

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 ARCO Oil and Gas Company

3. ADDRESS OF OPERATOR
 Box 1610, Midland, Texas 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
 At surface: 760' FWL & 2080' FSL Unit Letter (L)
 At proposed prod. zone: Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 10 miles SE of Loco Hills, New Mexico

10. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drg. unit line, if any) 560

16. NO. OF ACRES IN LEASE 360

17. NO. OF ACRES ASSIGNED TO THIS WELL 40

13. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 1320

19. PROPOSED DEPTH 9600

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DP, RT, GR, etc.)
 GL 3703.0

22. APPROX. DATE WORK WILL START*
 November 20, 1988

5. LEASE DESIGNATION AND SERIAL NO.
 NM - 28096

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
 NA

7. UNIT AGREEMENT NAME
 NA

8. FARM OR LEASE NAME
 Swearingen Deep 14 Federa

9. WELL NO.
 #4

10. FIELD AND POOL, OR WILDCAT
 TAMAND POOL
 Undesignated

11. SEC., T., S., M., OR BLK. AND SURVEY OR AREA
 Sec. 14, T18S-R31E

12. COUNTY OR PARISH 13. STATE
 Eddy New Mexico

RECEIVED
 NOV 01 '88
 O. C. D.
 ARTESIA OFFICE

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2	13 3/8	54.5	400	800 SX Circ
11	8 5/8	24	2350	700 SX Circ
7 7/8	5 1/2	17	9600	1200 SX TOC + 2200

Propose to drill to a depth of 9600' as described in the attached plan. Pursuant to "Onshore Oil and Gas Order #1", attachments are as follows:

1. Certified location plat.
2. Drilling plan with attachments.
3. Surface use plan with attachments.
4. Blow out preventor program.

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 OCT 11 9 45 AM '88
 ARTESIA OFFICE

POST ID-1
 NL & API
 11-4-88

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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 Ken W Gosnell TITLE Engineer Technician DATE 10/8/88

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____
 APPROVED BY Jaime R. Poyente TITLE _____ DATE 10-31-88
 CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

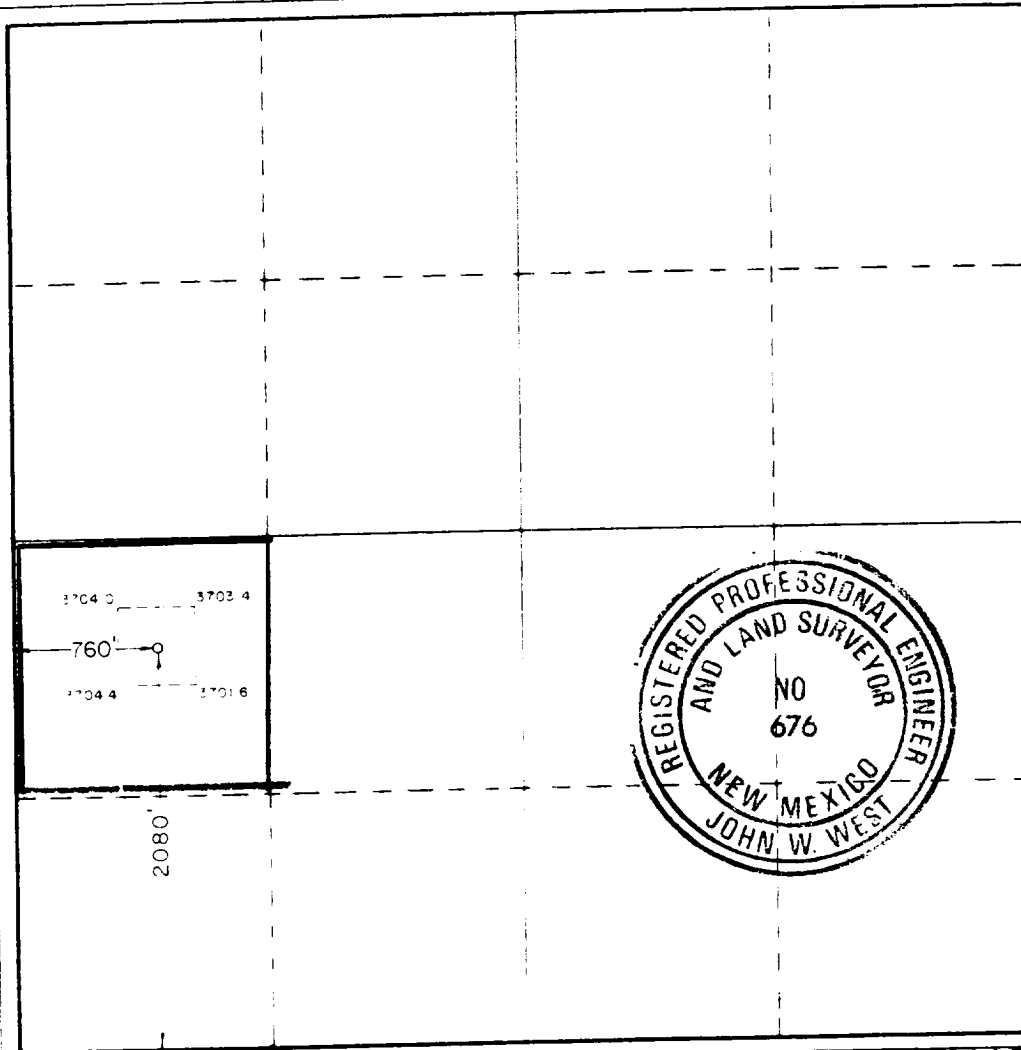
Operator ARCO Oil & Gas Company		Lease Swearizzen Deep 1- Fed		Well No.	
Tract Letter 1	Section 1-	Township 18 South	Range 31 East	County Eddy	
Actual Encroachment Location of Well: 2080 feet from the SOUTH line and 760 feet from the WEST line					
Ground Level Elev. 3703.0	Producing Formation Bone Springs	Pool TAMBO BONE SPRING Undesignated		Designated Acreage 40 Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Ken W. Gosnell

Name
Ken W. Gosnell

Position
Engr. Tech.

Company
ARCO Oil & Gas Company

Date
10/8/88

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.

Date Surveyed
October 1, 1988

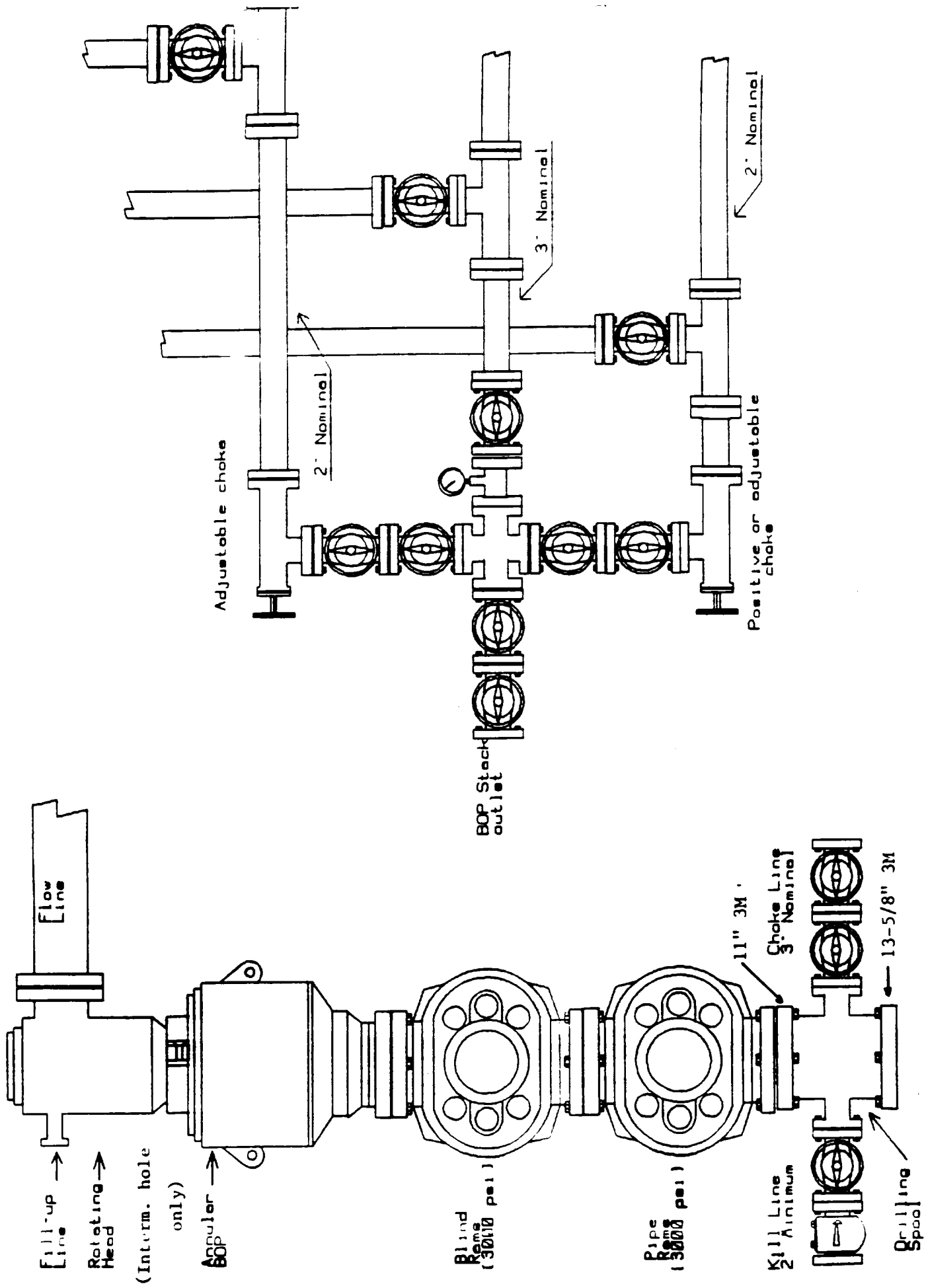
Registered Professional Engineer and/or Land Surveyor

Ronald J. Eidson

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239



MINIMUM BOP AND CHOKE MANIFOLD REQUIREMENTS



To supplement USGS Form 3160-3, "Application for Permit to Drill, Deepen or Plugback", the following additional information is submitted to comply with USGS Order NTL-6.

Operator: ARCO Oil and Gas Company

Lease & Well No.: Swearingen Deep "14" Federal #4

Location: Unit Letter L
Section 14, T18S, R31E
Eddy County, New Mexico
Lease, New Mexico LC-029389-(c)
Development well _____ Exploratory well _____

1. See Well location and Acreage Dedication Plat Form C-102.
2. See Form 3160-3 for elevation above sea level of unprepared location.
3. The geologic name of the surface formation is as follows: Querecho Plains Aeolian material with loose sandy loams and commonly harbor calcareous gravels.
4. The type of drilling tools and associated equipment to be utilized will be rotary.
5. The proposed drilling depth will be 9,600'.
6. The estimated tops of important geologic markers are as follows:

TOS	700'	Queen	3400'
BOS	1900'-2100'	Grayburg	3850'
Seven Rivers	2650'	San Andres	4300'
Bone Springs	6200'		
1st Bone Springs Sand		7700'	
2nd Bone Springs Carbonate		8300'	
3rd Bone Springs Sand		9300'	

7. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to encounter are a follows:

Bone Spring Sand 7700'; Oil

8. The proposed casing program including the size, grade and weight-per-foot of each string has been indicated on Form 3160-3. All strings of casing will be new.
9. See Form 3160-3 for amount of cement.

Swearingen Deep "14" Federal #4
Eddy County, New Mexico
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10. The pressure control diagram is attached to Form 3160-3. The following additional information about the pressure control equipment is as follows:

13-3/8" Casing:

Size: 13-5/8" or 11" 3000 psi WP double ram hydraulic w/annular
Pressure Ratings: 3000 psi WP, 6000 psi Test
Testing Procedure: Pressure up to 1000 psi before drilling out casing.
Testing Frequency: Pressure Test upon installation and operational checks daily and on all trips. The kill lines will be flushed after cementing.

8-5/8" Casing:

Size: 13-5/8" or 11" 3000 psi WP double ram hydraulic w/annular
Pressure Ratings: 3000 psi WP, 6000 psi Test
Testing Procedure: Pressure all BOPE to rated working pressure using independent testing company. Annular will be tested to 1500 psi.
Testing Frequency: (Same as above)

11. The type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling, and the qualities and types of mud and weighting material to be maintained will be as follows:

0-680'	Fresh water Spud Mud, 8.6 ppg
680'-2350'	Saturated Brine Water, 10 ppg
2350'-7000'	Cut Brine, Clear Fluid, 9.96-9.8 ppg
7000'-9600'	Cut Brine, 9.0-9.5 ppg, XCD and Drispack, CL=50K ppm

12. The testing, logging and coring program will be as follows:

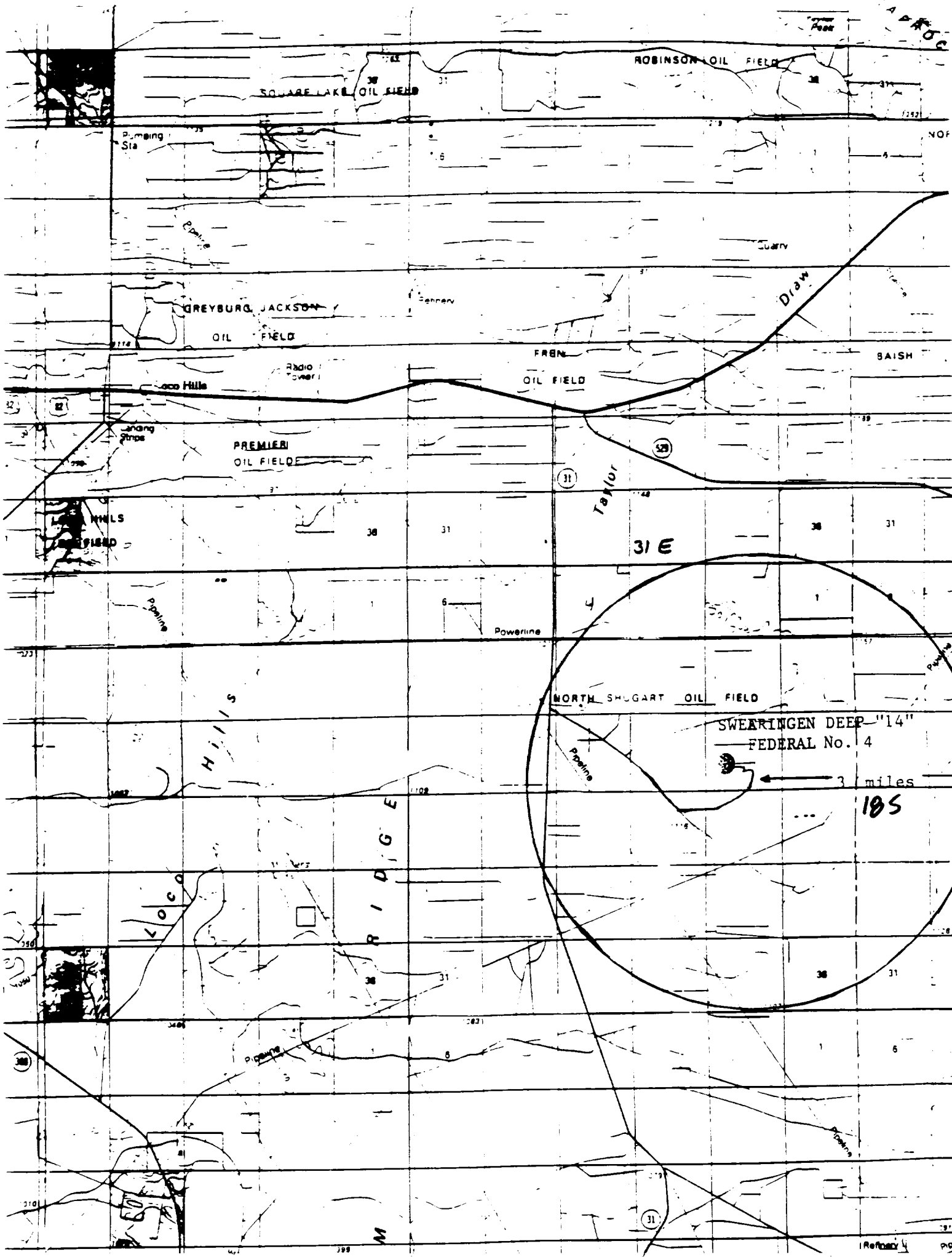
Drill Stem Test	Logs	Coring
None Anticipated	Open Hole Logs	None Anticipated
But possible, depending on shows	DLL-MSFL TD to 2350'	But possible, depending on shows
	FDC-CNL-GR-Calp to 2150'	
	Cased Hole Logs:	
	GR-CCL PBSD to 6500'	

13. There are no abnormal temperatures anticipated. A salt water flow of 60 BPH was encountered on the Swearingen Deep "14" No. 1 @ + 1500'. If this occurs on the #2, drilling will continue to casing point with well flowing. The casing will be cemented through the choke

Swearingen Deep "14" Federal #4
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to allow back pressure to be applied during cementing operating. This method was successful on the Swearingen Deep "14" Federal #1.

14. The anticipated starting date (constructed) will be September 15, 1988 and completing date approximately November 10, 1988.
15. The auxiliary equipment to be used will consist of the following: Kelly cocks and sub on floor with full opening valve, to be used when needed. A mud logging unit will be used in the interval from 2350'-9600'.



ROBINSON OIL FIELD

SQUARE LAKE OIL FIELD

GREYBURG JACKSON OIL FIELD

PREMIER OIL FIELD

FRENCH OIL FIELD

NORTH SHUGART OIL FIELD

SWEARINGEN DEEP - 14"
FEDERAL No. 4

3 miles

185

31 E

Taylor

Draw

HILLS

BRIDGE

LOCO

TYPICAL LOCATION LAYOUT FOR WELL 1000' OR GREATER IN DEPTH Eddy and Lea County, New Mexico

