

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

| | | |
|---|--|---|
| 1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> | | 5. LEASE DESIGNATION AND SERIAL NO. NM-66428 |
| b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/> | | 6. IF INDIAN, ALLOTTEE OR TRIBE NAME |
| 2. NAME OF OPERATOR Exxon Corporation Attn: Permits Supervisor | | 7. UNIT AGREEMENT NAME Laguna Salado South Unit |
| 3. ADDRESS OF OPERATOR P. O. Box 1600, Midland, TX 79702 | | 8. FARM OR LEASE NAME LAGUNA SALADO SO. UNIT |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface 660' FNL and 1980' FWL of Sec. 27 At proposed prod. zone | | 9. WELL NO. 1 |
| 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 6.5 miles SE from Loving | | 10. FIELD AND POOL, OR WILDCAT *Undesig. Laguna Grande Morrow |
| 15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any) 660' FNL | | 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 27, T23S, R29E |
| 16. NO. OF ACRES IN LEASE 640 | | 12. COUNTY OR PARISH Eddy |
| 17. NO. OF ACRES ASSIGNED TO THIS WELL 320 | | 13. STATE NM |
| 18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. None | | 20. ROTARY OR CABLE TOOLS Rotary |
| 21. ELEVATIONS (Show whether DF, RT, GR, etc.) GR 2993 | | 22. APPROX. DATE WORK WILL START* 2nd Quarter 1988 |

| 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 | 250 | 290 ft ³ CIRCULATE |
| 12 1/4 | 10 3/4 | 40.5 | 2900 | 1330 ft ³ CIRCULATE |
| 9 1/2 | 7 5/8 | 29.7 | 10800 | 1525 ft ³ |
| 6 1/2 | 5 | 18 | 10300-13900 | 360 ft ³ |

*Other possible pools for completion: Wildcat-Atoka, Wildcat-Delaware

POST 10-1
NL & API
7-1-88

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 Charlotte Harper TITLE Permits Supervisor DATE 4-4-88

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY Scott Adams TITLE Artis DATE 6-27-88
CONDITIONS OF APPROVAL, IF ANY:

*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.

WELL LOCATION AND ACREAGE DEDICATION PLAT

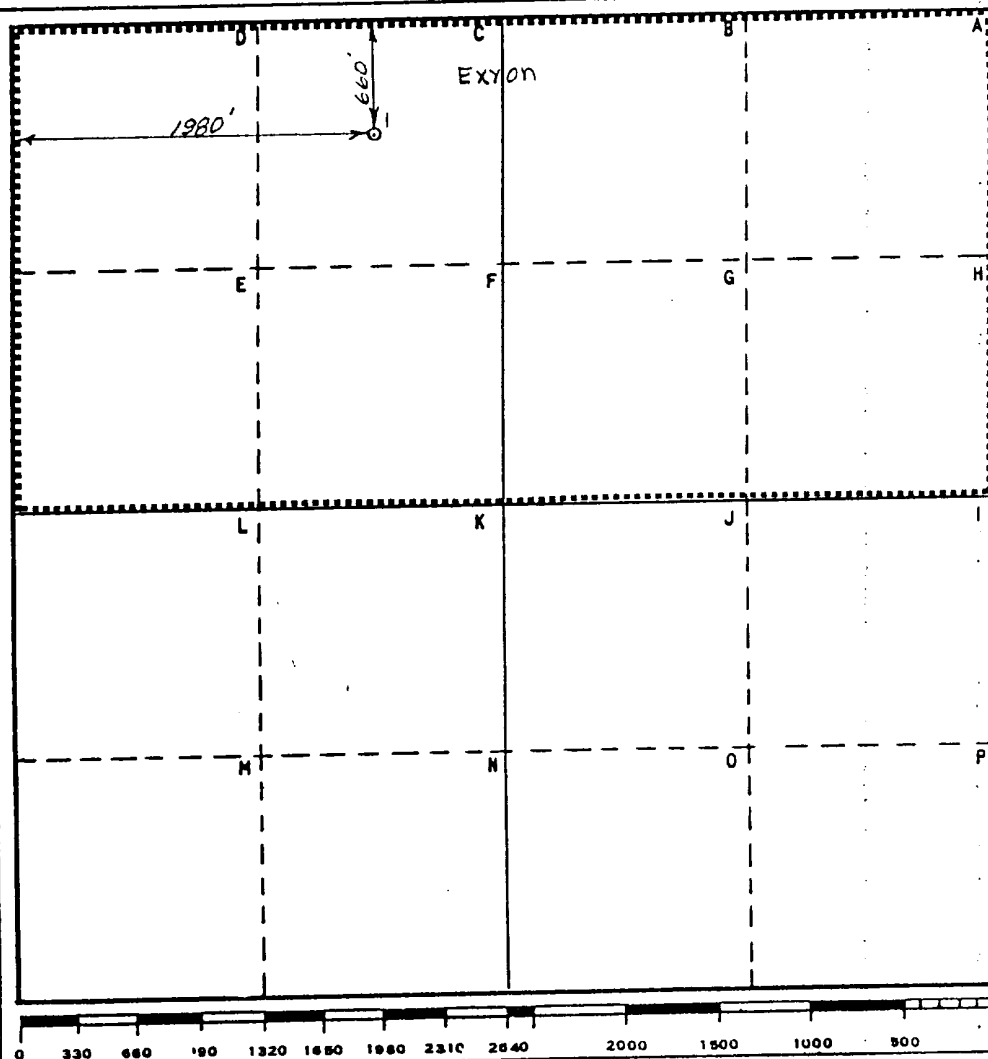
All distances must be from the outer boundaries of the Section.

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. 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.



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

Charlotte Harper

Name _____

Charlotte Harper

Position

Permits Supervisor

Company Exxon Corporation

Box 1600 Midland, Texas

Date _____

April 4, 1988

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

3-3-88

Registered Professional Engineer
and/or Land Surveyor

Barbara R. Russell
Certificate No.

Certificate No.

9062

6.5 Miles SE of LOVING

New Mexico

C.E. Sec. File No.

State Les. No. _____

WELL LOCATION AND ACREAGE DEDICATION PLAT

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

Federal Les. No. _____

All distances must be from the outer boundaries of the Section.

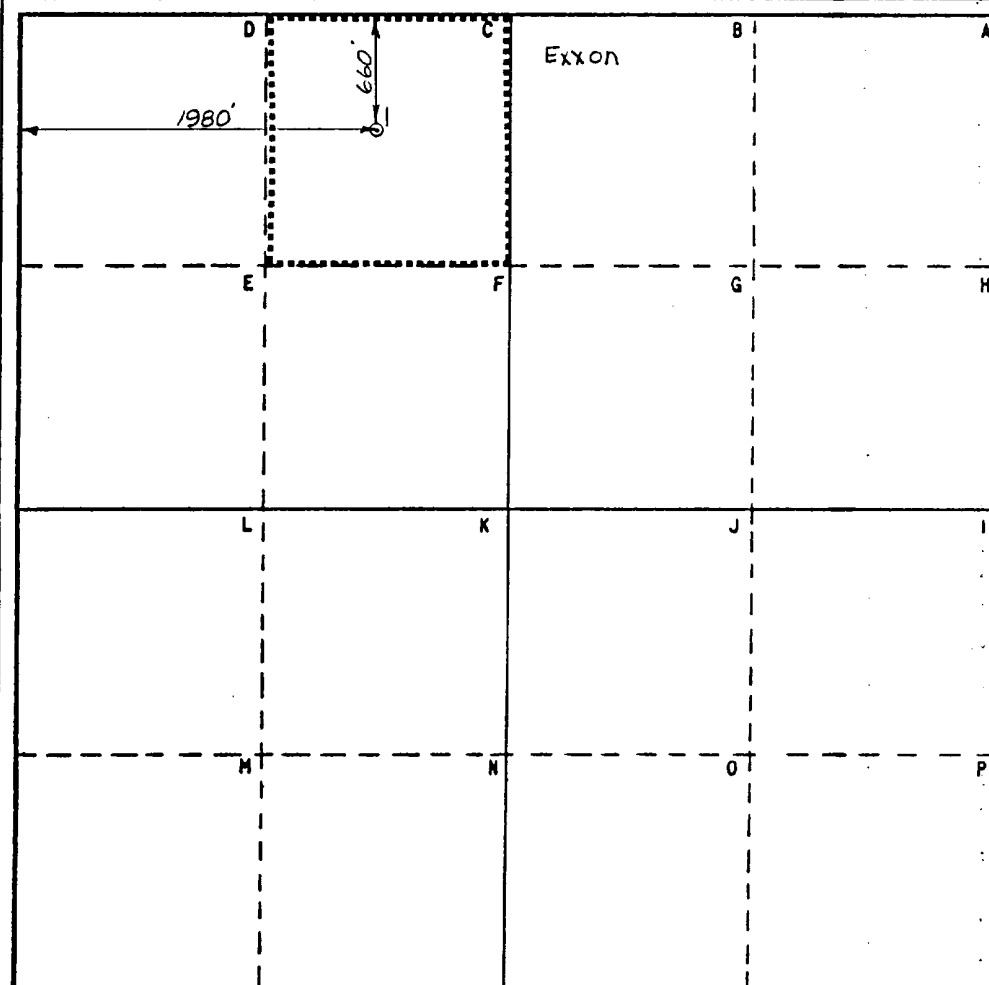
| | | | | | |
|---|--|------------------------|--|---------------------------------------|----------------------|
| Operator Exxon Corporation | | | Lease LAGUNA SALADO SOUTH UNIT | | Well No. 1 |
| Unit Letter C | Section 27 | Township 23S | Range 29E | County EDDY | |
| Actual Footage Location of Well: 660 feet from the NORTH line and 1980 feet from the WEST line | | | | | |
| Ground Level Elev: 2993 | Producing Formation DELAWARE | | Pool WILDCAT | Dedicated Acreage: 40 Acres | |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. 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.

Charlotte Harper

Name

Charlotte Harper

Position

Permits Supervisor

Company Exxon Corporation

Box 1600 Midland, Texas

Date

April 4, 1988

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

3-3-88

Registered Professional Engineer
and/or Land Surveyor

Bruce R. Pennell

Certificate No.

#9062

6.5 Miles SE of LOVING

New Mexico

C.E. Sec. File No. WA-10000

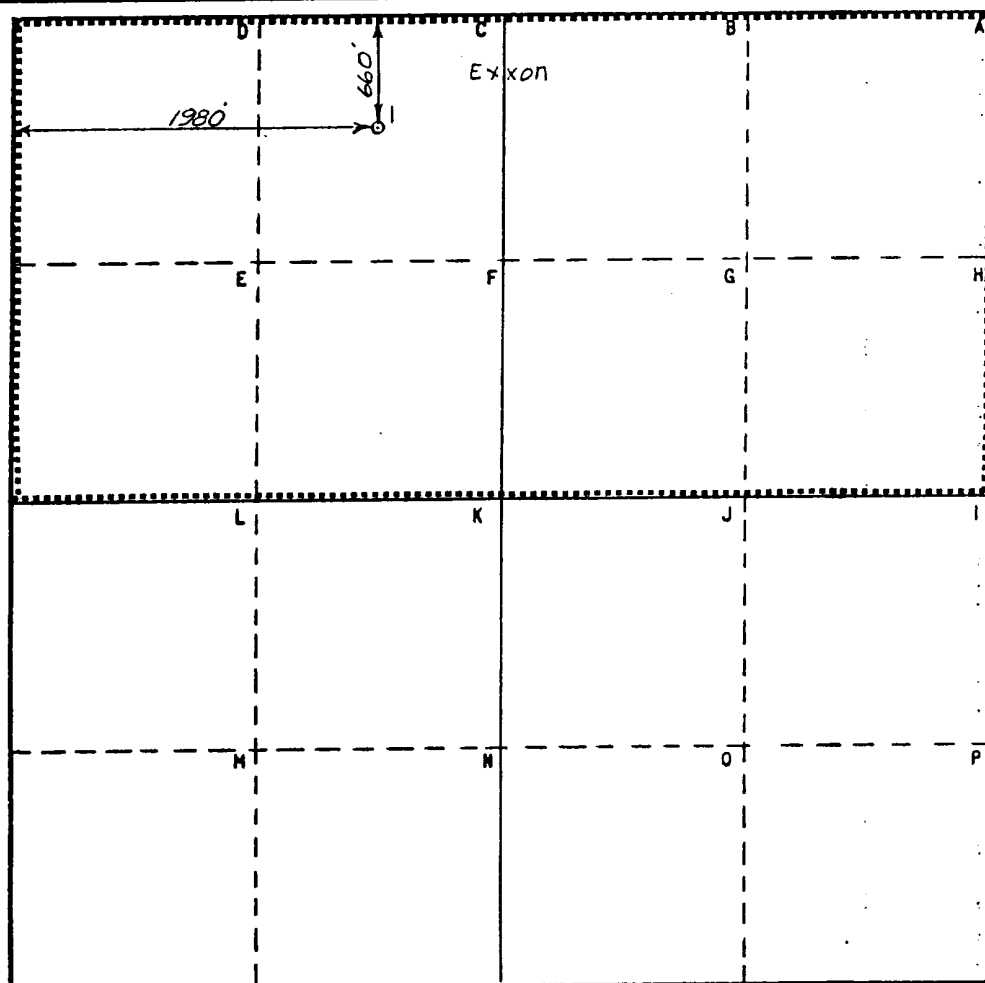
| | | | | | |
|---|-------------------------------------|------------------------|--|--|----------------------|
| Operator Exxon Corporation | | | Lease LAGUNA SALADO SOUTH UNIT | | Well No. 1 |
| Unit Letter C | Section 27 | Township 23S | Range 29E | County EDDY | |
| Actual Footage Location of Well: 660 feet from the NORTH line and 1980 feet from the WEST line | | | | | |
| Ground Level Elev: 2993 | Producing Formation ATOKA | | Pool WILDCAT | Dedicated Acreage: 320 Acres | |

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. 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.

Charlotte Harper

Name

Charlotte Harper

Position

Permits Supervisor

Company Exxon Corporation

Box 1600 Midland, Texas

Date

April 4, 1988

BRUCE R. PENNELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
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

3-3-88

Registered Professional Engineer and/or Land Surveyor

Bruce R. Pennell

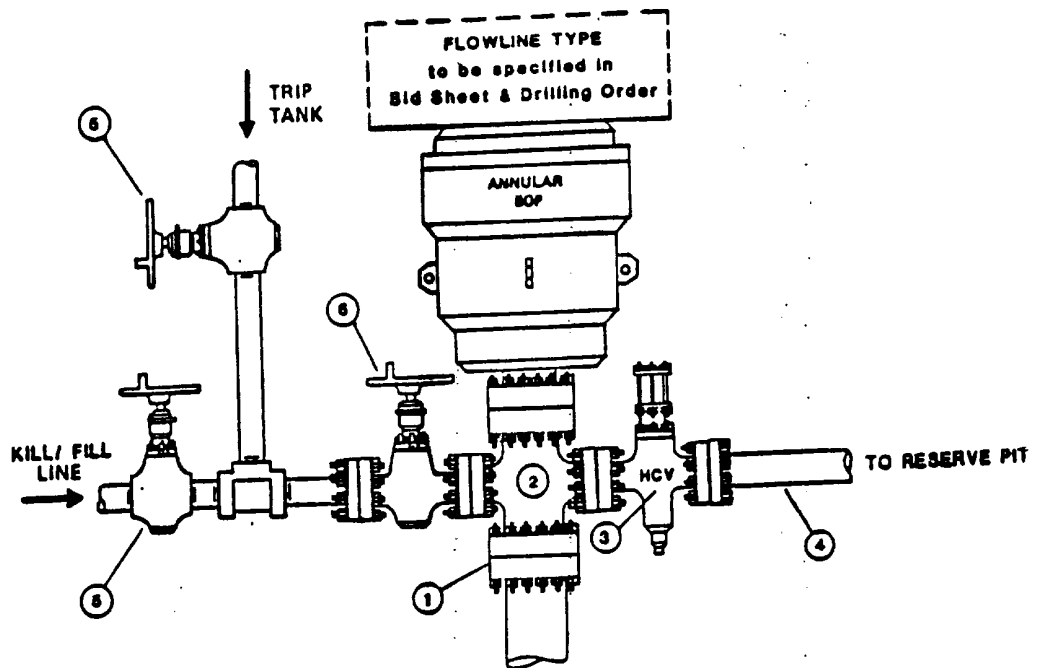
Certificate No.

#9062

6.5 Miles SE of LOYING, New Mexico

C.E. Sec. File No. WA-1-1000

TYPE SA BOP



COMPONENT SPECIFICATIONS:

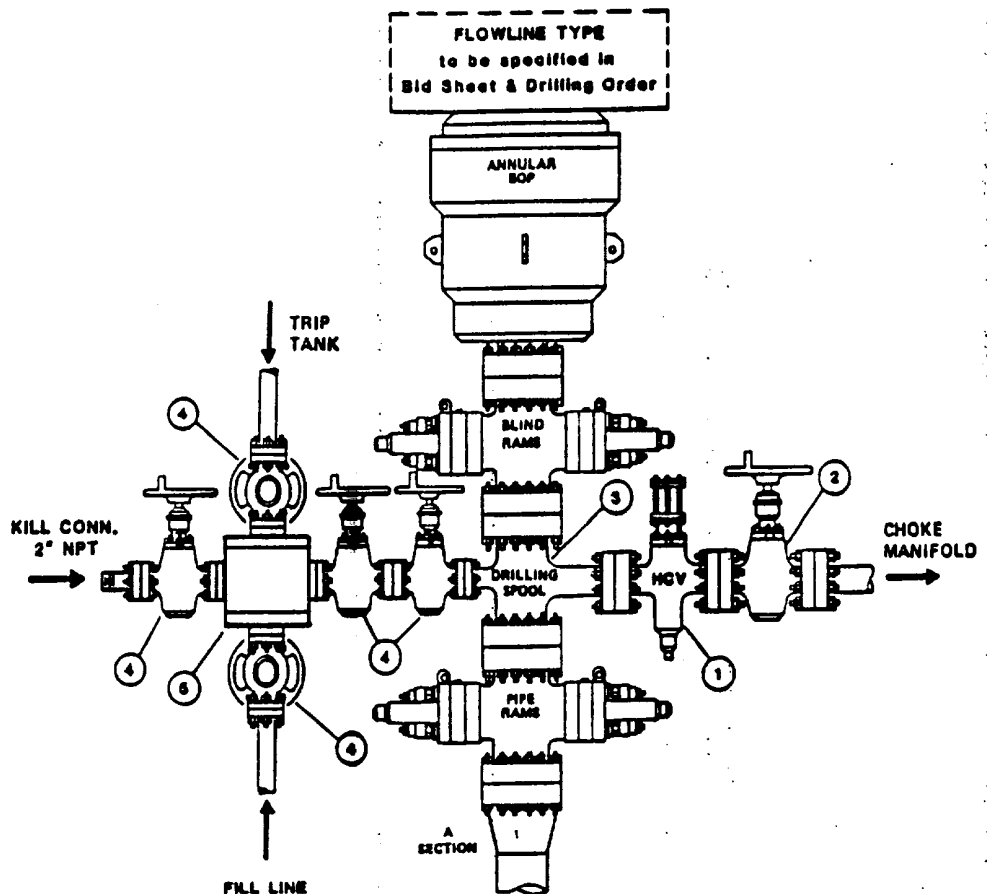
1. Wellhead or BOP Companion flange - screwed or welded to casing.
2. Flanged Drilling Spool.
3. Hydraulically operated full opening flanged valve -- 4" minimum -- 2000 psi minimum working pressure. Valve is closed during normal operations.
4. Diverter line minimum size 4" internal diameter, steel pipe. Diverter lines must be securely anchored. Only flanged or welded connections can be used for pipe joint connections and 45° or 90° ells must not be installed on the end of diverter lines to direct flow downward.
5. Flanged or screwed gate or plug valve -- 2" minimum nominal diameter and 2000 psi minimum working pressure.
6. Full opening flanged gate or plug valve -- 2" minimum -- 2000 psi minimum working pressure.

NOTE:

- A. Unless specified otherwise in the Bid Letter and/or Contract, the contractor will furnish and maintain all components shown above Exxon's wellhead.
- B. The choke line between the drilling spool and choke manifold should not contain any bend or turn in the pipe body. Any bend or turn required should be made with a running tee with a blind flange or welded bullplug. All connections should be flanged or welded. All fabrications requiring welding must be done by a certified welder. Welds should be stress relieved when required.
- C. Plug valves should be equivalent to the Howco Lo-Torc and gate valves equivalent to the Cameron Type 'F'.

TYPE RSRA BOP STACK

THREE PREVENTERS



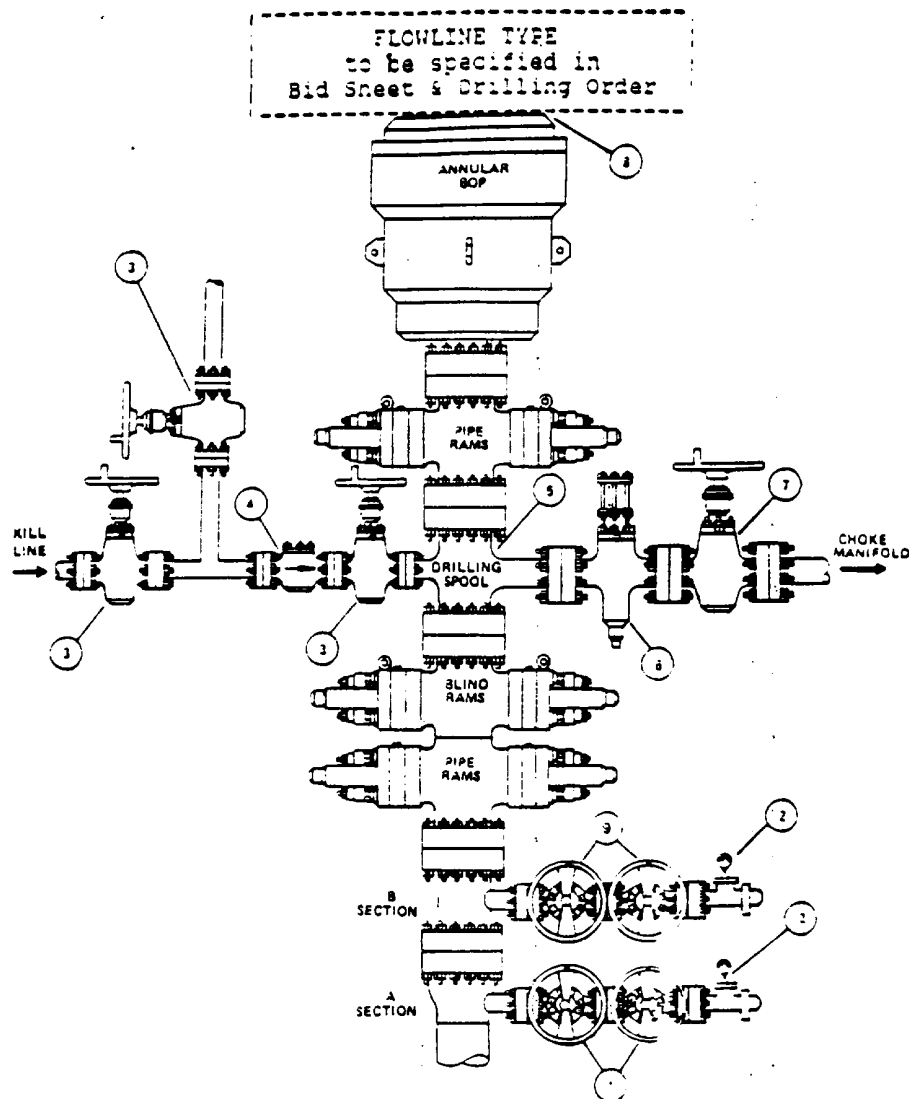
COMPONENT SPECIFICATIONS:

1. Flanged hydraulically controlled gate valve -- 3" minimum nominal diameter -- same working pressure as BOP stack.
2. Flanged plug or gate valve -- 3" minimum nominal diameter -- same working pressure as BOP stack.
3. Drilling spool with flanged side outlets -- minimum 3" choke and minimum 2" kill line.
4. Flanged plug or gate valve -- 2" minimum nominal diameter -- same working pressure as BOP stack.
5. Flanged cross or two (2) flanged tees.

NOTE:

- A. Unless specified otherwise in the Bid Letter and/or Contract, the contractor will furnish and maintain all components shown above Exxon's wellhead.
- B. The choke line between the drilling spool and choke manifold should not contain any bend or turn in the pipe body. Any bend or turn required should be made with a running tee with a blind flange or welded bullplug. All connections should be flanged or welded. All fabrications requiring welding must be done by a certified welder. Welds should be stress relieved when required.
- C. Plug valves should be equivalent to the Howco Lo-Torc and gate valves equivalent to the Cameron Type 'F'.

FOUR PREVENTERS



COMPONENT SPECIFICATIONS

1. Screwed or flanged plug or gate valves -- 2" minimum nominal dia. -- same working pressure as "A" section.
2. Tee with tapped bullplug, needle valve, and pressure gauge.
3. Flanged plug or gate valves -- 2" minimum nominal dia. -- same working pressure as BOP stack.
4. Flanged spring-loaded or flapper type check valve -- 2" minimum nominal dia. -- same working pressure as BOP stack.
5. Drilling spool of sufficient height to allow stripping with 2 flanged side outlets -- 3" choke and 2" kill line minimum nominal dia.
6. Flanged hydraulically controlled gate valve -- 3" minimum nominal dia. -- same working pressure as BOP stack.
7. Flanged plug or gate valve -- 3" minimum nominal dia. -- same working pressure as BOP stack.
8. Top of annular preventer must be equipped with an API flange ring gasket. All flange studs must be in place or holes filled in with screw type plugs.
9. Flanged plug or gate valves -- 2" minimum nominal dia. -- same working pressure as "B" section.

NOTE:

- A. Unless specified otherwise in the Bid Letter and/or Contract, the contractor will furnish and maintain all components shown above Exxon's wellhead.
- B. The choke line between the drilling spool and choke manifold should not contain any bend or turn in the pipe body. Any bend or turn required should be made with a running tee with a blind flange or welded bullplug. All connections should be flanged or welded. All fabrications requiring welding must be done by a certified welder. Welds should be stress relieved when required.
- C. Plug valves should be equivalent to the Howco Lo-Torc and gate valves equivalent to the Cameron Type 'F'.

EXXON CORPORATION - LAGUNA SALADO SOUTH UNIT #1

Section 27, T23S, R29E
Eddy County, Texas
BLM Eight Point Plan
March 16, 1988

1. The Estimated Tops of Important Geologic Markers

| <u>Formation</u> | <u>Tops</u> |
|------------------|-------------|
| Salado | 30 |
| Castile | 2,780 |
| Delaware | 3,000 |
| Bone Springs | 6,700 |
| Wolfcamp | 9,950 |
| Upper Penn | 11,510 |
| Strawn | 11,700 |
| Atoka | 11,890 |
| Morrow Lime | 12,730 |
| Morrow Clastics | 12,990 |
| TD | 13,900 |

2. The estimated depths at which the top and the bottom of anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

| | <u>Top</u> | <u>Bottom</u> | <u>How Protected</u> |
|--------------|------------|---------------|--|
| Fresh Water | Surf | 250 | Surface casing - cemented to surface. |
| Delaware | 3,000 | 6,700 | Intermediate casing - cemented to 2,500'. |
| Bone Springs | 6,700 | 9,950 | Intermediate casing - cemented to 2,500'. |
| Wolfcamp | 9,950 - | 11,510 | Intermediate casing - cemented to 2,500' and production liner cemented to liner top. |
| Atoka | 11,890 - | 12,730 | Intermediate casing - cemented to 2,500' and production liner cemented to liner top. |
| Morrow | 12,730 - | 13,900 | Intermediate casing - cemented to 2,500' and production liner cemented to liner top. |

3. Minimum Specifications for Pressure Control Equipment

A. Wellhead and X-mas tree equipment:

"A" Section - 13-3/8" BTC x 13-5/8", 3,000 psi WP, sweet
"B" Section - 13-5/8" x 11", 5,000 psi WP, sweet
Tubinghead - 11" x 7-1/16", 10,000 psi WP, sweet
Tubinghead adapter - 7-1/16" x 2-9/16", 10,000 psi WP, sweet
X-mas tree - 2-9/16", 10,000 psi WP, sweet

B. Blowout preventer equipment:

| Type | Pressure Rating | Installed on Casing |
|--------------------|-----------------|---------------------|
| Type - SA BOP | 2,000 psi | 13-3/8" |
| Type - RSRA Stack | 5,000 psi | 10-3/4" |
| Type - RRSRA Stack | 5,000 psi | 7-5/8" |

Additional preventers may be added and/or preventers with higher pressure ratings may be substituted depending on equipment provided by drilling contractor. Diagram of the preventer stack type is attached.

C. Testing:

Operational testing - an operational test consisting of closing the annular preventer and pipe rams on the drill pipe and closing the blind rams on open hole will be performed on each round trip but no more than once each day.

Pressure testing - an initial pressure test of 5,000 psi will be performed on the ram BOP's after nipping up on the intermediate casing strings, but prior to drilling out. Annular BOP will be tested to 200 psi (low pressure) and 500 psi on the 13-3/8" casing, and 300 psi (low pressure) and 3,500 psi on the 10-3/4" and 7-5/8" casing upon installation.

Subsequent pressure tests of the BOP equipment will be conducted as follows:

1. Upon any change in rams or other component of the BOP stack and/or choke manifold.
2. At least every thirty (30) days.

Subsequent pressure tests will be at 300 psi and 3,500 psi for the ram BOP's and the annular preventer will be tested to 200 psi (low pressure) and 500 psi on the 13-3/8" casing, and 300 psi (low pressure) and 2,500 psi on the 10-3/4" and 7-5/8" casing.

Blow prevention drills - a drilling crew proficiency test to perform the well shut-in procedure will be performed at least once each week with each crew.

D. BOP control unit:

Unit will be hydraulically operated and have one control station located at least 60' from wellbore and one located on the rig floor.

4. Auxiliary Equipment and Proposed Casing Program

A. Auxiliary equipment:

Kelly cocks - upper and lower installed on kelly.

Safety valve - full opening ball type valve to fit each type and size of drill pipe in use will be available on the rig floor in the open position at all times for use when the kelly is not connected to the drill string.

B. Casing:

| <u>String</u> | <u>Hole Size</u> | <u>Size / Wt./Grade</u> | <u>Depth Interval</u> |
|------------------|------------------|-------------------------|-----------------------|
| Surface | 17-1/2" | 13-3/8" 54.5 K55 | 0 - 250 |
| Intermediate | 12-1/4" | 10-3/4" 40.5 K55 | 0 - 2,900 |
| Intermediate | 9-1/2" | 7-5/8" 29.7 P-110 | 0 - 10,800 |
| Production Liner | 6-1/2" | 5" 18.0 N-80 | 10,300 - 13,900 |

Substitutions regarding weight and grade might be required due to availability.

C. Cement:

| <u>Casing</u> | <u>Depth</u> | <u>Cement Type</u> | <u>Approximate Cement Volume</u> | <u>Top of Cement (Gauge Hole)</u> |
|---------------|---------------|-------------------------------|----------------------------------|-----------------------------------|
| 13-3/8" | 250 | Class "C" | 290 ft ³ | Surface |
| 10-3/4" | 2,900 | Class "C"/Lite | 1,330 ft ³ | Surface |
| 7-5/8" | 10,800 | Class "H" (1st Stage) | 740 ft ³ | 6,700' (DV Tool) |
| | | Class "C"/Lite (2nd Stage) | 785 ft ³ | 2,500' |
| 5" | 10,300-13,900 | Class "H" | 360 ft ³ | 10,300' |

Calculated cement volume will be adequate to cover all hydrocarbon bearing formations.

D. Casing test procedures:

1. Surface casing (13-3/8") - 500 psi test pressure (with cement head after cement has set).
2. Intermediate casing (10-3/4") - 1,000 psi test pressure
3. Intermediate casing (7-5/8") - 2,200 psi test pressure
4. Liner (5") - 2,800 psi test pressure

5. Circulating Medium Characteristics

A. Type and anticipated characteristics of circulating medium.

| Depth Interval | Mud Type | Weight (ppg) | FV (Sec/Qt) | PV (Cp) | YP (#/100 SF) | WL (cc/30 min.) | pH |
|----------------|----------|--------------|-------------|---------|---------------|-----------------|----------|
| 0- 250 | Spud | 8.3-8.5 | 26-28 | | | NO CONTROL | |
| 250- 2900 | SBW | 10-10.2 | 28-30 | | | NO CONTROL | 9.5-10.5 |
| 2900-10800 | FW/CBW | 8.6-9.2 | 28-34 | | | NO CONTROL | 9.5-10.5 |
| 10800-13900 | BWM | 10-13.5 | 30-45 | 8-15 | 10-18 | 5-8 | 9.5-10.5 |

B. Quantities of mud and weighting materials:

A sufficient inventory of mud materials and treating equipment will be maintained to control mud properties adequately for well control and drilling requirements.

C. Mud system monitoring equipment:

Trip tank - tank will be used to keep hole full of fluid on trips and to monitor hole behavior on trips.

6. Anticipated Type and Amount of Coring, Testing, and Logging

Coring program: none anticipated.

Drill stem tests: one (1) in the Delaware.

| Logging program: | Logs | From | To |
|------------------|-------------|---------|--------|
| | GR-DLL/MSFL | 2,900 | TD |
| | GR-LDT/CNL | 2,900 | TD |
| | GR-CNL | Surface | TD |
| | Dipmeter | 11,800 | 12,900 |

7. Bottom Hole Pressure and Other Potential Hazards

A. No H₂S is anticipated.

B. Possible abnormal pressure in

- Wolfcamp below 10,850' (6,600 psi, EMW 11.7 ppg)
- Upper Penn (7,182 psi EMW 12.0 ppg)
- Strawn (7,300 psi EMW 12.0 ppg)
- Atoka (8,038 psi EMW 13.0 ppg)

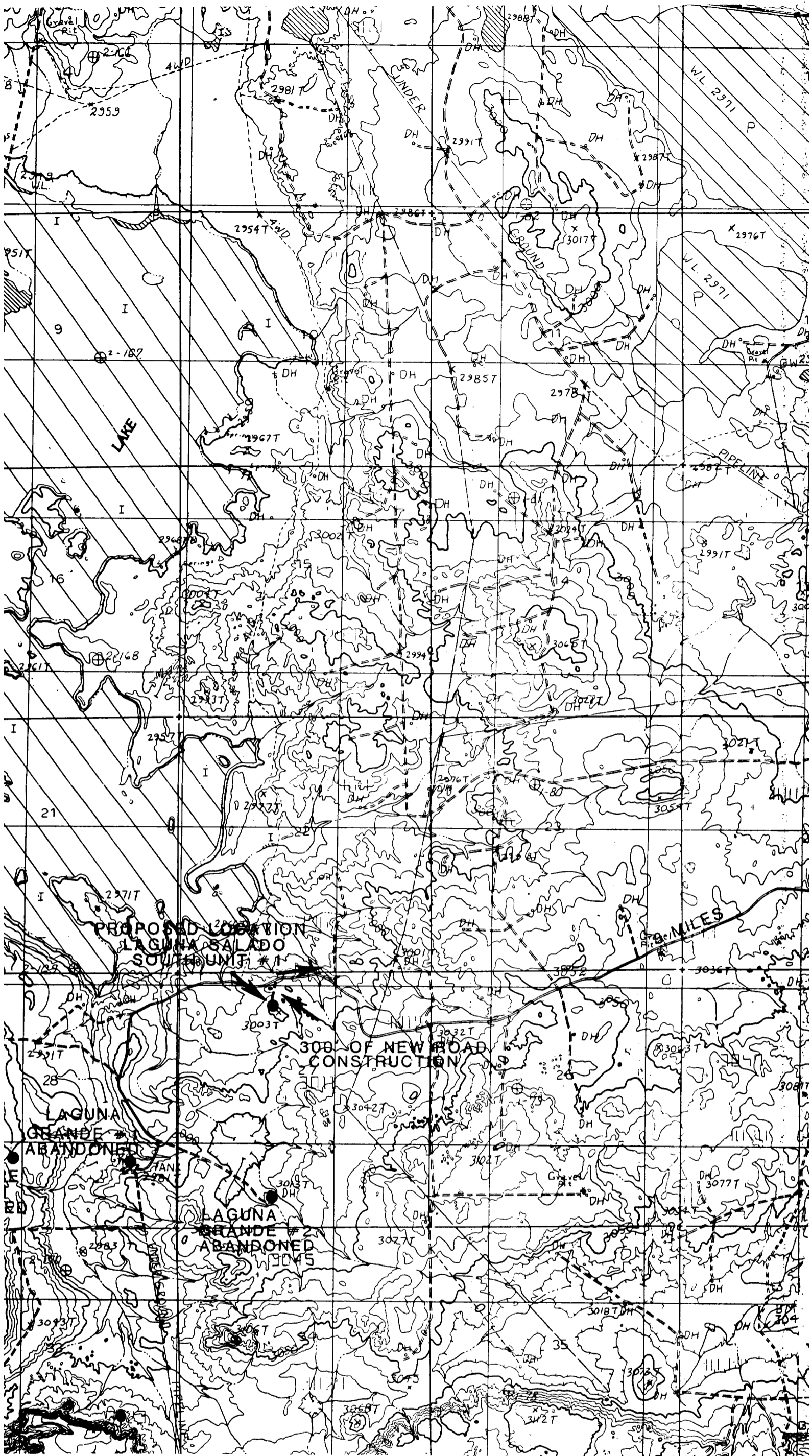
8. Other Facets of the Proposed Operation

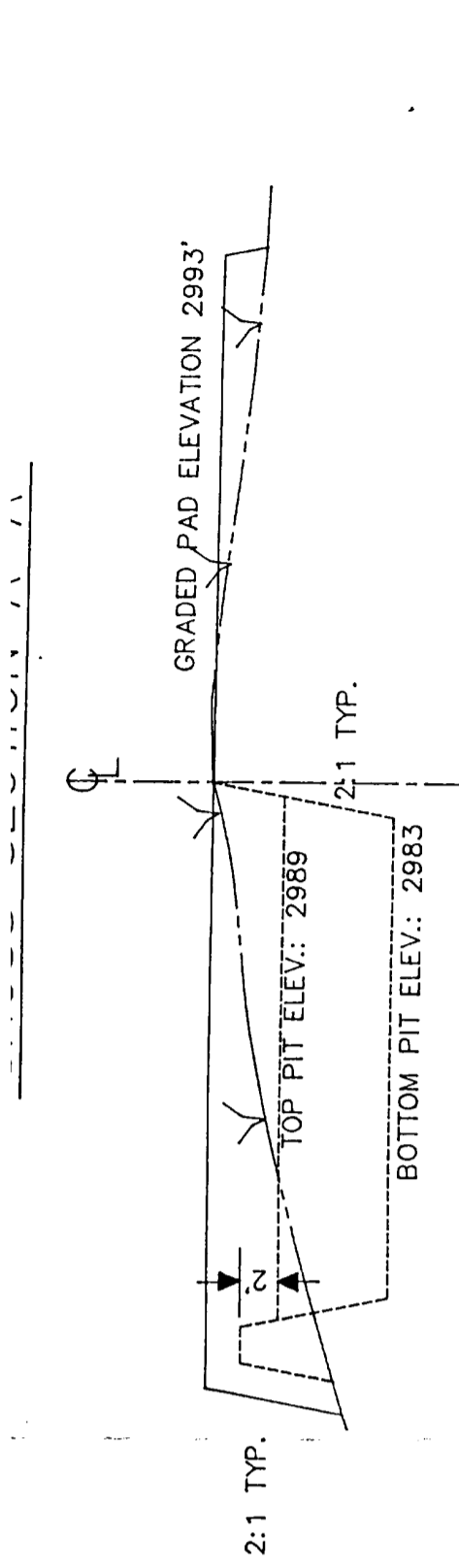
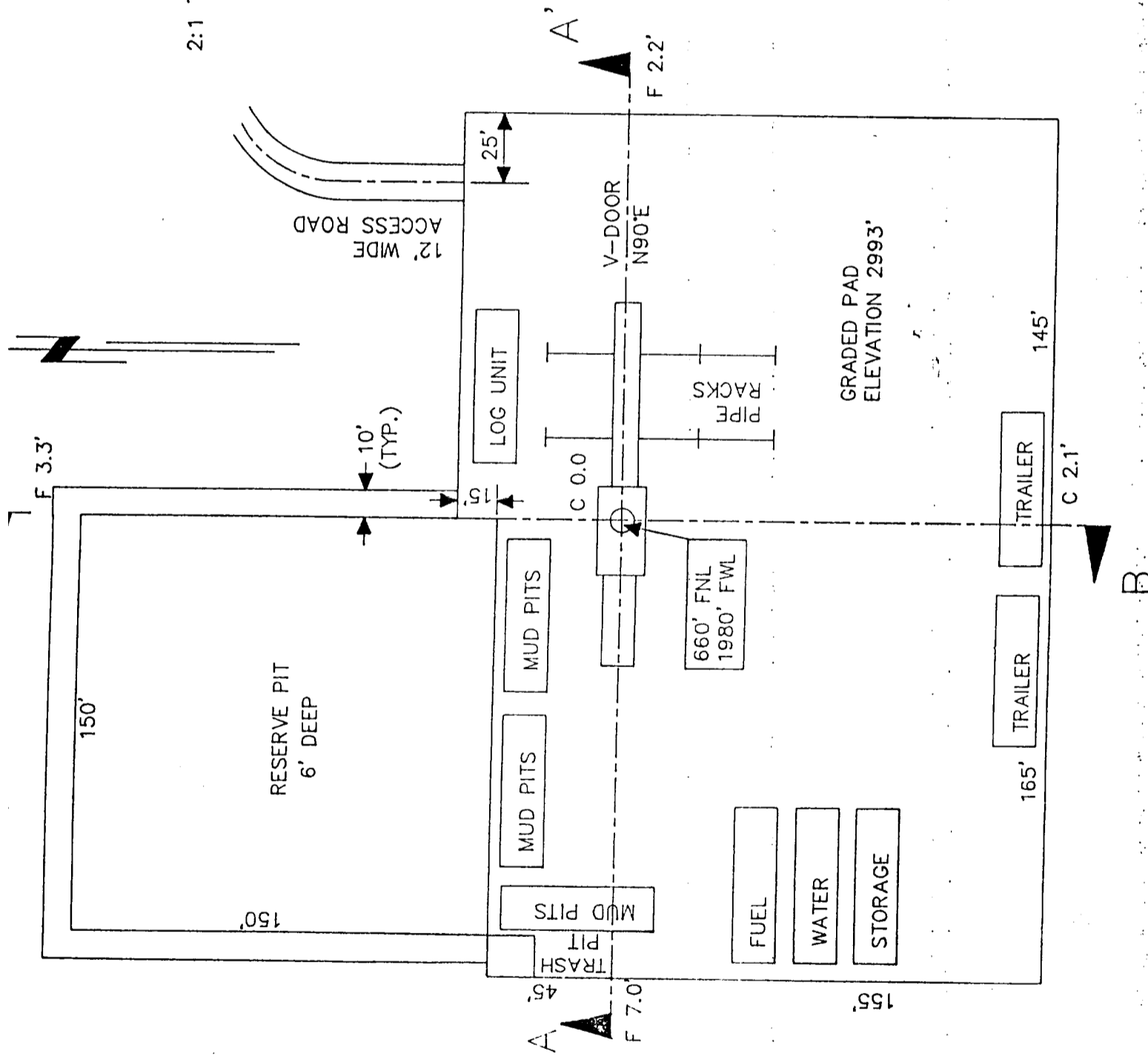
Completion operations: Perforate, stimulate, and production test the Atoka/Morrow interval based on electric logs and shows.

Contact W. F. Burchard at 915/686-4353 or Bob Grady at 915/686-4304 with any questions concerning this eight-point plan.

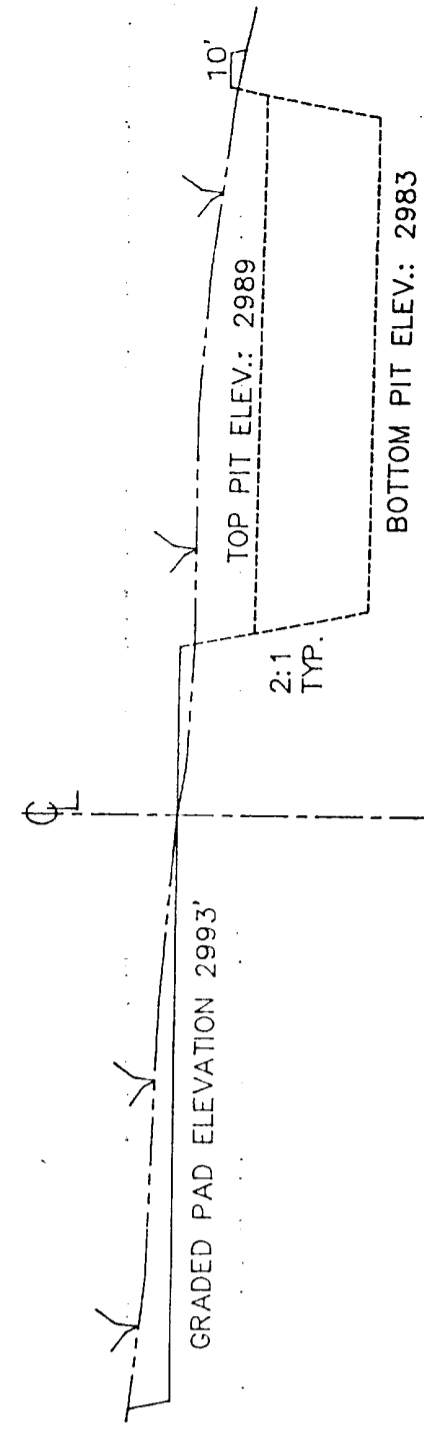
W. F. Burchard

W. F. Burchard





CROSS SECTION B-B'



HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'