

NOV 06 2007  
OCD-ARTESIA

A 15-07-581

Form 3160-3  
(April 2004)

OCD-ARTESIA

SECRETARY'S POTASH

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

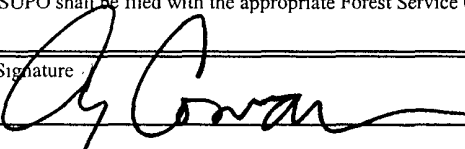
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM LC-028990-B
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Yates Petroleum Corporation 25575		7. If Unit or CA Agreement, Name and No. 32575
3a. Address 105 South Fourth Street, Artesia, NM 88210	3b. Phone No. (include area code) (505) 748-1471	8. Lease Name and Well No. Creek AL Federal Com #20 32575
4. Location of well (Report location clearly and in accordance with any State requirements. *) At surface Capitan Controlled Water Basin At proposed prod. zone SENE 1980' FNL and 1200' FEL Unit H Same as above		9. API Well No. 30-015-35908
14. Distance in miles and direction from the nearest town or post office* Approximately 8 miles southwest of Loco Hills, NM		10. Field and Pool, or Exploratory Hackberry; Morrow, North
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg unit line, if any) 120'		11. Sec., T., R., M., or Blk. And Survey or Area Section 25, T 18 S, R 30 E
16. No. of acres in lease 560.00	17. Spacing Unit dedicated to this well 320 N/2	12. County or Parish Eddy County
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2000'	19. Proposed Depth 12,250 md	13. State NM
20. BLM/ BIA Bond No. on file NATIONWIDE BOND #NMB000434	21. Elevations (Show whether DF RT, GR, etc.) 3588 GL	22. Aproximate date work will start* ASAP
23. Estimated duration 45 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 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 a authorized officer |

25. Signature 	Name (Printed/ Typed) Cy Cowan	Date 7/17/2007
Title Regulatory Agent		
Approved By (Signature) /s/ Linda S.C. Rundell	Name (Printed/ Typed) /s/ Linda S.C. Rundell	Date NOV 7 2007
Title STATE DIRECTOR		
Office NM STATE OFFICE		

Application approval does not warrant or ce operations thereon.

Conditions of approval, if any, are attached

Title 18 U.S.C. Section 1001 and Title 43 U.

States any false, fictitious or fraudulent stat

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

If earthen pits are used in  
association with the drilling of this  
well, an OCD pit permit must be  
obtained prior to pit construction.

is in the subject lease which would entitle the applicant to  
APPROVAL FOR TWO YEARS

d willfully to make to any department or agency of the Unite

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number	<sup>2</sup> Pool Code 96785	<sup>3</sup> Pool Name Hackberry, Morrow, North
<sup>4</sup> Property Code	<sup>5</sup> Property Name CREEK AL FEDERAL COM	<sup>6</sup> Well Number 20
<sup>7</sup> OGRID No. 025575	<sup>8</sup> Operator Name YATES PETROLEUM CORPORATION	<sup>9</sup> Elevation 3588'

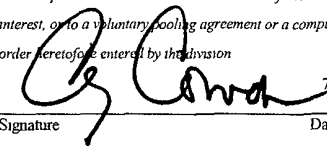
<sup>10</sup> Surface Location

UL or lot no. H	Section 25	Township 18S	Range 30E	Lot Idn	Feet from the 1980	North/South line NORTH	Feet from the 1200	East/West line EAST	County EDDY
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<sup>11</sup> 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
<sup>12</sup> Dedicated Acres 320 N/2	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

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>NM-028990-B</b>				<b>NM-0255073</b>				<b>NM-028990-B</b>				<b><sup>17</sup> OPERATOR CERTIFICATION</b> <i>I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division</i>  Signature _____ Date 7/17/07 Cy Cowan Printed Name Regulatory Agent Title	
												<b><sup>18</sup> SURVEYOR CERTIFICATION</b> <i>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</i> Date of Survey Signature and Seal of Professional Surveyor REFER TO ORIGINAL PLAT Certificate Number	

## DISTRICT II

811 South First, Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

2040 South 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	Pool Name Wildcat Morrow
Property Code	Property Name CREEK "AL" FEDERAL COM.	Well Number 20
OGRID No. 025575	Operator Name YATES PETROLEUM CORPORATION	Elevation 3588

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	25	18S	30E		1980	NORTH	1200	EAST	EDDY

## 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 320	Joint or Infill	Consolidation Code	Order No.						

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 the the information contained herein is true and complete to the best of my knowledge and belief.  Signature Cy Cowan Printed Name Regulatory Agent Title May 2, 2003 Date	
	<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. 4/16/2003 Date Surveyed  Signature Professional Surveyor  Certificate No. Herschel Jones RLS 3640 CREEK 20 GENERAL SURVEYING COMPANY	
	32.72022 103.9288	

0 330' 660' 990' 1650' 1980' 2310' 2310' 1980' 1650' 990' 660' 330' 0'

# YATES PETROLEUM CORPORATION

## Creek AL Federal Com. #20

1980' FNL & 1200' FEL  
Section. 25 -T18S-R30-E  
Eddy County, New Mexico

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

Rustler	485'	Oil Pay	Dolomite	8300'	Gas Pay
Tansill	1800'	Oil Pay	Wolfcamp	9570'	Gas Pay
Yates	1910'	Oil Pay	Strawn	10750'	Gas Pay
Seven Rivers	2350'	Oil Pay	Atoka	11075'	Gas Pay
Queen	3075'	Oil Pay	Morrow	11470'	Gas Pay
Grayburg	3560'	Oil Pay	Chester	12120'	Gas Pay
Delaware	4600'	Oil Pay	TD	12250'	Gas Pay
Bone Spring	5820'	Oil Pay			

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

Water: Approx 250' - 350'  
Oil or Gas: See Above.

3. Pressure Control Equipment: BOPE will be installed on the 9 5/8" casing and rated for 3000 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.

See  
COA

### 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)

See  
COA  
↓  
Replaced  
8-21-07

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
17 1/2"	13 3/8"	48#	H-40	ST&C	0-700'	700'
12 1/4"	9 5/8"	36#	J-55	ST&C	0-4000'	4000'
8 3/4"	7"	29#	P-110	LT&C	0-100'	100'
8 3/4"	7"	26#	L-80	LT&C	100'-8600'	8500'
8 3/4"	7"	26#	HCP-110	LT&C	8600'-11000'	2400'
8 3/4"	7"	29#	P-110	LT&C	11000'-12250'	1250'

Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, Joint Strength 1.8

## B. CEMENTING PROGRAM:

Surface casing: 400 sx Lite (YLD 2.0 WT 12.5) Tail in w/ 250 sx Class "C"  
+ 2% CaCL<sub>2</sub> (YLD 1.32 WT 14.8). Surface

Intermediate Casing: Lead with 1100 sx Lite (YLD 2.0 WT 12.5); Tail in w/250 sx Class "C"  
+ 2% CaCL<sub>2</sub> (YLD 1.32 WT 14.8). Surface

Production Casing: Lead with 600 sx Lite (YLD 2.0 WT. 12.5). Tail in w/ 500 sx  
Super "C" (YLD 1.62 WT 13.2) TOC-3500'

## 5. Mud Program and Auxiliary Equipment:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-700'	FW Gel/Paper	8.6-9.0	32-36	N/C
700'-4000'	Brine	10.0-10.2	28	N/C
4000'-11000'	Cut Brine	8.8-9.5	28	N/C
11000'-12250'	S Gel/Starch/Driscap/KCL	9.5-10.0	32-40	<10cc

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: 30' samples to 5000'. 10' samples 5000' to TD.

Logging: Platform HALS

Coring: Sidewall cores as warranted.

DST's: As warranted. ← see CoA

## 7. Abnormal Conditions, Bottom hole pressure and potential hazards:

Anticipated BHP:

From: O	TO: 700'	Anticipated Max. BHP:	300	PSI
From: 700'	TO: 4000'	Anticipated Max. BHP:	1700	PSI
From: 4000'	TO: TD	Anticipated Max. BHP:	6100	PSI

No abnormal pressures or temperatures are anticipated.

Lost Circulation Zones Anticipated: None.

H<sub>2</sub>S Zones Anticipated: None

## 8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 30 days to drill the well with completion taking another 15 days.

### Creek AL Federal Com. #20 Intermediate Casing Design

0 ft to 100 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
9.625 inches	40 #/ft	J-55	ST&C		5,200	3,900 6,500	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
2,570 psi	3,950 psi	452 ,000 #			630 ,000 #	8.75-SD	

100 ft to 3,300 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
9.625 inches	36 #/ft	J-55	ST&C		4,530	3,400 5,660	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
2,020 psi	3,520 psi	394 ,000 #			564 ,000 #	8.765	

3,300 ft to 4,000 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
9.625 inches	40 #/ft	J-55	ST&C		5,200	3,900 6,500	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
2,570 psi	3,950 psi	452 ,000 #			630 ,000 #	8.75-SD	

### Creek AL Federal Com. #20 Production Casing Design

0 ft to 3,100 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	L-80	LT&C		5110	3830 6390	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
5,410 psi	7,240 psi	511 ,000 #			604 ,000 #	6.151	

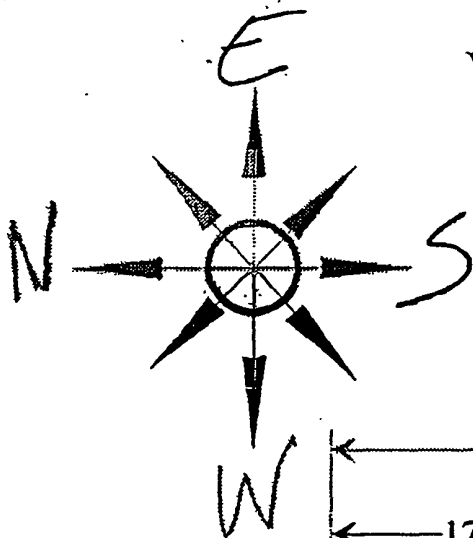
3,100 ft to 6,400 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	J-55	LT&C		3670	2750 4590	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
4,320 psi	4,980 psi	367 ,000 #			415 ,000 #	6.151	

6,400 ft to 8,800 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	L-80	LT&C		5110	3830 6390	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
5,410 psi	7,240 psi	511 ,000 #			604 ,000 #	6.151	

8,800 ft to 12,250 ft				Make up Torque ft-lbs			Total ft =
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	HCP-110	LT&C		6930	5200 8660	
Collapse Resistance	Internal Yield	Joint Strength			Body Yield	Drift	
7,800 psi	9,950 psi	693 ,000 #			830 ,000 #	6.151	



# Yates Petroleum Corporation

Location Layout for Permian Basin

12,000' to 14,000'

Pits North

YATES PETROLEUM CORPORATION

105 South 4<sup>th</sup> Street

Artesia, NM 88210

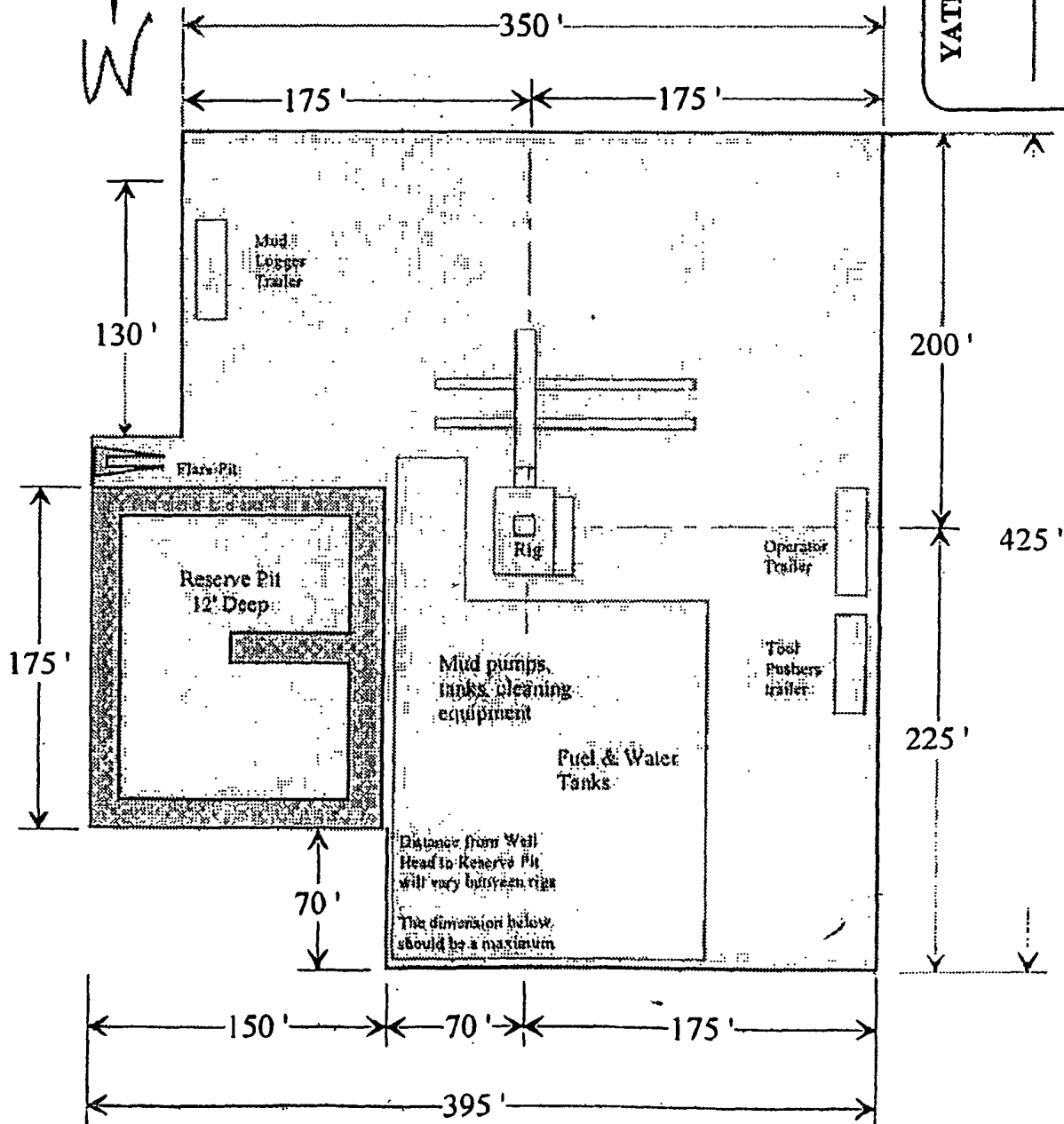
Creek AL Federal Com. #20

1980' FNL & 1200' FEL

Section 25 - T18S-R30-E

Eddy County, New Mexico

Exhibit "C"



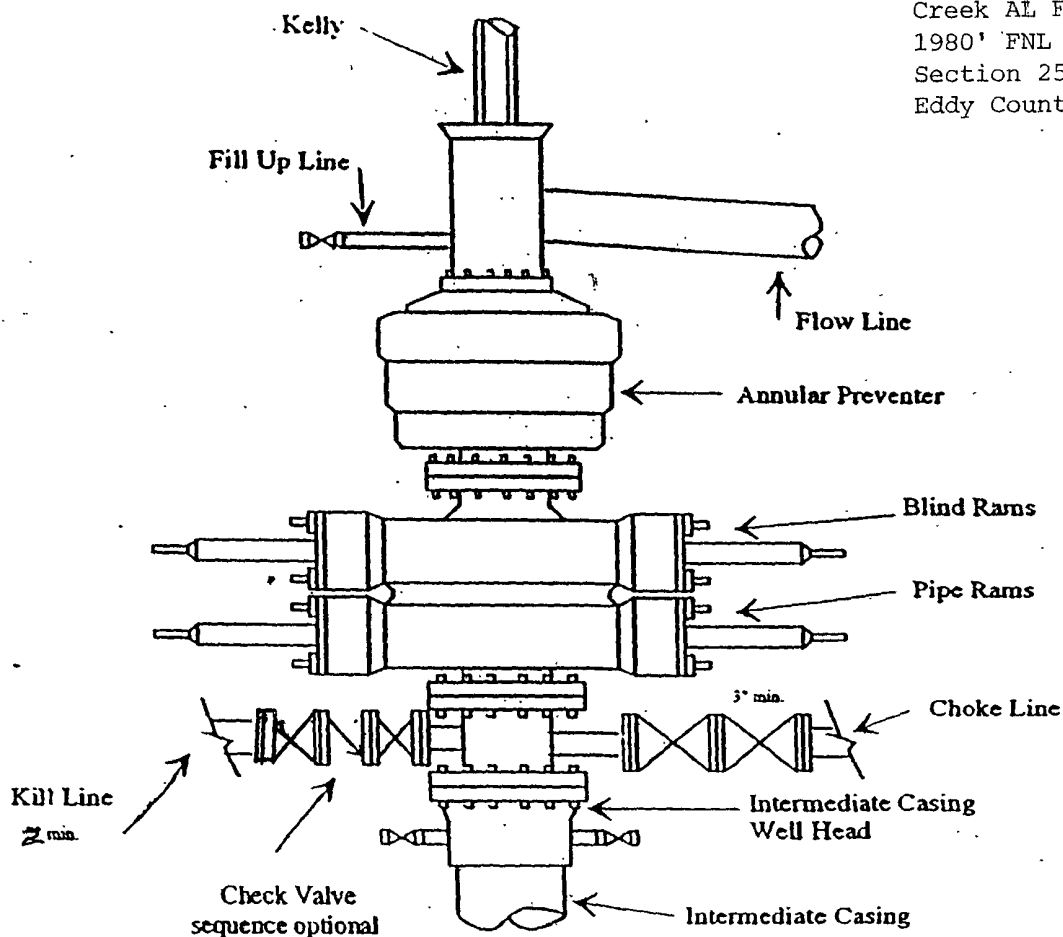


# Yates Petroleum Corporation

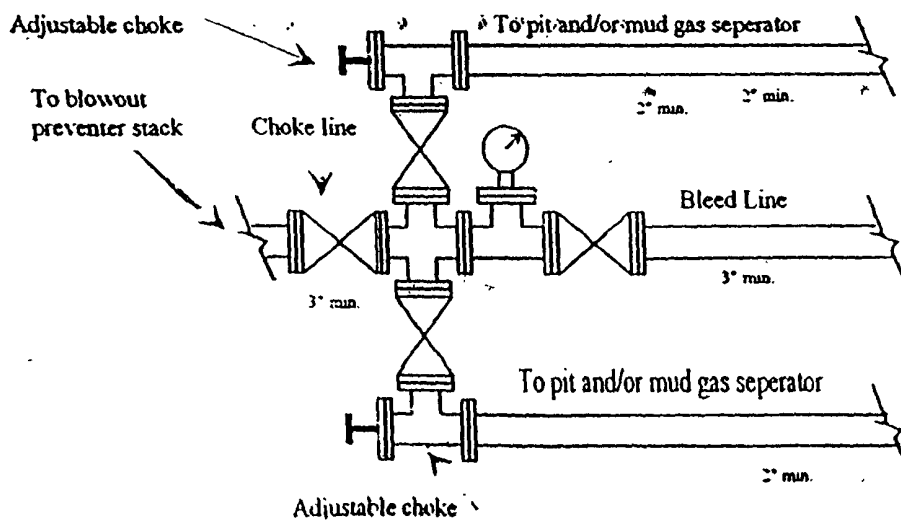
BOP-3

## Typical 3,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack

Creek AL Federal Com. #20  
1980' FNL and 1200' FEL  
Section 25, T18S-R30E  
Eddy County, New Mexico



## Typical 3,000 psi choke manifold assembly with at least these minimum features





**MULTI-POINT SURFACE USE AND OPERATIONS PLAN**  
**Creek AL Federal Com. #20**  
1980' FNL & 1200' FEL  
Section. 25 -T18S-R30-E  
Eddy 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 wellsite is located approximately 8 miles southwest of Loco Hills, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go east of Artesia on Highway 82 to Highway 360. Turn right on 360 and go to Duval Shaft Road (CR-251). Turn left on Duval Shaft Road and go to Grubbs Road (CR-250). Turn right on Grubbs road and go approx. 3 miles. Turn left here and go approx. 0.8 of a mile. The new road will start here going east.

2. PLANNED ACCESS ROAD.

- A. The proposed new access will go east for approximately 200 feet to the southwest corner of the drilling pad. The road will lie in a west to east direction.
- 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 one side. Traffic turnouts may 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 wellsite.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed wellsite.

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 and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

Dirt contractor will locate closest pit and obtain any permits and materials needed for construction.

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.
- 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 wellsite 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: Federal surface, Administered by the Bureau of Land Management, Carlsbad, New Mexico.

12. OTHER INFORMATION:

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

13. OPERATOR'S REPRESENTATIVE

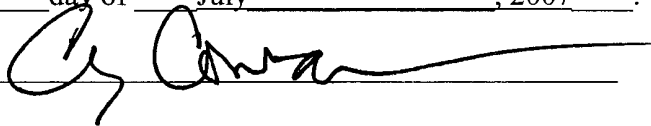
- |  |  |
|--|--|
| A. Through A.P.D. Approval:<br><br>Cy Cowan, Regulatory Agent<br>Yates Petroleum Corporation<br>105 South Fourth Street<br>Artesia, New Mexico 88210<br>Phone (505) 748-1471 | B. Through Drilling Operations,<br>Completions and Production:<br>Ray Stall, Operations Manager<br>Yates Petroleum Corporation<br>105 South Fourth Street<br>Artesia, New Mexico 88210<br>Phone (505) 748-1471 |
|--|--|

CERTIFICATION  
YATES PETROLEUM CORPORATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 17th day of July, 2007.

Name Cy Cowan



Position Title Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 505-748-4376

Field Representative (if not above signatory) Jim Krogman

Address (if different from above) Same

Telephone (if different from above) 505-748-4215

E-mail (optional) \_\_\_\_\_

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of **2** hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(505) 361-2822

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Yates** formation. **Hydrogen Sulfide has been reported in Section 7 with measurements from 150-380 ppm the gas stream from the North Shugart Field.**
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. When floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### B. CASING

1. The **13-3/8** inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 700 feet** and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM 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, 24 hours in the potash area, or 500 pounds compressive 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 compressive strength, whichever is greater.
- d. If cement falls back, remedial action will be done prior to drilling out that string.

**Possible water flows in the Salado Group and the Premier of the Grayburg formation.**

**Possible high pressure gas bursts from Wolfcamp and the Pennsylvanian Section may be over pressured.**

- 2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a-d above.

- 3. The minimum required fill of cement behind the **7** inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

- 4. 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.

**C. PRESSURE CONTROL**

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **5000 (5M)** psi.
- 4. The appropriate BLM office shall be notified a minimum of **2** hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.

- c. 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 appropriate BLM office.
- d. 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.
- e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. . This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### **D. 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.

#### **E. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**Engineer on call phone (after hours):      Carlsbad: (505) 706-2779**

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