

N.M. Oil Cons. DIV-Dist. 2  
1301 W. Grand Avenue  
Artesia, NM 88210

Form 3160-3  
(August 1999)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

OCT 13 2005

000-ARTESIA

OMB No. 1004-0136  
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NM-81218</b>	
b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input 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	
2. Name of Operator <b>Yates Petroleum Corporation</b> <i>25575</i>		7. If Unit or CA Agreement, Name and No. <b>14056</b>	
3A. Address <b>105 South Fourth Street</b> <b>Artesia, New Mexico 88210</b>		8. Lease Name and Well No. <b>Brannigan ANF Federal #7</b>	
3b. Phone No. (include area code) <b>(505) 748-1471</b> <i>33685</i>		9. API Well No. <b>30-015-33057</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>2415' FNL and 2119' FEL</b> At proposed prod. Zone <b>660' FNL and 1980' FWL, Lot 3</b>		10. Field and Pool, or Exploratory <b>Indian Basin Upper Penn Assoc.</b>	
14. Distance in miles and direction from nearest town or post office* <b>Approximately 31 miles Northwest of Carlsbad, New Mexico</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>Section 6, T22S-R24E</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>2310'</b>		12. County or Parish <b>EDDY</b>	13. State <b>New Mexico</b>
16. No. of Acres in lease <b>660.09</b>		17. Spacing Unit dedicated to this well <b>W/2</b>	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>2600'</b>		19. Proposed Depth <b>10,200'</b>	
20. BLM/BIA Bond No. on file <b>NM-2811</b>		21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>4023' GL</b>	
22. Approximate date work will start*		23. Estimated duration	

24. Attachments

CARLSBAD CONTROLLED WATER BASIN

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) <b>Debbie L. Caffall</b>	Date <b>9/9/2005</b>
Title: <b>Regulatory Technician/Land Department</b>		
Approved by (Signature) <i>/s/ Joe G. Lara</i>	Name (Printed/Typed) <b>/s/ Joe G. Lara</b>	Date <b>OCT 11 2005</b>
Title <b>ACTING FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

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 1 YEAR

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  
ATTACHED

*77.5*

District I  
1825 N. French Dr. Hobbs, NM 88240

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

State of New Mexico  
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION

2040 South Pacheco

Santa Fe, N M 87505

Form C-102

Revised March 17, 1999  
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	Pool Name
		Indian Basin Upper Penn Assoc.
Property Code	Property Name	Well Number
	BRANNIGAN ANF FEDERAL	7
OGRID No.	Operation Name	Elevation
025575	YATES PETROLEUM CORPORATION	4023

Surface Location									
UL or Lot No.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
G	6	22-S	24-E		2415	NORTH	2119	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
LOT 3	6	22-S	24-E		660	NORTH	1980	WEST	EDDY
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						
320									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTEREST HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NM-81218		680'				OPERATOR CERTIFICATION	
1980'		⊕ BOTTOM HOLE LOCATION				I HEREBY CERTIFY THAT THE INFORMATION HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	
				2415'		Signature 	
				⊕ SURFACE LOCATION		Printed Name Cy Cowan	
				2119'		Title Regulatory Agent	
						Date August 19, 2003	
						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 KNOWLEDGE AND BELIEF.	
						AUGUST 6 2003	
						Date of Survey	
						Signature and Seal of Professional Surveyor	
							
						NEW MEXICO 5412 LAWYER RECEIVED N.M. DEPT. OF ENERGY PROFESSIONAL SURVEYOR Certificate Number	

**YATES PETROLEUM CORPORATION**  
**Brannigan ANF Federal #7**  
 2415' FNL and 2119' FEL Surface Location  
 660' FNL & 1980' FWL Bottom Hole Location  
 Sec. 6-T22S-R24E  
 Eddy County, New Mexico

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

Queen	Surface	Strawn	8992'
San Andres	1085'	Atoka	9378'
Glorietta	2568'	Upper Morrow	9770'
2 <sup>nd</sup> Bone Springs	4080'	Mid Morrow	9835'
3rd Bone Springs	6905'	Lower Morrow	9985'
Wolfcamp	7084'	Base Morrow	10095'
Cisco Canyon Dolomite	7780'	TD	10200'
Base of Dolomite	8267'		
Lower Canyon Lime	8287'		

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 zones.

3. Pressure Control Equipment: BOPE will be installed on the 8 5/8" casing and rated for 5000 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>	WITNESS
14 3/4"	9 5/8"	36#	J-55	ST&C	0-2560	2560'	
8 3/4"	7.0"	26#	L-80	LT&C	0-800'	800'	
8 3/4"	7.0"	26#	J-55	LT&C	800'-2100'	2800'	
8 3/4"	7.0"	23#	J-55	LT&C	2100'-4900'	1300'	
8 3/4"	7.0"	26#	J-55	LT&C	4900'-7100'	2200'	
8 3/4"	7.0"	26#	L-80	LT&C	7100'-9300'	2200'	
8 3/4"	7.0"	26#	HCP-110	LT&C	9300'-10200'	900'	

Possible set 7" early if severe lost circ. in Canyon

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

## B. Cementing Program:

Surface casing: 1800 sx Lite (YLD 2.0 WT 12.5), tail with 250 sx 'C' +2% CaCL<sub>2</sub> (YLD 1.33 WT 14.8)

Production Casing: Stage I 350 sx 'H' (YLD 1.72 WT 13.0).

Stage II Lead in with 450 sx Interfill 'C' (YLD 2.71 WT 11.5).

If needed due to H<sub>2</sub>S tail in with 100 sx Premium (YLD 1.18 WT 15.6) Note attached contingency plan for drilling operations

## 5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-2650'	FW/Air Mist	8.4	28	N/C
2605'-7750'	Cut Brine	8.6-9.0	28	N/C
7750'-10,000'	Cut Brine/Starch/S Gel	9.0-9.4	28-32	<12cc
10,000'-TD	Salt Gel/Starch	9.4-9.8	34-38	<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: 10' samples from intermediate casing.

Logging: Platform Express, HALS, NGT, possible FMI

Coring: None anticipated

DST's: As warranted.

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

Anticipated BHP:

From: 0 TO: 2650' Anticipated Max. BHP: 1150 PSI

From: 2650' TO: 10200' Anticipated Max. BHP: 5200 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: Possible in surface and intermediate holes.

H<sub>2</sub>S Zones Anticipated: Possible Canyon

Maximum Bottom Hole Temperature: 178 F

## 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.

## **MULTI-POINT SURFACE USE AND OPERATIONS PLAN**

**Yates Petroleum Corporation**

**Brannigan ANF Federal #7**

2415' FNL and 2119 FEL Surface location

660' FNL & 1980' FWL Bottom Hole Location

Sec. 6-T22S-R24E

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 31 miles northwest of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

### **DIRECTIONS:**

Go north of Carlsbad on Highway 285 to Highway 137 (Scenick Byeway). Turn west on Highway 137 and go approximately 12 miles. Turn east on lease road and go approximately .4 of a mile to existing well pad for the Brannigan ANF Federal #3. This well location will be modified to accommodate the Brannigan ANF Federal #7 and the #8

### **2. PLANNED ACCESS ROAD**

There will be no new access road. However the existing road will be upgraded for approximately .4 of a mile from the point of origin to the southwest corner of the proposed well location.

### **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 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 locate closest pit and will obtain any permits and materials needed for construction.

**YATES PETROLEUM CORPORATION**  
**Brannigan ANG Federal #7**  
**2415' FNL and 2119' FEL Surface Location**  
**660' FNL and 1980' FWL Bottom Hole Location**  
**Section 6, T22S-R24E**  
**Eddy County, New Mexico**  
**Directional Drilling Procedure**

Yates Petroleum Corporation proposes that the Brannigan ANG Federal #7 will be drilled vertically to a kick off point of 2,750'. A gyro survey will then be run. Will pick up mud motor and MWD system. Angle will be built at 3 degrees per 100' until an angle of 27.94 degrees and an azimuth of 324.3 degrees is reached. The angle and azimuth will be maintained as per above until 7,236' Measured Depth is reached. At this point the angle will be dropped at the rate of 3 degrees per 100' until the well bore is vertical this is projected to be at 8,167' Measured Depth. The wellbore will be kept at vertical and drilled to a TD of 10,687' Measured Depth (TVD=10,200').

**Brannigan ANG Federal #7**  
**Directional Drilling Procedure**

Brannigan ANG Fed. # 7 will be vertically drilled to kick off point of 2,750'.

A gyro survey will be ran.

Will pick up a Mud Motor and MWD system.

Angle will be built @ 3° / 100', until angle of 27.94°, and an azimuth of 324.3° is reached.

The angle and azimuth will be maintained as per above, until 7,236' – Measured Depth.

At that point, the angle will be dropped at the rate of 3° / 100', until the well bore is vertical, projected @ 8,167' – Measured Depth.

The wellbore will be kept at vertical, and drilled to TD of 10,687' – Measured Depth. ( TVD = 10,200')

# **Yates Petroleum Corporation**

**105 S. Fourth Street  
Artesia, NM 88210**

## **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

**For**

**Brannigan ANF Federal #7**

**2415' FNL and 2119' FEL Surface Location**

**660' FNL and 1980' FWL Bottom Hole Location**

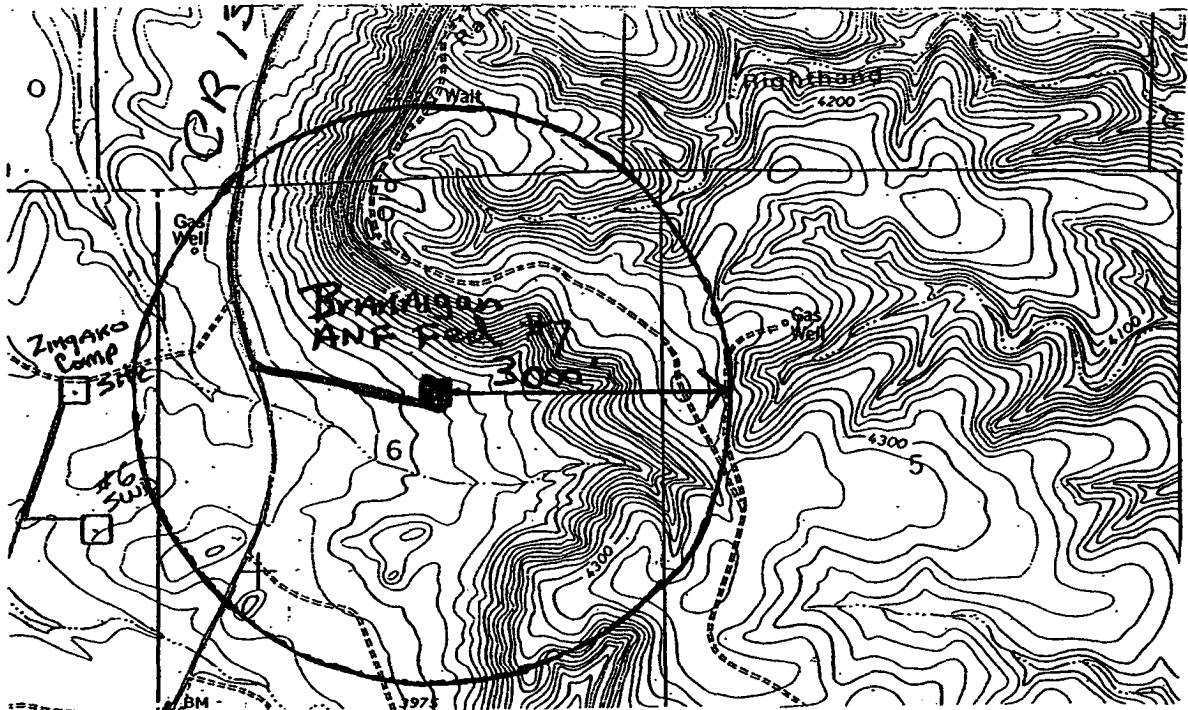
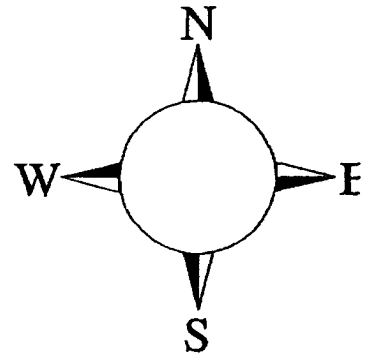
**Section-6, T-22S, R-24E**

**Eddy County NM**



## Brannigan ANF Federal #7 Location

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



Assumed 100 ppm ROD = 3000  
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan

## ***Yates Petroleum Corporation Phone Numbers***

---

YPC Office .....	(505) 748-1471
Pinson McWhorter/Operations Manager .....	(505) 748-4189
Darrel Atkins/Production Manager .....	(505) 748-4204
Ron Beasley/Prod Superintendent .....	(505) 748-4210
Al Springer/Drilling .....	(505) 748-4225
Paul Hanes/Prod. Foreman/Roswell .....	(505) 624-2805
Jim Krogman/Drilling Superintendent.....	(505) 748-4215
Artesia Answering Service .....	(505) 748-4302
(During non-office hours)	

### **Agency Call List**

#### **Eddy County (505)**

##### **Artesia**

State Police.....	746-2703
City Police.....	746-2703
Sheriff's Office .....	746-9888
Ambulance .....	911
Fire Department .....	746-2701
LEPC (Local Emergency Planning Committee) .....	746-2122
NMOCD.....	748-1283

##### **Carlsbad**

State Police.....	885-3137
City Police.....	885-2111
Sheriff's Office .....	887-7551
Ambulance .....	911
Fire Department .....	885-2111
LEPC (Local Emergency Planning Committee).....	887-3798
US Bureau of Land Management.....	887-6544

New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR .....	(505) 827-9126
National Emergency Response Center (Washington, DC)	...(800) 424-8802

##### **Other**

Boots & Coots IWC .....	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control.....	(915) 699-0139 or (915) 563-3356
Halliburton .....	(505) 746-2757
B. J. Services.....	(505) 746-3569

Flight For Life -4000 24th St, Lubbock, TX .....	(806) 743-9911
Aerocare -Rr 3 Box 49f, Lubbock, TX .....	(806) 747-8923
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM .....	(505) 842-4433
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM .....	(505) 842-4949

**YATES PETROLEUM CORPORATION  
BRANNIGAN "ANF" FEDERAL #7  
SURFACE: 2415' FNL AND 2119' FEL  
BOTTOM HOLE: 660'FNL AND 1980' FWL  
Section 6, T19S-R24E  
Eddy County, New Mexico**

**H2S Drilling Operations Plan**

Personnel employed at the rig site shall receive training in H2S detection, safe drilling procedures and contingency plans. H2S safety equipment shall be installed and functional 3 days or 500 feet prior to encountering known or probable H2S zone at 3200' feet.

Submitted with the APD is a well site diagram showing:

- 1) Drilling rig orientation, location of flare pit.
- 2) Prevailing wind direction.
- 3) Location of access road.

Primary briefing area will be established 150' from wellbore and up wind of prevailing wind direction. Secondary briefing area will be established 180 degrees from primary briefing area.

A H2S warning sign will be posted at the entrance of the location. Depending on conditions, a green, yellow, or red flag will be displayed.

**Green - Normal conditions**

**Yellow - Potential danger**

**Red - Danger H2S present**

Wind indicators will be placed on location at strategic, highly visible areas. H2S monitors ( a minimum of three) will be positioned on location for best coverage and response. H2S concentrations of 10 ppm will trigger a flashing light and 20 ppm will trigger an audible siren.

H2S breathing equipment will consist of:

- 1) 30 minute "pressure demand" type working unit for each member of rig crew on location.
- 2) 5 minute escape packs for each crew member.
- 3) Trailer with a "cascade air system: to facilitate working in a H2S environment for time period greater than 30 minutes.

**BRANNIGAN "ANF" FEDERAL #7**

**Page 2**

Breathing equipment will be stored in weather proof cases or facilities. They will be inspected and maintained weekly.

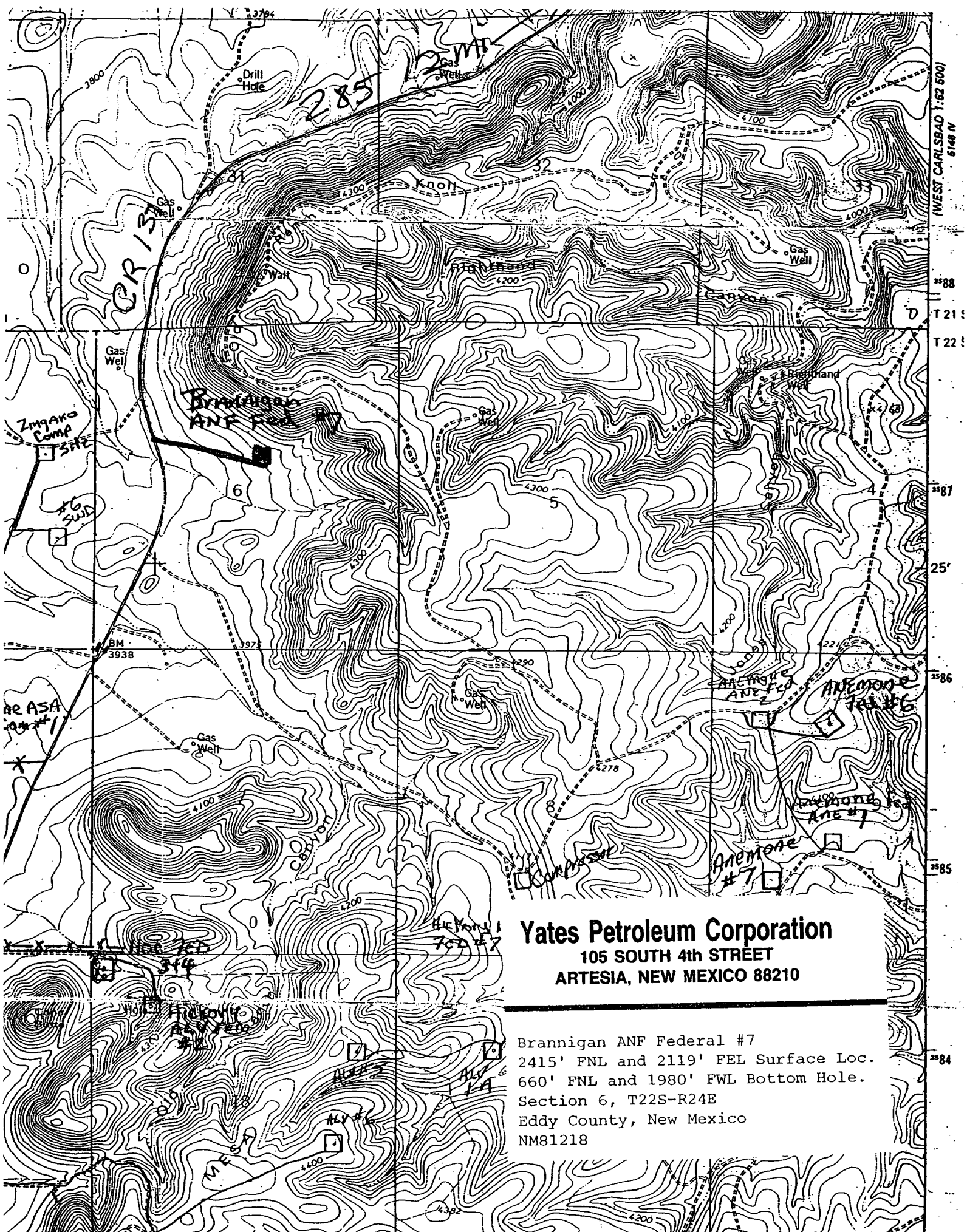
The mud system will be designed to minimize or eliminate the escape of H<sub>2</sub>S at the rig floor. This will be accomplished through the use of proper mud weight, proper pH control of the drilling fluid and the use of H<sub>2</sub>S scavengers in the drilling fluid. A mud gas separator will be utilized when H<sub>2</sub>S is present in the mud.

Drilling experience has shown that wells in developmental areas, (i.e. Dagger Draw, Livingston Ridge Delaware, and Lusk Delaware) are normally pressured and don't experience either H<sub>2</sub>S kicks or loss of returns. Due to these circumstances, we request exceptions to the rule requiring flare line with remote lighter and choke manifold with minimum of one remote choke. This equipment would be provided on exploratory wells or wells with the known potential for H<sub>2</sub>S kicks. Additionally, a SO<sub>2</sub> monitor would be positioned near the flare line, and a rotating head utilized.

The drill string, casing, tubing, wellhead, blowout preventers and associated lines and valves will be suitable for anticipated H<sub>2</sub>S encounters.

Radio and or mobile telephone communication will be available on site. Mobile telephone communication will be available in company vehicles.

Drill stem testing to be performed with a minimum number of essential people on location. They will be those necessary to safely conduct the test. If H<sub>2</sub>S is encountered during a drill stem test, essential personnel will mask up and determine H<sub>2</sub>S concentration. The recovery will then be reversed to flare pit. Pulling of test tools will be conducted in a safe manner.



**Yates Petroleum Corporation**  
105 SOUTH 4th STREET  
ARTESIA, NEW MEXICO 88210

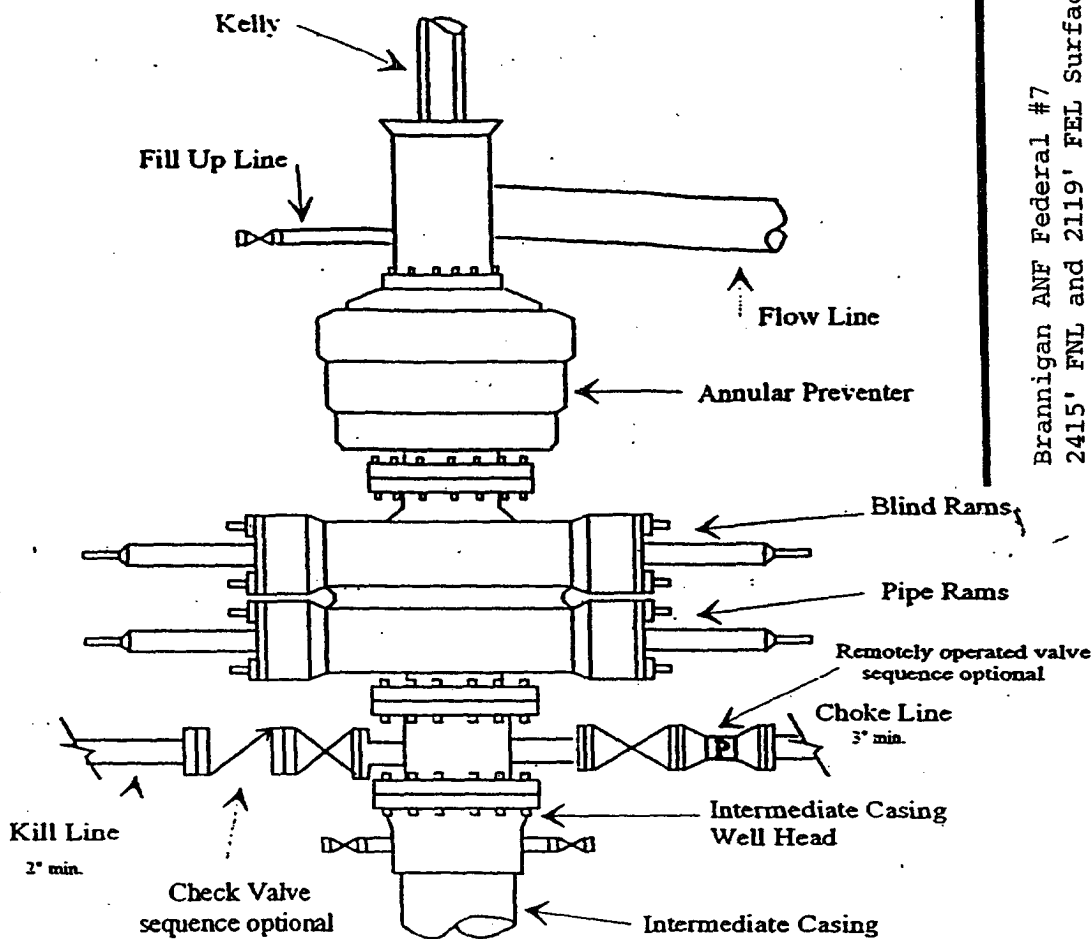
Brannigan ANF Federal #7  
2415' FNL and 2119' FEL Surface Loc.  
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Section 6, T22S-R24E  
Eddy County, New Mexico  
NM81218



# Yates Petroleum Corporation

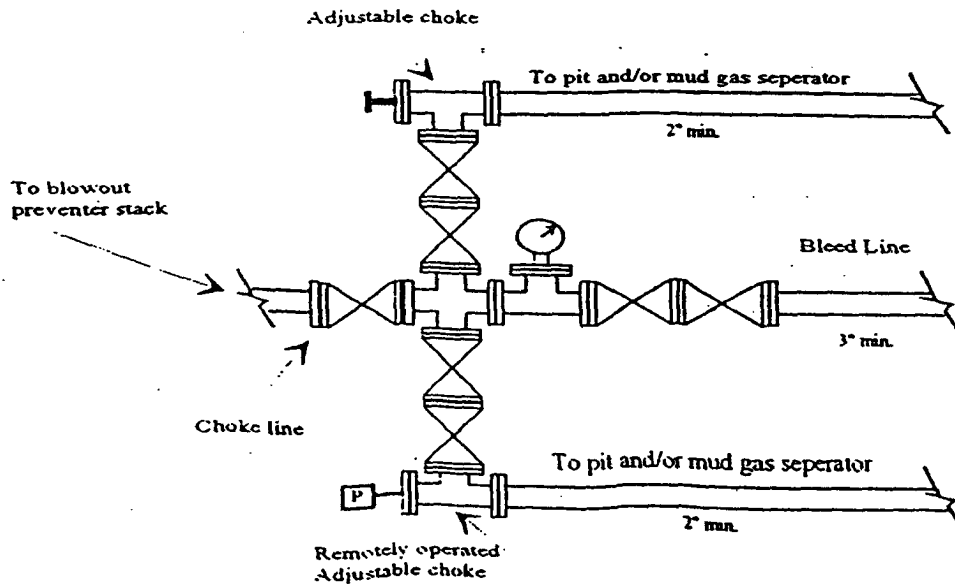
BOP-4

## Typical 5,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack



Brannigan ANF Federal #7  
2415' FNL and 2119' FEL Surface Loc.  
660' FNL and 1980' FWL Bottom Hole.  
Section 6, T22S-R24E  
Eddy County, New Mexico  
NM-81218

## Typical 5,000 psi choke manifold assembly with at least these minimum features



## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Yates Petroleum Corporation  
Well Name & No. Brannigan ANF Federal #7  
SH Location: 2415' FNL, 2119' FEL, Section 6, T. 22 S., R. 24 E., Eddy County, New Mexico  
BH Location: 660' FNL, 1980' FWL, Section 6, T. 22 S., R. 24 E., Eddy County, New Mexico  
Lease: NM-81218

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

A. Well spud

B. Cementing casing: 9-5/8 inch 7 inch

C. BOP tests

2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Operation Contingency Plan shall be activated prior to drilling into the Canyon formation. A copy of the plan shall be posted at the drilling site.

3. 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.

4. 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.

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

### II. CASING:

1. The 9-5/8 inch surface casing shall be set at approximately 2,560 feet 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 7 inch production casing is to be sufficient to reach at least 500' feet above the top of the uppermost hydrocarbon productive interval.

### III. 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 9-5/8 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 5000 psi.

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

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- 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.

- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

#### **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.

8/25/03

9/19/05 - rev

acs