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OCD-ARTESIA

OCT 18 2007

OCD-ARTESIA

AT 5-07-314
EA-07-1258

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCT 18 2007
OCD-ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of Work: ☒ DRILL ☐ REENTER
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone
2. Name of Operator

5. Lease Serial No.
NM-104620
6. If Indian, Allottee or Tribe Name
If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
Catwoman BBC Federal #2H 36650

9. API Well No.
30-015-35872

3a. Address Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210
3b. Phone No. (include area code)
(505) 748-1471

10. Field and Pool, or Exploratory
Bunting Ranch Wolfcamp

4. Location of well (Report location clearly and in accordance with any State requirements. *)
At surface
1880' FNL and 860' FWL Surface Hole Location
At proposed prod. zone
1880' FNL and 660' FEL Bottom Hole Location

11. Sec., T., R., M., or Blk And Survey or Area
Section 20, T19S-R21E

14. Distance in miles and direction from the nearest town or post office*
Approximately 16 miles southwest of Hope, New Mexico

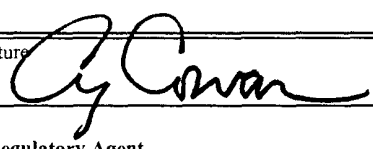
12. County or Parish
Eddy
13. State
NM

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
860'	480.00	N/2
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
1500'	4295' Vert/7775' Horiz.	NATIONWIDE BOND #NMB000434
21. Elevations (Show whether DF, RT, GR, etc.)	22. Approximate date work will start*	23. Estimated duration
4424' GL	ASAP	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 8/17/2007
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Title
Regulatory Agent

Approved By (Signature) /S/ DON PETERSON	Name (Printed/ Typed) /S/ DON PETERSON	Date OCT 16 2007
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Title
FOR FIELD MANAGER

BLM-CARLSBAD FIELD OFFICE

Application approval does not constitute approval of operations thereon.
Conditions of approval, if any, shall be set forth in the title 18 U.S.C. Section 1001.
States any false, fictitious or fraudulent information.

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

The title to those rights in the subject lease which would entitle the applicant to cc
APPROVAL FOR TWO YEARS
person knowingly and willfully to make to any department or agency of the United States within its jurisdiction

Roswell Controlled Water Basin
SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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 and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 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

API Number	Pool Code 97605	Pool Name Bunting Ranch ; Wolfcamp
Property Code	Property Name CATWOMAN BBC FEDERAL COM	Well Number 2H
OGRID No. 025575	Operator Name YATES PETROLEUM CORPORATION	Elevation 4424

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	20	19S	21E		1880	NORTH	860	WEST	EDDY

Bottom Hole Location If Different From Surface

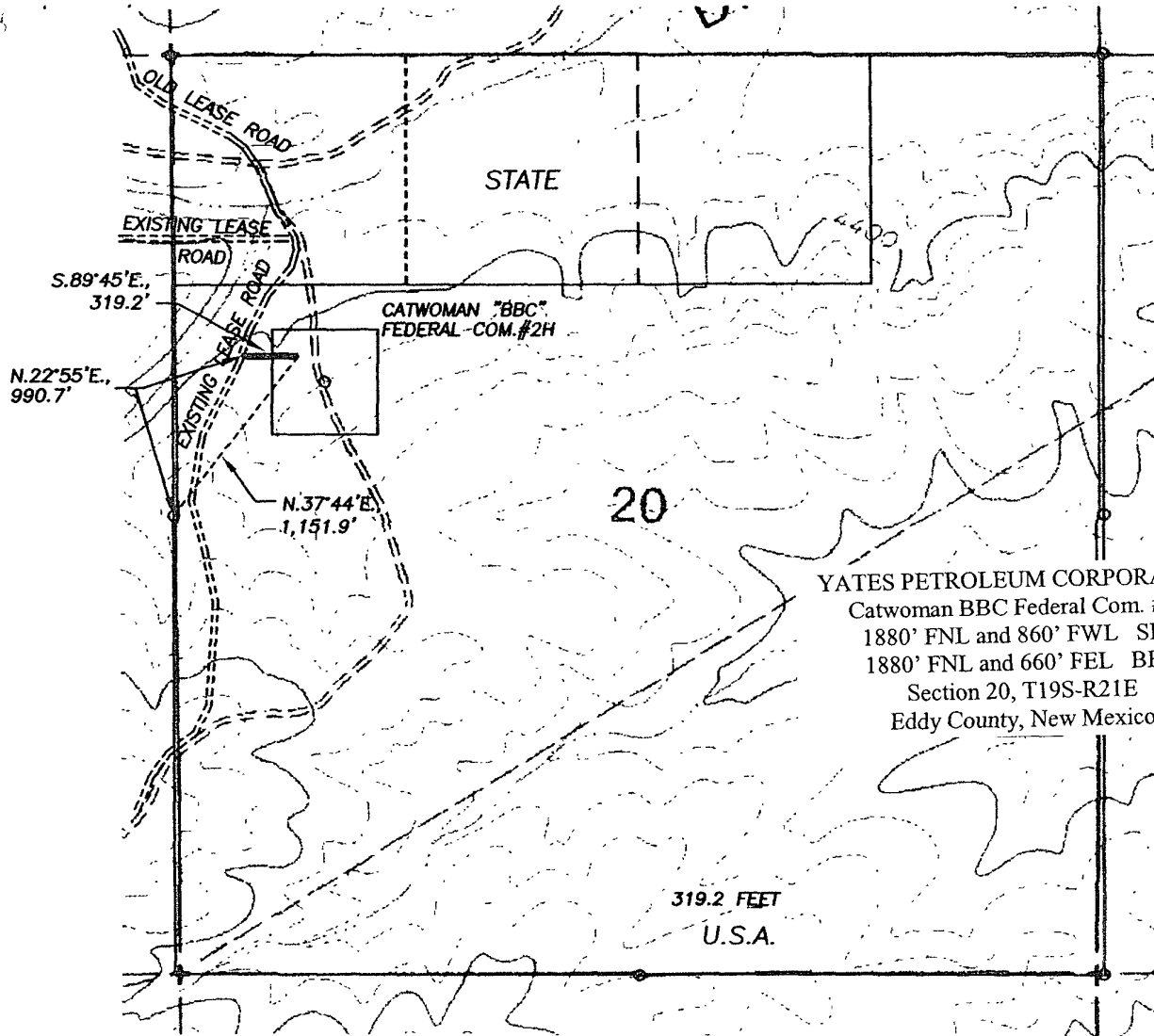
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	20	19S	21E		1880	NORTH	660	EAST	EDDY

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

<p>PROJECT AREA</p> <p>PRODUCING AREA</p> <p>GRID AZ. = 90°05'34"</p> <p>HORIZ. DIST. = 3748.7'</p> <p>S.L.</p> <p>B.H.</p> <p>4403 4412</p> <p>860'</p> <p>1880'</p> <p>4425 4451</p> <p>860'</p>	<p>OPERATOR CERTIFICATION</p> <p>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 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.</p> <p><i>Cy Cowan</i> 8/17/07</p> <p>Signature Date</p> <p>Cy Cowan, Regulatory Agent</p> <p>Printed Name</p>
<p>GEODETC COORDINATES NAD 27 NME SURFACE HOLE LOCATION Y=599777.9 N X=349726.3 E LAT.=32.647942 LONG.=104.821557 (NAD-27)</p> <p>BOTTOM HOLE LOCATION Y=599752.5 N X=353474.8 E LAT.=32.647919 N LONG.=104.809379 W</p>	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>3/20/2007</p> <p>Date Surveyed</p> <p>Signature of Professional Surveyor</p> <p>HERSCHEL L. JONES</p> <p>NEW MEXICO</p> <p>REGISTERED SURVEYOR</p> <p>3640</p> <p>Certificate No. Herschel L. Jones 3640</p> <p>GENERAL SURVEYING</p>

SECTION 20, TOWNSHIP 19 SOUTH, RANGE 21 EAST, NMPM, EDDY COUNTY, NEW MEXICO.



DESCRIPTION:

A LEASE ROAD RIGHT OF WAY 319.2 FEET IN LENGTH, BEING 15 FEET TO THE LEFT AND RIGHT OF THE SURVEY CENTERLINE AS SHOWN IN RED ON THIS PLAT. SAID RIGHT OF WAY IS LOCATED IN SECTION 20, TOWNSHIP 19 SOUTH, RANGE 21 EAST, NMPM, EDDY COUNTY, NEW MEXICO.

319.2 FEET = 19.3455 RODS, 0.0605 MILES OR 0.2198 ACRES, MORE OR LESS.

1000' 0 1000' 2000'
Scale 1" = 1000'

THE PREPARATION OF THIS PLAT AND THE PERFORMANCE OF THE SURVEY UPON WHICH IT IS BASED WERE DONE UNDER MY DIRECTION AND THE PLAT ACCURATELY DEPICTS THE RESULTS OF SAID SURVEY AND MEET THE REQUIREMENTS OF THE STANDARDS FOR LAND SURVEYS IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.

3640

HERSCHEL P. JONES No. 3640

GENERAL SURVEYING COMPANY P.O. BOX 1928
LOVINGTON, NEW MEXICO 88260


YATES PETROLEUM CORP.

LEASE ROAD TO ACCESS THE YATES CATWOMAN BBC
FEDERAL #2H WELL, LOCATED IN SECTION 20, TOWNSHIP 19
SOUTH, RANGE 21 EAST, NMPM, EDDY COUNTY, NEW
MEXICO.

Survey Date: 3/20/2007	Sheet 2 of 2 Sheets
Drawn By: Ed Blevins	W.O. Number
Date: 3/22/07	Scale 1" = 1000' CATWOMAN

YATES PETROLEUM CORPORATION

Catwoman BBC Federal #2H

1880' FNL & 860' FWL (Pilot Hole)
1880' FNL & 860' FEL (Bottom Hole) 
Section 20, T19S-R21E
Eddy County, New Mexico

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

San Andres	Oil Pay	439'	Wolfcamp Pay	Gas Pay	4154'
Glorietta	Oil Pay	1289'	Base Wolfcamp Pay	Gas Pay	4204'
Upper Yeso	Oil Pay	1439'	Wolfcamp Shale	Gas Pay	4234'
Tubb	Oil Pay	2649'	TD (Pilot Hole)	Gas Pay	4450'
Lower Yeso	Oil Pay	2794'	TD (Lateral Hole)	Gas Pay	7775'
Abo	Oil Pay	3284'			

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

Water: 835'

Oil or Gas: All potential formations.

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

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)

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
14 3/4"	9 5/8"	36#	J-55	ST&C	0-1500'	1500'
8 3/4"	5 1/2"	17#	HCP-110	LT&C	0-7775'MD	7775'
**8 3/4"	7"	23#	J-55	ST&C	0-4295'	4295'
6 1/8"	4 1/2' Liner	11.6#	HCP-110	LT&C	3795'-7775'	3980'

***Pilot hole will be drilled to 4450'. Well will then be plugged back and kicked off at approximately 3795' at 15 degrees per 100' with an 8 3/4" hole to 4295' MD. If hole conditions warrant, 7" casing will be set and cemented back to previous casing. A 6 1/8" hole will then be drilled to a TD of 7775' and 4 1/2" liner will be set and cement tied back to the 7" casing. If 7" casing is not warranted then hole size will be reduced to 7 7/8" and drilled to 7775'. 5 1/2" casing will be set and cemented.

see
COA

Yates Petroleum Corporation requests a variance to install a rotating head on the surface casing strings when intermediate casing will be set. If a BOP system is required then we wish to install a 2M system and receive a variance to test the system to 500# using the rig pumps. The test will be held for 30 minutes on each system component. Components to be tested include pipe rams, blind rams, and annular preventer.

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

B. CEMENTING PROGRAM:

Surface Casing: TOC-Surface. Lead with 900 sx 'C' Lite (YLD 2.0 WT 12.5) plus 2% CaCl₂. Tail in with 200 sx 'C' (YLD 1.35 WT 14.8).

Production Casing: TOC-1000 Lead with 575 sx 'C' Lite (YLD 2.05 WT 12.5) Plus 2% CaCl₂. Tail in with 600 sx Acid Soluble Cement (YLD 2.60 WT 11.15).

If 7" casing is run a 6 1/8" hole will be drilled and 4 1/2" production liner will be set. TOC-1000' Lead w/ 325 sx 'C' Lite (YLD 2.04 WT 12.5). TOC-3795' Tail in w/ 300 sx Acid Soluble Cement (YLD 2.6 WT 11.15)

5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-1500'	Fresh Water	8.4	28	N/C
1500'-4500'	Cut Brine	8.6-9.2	28	N/C
	(Horizontal Section)			
3795'-7775'	Cut Brine	8.8-9.2	28	N/C

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. Rig personnel will check mud hourly.

6. EVALUATION PROGRAM:

Samples: 10' samples out from under intermediate casing.
 Logging: Platform Express/NGT/HALS, FMI, GR on MWD in lateral.
 Coring: None Anticipated.
 DST's: None Anticipated.

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

Anticipated BHP:

From: 0	TO: 1500'	TVD	Anticipated Max. BHP: 655 PSI
From: 1500'	TO: 4450'	TVD	Anticipated Max. BHP: 2130 PSI

Abnormal Pressures Anticipated: None
 Lost Circulation Zones Anticipated: None.
 H₂S Zones Anticipated: None Anticipated
 Maximum Bottom Hole Temperature: 168 F

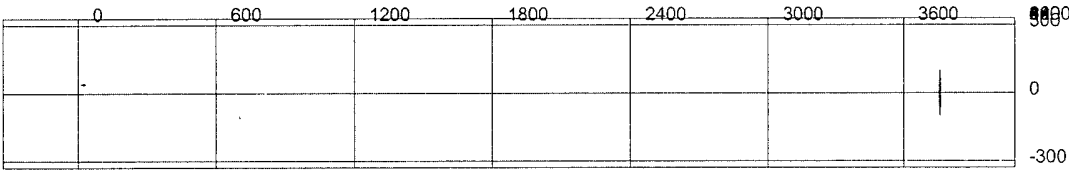
8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 45 days to drill the well with completion taking another 40 days.

	M.D. [ft]	Inclination [°]	Azimuth [°]	T.V.D. [ft]	N+/S- [ft]	E+/W- [ft]	D.L.S. [°/100ft]	ToolFace [°]	T.F. Ref. [HS/GN]
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	3795.00	0.00	0.00	3795.00	0.00	0.00	15.00	90	GN
3	3800.00	0.75	90.00	3800.00	0.00	0.03	15.00	0	HS
4	3825.00	4.50	90.00	3824.97	0.00	1.18	15.00	0	HS
5	3850.00	8.25	90.00	3849.81	0.00	3.95	15.00	0	HS
6	3875.00	12.00	90.00	3874.42	0.00	8.35	15.00	0	HS
7	3900.00	15.75	90.00	3898.68	0.00	14.34	15.00	0	HS
8	3925.00	19.50	90.00	3922.51	0.00	21.91	15.00	0	HS
9	3950.00	23.25	90.00	3945.78	0.00	31.02	15.00	0	HS
10	3975.00	27.00	90.00	3968.41	0.00	41.63	15.00	0	HS
11	4000.00	30.75	90.00	3990.30	0.00	53.70	15.00	0	HS
12	4025.00	34.50	90.00	4011.35	0.00	67.18	15.00	0	HS
13	4050.00	38.25	90.00	4031.48	0.00	82.00	15.00	0	HS
14	4075.00	42.00	90.00	4050.59	0.00	98.11	15.00	0	HS
15	4100.00	45.75	90.00	4068.61	0.00	115.44	15.00	0	HS
16	4125.00	49.50	90.00	4085.45	0.00	133.90	15.00	0	HS
17	4150.00	53.25	90.00	4101.06	0.00	153.43	15.00	0	HS
18	4175.00	57.00	90.00	4115.35	0.00	173.94	15.00	0	HS
19	4200.00	60.75	90.00	4128.27	0.00	195.33	15.00	0	HS
20	4225.00	64.50	90.00	4139.76	0.00	217.53	15.00	0	HS
21	4250.00	68.25	90.00	4149.78	0.00	240.43	15.00	0	HS
22	4275.00	72.00	90.00	4158.28	0.00	263.94	15.00	0	HS
23	4300.00	75.75	90.00	4165.22	0.00	287.95	15.00	0	HS
24	4325.00	79.50	90.00	4170.58	0.00	312.36	15.00	0	HS
25	4350.00	83.25	90.00	4174.32	0.00	337.08	15.00	0	HS
26	4375.00	87.00	90.00	4176.45	0.00	361.98	15.00	0	HS
27	4382.59	88.14	90.00	4176.77	0.00	369.56	15.00	0	HS
28	7774.82	88.14	90.00	4287.00	0.00	3760.00	0.00		

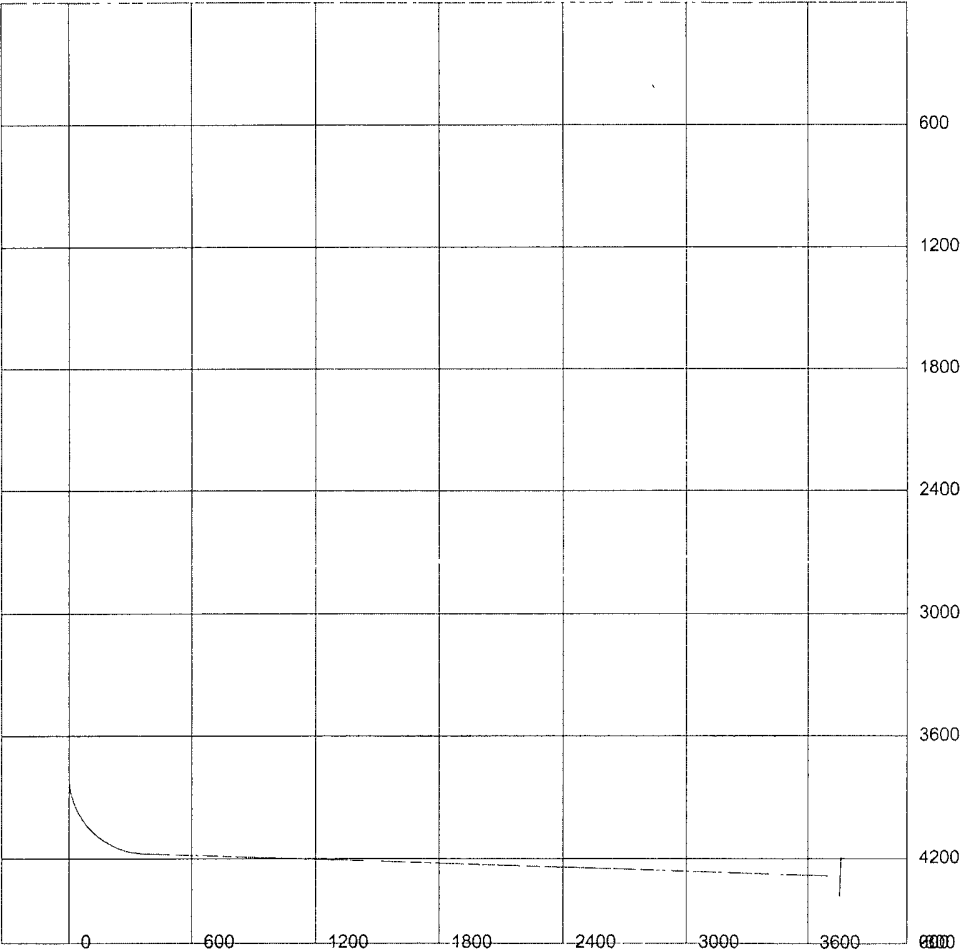
3D³ Directional Drilling Planner - 3D View

Company: **Yates Petroleum Corporation**
Well: **Catwoman BBC Federal Com. #2H**



3D³ Directional Drilling Planner - 3D View

Company: **Yates Petroleum Corporation**
Well: **Catwoman BBC Federal Com. #2H**



PB - LI

Yates Petroleum Corporation

Location Layout for Permian Basin

Up to 12,000'

See COAs

Pits South

V-Door West

YATES PETROLEUM CORPORATION

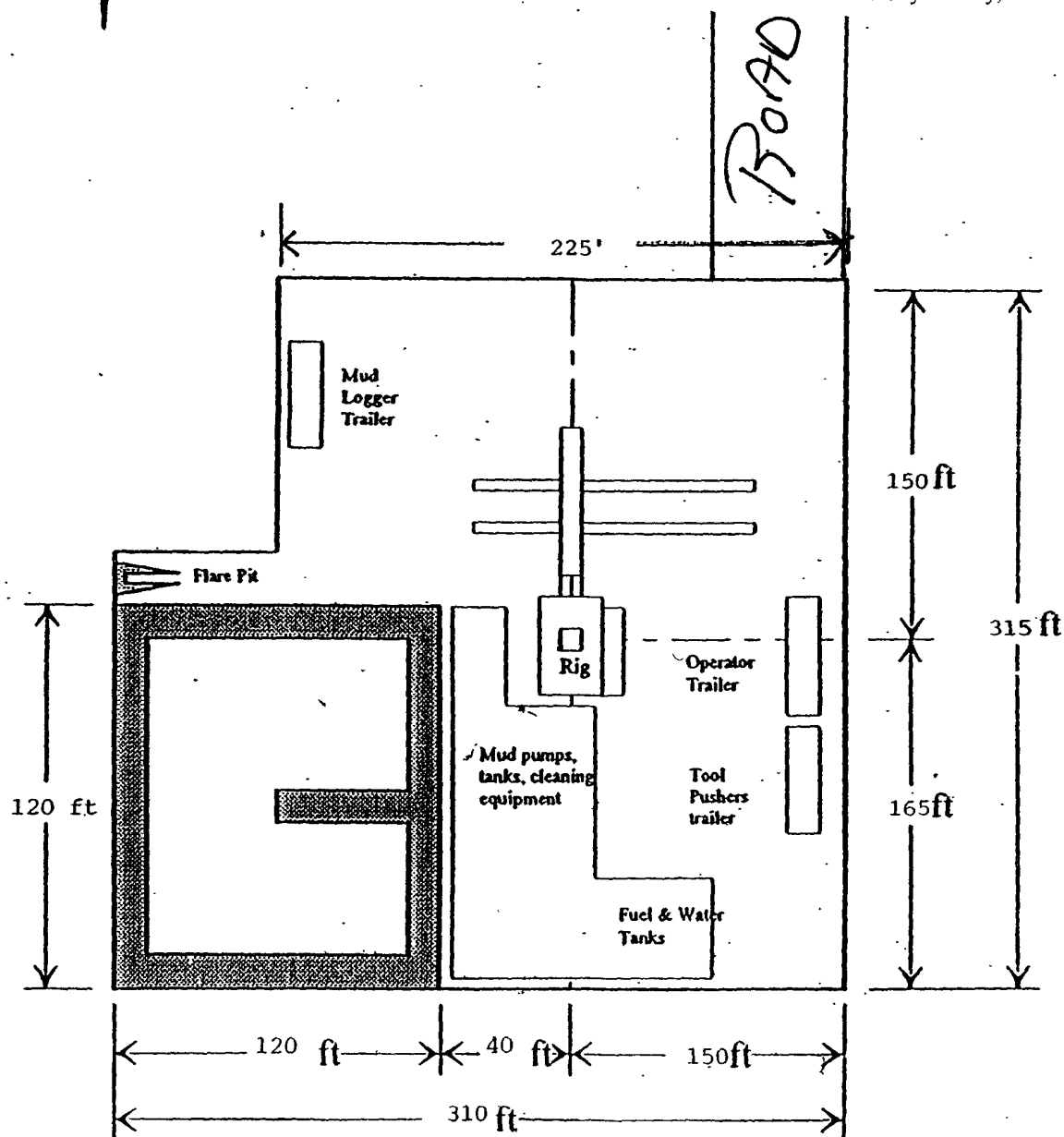
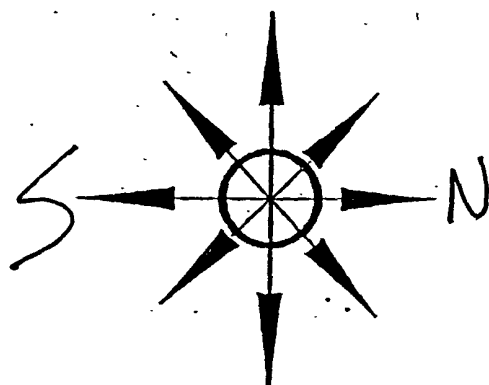
Catwoman BBC Federal Com. #2H

1880' FNL and 860' FWL SHL

1880' FNL and 660' FEL BHL

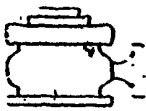
Section 20, T19S-R21E

Eddy County, New Mexico



Distance from Well Head to Reserve Pit will vary between rigs

The above dimension should be a maximum

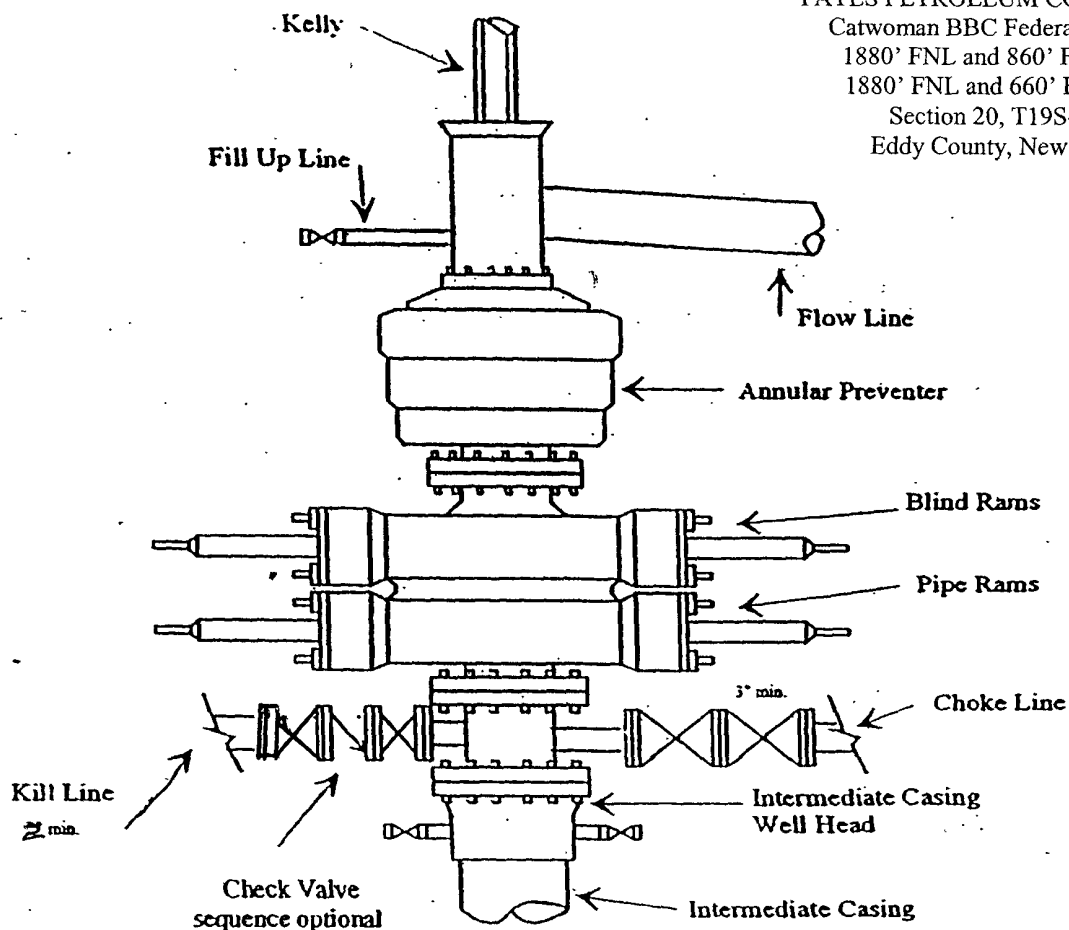


Yates Petroleum Corporation

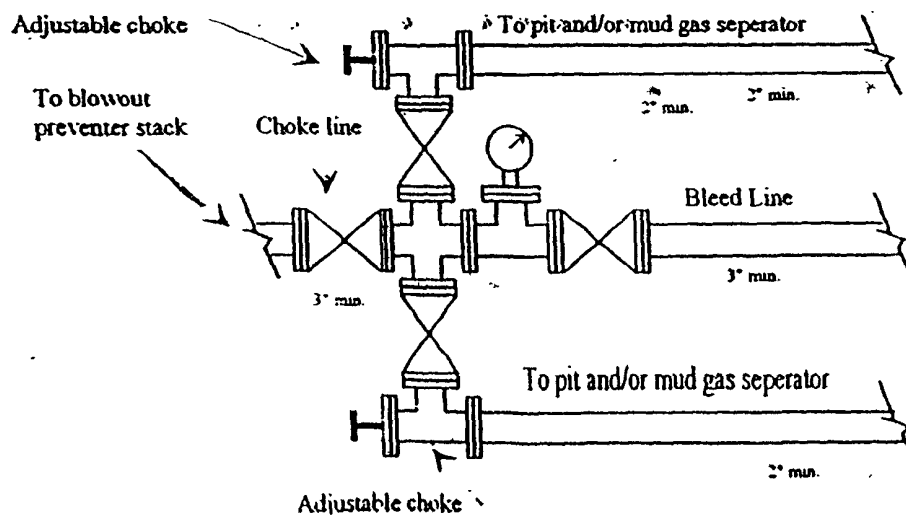
BOP-3

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

YATES PETROLEUM CORPORATION
Catwoman BBC Federal Com. #2H
1880' FNL and 860' FWL SHL
1880' FNL and 660' FEL BHL
Section 20, T19S-R21E
Eddy County, New Mexico



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



MULTI-POINT SURFACE USE AND OPERATIONS PLAN
YATES PETROLEUM CORPORATION
Catwoman BBC Federal Com #2H
1880' FNL & 860' FWL (Pilot Hole)
1880' FNL & 660' FEL (Bottom Hole)
Section 20-T19S-R21E
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 well site is located approximately 16 miles southwest of Hope, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

From Hope, New Mexico go south on Armstrong road for approximately 7 miles to Bronc Road. Turn right on Bronc Road and go approximately 7 miles to an existing lease road on the right side of the road. Turn right here and follow the lease road for approximately 2 miles. The new road will start here going east for approximately 400 feet to the northwest corner of the proposed well location.

2. PLANNED ACCESS ROAD:

- A. The proposed new access will be approximately 400 feet in length.
- 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 well site.
- B. An exhibit shows existing wells within a one-mile radius of the proposed wellsite.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. There are no 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 a producing gas well.

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:

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

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. The reserve pits will be constructed and reclamation done according to NMOCD guidelines.
- C. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. 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. An exhibit 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. Yates Petroleum Corporation is in full compliance with the OCD General Plan for Drilling Pits approved on April 15, 2004.
- C. A 600' x 600' 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 plugged and abandoned, 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 reclaimed as required by the Oil Conservation Division.

11. SURFACE OWNERSHIP:

Surface is managed 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, and historical and cultural sites.
- B. The primary surface use is for grazing.

CERTIFICATION
YATES PETROLEUM CORPORATION

CATWOMAN BBC FEDERAL COM. 2H

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 16th day of August, 20 07

Signature 

Name Cy Cowan

Position Title Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico 88210

Telephone (505) 748-4372

Field Representative (if not above signatory) Jim Krogman, Drilling Supervisor

Address (if different from above) Same as above.

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. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard.**
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 9-5/8 inch surface casing shall be set at **approximately 1500** 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 lost circulation in the San Andres, Glorietta, and Wolfcamp formations.
Medium cave/karst.**

Possible high pressure gas kicks in the Wolfcamp formation.

2. The minimum required fill of cement behind the 5-1/2 inch production casing is:

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

7" contingency string will be run of hole conditions warrant and will be cemented to 1500 feet with operator providing method of verification. This will necessitate running a 4-1/2" liner and that liner will be cemented to the top of liner which is proposed to extend 500' inside the 7" casing.

3. 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 3000 (3M) psi.
3. 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.

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.

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

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