AT5-11-317

HOBBS OCD

JUN 27 2011

OCD-HOBBS

Form 3160 -3
(April 2004)

RECEIVED UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

Ia. Typeofwork- ☒ DRILL ☐ REENTER	5 Lease Serial No. NMNM-121480
	6 If Indian, Allotee or Tribe Name
	7 If Unit or CA Agreement, Name and No
Ib Type of Well ☐ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone	8, Lease Name and Well No. <38683> Rangers Federal #1
2 Name of Operator Mack Energy Corporation <13837>	9. API Well No. 30-025-40180
3a Address P.O. Box 960 Artesia, NM 88211-0960	3b. PhoneNo *(include area code)* (575)748-1288
	10. Field and Pool, or Exploratory <65350> Young North Bone Springs
4 Location of Well *(Report location clearly and inaccorounce with any State requirements*)* At surface 990 FNL & 990 FWL Lot 4	11 Sec , T R. M or Blk and Survey or Area
At proposed prod zone	Sec. 1 T18S R32E
14 Distance in miles and direction from nearest town or post office* 10 miles northwest of Loco Hills, NM	12. County or Parish Lea / 13 State NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any)	16 No of acres in lease	17 Spacing Unit dedicated to this well
230	40.07	40.07
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**19. Proposed Depth**	**20. BLM/BIA Bond No on file**
1320	~~9500~~ 9400'	NMB000286
21. Elevations (Show whether DF, KDB, RT, GL, etc)	**22 Approximate date work will start***	**23 Estimated duration**
3919' GR	03/23/2011	35 days

24. Attachments

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	Name *(Printed/Typed)*	Date
Jerry W. Sherrell	Jerry W. Sherrell	2/24/11
Title: Production Clerk		
Approved by *(Signature)*: /s/ Don Peterson	Name *(Printed/Typed)*	Date: JUN 23 2011
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

Title 18 U S C Section 1001 and Tide 43 U S C Section 1212, make it a crime for any person knowirilly and willfully to make to any department or agency ofthe United States any false, fictitious or fraudulent statements or representations as to any matter within its juris iction

(Instructions on page 2)

KZ 06/28/11

Capitan Controlled Water Basin

JUN 29 2011

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

Attached to Form 3160-3
Mack Energy Corporation
Rangers Federal #1
SL 990 FNL & 990 FWL, Lot # 4, Sec. 1 T18S R32E
Lea County, NM

DRILLING PROGRAM

1. **Geologic Name of Surface Formation**

   Quaternary

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

Rustler:	1310'	Bone Springs:	6120'
Top Salt:	1500'		
Base Salt:	2890'		
Yates:	2890'		
Queen:	3960'		
San Andres:	4510'		
Delware:	5080'		

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

Water Sand	150'	Fresh Water
San Andres	4510'	Oil/Gas
Delware	5080'	Oil/Gas
Bone Springs	6120'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 8 5/8" casing to ~~1310~~ 1370' and circulating cement back to surface will protect the surface fresh water sand and salt section and zones above producing interval. A 5 ½" production casing will be set 9,400', 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
See COA	1370		
12 1/4"	0-~~1310~~'	8 5/8"	32#,J-55, ST&C, New, 3.868785/7.453798/7.86
7 7/8"	0-9400'	5 ½"	17#,L-80,LT&C, New, 1.369/2.3133/2.58

5. **Cement Program:**

8 5/8" Surface Casing: Lead 600 sx, 35:65:0 Class C + 2.0% CaCl 2 +.13#/ sk Cello Flake +3#/sk LCM-1 +1.5% Sodium Metasilicate + 6% MPA 5, yield 1.78, excess 100% ,Tail. 200sx Class C 1% CaCl2 yield 1.34, excess 100%
5 ½" Production Casing: Lead 525sx Class H + 2.55% bwoc R-3 + 3#/ sk LCM-1 + .005 GPS FP-6L + 4% Bwoc Sodium Metasilicate , yield 2.15, excess 35%, Tail 1072sx H 50:50:0 POZ Class H + 2% Sodium Chloride + 3#/sk LCM-1 + 2% FL-52 + 1% FL-62 + .05% ASA-301 + .005 gps FP-6L + 2% Sodium Metasilicate, yield 1.20, excess 35%.

Attached to Form 3160-3
Mack Energy Corporation
Rangers Federal #1
SL 990 FNL & 990 FWL, Lot # 4, Sec. 1 T18S R32E
Lea County, NM

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6. Minimum Specifications for Pressure Control: See COA

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 13 3/8" BOP will be nippled up on the 13 3/8" surface casing and tested by a 3rd party to ~~2000~~ 500 psi 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

13 5/8" Spec. BOP per Operator For Test plug. CPH

7. Types and Characteristics of the Proposed Mud System:

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

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-1310' 1370'	Fresh Water	8.5	28	N.C.
1310-TD'	Brine	10	30	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: See COA

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 1,900 psig. Low levels of Hydrogen sulfide has been monitored 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.

If H2S is encountered in quantities under 10ppm fans will be place in the substructure, rig floor area of drilling rig to prevent accumulation of gas. ~~If higher levels of H2S are detected the well will be shut in and a gas separator installed with a flare line.~~ Not approved for 2 strings Casing design - See COA (H_2S)

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 March 23, 2011. Once commenced, the drilling operation should be finished in approximately 30 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.

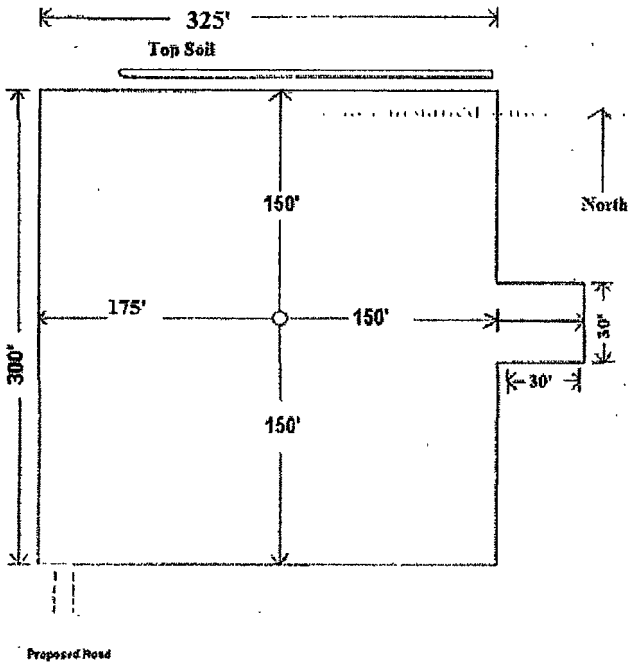
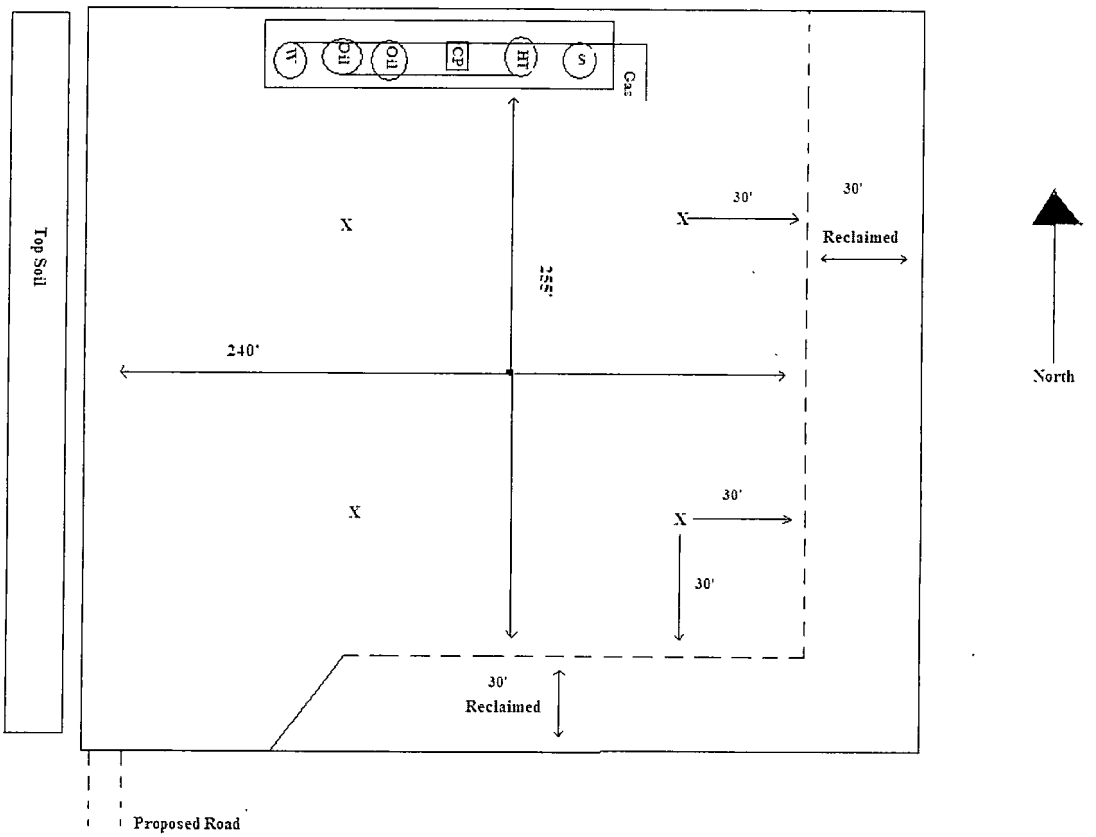


Exhibit #6

Attached to Form 3160-3
Mack Energy Corporation
Rangers Federal #1
SL 990 FNL & 990 FWL, Lot # 4, Sec. 1 T18S R32E
Lea County, NM

C. Diagram below shows the proposed downsized well site after Interim Reclamation. Dimensions are estimates on present conditions and are subject to change.



Attached to Form 3160-3
Mack Energy Corporation
Rangers Federal #1
SL 990 FNL & 990 FWL, Lot # 4, Sec. 1 T18S R32E
Lea County, NM

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Rangers Federal #1
Lea 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.

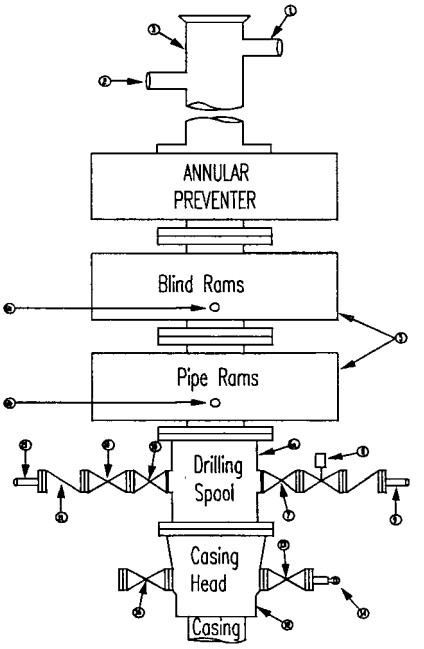
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
13 3/8 inch- 3 MWP
11 Inch - 3 MWP
EXHIBIT #10

Stack Requirements

NO	Items	Min I.D.	Mın 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" mın kill line and 3" mın choke line outlets		2" Choke
6b	2" mın. kill line and 3" mın 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 10
CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above ME 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.

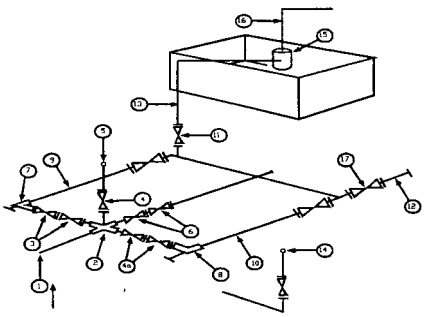
1 Bradenhead or casing head and side valves
2. Wear bushing If required

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
MIMIMUM 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

Mimimum requirements

No.		3,000 MWP I.D.	Nominal	Rating	5,000 MWP I.D.	Nominal	Rating	10,000 MWP 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

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