

Form 3160-3
(August 1999)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OMB No. 1004-0136

Expires November 30, 2000

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-9982
b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" 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 Not Applicable
2. Name of Operator Yates Petroleum Corporation 25575		7. If Unit or CA Agreement, Name and No. 29678
3A. Address 105 South Fourth Street Artesia, New Mexico 88210	3b. Phone No. (include area code) (505) 748-1471	8. Lease Name and Well No. Teckla MD Federal Com #11
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNE 660' FNL and 1980' FEL, Unit B At proposed prod. Zone Same as above		9. API Well No. 30-005-63888
14. Distance in miles and direction from nearest town or post office* Approximately twenty-eight (28) miles northeast of Roswell, New Mexico		10. Field and Pool, or Exploratory Wildcat Precambrian
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease 240	11. Sec., T., R., M., or Blk. and Survey or Area Section 24, T6S-R25E, Mer NMP
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	17. Spacing Unit dedicated to this well 320 acres-N/2	12. County or Parish Chaves County
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3764' GL	19. Proposed Depth 5400	13. State NM
22. Approximate date work will start* ASAP	20. BLM/BIA Bond No. on file NMB000434	
23. Estimated duration 30 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. | 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 office. |

25. Signature <i>Debbie L. Caffall</i>	Name (Printed/Typed) Debbie L. Caffall	Date 12/6/2006
Regulatory Agent		
Approved by (Signature) <i>/S/LARRY D. BRAY</i>	Name (Printed/Typed) /S/LARRY D. BRAY	Date JAN 05 2007
Title Assistant Field Manager, Lands And Minerals	Office ROSWELL FIELD OFFICE	APPROVED FOR 1 YEAR

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.

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 reverse)

Previously Approved

C-144 attached

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHEDIf earthen pits are used in
association with the drilling of this
well, an OCD pit permit must be
obtained prior to pit construction.

TO DRILL OR REENTER

6. If Indian, Allottee or Tribe Name

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-11

Revised March 17, 19

Instruction on how

Submit to Appropriate District Office

State Lease - 4 Ceph

Fee Lease - 3 Ceph

Ac. NM 88810

Artesia, NM 88810

Aztec Rd., Aztec, NM 87410

CT IV
Cuth Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96542	Pool Name Wildcat Precambrian
Property Code	Property Name TECKLA "MD" FEDERAL COM.	Well Number 11
OGRID No.	Operator Name YATES PETROLEUM CORPORATION	Elevation 3764

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	24	6S	25E		660	NORTH	1980	EAST	CHAVE

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
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						
320									

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

		OPERATOR CERTIFICATION I hereby certify the the inform... contained herein is true and complete to the best of my knowledge and belief. Signature Pat Perez Printed Name Regulatory Agent Title 12/4/2002 Date
		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. 10/10/2002 Date Surveyed Signature & Seal of Professional Surveyor

YATES PETROLEUM CORPORATION
Teckla "MD" Federal Com. #11
 660' FNL and 1980' FEL
 Section 24-T6S-R25E
 Chaves County, New Mexico

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

San Andres	550'	Spear Zone	4700'
Glorieta	1540'	Cisco	4955'
Yeso	1615'	George Zone	5090'
Tubb	3050'	Strawn	5140'
Abo	3690'	Basement	5250'
Wolfcamp	4450'	TD	5400'

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

Water: 250'-350'
 Oil or Gas: All potential formations.

3. Pressure Control Equipment: BOPE will be installed on the 11 3/4" casing and rated for 2000# BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings, which are set and cemented in place. Blowout Preventor controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.

Auxiliary Equipment:

- A. Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when kelly is not in use.

4. THE PROPOSED CASING AND CEMENTING PROGRAM:

- A. Casing Program: (All New)

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt./Ft</u>	<u>Grade</u>	<u>Coupling</u>	<u>Interval</u>	<u>Length</u>
14 3/4"	11 3/4"	42#	H-40	ST&C	0-900'	900'
11"	8 5/8"	24#	J-55	ST&C	0-1600'	1600'
7 7/8"	5 1/2"	15.5#	J-55	ST&C	0-5400'	5400'

WITNESS

1. Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, and Tensile Strength 1.8

B. CEMENTING PROGRAM:

Surface Casing: Cement with 350 sx Lite "C" (YLD 2.0 WT 12.5). Tail in with 200 sx "C" + 2% CaCl₂ (YLD 1.33 WT 15.6).

Intermediate: 250 sx Class "C" + 2% CaCl₂ (YLD 1.32 WT 14.8)

Production Casing: 500 sx PVL (YLD 1.34 WT 13). TOC 3100'.

5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-900'	FW GEL/Paper/LCM	8.6-9.6	32-36	N/C
900'-3660'	Cut Brine/Brine	9.6-10.2	28	N/C
3660'-5400'	Starch/Salt Gel	9.6-10.2	32-40	<6CC

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

6. EVALUATION PROGRAM:

Samples: 10' samples out from under surface casing.

Logging: Platform Express, CNL/LDT W/NGT to TD to surface casing, w/ GR/CNL TD to surface, DLL/MSFL TD to surface casing, BHC Sonic TD to surface casing; FMI TD - top of Wolfcamp.

Coring: Sidewall

DST's: None

7. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE, AND POTENTIAL HAZARDS:

Anticipated BHP:

From: 0	TO: 900'	Anticipated Max. BHP: 375 PSI
From: 900'	TO: 5400'	Anticipated Max. BHP: 2000 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: None.

H₂S Zones Anticipated: None Anticipated

Maximum Bottom Hole Temperature: 145 F

8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 15 days to drill the well with completion taking another 15 days.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
YATES PETROLEUM CORPORATION
Teckla "MD" Federal Com. #11
660' FNL and 1980' FEL
Section 24-T6S-R25E
Chaves County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. **EXISTING ROADS:**

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 28 miles northeast of Roswell, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go northeast out of Roswell on Hwy 285. From the intersection of Hwy 70 & 285, go approximately 24 miles to Dona Anna Road. Turn east and follow Dona Anna approximately 10.5 miles to Mapco pipeline road. Turn right, and go approximately 4 miles. Turn right on lease road and go approximately 0.8 of a mile and take right fork. Stay on lease road for approximately 0.5 of a mile and just through the cattle guard, turn left. Go east approximately 300' and you go through another cattle guard and the road turns south. Go approximately 0.2 of a mile to a 2-track road on the left, take 2-track and drive approximately 0.3 of a mile where the road is staked going to the SW corner of the location.

2. **PLANNED ACCESS ROAD:**

- A. The proposed new access will be approximately 2200' in length from the point of origin to the southeast corner of the drilling pad.
- B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
- C. The new road will be bladed with drainage on both sides. No traffic turnout will be built.
- D. The route of the road is visible.
- E. Existing roads will be maintained in the same or better condition.

3. **LOCATION OF EXISTING WELL:**

- A. There is drilling activity within a one-mile radius of the well site.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed well site.

4. **LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:**

- A. There are production facilities on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is productive of gas.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources, possibly in Roswell, and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

The dirt contractor will be responsible for finding a source of material for construction of road and pad and will obtain any permits, which may be required.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES: NONE

9. WELLSITE LAYOUT:

- A. Exhibit C shows the relative location and dimensions of the well pad, the reserve pits, the location of the drilling equipment, rig orientation and access road approach. Note: Pits to East Southeast.
- B. The reserve pits will be plastic lined.
- C. A 400' x 400' area has been staked and flagged.

10. PLANS FOR RESTORATION:

- A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluids will be fenced until they have dried and been leveled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled level after they have evaporated and dried.

11. SURFACE OWNERSHIP: Marie Haumont

12. OTHER INFORMATION:

- A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, and historical and cultural sites.
- B. The primary surface use is for grazing.

13. OPERATOR'S REPRESENTATIVE:

- | | |
|--|---|
| A. Through A.P.D. Approval:
Debbie Caffall, Regulatory Agent
Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210
Phone (505) 748-1471 | B. Through Drilling, Completions & Prod.
Pinson McWhorter, Operations Manager
Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210
Phone (505) 748-1471 |
|--|---|

14. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Yates Petroleum Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

12/6/2006

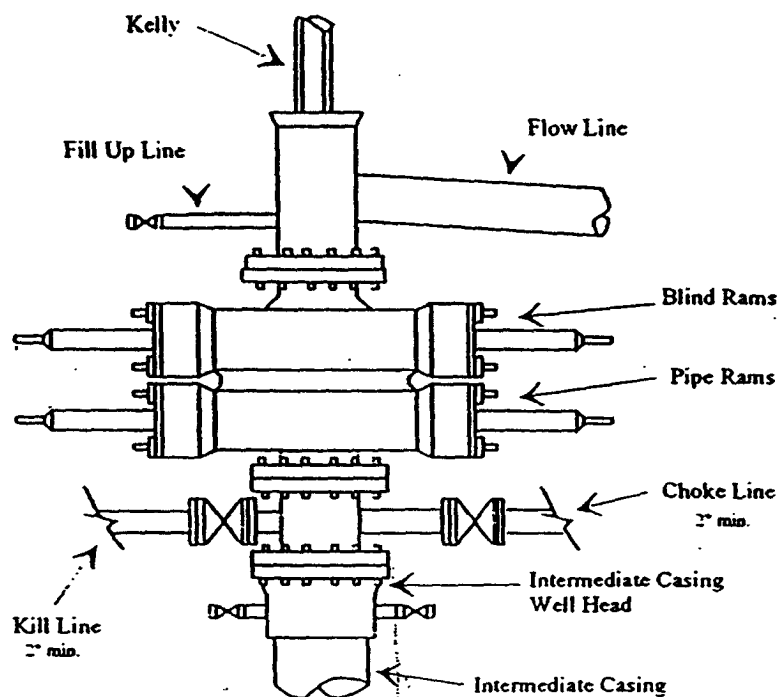

Regulatory Agent



Yates Petroleum Corporation

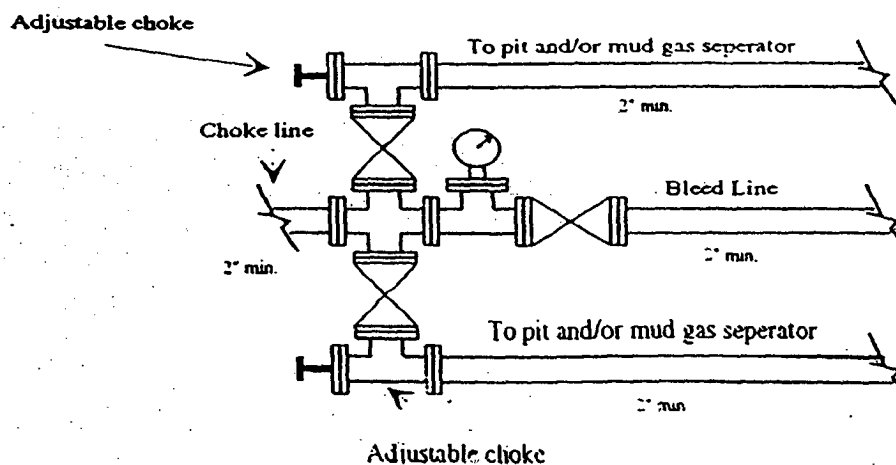
BOP-2

Typical 2,000 psi Pressure System Schematic Double Ram Preventer Stack



Yates Petroleum Corporation
Teckla "MD" Federal Com. #11
660' FNL and 1980' FEL
Section 24-T6S-R25E
Chaves County, New Mexico
Exhibit "B"

Typical 2,000 psi choke manifold assembly with at least these minimum features



Yates Petroleum Corporation

Location Layout for Permian Basin

Up to 12,000'

Yates Petroleum Corporation
Teckla "MD" Federal Com. #11
660' FNL and 1980' FEL
Section 24-T6S-R25E
Chaves County, New Mexico
Exhibit "C"

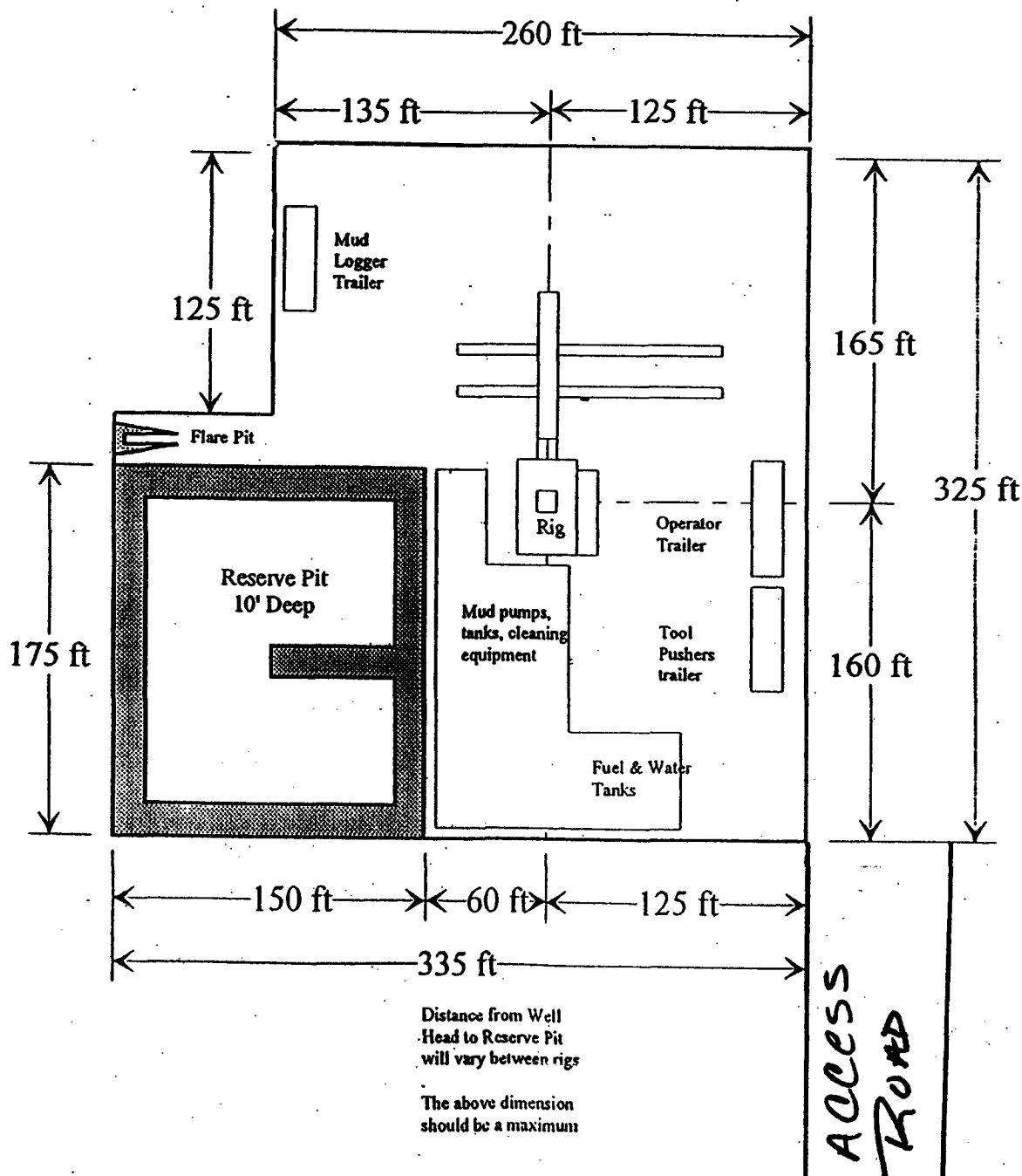
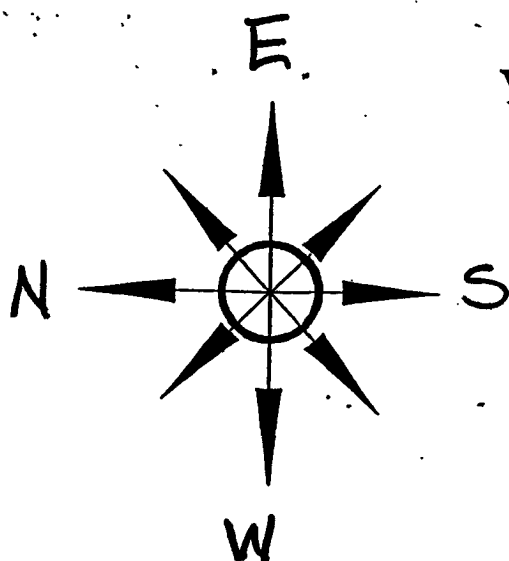


EXHIBIT A

OPERATOR: Yates Petroleum Corporation

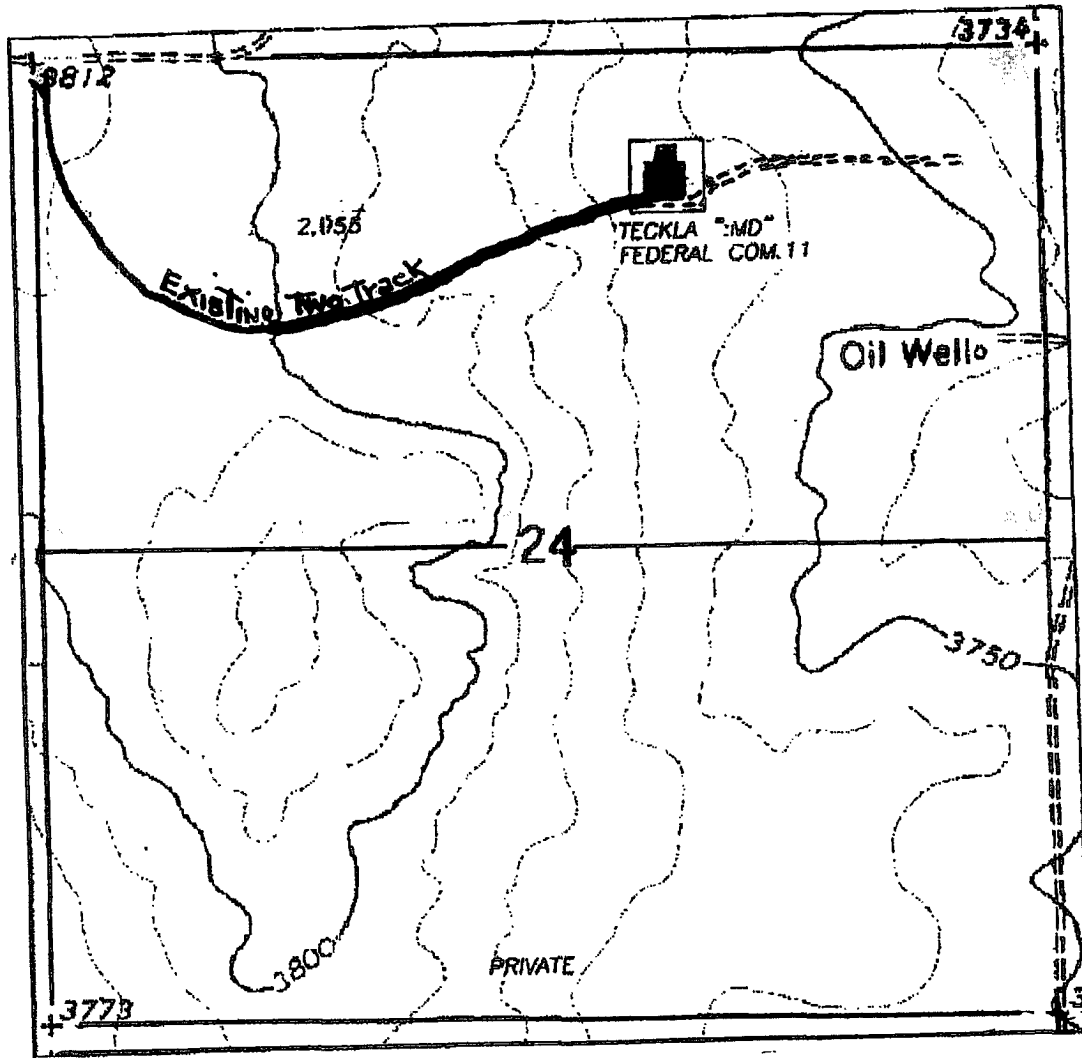
BLM LEASE NUMBER: NM-9982

WELL NAME & NO.: Teckla "MD" Federal Com. #11

LOCATION: SECTION 24, T. 6 S., R. 25 E.

QUARTER/QUARTER & FOOTAGE: NW $\frac{1}{4}$ NE $\frac{1}{4}$, - 660' FNL & 1980' FEL

COUNTY: Chaves County New Mexico





United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201

EXHIBIT B

1 of 8 pages

WELL DRILLING REQUIREMENTS

OPERATORS NAME: Yates Petroleum Corporation LEASE NO.: NM-9982
WELL NAME & NO: Teckla "MD" Federal Com. #11
QUARTER/QUARTER & FOOTAGE: NW¼NE¼ - 660' FNL & 1980' FEL
LOCATION: Section 24, T. 6 S., R. 25 E., NMPM
COUNTY: Chaves County, New Mexico

I. GENERAL PROVISIONS:

- A. The operator has the right of administrative review of these requirements pursuant to 43 CFR 3165.1(a).
- B. The operator shall hereafter be identified as the holder in these requirements. The Authorized Officer is the person who approves the Well Drilling Requirements.

II. WELL PAD CONSTRUCTION REQUIREMENTS:

- A. The BLM shall administer compliance and monitor construction of the access road and well pad. Notify Richard G. Hill at least 3 working days (72 Hours) prior to commencing construction of the access road and/or well pad. Roswell Field Office number (505) 627-0247.
- B. Prior to commencing construction of the access road, well pad, or other associated developments, the holder shall provide the dirt contractor with a copy of the approved APD signature page, a copy of the location map (EXHIBIT A), a copy of pages 1 & 2 from the Well Drilling Requirements (EXHIBIT B), and a copy of the Permanent Resource Road Requirements (EXHIBIT D).
- C. The holder shall stockpile the topsoil from the surface of the well pad for reclamation purposes. The topsoil on the Teckla "MD" Federal Com. #11 well pad is approximate 6 inches in depth. Approximately 800 cubic yards of topsoil shall be stockpiled on the Southeast corner of the well pad, opposite the reserve pit. Upon reclamation of the well pad, the topsoil stockpile shall be redistributed over the disturbed areas. See Well Drilling Requirements - VI. Seeding Requirements - for reclamation of the well pad.

D. Reserve Pit Requirements:

1. The reserve pit shall be constructed 175' X 150' on the **North** side of the well pad.
2. The holder shall follow NMOCD Rules pertaining to the reserve pit construction and reclamation.
3. The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.
4. The reserve pit shall be constructed so as not to leak, break, or allow discharge of drilling muds. Under no circumstances will the reserve pit be cut to drain drilling muds on the terrain.
5. The reserve pit shall not be located in any natural drainage.
6. The reserve pit shall be equipped to deter entry by birds, bats, other wildlife, and livestock, if the reserve pit contains any oil and/or toxic fluids.

7. Drilling muds shall be properly disposed of before the reserve pit is reclaimed. Drilling muds can be allowed to evaporate in the reserve pit or be removed and transported to an authorized disposal site.
8. Dumping of junk or trash into the reserve pit is not allowed. Junk or trash shall be removed from within the reserve pit before the reserve pit is reclaimed. **Junk or trash shall not be buried in the reserve pit.**
9. Reserve Pit Reclamation:
 - a. Upon reclamation of the reserve pit, the impervious, reinforced, synthetic or fabricated 12 mil in thickness liner shall be used to encapsulate the reserve pit cuttings.
 - b. The dried cuttings in the reserve pit shall be buried a minimum depth of three (3) feet below ground level.
 - c. The reserve pit area shall be covered with a three (3) feet minimum cap of clean soil or like material that is capable of supporting native plant growth. Once the reserve pit contents have been capped, the cap shall not be disturbed without NMOCD approval.
 - d. Should the cuttings in the reserve pit not meet the three (3) feet below ground level depth, the excess contents shall be removed from the reserve pit until the required minimum depth of three (3) feet below ground level requirement has been met. The excess cuttings shall be removed from the well location and shall be properly disposed of at an authorized disposal site.
 - e. Contact Richard G. Hill, three days before commencing the reserve pit reclamation.

E. Federal Mineral Materials Pit Requirements:

1. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the authorized officer. Contact Jerry Dutchover at (505) 627 -0236.
2. Payment for any Federal mineral materials that will be used to surface the access road and the well pad is required prior to removal of the mineral materials.
3. Mineral Materials extracted during construction of the reserve pit may be used for development of the pad and access road as needed, for the Teckla "MD" Federal Com. #11 gas well only. Removal of any additional material on location must be purchased from BLM prior to removal of any material.
 - a. An optional mineral material pit may be constructed within the archaeologically cleared area. The mineral material removed in the process can be used for pad and access road construction. However, a mineral material sales contract must be purchased from the BLM prior to removal of any material.

F. Well Pad Surfacing Requirement:

The well pad shall be surfaced with 6 inches of compacted caliche, gravel, or other approved surfacing material. The well pad shall be surfaced prior to drilling operations. See **Permanent Resource Road Requirements - EXHIBIT D - requirement #4, for road surfacing.**

G. Cave Requirements:

1. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease. Contact Larry Bray at (505) 627-0250.
2. The BLM Authorized Officer will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

III. DRILLING OPERATION REQUIREMENTS:**A. GENERAL DRILLING REQUIREMENTS:**

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272, in sufficient time for a representative to witness:

A. Spudding B. Cementing casing: 11 $\frac{3}{4}$ inch 8 $\frac{5}{8}$ inch 5 $\frac{1}{2}$ inch C. BOP tests

2. 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.

3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

5. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

B. CASING:

1. The 11 $\frac{3}{4}$ inch surface casing shall be set at 900 FT and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 8 $\frac{5}{8}$ inch intermediate casing is to be sufficient to bring top of cement at least 200 feet above shoe.

3. The minimum required fill of cement behind the 5 $\frac{1}{2}$ inch production casing is cement shall extend upward a minimum of 500 feet above the uppermost perforation.

C. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 11 $\frac{3}{4}$ inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- A. The results of the test shall be reported to the appropriate BLM office.
- B. 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.
- C. Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- D. BOPE shall be tested prior to drilling into the Wolfcamp Formation.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- Recording pit level indicator to indicate volume gains and losses.
- Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- Flow sensor on the flow line to warn of abnormal mud returns from the well.