

## N. M. Oil Cons. Division

Form 3160-3  
(July 1992)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT811 SUBMITTING SITE  
ARTESIA, NM 88210-1834  
reverse side)FORM APPROVED  
OMB NO. 1004-0136  
Expires February 28, 1995

c/sf

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

## 1a. TYPE OF WORK

Drill ☐Deepen ☒

## b. TYPE OF WELL

Oil Well ☒Gas Well ☐Other ☐Single Zone ☒Multiple Zone ☐

## 2. NAME OF OPERATOR

Shahara Oil, LLC

## 3. ADDRESS AND TELEPHONE NO.

207 W. McKay

Phone: 505-885-5433

Carlsbad, NM 88220

Fax: 505-885-4989

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At surface

2297' 1646'  
2310' FNL & 1650' FEL, Unit G

At proposed prod. zone

Same

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE \*

2 1/2 miles SW of Loco Hills

## 15. DISTANCE FROM PROPOSED \*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.

330'

(Also to nearest drlg. unit line, if any)

## 18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

330'

## 21. ELEVATIONS (Show whether DF, RT, GR, etc)

3568' GR

## 16. NO. OF ACRES IN LEASE

440

## 19. PROPOSED DEPTH

3200'

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

## 20. ROTARY OR CABLE TOOLS

Rotary

## 22. APPROX. DATE WORK WILL START \*

May 1, 1999

## 23.

## PROPOSED CASING AND CEMENT

**NEED WELL CONTROLLED WATER BARRIER**

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
6 1/4"	4 1/2"		3200'	600 sx - Circulate

The operator proposes to re-enter well and deepen from 2850' to a depth of 3200' for injection purposes.  
Well drilled in 1940 and TA'd in 1993.

Specific programs are outlined in the following attachements:

DRILLING PROGRAM

SURFACE USE AND OPERATING PLAN

EXHIBIT A - ROAD MAP

EXHIBIT B - EXISTING WELL MAP

EXHIBIT C - LOCATION AND ACREAGE DEDICATION PLAN

EXHIBIT C-1 - TOPO MAP

EXHIBIT D - DRILLING AND RIG LAYOUT (Pulling Unit)

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

Shallia Marshall

TITLE

Agent

DATE

04/09/99

(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:

/S/LARRY D. BRAY

Acting

Assistant Field Office Manager,  
Lands and Minerals

APPROVED BY

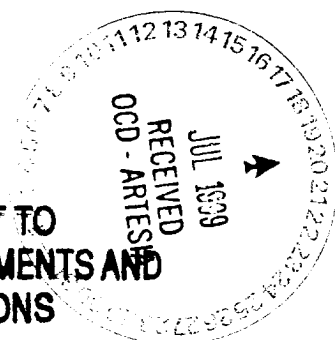
TITLE

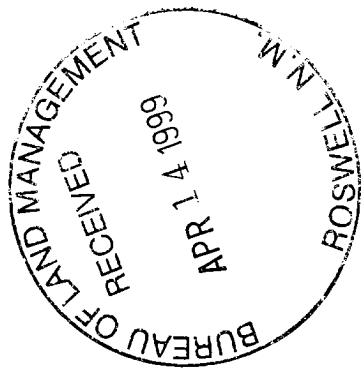
DATE

JUL 19 1999

\*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.

Post ID-1  
7-23-99(PB) Re-entry  
Phy Feg



## DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

## DISTRICT II

P.O. Drawer 80, Artesia, NM 88211-0719

## DISTRICT III

1000 Rio Brazos Rd., Artec, NM 87410

## DISTRICT IV

P.O. Box 2088, Santa Fe, NM 87504-2088

## State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## 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
Property Code	Property Name BEESON "F" FEDERAL	Well Number 5
OGRID No.	Operator Name SHAHARA OIL, LLC	Elevation 3563

## 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	31	17 S	30 E		2297	NORTH	1646	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 40	Joint or Infill	Consolidation Code	Order No.
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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

LOT 1 37.67 AC.		<b>OPERATOR CERTIFICATION</b> I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. <u>Perry L Hughes</u> Signature <u>Perry L Hughes</u> Printed Name <u>Pres.</u> Title <u>4/30/99</u> Date
LOT 2 37.65 AC.		<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. APRIL 26, 1999 Date Surveyed <u>Ronald E. Edson</u> Signature Professional Surveyor NEW MEXICO 3239 P.Q. Num 99-116372 Certified No. RONALD E. EDSON, 3239 GARY M. EDSON, 12841 JAMES MCDONALD, 12185
LOT 3 37.63 AC.		
LOT 4 37.61 AC.		

## DRILLING PROGRAM

Shahara Oil, LLC  
Beeson "F" Federal No. 5  
2310' FNL & 1650' FEL, Unit G  
Section 31, T17S, R30E  
Eddy County, New Mexico  
Lease No. LC-060529

In connection with Form 3160-3, Application for Permit to Drill subject well, Shahara Oil, LLC. submits the following items of pertinent information in accordance with BLM requirements:

1. Geologic Name of Surface Formation: Permian
2. Estimated Tops of Important Geologic Markers

<u>Formation</u>	<u>Depth</u>
Top of Salt	455'
Base of Salt	1110'
Queen	2308'
Grayburg	2633'
San Andres	3140'
Total Depth	3200'

3. Estimated Depths of Fresh Water, Oil and Gas:

There is little if any fresh water in this area. Oil is expected in the Queen, Grayburg and San Andres below 2300'. No other formations are expected to give up oil, gas or fresh water in measurable quantities. Any surface fresh water sands have been protected by setting 7" casing at 2722'. 4 ½" casing will be set at TD and cemented to surface.

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

4. Existing Casing and Cement Program

<u>Casing</u>		<u>Casing OD</u>	<u>Weight, Grade</u>
<u>Hole Size</u>	<u>From To</u>		
12 1/4"	0' 625'	8 5/8"	24# J-55
7 7/8"	0' 2737'	7"	20# & 23# J-55

### Proposed Casing and Cement Program

#### 4 ½" Production Casing Set at TD

Cement with 600 sx of Class C with additives. Will circulate to surface.

5. Minimum Specifications for Pressure Control:

6 1/2" Hole - The following BOP equipment will be nipped up on the 7" casing and used continuously until TD is reached.

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.

BLM method to calculate minimum BOP requirements:

$$(.052)(8.4 \text{ ppg})(3200') - (0.22 \text{ psi/ft})(3200') = 672 \text{ psi}$$

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
2850'-3200'	Fresh water	8.4	28	NC

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

7. Auxiliary Well Control and Monitoring Equipment:

- A kelly cock will be kept in the string at all times.
- A full opening drill pipe stabbing valve (TIW/inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- 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 Programs:

- The cased hole electric logging program will consist of:  
GR-CNL-CDL-Cal - TD-2200'
- No cores are planned.
- Further testing procedures will be determined after the 4 1/2" casing has been cemented at TD.

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

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

Some minor hydrogen sulfide may be encountered. No major lost circulation zones have been reported in offsetting wells.

The maximum anticipated bottom hole pressure is approximately 1386 psi.  
(3200' x .433 psi/ft = 1386 psi)

The maximum anticipated bottom hole temperature is 90 degrees 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 May 1, 1999. Once commenced, the drilling operation should be complete in 10 days.

## **SURFACE USE AND OPERATING PLAN**

Shahara Oil, LLC  
Beeson "F" Federal No. 5  
2310' FNL & 1650' FEL, Unit G  
Section 31, T17S, R30E  
Eddy County, New Mexico  
Lease No. LC-060529

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities, and the operations plan to be followed in rehabilitating the surface after completion of the operation to that a complete appraisal can be made of the environmental effects associated with the operations.

<b><u>Located:</u></b>	2 ½ miles southwest of Loco Hills, New Mexico												
<b><u>Federal Lease Number:</u></b>	LC-060529												
<b><u>Lease Issued:</u></b>	N/A												
<b><u>Acres in Lease:</u></b>	440 acres												
<b><u>Record lessee:</u></b>	Phillips Petroleum Company												
<b><u>Surface Ownership:</u></b>	Federal												
<b><u>Grazing Permittee:</u></b>	Blaine B. Haines												
<b><u>Pool:</u></b>	Loco Hills Queen Grayburg San Andres												
<b><u>Pool Rules:</u></b>	The 40 acre oil well spacing rules apply to this location, being 330' to the nearest side boundary or 1/4-1/4 section line, nor closer than 330' to the nearest well capable of producing from the same formation.												
<b><u>Exhibits:</u></b>	<table><tbody><tr><td>"A"</td><td>Road Map</td></tr><tr><td>"B"</td><td>Existing Wells Map</td></tr><tr><td>"C"</td><td>Well Location and Acreage Dedication Plat</td></tr><tr><td>"C-1"</td><td>Topo Map (Location Verification Map)</td></tr><tr><td>"D"</td><td>Drilling Rig Layout Diagram (Pulling Unit)</td></tr><tr><td>"E"</td><td>BOP Equipment</td></tr></tbody></table>	"A"	Road Map	"B"	Existing Wells Map	"C"	Well Location and Acreage Dedication Plat	"C-1"	Topo Map (Location Verification Map)	"D"	Drilling Rig Layout Diagram (Pulling Unit)	"E"	BOP Equipment
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"E"	BOP Equipment												

1. **Existing Roads:**

- a) All roads to the location are shown on Exhibit "A". The existing roads are illustrated in yellow and are adequate for travel during drilling and injection operations. Upgrading of the road prior to drilling will be done where necessary as determined during the on-site inspection.
- b) Directions to location: Go southwest of Loco Hills on Hagerman Cutoff approximately 1.5 miles. Go left on existing lease road approximately 3/4 mile to intersection with existing access road running east and west. Turn east and go approximately 1/4 mile then north 400' to location.
- c) Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

2. **Proposed Access Road:**

No access roads are necessary.

3. **Location of Existing Wells:**

Exhibit "B" shows all existing wells within a one-mile radius of this well.

4. **Location of Existing and/or Proposed Facilities:**

This well is to an injector.

5. **Location and Type of Water Supply:**

The well will be drilled with a combination of natural and fresh water mud system as outlined in the drilling program.

The water necessary for drilling operations will be purchased and trucked to the wellsite.

6. **Source of Construction Materials:**

Not applicable.

7. **Method of Handling Waste Disposal:**

- a) Drill cuttings will be disposed into the reserve pit.
- b) Drilling fluids will be contained in the reserve pit. The reserve pit will be an earthen pit, approximately 6' deep and fenced on three sides prior to drilling. The fourth side will be fenced immediately following pulling unit removal. The reserve pit will be lined with plastic (5-7 mil thickness) to minimize loss of drilling fluids.



- c) Water produced from the well during completion may be disposed into the reserve pit or a steel tank (depending upon rates).
- d) Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- e) Oil produced during testing will be stored in steel test tanks until sold.
- f) Trash, waste paper, garbage and junk will be placed in a trash bin located on the drill site pad. It will be transported to an approved landfill for disposal within 30 days after completion of drilling and/or completion of operations. All waste material will be contained to prevent scattering by the wind.
- g) A portable chemical toilet will be provided on the location for human waste during the drilling and completion operations.

8. **Ancillary Facilities:**

No other facilities will be built as a result of the operations on this well.

9. **Well Site Layout:**

Will use existing well pad.

10. **Plans for Reclamation of the Surface:**

- a) After completion of drilling and/or completion of operations, all equipment and other material not needed for operations will be removed. The pit area will be allowed to dry before reclamation. If the borrow pit is constructed, the cuttings in the reserve pit will be deep buried in the borrow pit, and the reserve pit and borrow pit will be broken out, filled, and leveled. The location will be cleaned of all trash and junk to leave the well site in an aesthetically pleasing condition as possible.
- b) Three sides of the reserve pit will be fenced prior to and during drilling operations. The borrow pit will be fenced on all four sides after the location is built. At the time the pulling unit is removed, the reserve pit will be fenced on the fourth side to prevent livestock or wildlife from being entrapped in the pit. The fencing will remain in place until the pits are cleaned up and leveled.
- c) After abandonment, all equipment, trash and junk will be removed and the well site will be cleaned.
- d) The disturbed area will be revegetated by reseeding during the proper growing season with a seed mixture of native grasses as recommended by the BLM.

11. **Other Information:**

- a) Topography: The land surface in the area is undulating with small sand dunes. In the immediate area of the well site, the land slope is to the southwest.
- b) Soil: Top soil at the well site is loamy sand.
- c) Flora and Fauna: The vegetation cover is moderate. It includes range grasses, weeds, scrub oak bushes, and mesquite bushes. Wildlife in the area is that typical of a semi-arid desert land and includes coyotes, rabbits, rodents, reptiles, hawks, dove, quail and other small birds.
- d) Ponds and Streams: There are no rivers or streams within a mile of this proposed location.
- e) Residences and Other Structures: There are no occupied dwellings within a mile of this location.
- f) Archaeological, Historical, or Other Cultural Sites: None are know of in the area. An archaeological survey has been conducted by Desert West Archaeological Services.
- g) Land Use: Grazing, oil and gas production and wildlife habitat.
- h) Surface Ownership: Federal

12. **Operator's Representative:**

Perry L. Hughes, President  
Shahara Oil, LLC  
207 W. McKay  
Carlsbad, NM 88220

Phone: 505-885-5433  
Fax: 505-885-4989

13. **Certification:**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the oeprations proposed herein will be performed by Shahara Oil, LLC and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of false statement.

04/09/99  
Date

Thallia Marshall  
Thallia Marshall, Agent

## **HYDROGEN SULFIDE DRILLING OPERATIONS PLAN**

### **APPLICABILITY:**

The provisions of this plan are effective when drilling operations are conducted in areas where zones may be penetrated that are known to contain, or may be reasonably expected to contain, hydrogen sulfide gas in concentrations of 100 parts per million or more.

### **TRAINING REQUIREMENTS:**

- A. When conducting drilling operations in an area where hydrogen sulfide gas might be encountered, all personnel at the well site will have had proper training in the following areas:
  - 1. The hazards and characteristics of hydrogen sulfide gas (H<sub>2</sub>S).
  - 2. Toxicity of hydrogen sulfide and sulfur dioxide.
  - 3. Hydrogen sulfide gas detectors, warning systems, evacuation procedures, and proper use and maintenance of personal protective equipment.
  - 4. Proper rescue procedures, first aid, and artificial respiration.
- B. In addition, supervisory personnel will be trained in the following areas:
  - 1. The effects of hydrogen sulfide on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
  - 2. Corrective action and shut-in procedures when drilling or reworking a well, and blowout prevention and well control procedures.
  - 3. The contents and requirements of the Hydrogen Sulfide Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable hydrogen sulfide zone (within 3 days or 500 feet) and weekly hydrogen sulfide and well control drills for all personnel in each crew. The initial training session will include a review of the site specific Hydrogen Sulfide Drilling Operations Plan and the Public Protection Plan. This plan will be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

### **WELL SITE DIAGRAM:**

A. Attached is a detailed well site diagram showing:

1. Drilling rig orientation
2. Prevailing wind direction (Southwest)
3. Location of briefing areas
4. Location of Caution/Danger signs
5. Location of hydrogen sulfide monitors
6. Location of wind direction indicators

### **HYDROGEN SULFIDE SAFETY EQUIPMENT:**

- A. All safety equipment and systems will be installed, tested, and deemed operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone reasonably expected to contain hydrogen sulfide.
- B. During drilling operations, a flare line will be routed from the BOP manifold to the reserve pit. Should suspected sour gas be vented through the flare line, a flare pistol will be used to ignite the flare.
- C. Protective equipment for essential personnel will be installed and maintained as follows:
1. 30-minute air packs will be maintained on the rig floor and near the briefing area.
  2. 30-minute work units will be maintained at the H<sub>2</sub>S trailer and/or on the rig floor.
  3. 30-minute escape units will be maintained on the rig floor.
  4. 300 cubic ft. air cylinders will be maintained in the H<sub>2</sub>S trailer.
  5. Associated breathing air equipment will also be installed and maintained.
  6. Hydrogen sulfide monitor will be located in the dog house on the rig floor with sensors placed on the rig floor, at the bell nipple, the shale shaker, and in the pit areas.
  7. An audible/visual alarm will be located near the dog house on the rig floor.

### **VISUAL WARNING SYSTEMS:**

- A. High visibility Caution/Danger signs will be posted on roads providing direct access to the well location.
- B. Green, yellow and red conditions flags to be displayed to denote Normal Conditions, Potential

Danger and Danger, H<sub>2</sub>S present.

- C. Wind socks to be located at the protection center and in the pit area to continuously indicate wind direction.

**CIRCULATING MEDIUM:**

- A. Drilling fluid to be conditioned to minimize the volume of H<sub>2</sub>S circulated to the surface.

**SPECIAL WELL CONTROL EQUIPMENT:**

- A. In addition to the normal BOP stack and choke manifold, a drilling head will be used to help control and H<sub>2</sub>S contaminated drilling fluid.

**WELL TESTING:**

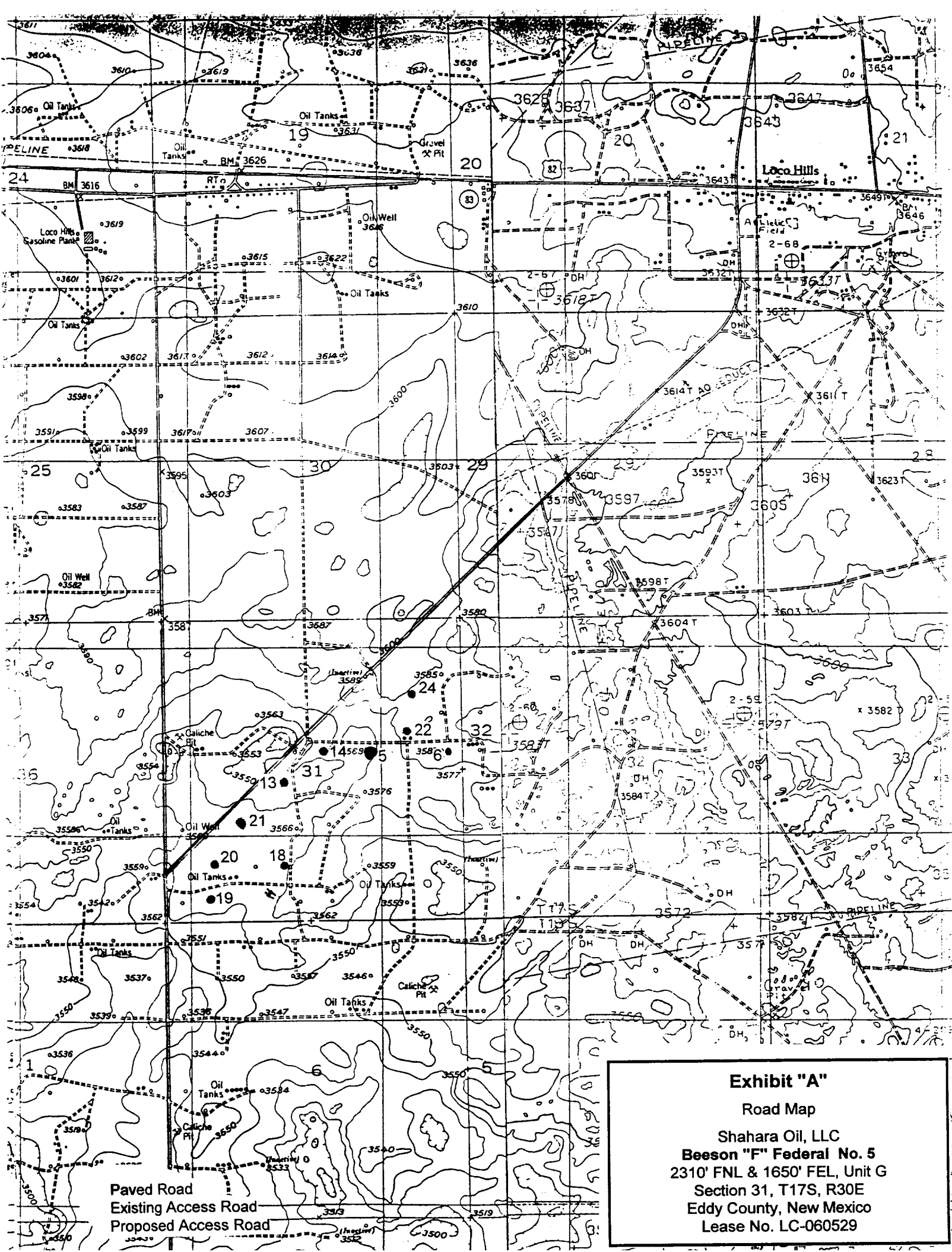
- A. Drill stem testing of zones known, or reasonably expected, to contain H<sub>2</sub>S in concentrations of 100 ppm or more will use the closed chamber method of testing.

**COMMUNICATION:**

- A. Radio communication will be available at the pulling unit and also in company vehicles.

**ADDITIONAL INFORMATION:**

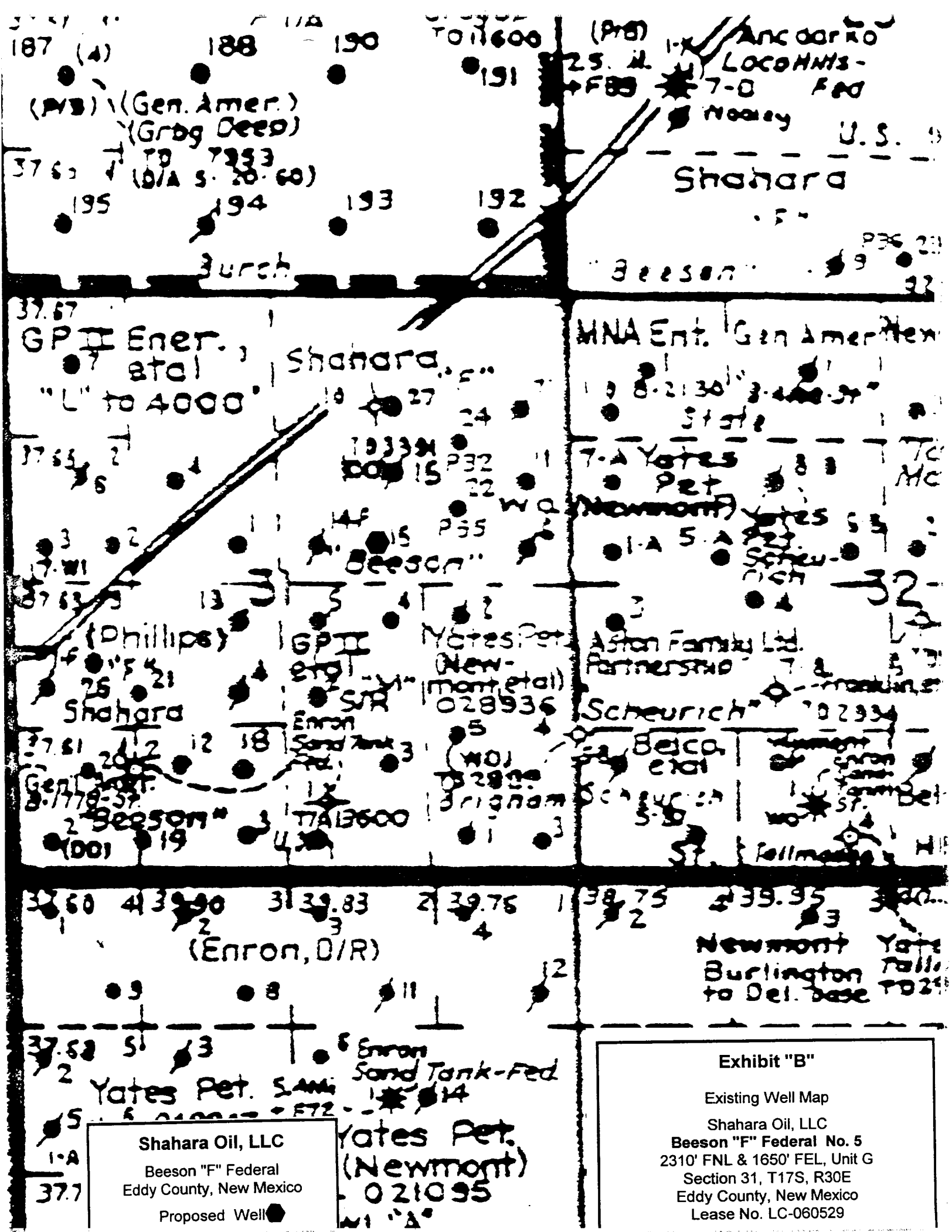
- A. Additional information concerning Emergency Reaction Steps, Ignition Procedures, Training Requirements and Emergency Equipment Requirements will be available on location at the well site.



**Exhibit "A"**

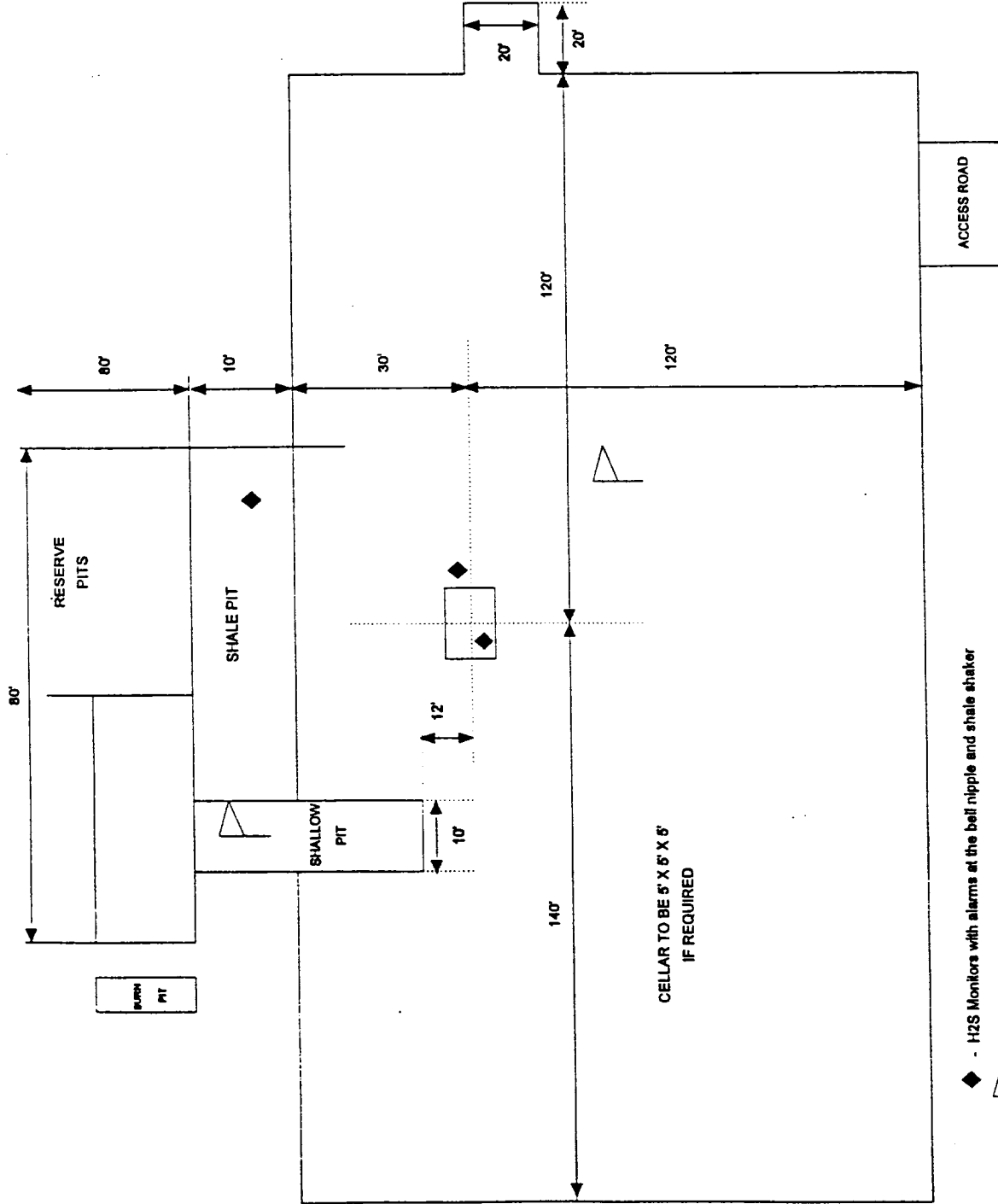
**Road Map**

Shahara Oil, LLC  
**Beeson "F" Federal No. 5**  
2310' FNL & 1650' FEL, Unit G  
Section 31, T17S, R30E  
Eddy County, New Mexico  
Lease No. LC-060529



# Exhibit "D" RIG LAYOUT

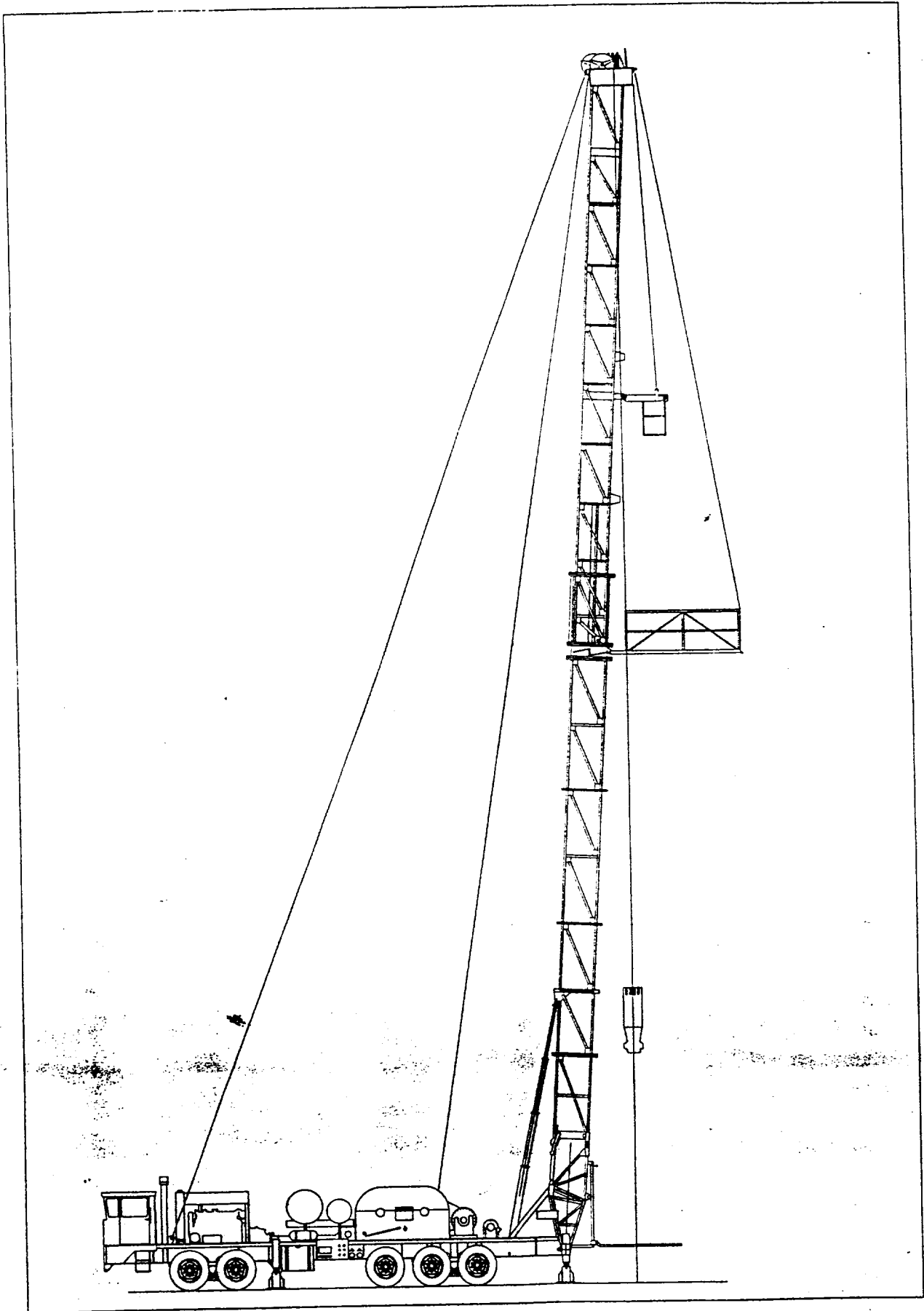
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Section 31, T17S, R30E  
Eddy County, New Mexico  
Lease No. LC-060529



Prevailing Wind Direction  
Southwest







# Exhibit "E"

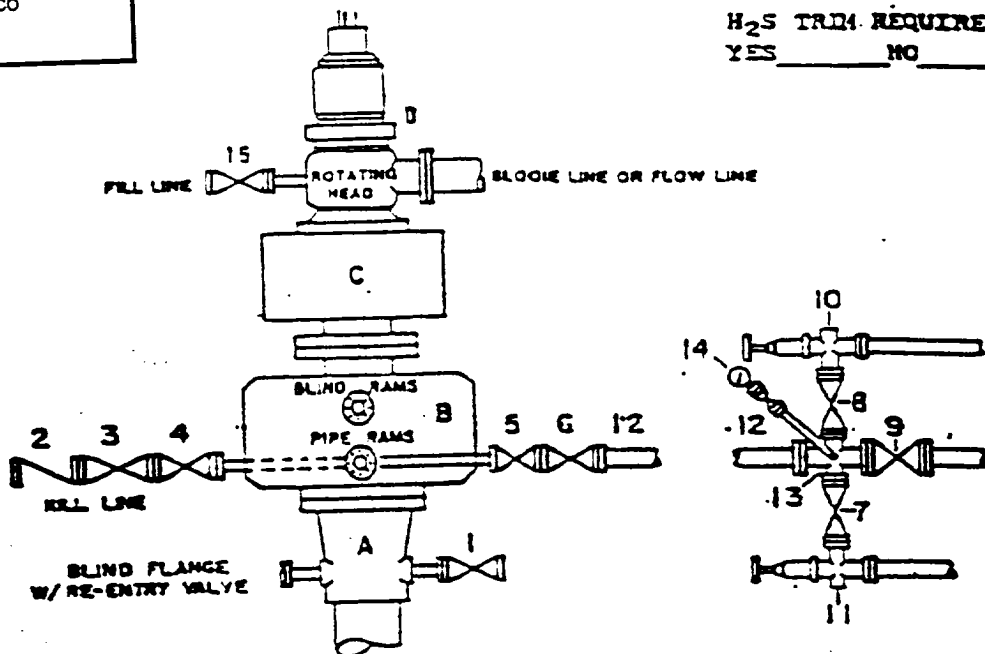
BOP Equipment

Shahara Oil, LLC

Beeson "F" Federal No. 5  
2310' FNL & 1650' FEL, Unit G  
Section 31, T17S, R30E  
Eddy County, New Mexico  
Lease No. LC-060529

## DRILLING CONTROL CONDITION III-B 3000 PSI WP

H<sub>2</sub>S TRIM REQUIRED  
YES \_\_\_\_\_ NO \_\_\_\_\_



### DRILLING CONTROL

#### MATERIAL LIST - CONDITION III - B

- |                |   |
|----------------|---|
| A              | Wellhead  |
| B              | 3000# W.P. Dual ram type preventer, hydraulic operated with 1" steel, 3000# W.P. control lines (where sub-structure height is adequate, 2 - 3000# W.P. single ram preventers may be utilized with 3000# W.P. drilling spool with 1" minimum flanged outlet for kill line and 3" minimum flanged outlet for choke line. The drilling spool is to be installed below the single ram type preventers). |
| C              | 3000# W.P. Annular Preventer with 1" steel, 3000# W.P. control lines.   |
| D              | Rotating Head with fill up outlet and extended Bloche line.   |
| 1,2,4,<br>7,8, | 2" minimum 3000# W.P. flanged full opening steel gate valve, or Halliburton Lo Terc Plug valve.   |
| 2              | 2" minimum 3000# W.P. back pressure valve.  |
| 3,6,9          | 3" minimum 3000# W.P. flanged full opening steel gate valve, or Halliburton Lo Terc Plug valve.   |
| 12             | 3" minimum Schedule 80, Grade B, seamless line pipe.  |
| 13             | 2" minimum x 3" minimum 3000# W.P. flanged cross.   |
| 10,11          | 2" minimum 3000# W.P. adjustable choke bodies.  |
| 14             | Cameron Mud Gauge or equivalent (location optional in Choke line).  |
| 15             | 2" minimum 3000# W.P. flanged or threaded full opening steel gate valve, or Halliburton Lo Terc Plug valve.   |

SCALE:	DATE:	EST. NO.	REV. NO.
DRAWN BY			
CHECKED BY			
APPROVED BY			

EXHIBIT E