OPER OGRID NO 20989
PROPERTY NO. 19427
POOL CODE 52250
EFF. DATE 12/4/97
API NO. 30-025-34218

Form 3160-3
(July 1992)

TRIPLICATE*
(Instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: LC-050107 A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:

1a. TYPE OF WORK: DRILL ☒ DEEPEN ☐

b. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ OTHER — SINGLE ZONE ☐ MULTIPLE ZONE ☐

8. FARM OR LEASE NAME, WELL NO.: Wills Federal #18
9. API WELL NO.: 18

2. NAME OF OPERATOR: Smith & Marrs Inc.

3. ADDRESS AND TELEPHONE NO.: Box 863 Kermit TX. 79745 915-586-3076

10. FIELD AND POOL, OR WILDCAT: Yates-7 Rivers Rhoads

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 330'FNL & 990'FEL
At proposed prod. zone: Unit A

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 34 T-26S R-37E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 7 miles SE of Jal, N.M.

12. COUNTY OR PARISH: Lea
13. STATE: N.M.

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. NO. OF ACRES ASSIGNED TO THIS WELL
990'	280	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	4000	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 2977 Ground level

22. APPROX. DATE WORK WILL START*: December 4, 1997

23. PROPOSED CASING AND CEMENTING PROGRAM

CAPITAN CONTROLLED WATER BASIN

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	K-55 8 5/8	24 #	600'	sufficient to circulate
7 7/8	K-55 5 1/2	17 #	4000	400 sks

WITNESS

The operator proposes to drill to a depth sufficient to test the Queen and Yates for oil. Specific programs are outlined in the following attachments:

Drilling Program
Surface Use and Operating Plan
Exhibit A - Road Map
Exhibit B - Existing Well Map
Exhibit C - Location & Acreage Dedication Plat
Exhibit C-1 - Topo Map
Exhibit D - Drilling Rig Layout
Exhibit E - 3m BOP Equipment

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED _____ TITLE Pres DATE 11-20-97

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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:

APPROVED BY (ORIG. SGD. [illegible] FERGUSON) TITLE ADM. MINERALS DATE 12-4-97

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name	
30-025-34218	52250	Rhodes Y-SR	
[4] Property Code	[5] Property Name		[6] Well Number
19427	Wills Federal		18
[7] OGRID No.	[8] Operator Name		[9] Elevation
20989	Smith & Marrs Inc.		2977'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	34	26 S	37 E		330	North	990	East	Lea

[11] 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

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

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

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Ricky Smith
Printed Name

Prod
Title

11-19-97
Date

[18] 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.

October 9, 1997
Date of Survey

Signature and Seal of Professional Surveyer:

Certificate Number 5109

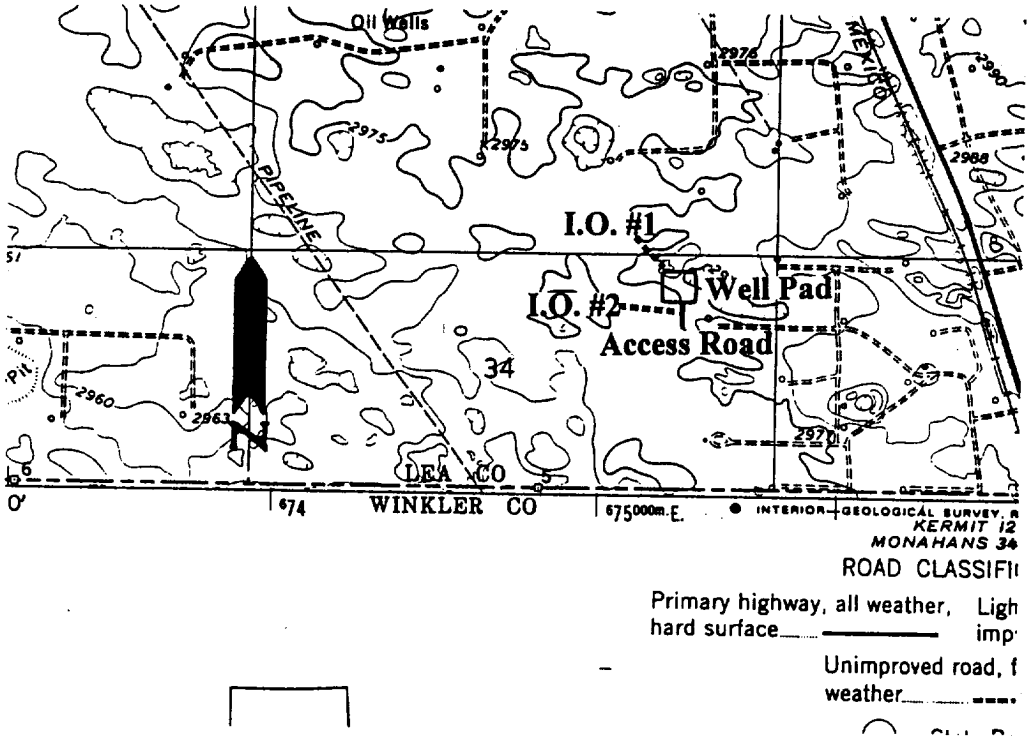


Figure 1. Showing SMITH AND MARRS, INC.'s proposed Willis Federal Well No. 18 (330' FNL; 990' FEL) and Access Raod in Section 34, t26S, r37E, NMPM, Lea County, NM. Map Reference: USGS 7.5' series, Jal, NM-Tx (1969; Photo Revised 1979)

sent to BLM (1&5) 11-19-97

DRILLING PROGRAM

Attached to Form 3160-3

Smith & Marrs, Inc.

Wills Federal No. 18
990' FEL & 330' FNL
Unit Letter A
Section 34, T26S, R37E

1. Geologic Name of Surface Formation: Permian
2. Estimated Tops of Important Geologic Markers and
3. Estimated Depths of Fresh Water, Oil, and Gas:

Formation	Depth	Fluid Content
Permian	Surface	Fresh water at +250'
Anhydrite	500'	------
Top of Salt	1350'	------
Base of Salt	2400'	------
Queen Sand	3920'	Oil
Total Depth	4000'	

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 8 5/8" casing at 1300' into the anhydrite and circulating cement to surface. 5-1/2" production casing will be set at TD.

The pore pressure gradient is normal (+8.4 ppg) down through the Queens. No abnormal pressures are anticipated.

4. Casing and Cementing Program

Hole Size	Casing From	Casing To	Casing OD	Weight, Grade, Coupling, Cond.
12 1/4"	0'	600	8-5/8"	24# J55 LTC used
7 7/8"	0	TD	5-1/2"	17# J55 LTC used

All used casing will be drifted and hydrostatically tested to at least 90% of new pipe rating.

Minimum Design Factors: Collapse 1.125
Burst 1.1
Tension 1.7

8 5/8" surface casing set at 600'
Centralize the bottom 3 joints.
Cement to surface with 385 sx of Class C with 4% gel, 5% salt, 1/4# FC (12.8 ppg, 1.94 ft 3/sx).

5 1/2" production casing set @ TD
Centralize every joint from TD to 2200'

Stage 1: 400 sx Class C Neat with 2% gel, 5% salt, 1/4# FC (14.2 ppg, 1.34 ft 3/sx).

5. Minimum Specifications for pressure control:
7 7/8" hole

The following BOP equipment will be nippled up on the 8-5/8" casing and used continuously until TD is reached for the 7-7/8 " hole.

The blowout preventer equipment (BOP) shown in Exhibit E will consist of a 3000 psi WP double ram type preventer and a 3M annular (bag type) preventer with rotating head. Both BOP's will be hydraulically operated. At the drilling contractor's option, 5M BOP's may be substituted. H2S trim will not be required.

Before drilling out from under the 8-5/8" intermediate casing, all BOP's and accessory equipment will be tested to 1000 psi with the rig pump. Pipe rams will be operationally checked each 24 hr period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

BLM method to calculate minimum BOP requirements:
(.052) (8.4ppg) (4000') - (0.22psi/ft) (4000') = 867 psi
Minimum BOP requirements: 2M BOP stack and manifold system.

6. Proposed Mud System:

The well will be drilled to TD with a combination of fresh water and 10# brine. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT (ppg)	VISCOSITY (sec)	WATER LOSS (cc)
0'-1300'	fr. wtr	8.4	28	NC
1300'-4000'	br wtr	10.0	29	NC

Sufficient mud materials to maintain mud properties and meet minimum lost circulation requirements will be kept at the wellsite at all times.

7. Auxiliary Well Control and Monitoring Equipment:

a) A kelly cock will be kept in the string at all times.

b) A full opening drill pipe stabbing valve (TIW/inside BOP) with proper drill pipe connection will be on the rig floor at all times.

c) An electronic pit volume totalizer system will NOT be used. The drilling fluids system will be visually monitored at all times.

8. Logging, Testing, and Coring Program:

a) Drillstem tests will be run on the basis of drilling shows.

b) The electric logging program will consist of:
1) 7-7/8" hole - Gamma ray, dual induction log, compensated neutron and litho-density logs.

c) No conventional cores are planned. Selected intervals may be sidewall cored based upon shows and openhole logs.

d) Further testing procedures will be determined after the 5-1/2" production casing has been cemented at TD.

9. Abnormal Conditions, Pressures, Temperatures, and Potential Hazards:

No abnormal pressures, temperatures, or other potential hazards are anticipated.

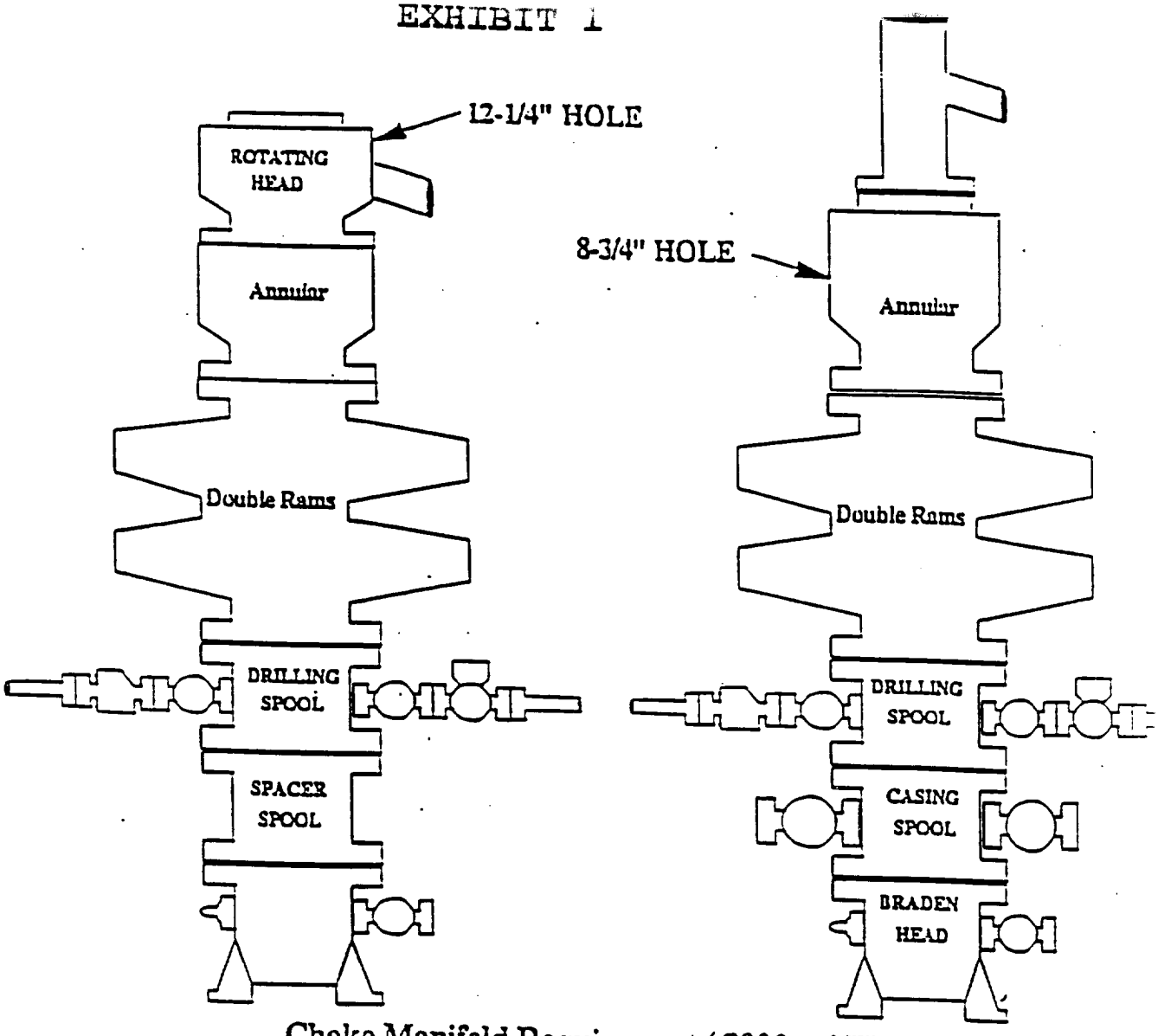
No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported, or are known to exist at this depth in this area. No major lost circulation zones have been reported in offsetting wells.

The maximum anticipated bottom hole pressure is approximately 1732 psi. (4000' x .433psi/ft - 1732 psi) The maximum anticipated bottom hole temperature is 90 F.

10. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is November 25, 1997. Once commenced, the drilling operation should be complete in 15 days. If the well is productive, an additional 30 days will be required for completion, testing, and installation of permanent facilities.

EXHIBIT 1



Choke Manifold Requirement (3000 psi WP)