.82	-4,058.19	4,059.67	2.00	721,999.88	621,950.41
12,900.00	93.95	268.43	8,859.66	4,831.66	-110.55	-4,084.90	4,086.39	0.00	721,999.15	621,923.70
13,000.00	93.95	268.43	8,852.77	4,824.77	-113.28	-4,184.62	4,186.16	0.00	721,996.42	621,823.98
13,100.00	93.95	268.43	8,845.89	4,817.89	-116.01	-4,284.35	4,285.92	0.00	721,993.69	621,724.25
13,200.00	93.95	268.43	8,839.00	4,811.00	-118.74	-4,384.07	4,385.68	0.00	721,990.96	621,624.53
13,300.00	93.95	268.43	8,832.11	4,804.11	-121.47	-4,483.80	4,485.44	0.00	721,988.23	621,524.80
13,345.23	93.95	268.43	8,829.00	4,801.00	-122.70	-4,528.90	4,530.56	0.00	721,987.00	621,479.70
PBHL(3H)										



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Site:	Sam Federal	MD Reference:	WELL @ 4028.00ft (18" RKB)
Well:	#3H	North Reference:	Grid:
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	Latitude Longitude
Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	
LT#3(#3H)	- plan hits target	0.00	0.00	8,913.00	-81.15	-2,998.90	722,028.552	623,009.698	32° 59' 3.413 N 103° 55' 55.841 W
	- Point								
LT#4(#3H)	- plan hits target	0.00	0.00	8,865.00	-108.20	-3,998.54	722,001.503	622,010.064	32° 59' 3.183 N 103° 56' 7.578 W
	- Point								
LT#1(#3H)	- plan hits target	0.00	0.00	8,997.00	-27.05	-999.63	722,082.651	625,008.966	32° 59' 3.872 N 103° 55' 32.367 W
	- Point								
PBHL(3H)	- plan hits target	0.00	0.00	8,829.00	-122.70	-4,528.90	721,987.000	621,479.700	32° 59' 3.059 N 103° 56' 13.805 W
	- Point								
LT#2(#3H)	- plan hits target	0.00	0.00	8,953.00	-54.10	-1,999.27	722,055.601	624,009.332	32° 59' 3.643 N 103° 55' 44.104 W
	- Point								

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
		(ft)	(ft)	
8,537.50	8,537.50	0.00	0.00	KOP-8537.50°MD,0.00°INC,0.00°AZI
9,287.56	9,015.00	-12.92	-477.33	EOC-9287.56°MD,90.00°INC,268.45°AZI,12.00°DLS, 477.50°VS, -12.92
13,345.23	8,829.00	-16.24	-600.28	BHL-13345.23°MD,93.95°INC,268.43°AZI, 8829.00°TVD, 4530.57°VS, -

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

## **V. DRILLING**

### **A. DRILLING OPERATIONS REQUIREMENTS**

1. Call the Roswell Field Office, 2909 West Second St., Roswell, NM 88201. During office hours call (575) 627-0205 or after office hours call (575) 910-6024. Engineer on call during office hours call (575) 627-0275 or after office hours call (575) 626-5749.
2. The BLM is to be notified a minimum of 24 hours in advance for a representative to witness:
  - a. Spudding well
  - b. Setting and/or Cementing of all casing strings

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

#### **BOPE Tests**

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
4. Include the API Number assigned to well by NMOCD on the subsequent report of setting the first casing string.
5. The operator will accurately measure the drilling rate in ft/min to set the base of the usable water protection casing string(s) opposite competent rock. The record of the drilling rate along with the caliper-gamma ray-neutron well log run to surface will be submitted to this office as well as all other logs run on the borehole 30 days from completion
6. A closed loop fresh water and non toxic drilling mud system will be used to drill to the base of the usable water to set the protection casing string(s). Any polymers used will be water based and non-toxic. Use a berm around the steel tank(s) sufficient to contain any leaks or overflow.

### **B. CASING**

1. The 13-3/8 inch usable water protection casing string(s) shall be set at approximately 450 feet in competent bedrock.

If not the operator is required to set usable water protecting casing in the next thick competent bedding (i.e. 15 to 25 ft or greater) encountered and cemented to the surface.

- a. If cement does not circulate to the surface, the Roswell Field Office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin or 500 pounds compression strength, whichever is greater. (This is to include the lead cement).

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.

d. If cement falls back, remedial action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is **sufficient to circulate to the surface**. If cement does not circulate see B.1.a-d above.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **sufficient to tie back 200 feet into the 8-5/8 inch intermediate casing set at approximately 3050 feet**. If cement does not circulate, a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

4. There is no required fill of cement behind the 4-1/2 inch production casing since a Peak Systems Iso-Pak liner will be used for lateral and will not require cementing.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

6. All casing shall be new or reconditioned and tested casing and meet API standards for new casing. The use of reconditioned and tested casing shall be subject to approval by the authorized officer. Approval will be contingent upon the wall thickness of any casing being verified to be at least 87-1/2 per cent of the nominal wall thickness of new casing.

### **C. PRESSURE CONTROL**

1. Before drilling below the 13-3/8 inch surface casing shoe, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve. Before drilling below the 8-5/8 inch intermediate casing shoe, the blowout preventer assembly shall consist of a minimum of One Annular Preventer, Two Ram-Type Preventers, and a Kelly Cock/Stabbing Valve.

2. Before drilling below the 13-3/8 inch surface casing shoe, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi. Before drilling below the 8-5/8 inch intermediate casing shoe, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3000 psi.

3. The BOPE shall be installed before drilling below the 13-3/8 inch surface casing and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

a. The BLM Roswell Field office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- b. The tests shall be done by an independent service company.
- c. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
- d. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the BLM Roswell Field Office at 2909 West Second Street, Roswell, New Mexico 88201.
- e. Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- f. Testing must be done in a safe workman like manner. Hard line connections shall be required.
- g. A variance to test the BOPE to the reduced pressure of 1000 psi prior to drilling below the 13-3/8 inch surface casing is approved.

## **VI. PRODUCTION**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Juniper Green**, standard environmental color chart.

## VII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo "interim" reclamation in order to minimize the environmental impacts of development on other resources and uses. Earthwork for interim and final reclamation must be completed within 6 months of well completion or well plugging (weather permitting). The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used in road repairs, fire walls or for building other roads and locations. In addition, in order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

### PECOS DISTRICT, BLM

#### SEED MIX FOR

Sandy Plains CP-2 Ecological Site, Sand Hills CP-2 Ecological Site, Deep Sand SD-3 Ecological Site

Common Name and Preferred Variety	Scientific Name	Pounds of Pure Live Seed Per Acre
Sand bluestem,	( <i>Andropogon hallii</i> )	0.5
Little bluestem	( <i>Schizachyrium scoparium</i> )	0.5
Sideoats grama,	( <i>Bouteloua curtipendula</i> )	1.5
Sand dropseed	( <i>Sporobolus cryptandrus</i> )	0.5
Spike dropseed	( <i>S. contractus</i> )	0.5
Mesa dropseed	( <i>S. flexuosus</i> )	0.5
Plains bristlegrass	( <i>Setaria macrostachya</i> )	2.0
Desert or Scarlet	( <i>Sphaeralcea ambigua</i> )	0.5
Globemallow	or ( <i>S. coccinea</i> )	
Buckwheat	( <i>Eriogonum</i> spp.)	<u>1.5</u>
TOTAL POUNDS PURE LIVE SEED (pls) PER ACRE		8.00
Certified Weed Free Seed		

IF ONE SPECIES IS NOT AVAILABLE

INCREASE ALL OTHER PROPORTIONATELY

NO LESS THAN SIX (6) SPECIES WITH A MINIMUM OF ONE (1) FORB.

NO LESS THAN 8.0 POUNDS PLS PER ACRE SHALL BE APPLIED.

## **VIII. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

- a) Upon abandonment of the well and/or when the access road is no longer in service, a Notice of Intent for Final Abandonment with the proposed surface restoration procedure must be submitted for approval.
- b) On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the Private Surface Land Owner agreements and a copy of the release is to be submitted upon abandonment.
- c) Upon abandonment of the well, all casing shall be cut-off at the base of the cellar or 3-feet below final restored ground level (whichever is deeper). The well bore shall then be covered with a metal plate at least ¼ inch thick and welded in place. The following information shall be permanently inscribed on the dry hole marker: Well name and number, the name of the operator, the lease serial number, the surveyed location (the quarter-quarter section, section, township and range or other authorized survey designation acceptable to the authorized officer; such as metes and bounds).
- d) Surface Reclamation must be completed within 6 months of well plugging. If the operator proposes to modify the plans for surface reclamation approved on the APD, the operator must attach these modifications to the Subsequent Report of Plug and Abandon using Sundry Notices and Reports on Wells, Form 3160-5.

## **IX. SEASONAL DRILLING REQUIREMENT - Lesser Prairie Chicken Stipulation:**

The Roswell Approved Resource Management Plan and Record of Decision addresses the preservation of the Lesser Prairie Chicken wildlife habitat.

1. There shall be no earthmoving construction activities, well exploratory and/or developmental drilling, well completion, plugging and abandonment activities, **between March 1<sup>st</sup> through June 15<sup>th</sup>**, of each year. During that period, other activities, including the operation and maintenance of oil and gas facilities, will not be allowed between **3:00 A.M. and 9:00 A.M.**. To the extent practicable, activities occurring for a short period of time may be conducted so long as they do not commence until after **9:00 A.M.**. Any deviation from this stipulation must be approved in writing by the Roswell Field Office Manager or the appropriate Authorized Officer.
2. All motors or engines that produce high noise levels shall have mufflers installed that effectively reduce excessive noise levels within prairie chicken habitat. High noise levels produced by motors or engines shall be reduced and muffled so as not to exceed **75 db** measured at 30 feet from the source of the noise.
3. Upon abandonment of the well, reclamation activities can be conducted between **March 1<sup>st</sup> through June 15<sup>th</sup>**, so long as reclamation work shall not be conducted between the hours of **3:00 AM to 9:00 AM**. Any deviation from this requirement shall require prior approval by the Authorized Officer.



4. In an emergency situation, the Authorized Officer can allow a pit to be constructed for the purpose of collecting crude oil for removal. To prevent wildlife from entering the pit, netting of adequate size to deter access by wildlife shall cover the pit until it is no longer a threat to wildlife, and the pit is reclaimed.