

Form 3160-3  
(April 2004)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, 2007

1a Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. <b>NM-025528</b>	
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name	
2 Name of Operator <b>Lime Rock Resources A, L.P.</b>		7 If Unit or CA Agreement, Name and No	
3a Address <b>1111 Bagby St., Suite 4600 Houston, TX 77002</b>		8 Lease Name and Well No <b>Eagle 33 O Federal, Well No. 19</b>	
3b Phone No. (include area code) <b>713-292-9526</b>		9 API Well No. <b>30-015-39459</b>	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>290' FSL &amp; 2210' FEL</b> At proposed prod zone <b>same</b>		10 Field and Pool, or Exploratory <b>Red Lake; Glorieta-Yeso</b>	
14 Distance in miles and direction from nearest town or post office* <b>13.5 road miles SE of Artesia, NM</b>		11 Sec, T R M or Blk and Survey or Area <b>Sec. 33-T17S-R27E</b>	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) <b>290'</b>		12 County or Parish <b>Eddy</b>	
16 No of acres in lease <b>360</b>		13 State <b>NM</b>	
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft <b>500'</b>		17 Spacing Unit dedicated to this well <b>40</b>	
19 Proposed Depth <b>4'500'</b> <input checked="" type="checkbox"/>		20 BLM/BIA Bond No on file <b>NMB-000499</b>	
21 Elevations (Show whether DF, KDB, RT, GL, etc) <b>3522 GL</b> <input checked="" type="checkbox"/>		22 Approximate date work will start* <b>09/20/2011</b>	
		23 Estimated duration <b>3 weeks</b>	

## 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  | 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>George R. Smith</i>	Name (Printed Typed) <b>George R. Smith</b>	Date <b>06/20/2011</b>
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Title  
**POA agent for Lime Rock Resources A, L.P.**

Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <b>Don Peterson</b>	Date <b>AUG 26 2011</b>
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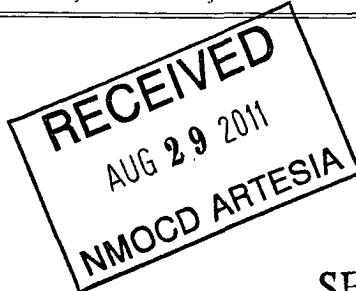
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon  
Conditions of approval, if any, are attached**APPROVAL FOR TWO YEARS**

Title 18 USC Section 1001 and Title 43 USC 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)

Roswell Controlled Water Basin

Approval Subject to General Requirements  
& Special Stipulations AttachedSEE ATTACHED FOR  
CONDITIONS OF APPROVAL

**APPLICATION FOR DRILLING**  
**LIME ROCK RESOURCES A, L.P.**  
Eagle 33 O Federal, Well No. 19  
290' FSL & 2210' FEL, Sec. 33-T17S-R27E  
Eddy County, New Mexico  
Lease No.: NMNM-022528  
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Lime Rock Resources A, L.P. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.

2. The estimated tops of geologic markers are as follows:

Yates	18'	San Andres	1429'
Seven Rivers	248'	Glorieta	2,785'
Queen	818'	Yeso	2,851'
Grayburg	1,174'	TD	4,500'

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water possible in the Triassic between 80' - 230'.

Oil: Possible in the San Andres, Glorieta below 1,429'

Gas: Possible in the San Andres, Glorieta below 1,429'

4. Proposed New Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH FACTOR	COLLAPSE DESIGN FACTOR	BURST DESIGN FACTOR	TENSION DESIGN FACTOR
12 1/4"	8 5/8"	24.0#	J-55	ST&C	<del>350'</del> 375'	1.2	1.18	2.0
7 7/8"	5 1/2"	17.0#	J-55	LT&C	4,500'	1.2	1.18	2.0

5. Proposed Control Equipment: A 5M Shaffer Type LWS Double Gate 11" BOP will be installed on the 8 5/8" casing. Casing and BOP will be tested as a 2M system as per Onshore Oil & Gas Order #2 before drilling out with the 7 7/8". The Pipe Rams will be operated and checked daily, plus each time drill pipe is out of hole. This will be documented on driller's log. See Exhibit "E".

6. Cement Program

CASING	SETTING DEPTH	QUANTITY OF CEMENT	TOC	YEILD
8 5/8"		Lead: 175 sx "C"+2%CaCl2+.125pps Poly-E Flake		1.35
	<del>350'</del>	Tail: 200 sx "C" +2% CaCl2 150% excess	Surface	1.32
5 1/2"	4,500'	Lead 450 sx 35:65 (Poz:C)+ .6% Gel + 0.125 pps PE Flake +3pps NaCl+3 pps Gilsonite + 0.5% Halad 9		1.87
		Tail. 550 sx "C"+0.4% LAP-1+ 0.5% CFR-3, .+ 0.25 pps D-AIR +0.125 pps Poly E Flake 100% excess	Surface	1.325

**7. Mud Program:**

MUD PROGRAM		MUD WEIGHT	VIS.	W/L CONTROL
DEPTH	MUD			
0 - <del>250'</del> <del>275'</del>	Fresh water mud:	8.4 - 9.2 ppg	28 - 34	No W/L control
<del>350'</del> - 3000'	Brine water	9.8 - 10.2 ppg	28 - 29	No W/L control
3000' - 4500'	Brine, Salt Gel, Starch	9.8 - 10.2 ppg	30 - 32	W/L control 20-30 cc w/starch

**8. Auxiliary Equipment:** Blowout Preventer, gas detector, Kelly cock.

**9. Testing, Logging, and Coring Program:**

Drill Stem Tests: None planned unless warranted.

Logging: T.D -Surface Casing: GR-DLL, GR-CND  
350' to surface: G/R/Neutron

Coring: None planned unless warranted.

**10.** No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated Surface Pressure = 1584 psi (evac. hole) and BHP of 2574 psi (evac) with temperature of 105°.

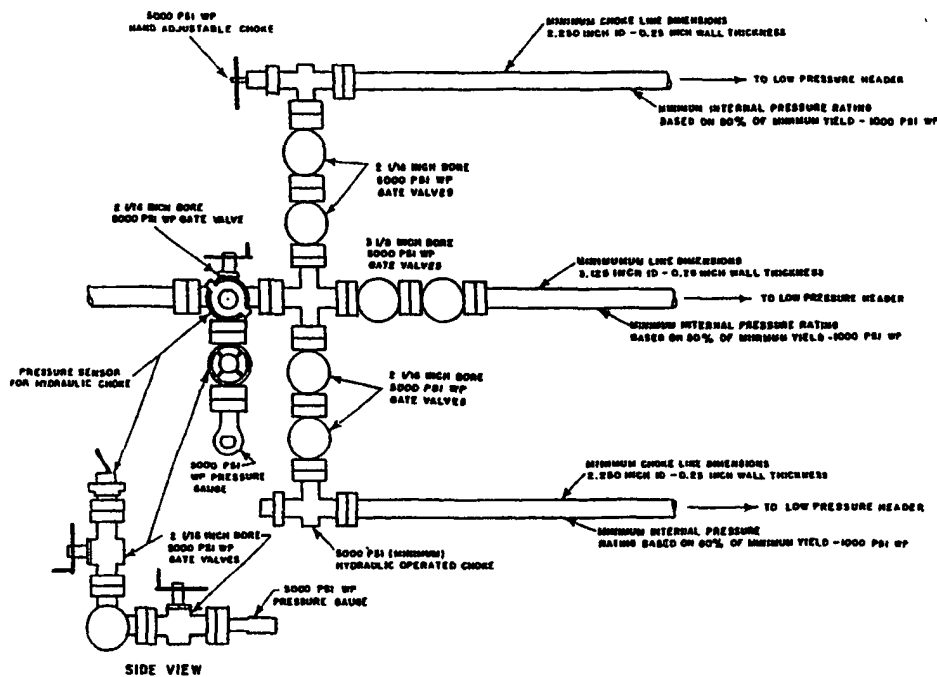
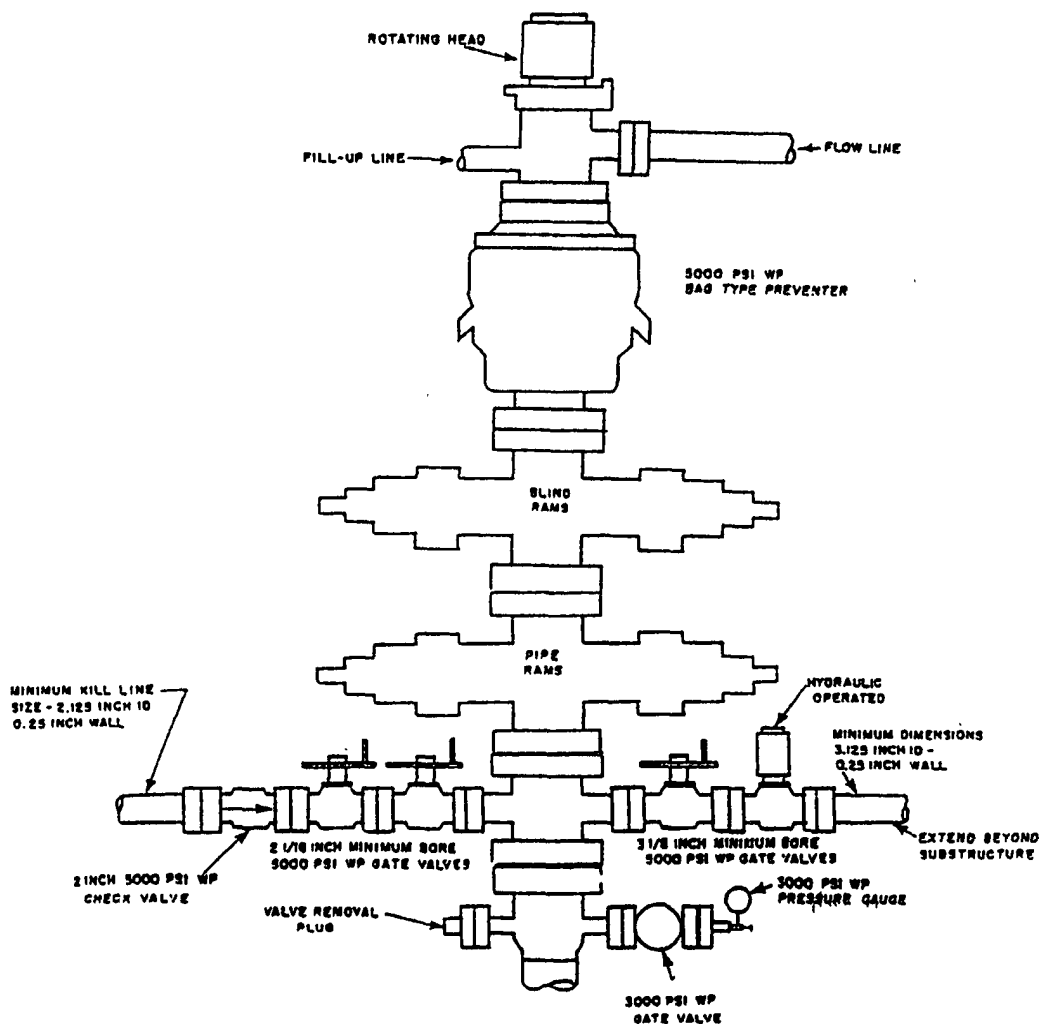
**11. H<sub>2</sub>S:** None expected. The mud log unit will be cautioned to use a gas trap to detect H<sub>2</sub>S and if any is detected the mud weight will be increased along with H<sub>2</sub>S inhibitors sufficient to control the gas. H<sub>2</sub>S monitoring equipment will be installed before drilling out from the 8 5/8" casing. The well will have a mud separator and flare line installed on the choke manifold and the H<sub>2</sub>S gas contingency program will be in force. See Exhibit "D".

**12.** Anticipated starting date: September 20, 2011.

Anticipated completion of drilling operations: Approx. 3 weeks

# 5000 PSI WORKING PRESSURE BLOWOUT PREVENTER STACK

EXHIBIT C-1



11" 5000 PSI WORKING PRESSURE CHOKE MANIFOLD

EXHIBIT C-2