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United States Department of the Interior

GEOLOGICAL SURVEY
P. O. Drawer U
Artesia, New Mexico 88210

RECEIVED

AUG 17 1979

O. C. C.
ARTESIA, OFFICE

August 13, 1979

Tenneco Oil Company
6800 Park Ten Blvd.
Suite 200 North
San Antonio, Texas 78213

TENNECO OIL COMPANY Federal 33-C No. 2 1010 FNL 1710 FWL Sec. 33, T17S, R29E Eddy County Lease No. NM-14845
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Above Data Required on Well Sign

Gentlemen:

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 9,200 feet to test the Wolfcamp formation is hereby approved subject to compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. New Mexico Oil Conservation Division approval of this nonstandard location is required prior to commencing any operations.
2. Drilling operations authorized are subject to compliance with the attached General Requirements for Oil and Gas Operations on Federal Leases, dated July 1, 1978.
3. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the Surface Use Plan and these Conditions of Approval including the attached General Requirements.
4. Submit a Daily Report of Operations from spud date until the well is completed and the Well Completion Report (form 9-330) is filed. The report should be not less than 8" x 5" in size and each page should identify the well.
5. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Guidelines. The color used should simulate sandstone brown (Federal Standard Color No. 595A, color 20318 or 30318).
6. Before drilling below the 8-5/8" casing, the blowout preventer assembly will consist of a minimum of one annular type and two ram type preventers.
7. A kelly cock will be installed and maintained in operable condition.



8. After setting the 8-5/8" casing string and before drilling into the Wolfcamp formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures by an independent service company. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report.
9. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be installed and operating before drilling into the Wolfcamp formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:
 - (1) A recording pit level indicator to determine pit volume gains and losses.
 - (2) A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.
 - (3) A flow sensor on the flow-line to warn of any abnormal mud returns from the well.
10. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.

Sincerely yours,

(Orig. Sgd.) ALBERT R. STALL

Albert R. Stall
Acting District Engineer

EXHIBITS ATTACHED:

"A"	Location and Elevation Plat
"B"	The Ten-Point Compliance Program
"C"	The Blowout Preventer Diagram
"D"	The Multi-Point Requirements for A.P.D.
"E"	Access Road Map to Location
"F"	Radius Map of Field
"G"	Drill Pad Layout & Production Facilities
"H"	Drill Rig Layout

4. The Proposed Casing Program

Casing Design

<u>CASING STRING</u>	<u>HOLE SIZE</u>	<u>INTERVAL</u>	<u>SECTION LENGTH</u>	<u>SIZE (OD)</u>	<u>WEIGHT, GRADE & JOINT</u>	<u>NEW OR USED</u>	<u>MUD * WEIGHT</u>	<u>SF t</u>	<u>SF c</u>	<u>SF b</u>
Conductor	--	0-40'	40'	20"	-----	---	---	--	--	--
Surface	17½"	0-300'	350'	13-3/8"	48# H-40 ST&C	New	8.8	16.8	3.7	High
Intermediate	11"	0-3400'	3400'	8-5/8"	32# K-55 ST&C	New	10.0	3.7	1.4	2.7
Production	7-7/8"	0-5400'	5400'	5½"	15.5# K-55 ST&C	New	9.5	1.5	1.5	1.4
		5400'-9200'	3800'	5½"	17# K-55 ST&C	New	9.5	3.4	1.1	1.5

* At casing setting

Cement Design

In setting 13-3/8" and 8-5/8", cement will be circulated.
5½" pipe will be cemented from 7650' to 9200' (I.D.)

5. The Operator's Minimum Specifications for Pressure Control

EXHIBIT "C" is a schematic diagram of the blowout preventer equipment. The BOP's will be hydraulically tested to 3000 psi. after nipping up and after any use under pressure. Pipe rams will be operationally checked each 24-hour period, as will blind rams and annular preventer each time pipe is pulled out of the hole. Such checks of BOP will be noted on daily drilling reports.

Accessories to BOP will include a kelly cock, floor safety valve, drill string BOP and choke manifold with pressure rating equivalent to the BOP stack.

6. The Type and Characteristics of the Proposed Circulating Muds

Mud system will be gel-chemical with adequate stocks of sorptive agents on site to handle possible spills of fuel and oil on the surface. Heavier muds will be on location to be added if pressure requires.

<u>Interval</u>	<u>Mud Weight (ppg)</u>	<u>Viscosity (sec.)</u>	<u>Fluid Loss</u>	<u>Remarks</u>
0-300'	8.8	34	NC	
350'-3400'	10.0	29	NC	Brine
3400'-9200'	9.5	34	10 cc.	

7. The Auxiliary Equipment to be Used

- (a) A kelly cock will be kept in the string at all times.
- (b) A float will not be used at the bit.
- (c) Flow-show and PVT will be used in monitoring mud system.
- (d) A stabbing valve will be on the floor to be stabbed into the drill pipe when kelly is not in the string.

8. The Testing, Logging and Coring Programs to be Followed

- (a) DST's are anticipated in the Wolf Camp and Cisco horizons. Other zones will be tested as needed.
- (b) The logging program will consist of a Dual Laterolog, a Density/Neutron from 3550' to T.D. and Gamma Ray to surface. Any other logs will be determined at well site to best evaluate any shows.
- (c) No coring is anticipated.
- (d) Stimulation procedures will consist of acidizing if indicated after evaluation of logs. Appropriate Sundry Notice will be submitted.

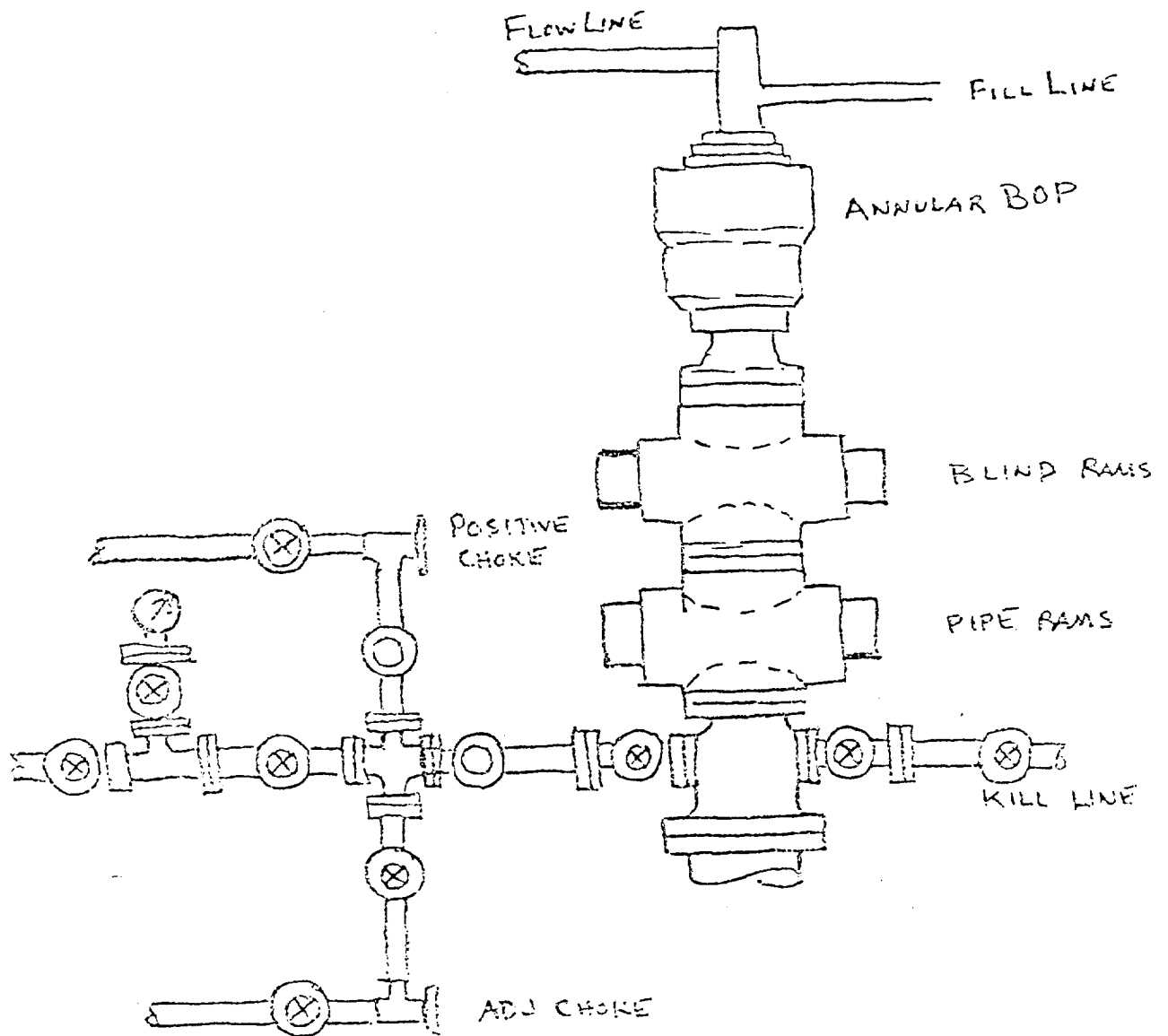
9. Any Anticipated Abnormal Pressures or Temperatures

Possible high pressures are anticipated in Wolf Camp horizon. These will be contained by heavy drilling mud. Bottom hole pressure in 1974 was 3730' psig. Pressure buildup in 1976 indicates BHP of 2200' psig.

No hydrogen sulfide or other hazardous fluids or gases have been found, reported or known to exist at these depths in the area.

10. Anticipated Starting Date and Duration of the Operations

The anticipated starting date is set for June 15, 1979, or as soon as possible after examination and approval of drilling requirements. Operations should be completed within 50 days.



All equipment will be 3000 psi working pressure, or better.

EXHIBIT "D"

MULTI-POINT REQUIREMENTS TO ACCOMPANY A.P.D.

Attached to Form 9-331C
Tenneco Oil Company
#2 Federal 33-C
NE NW Sec. 33 T17S R29
Eddy County, New Mexico

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JUN 8 1979

**U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO**

1. Existing Roads

- A. The proposed well site and elevation plat is shown as EXHIBIT "A".
- B. The distance from Artesia, New Mexico is 18.8 miles. Proceed East along Highway #83 for a distance of 17.5 miles, thence Southeast along oil field road 1.3 miles to location, as shown on EXHIBIT "E".
- C. All roads to location are color-coded on EXHIBIT "E". A new access road 100 feet from the existing oil field road will be required, as shown on EXHIBIT "E".
- D. N/A
- E. This is a development well. All existing roads within a one-mile radius are shown on EXHIBIT "E".
- F. The existing roads need no improvement. Maintenance will be performed as required.

2. Planned Access Roads

Map showing all necessary access roads to be constructed or reconstructed is shown as EXHIBIT "E" for the following:

- (1) The maximum width of the running surface of the 100 feet of access road, extending beyond the existing oil field road will be 18'.
- (2) The grade will be 8% (eight percent) or less.

2. Planned Access Roads - cont'd.

- (3) No turn outs are planned.
- (4) Appropriate water bars will be constructed to assure drainage off location to conform with the natural drainage pattern.
- (5) No culverts are needed. No major cuts or fills are anticipated along access road during drilling operation.
- (6) Surfacing materials will be native soil.
- (7) No gates, cattle guards, or fence cuts are needed.
- (8) The new access road to be constructed was staked and centerline flagged, as shown on EXHIBIT "E".

3. Location of Existing Wells

For all existing wells within a one-mile radius of development well, see EXHIBIT "F".

- (1) There are no water wells within a one-mile radius of this location.
- (2) Any abandoned wells in this one-mile radius are shown on EXHIBIT "F".
- (3) There are no temporarily abandoned wells.
- (4) There are no disposal wells.
- (5) There are no wells presently being drilled.
- (6) There are two (2) wells producing from Wolf Camp horizon within a one-mile radius. Federal Comm. #1 from Morrow.
- (7) There are no shut-in wells.
- (8) There are no injection wells.
- (9) There are no monitoring or observation wells for other uses.

4. Location of Existing and/or Proposed Facilities

- A. Within a one-mile radius of location the following existing facilities are owned or controlled by lessee/operator:

4. Location of Existing and/or Proposed Facilities - cont'd.

- (1) Tank Batteries: One condensate tank at #1-33.
 - (2) Production Facilities: Gas production unit at #1-33.
 - (3) Oil Gathering Lines: None
 - (4) Gas Gathering Lines: None
 - (5) Injection Lines: None
 - (6) Disposal Lines: None
- B. If the well is productive, new facilities will be as follows:
- (1) Production facilities will be located on solid ground of cut area of drill pad, as shown on EXHIBIT "G".
 - (2) Well flow lines will not be buried and will be on the well site and battery site.
 - (3) Facilities will be 325 feet long and 300 feet wide.
 - (4) All construction materials for battery site and pad will be obtained from site. No additional material from outside sources is anticipated.
 - (5) Any necessary pits will be fenced and flagged to protect livestock and wildlife.
- C. Rehabilitation, whether well is productive or dry, will be made on all unused areas in accordance with B.L.M. stipulations.

5. Location and Type of Water Supply

- A. Water will be obtained from a commercial water hauler, or from an existing local well, if available.
- B. Water will be transported by truck over existing roadways.
- C. No water well is to be drilled on this lease.

6. Construction Materials

- A. No construction materials are needed for drilling and access roads into the drilling location unless well is productive. The surface soil materials will be sufficient or will be purchased from Dirt Contractor as needed. Pad surface material will be compacted Caliche.
- B. No construction materials will be taken off Federal or Indian land.
- C. All surface soil materials for construction of access roads are sufficient.
- D. All major access roads presently exist as shown on EXHIBIT "E".

7. Handling of Waste Materials and Disposal

- (1) Drill cuttings will be buried in the reserve pit and covered.
- (2) Drilling fluids will be handled in the reserve pit.
- (3) Any fluids produced during drilling test or while making production test will be collected in a test tank. If a test tank is not available during drilling, fluids will be handled in reserve pit. Any spills of oil, gas, salt water or other noxious fluids will be cleaned up and removed.
- (4) Chemical facilities will be provided for human waste.
- (5) Garbage and non-flammable waste and salts and other chemicals produced during drilling or testing will be handled in trash pit. Flammable waste will be disposed of in burn pit. Drill fluids, water, drilling mud and tailings will be kept in reserve pit, as shown on EXHIBIT "H". The trash and/or burn pit will be totally enclosed with small mesh wire to prevent wind scattering trash before being burned or buried. Reserve pit will be fenced on three sides and the fourth side fenced upon removal of the rig.
- (6) After the rig moves out, all materials will be cleaned up and no adverse materials will be left on location. Any dangerous open pit will be fenced during drilling and kept closed until such time as the pit is leveled.

8. Ancillary Facilities

No air strip, camp or other facilities will be built during drilling of this well.

9. Well Site Layout

- (1) EXHIBIT "G" is the Drill Pad Layout as staked, with elevations, by Powers Elevation of Durango, Colorado. Cuts and fills have been drafted to visualize the planned cut across the location spot and the deepest part of the pad. Topsoil will be stockpiled per B.L.M. specifications determined at time of pre-drill inspection.
- (2) EXHIBIT "H" is a plan diagram of the proposed rig and equipment, reserve pit, burn and trash pit, pipe racks and mud tanks. No permanent living facilities are planned. There will be a trailer on site.
- (3) EXHIBIT "G" is a diagram showing the proposed production facilities layout.
- (4) The reserve pits will be lined. Steel mud tanks may be used during drilling operations.

10. Plans for Restoration

- (1) Backfilling, leveling and contouring are planned as soon as all pits have dried. Waste disposal and spoils materials will be buried or hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
- (2) The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula provided by the B.L.M. Revegetation is recommended for road area, as well as around drill pad.
- (3) Three sides of the reserve pit will be fenced during drilling operations. Prior to rig release, the reserve pit will be fenced on the fourth side to prevent livestock or wildlife from becoming entrapped; and the fencing will be maintained until leveling and cleanup are accomplished.
- (4) If any oil is on the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with wire mesh.
- (5) The rehabilitation operations will begin immediately after the drilling rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and revegetation is considered best in Spring, 1980 unless requested otherwise.

11. Other Information

- (1) The soil is sandy. No distinguishing geological features are present. The area is covered with cactus and sagebrush. There are lizards and rabbits in the area. The topography is a very gradual slope to the Southwest.
- (2) There is little apparent use of this land other than for oil and gas production. The surface is owned by the U.S. Government.
- (3) There is no live water within several miles.

The closest occupied dwellings are 7 miles East at Loco Hills.

There are no known archaeological, historical, or cultural heritages that will be disturbed by this drilling.

- (4) There are no reported restrictions or reservations noted on the oil and gas lease.
- (5) Drilling is planned for on or about June 15, 1979. It is anticipated that the casing point will be reached within 50 days after commencement of drilling.

12. Lessee's or Operator's Representative

George Lapaseotes
Agent Consultant for
Tenneco Oil Company
600 South Cherry Street
Suite 1201
Denver, Colorado 80222
Phone (303) 321-2217

Bob Dixon
Tenneco Oil Company
6800 Park Ten Blvd.
Suite 200 North
San Antonio, Texas 78213
Phone (512) 734-8161

13. Certification

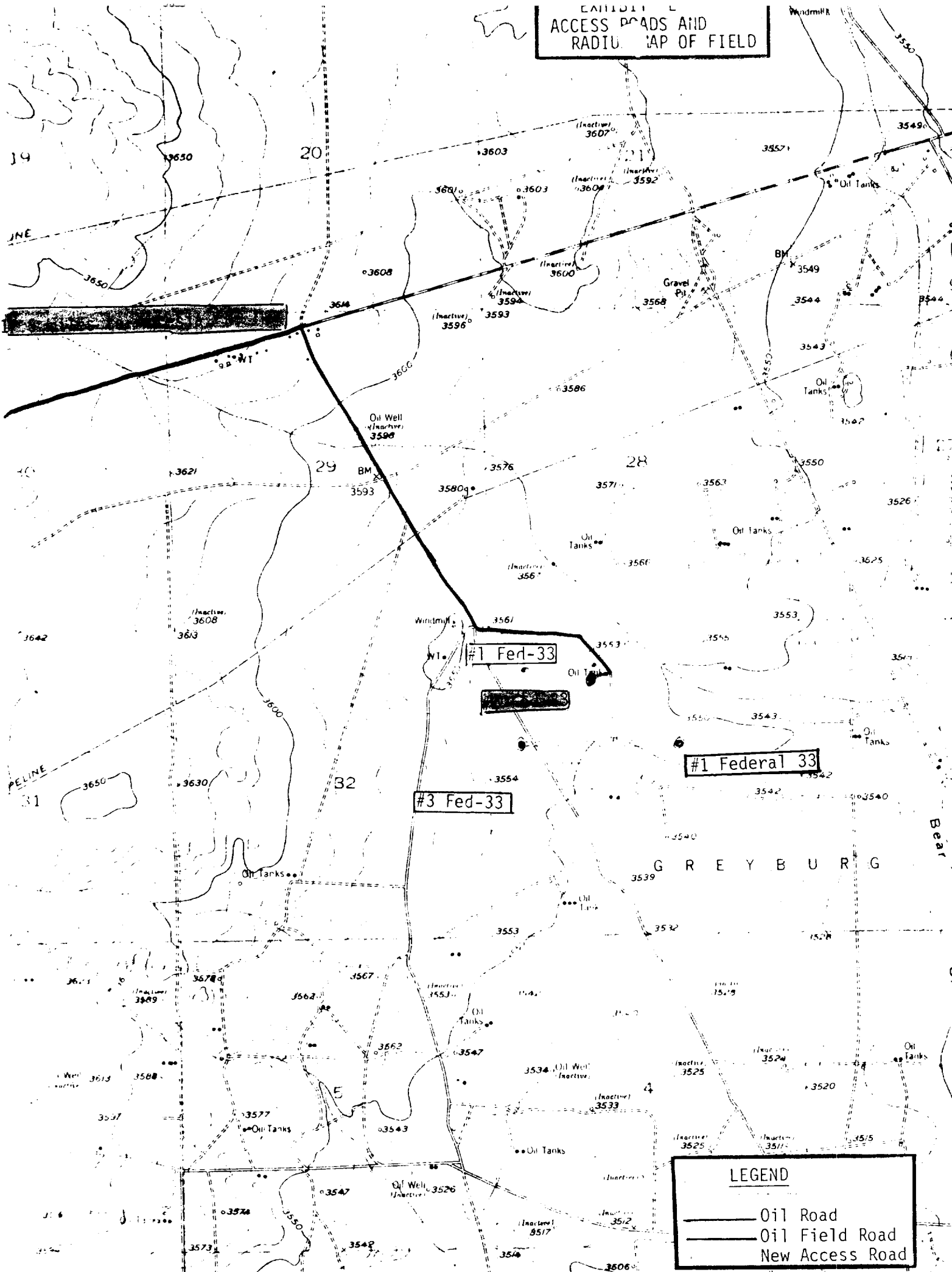
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Tenneco Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date

6-5-79

George Lapasotes
George Lapasotes
Agent Consultant for
Tenneco Oil Company

EXISTING
ACCESS ROADS AND
RADIO MAP OF FIELD



LEGEND

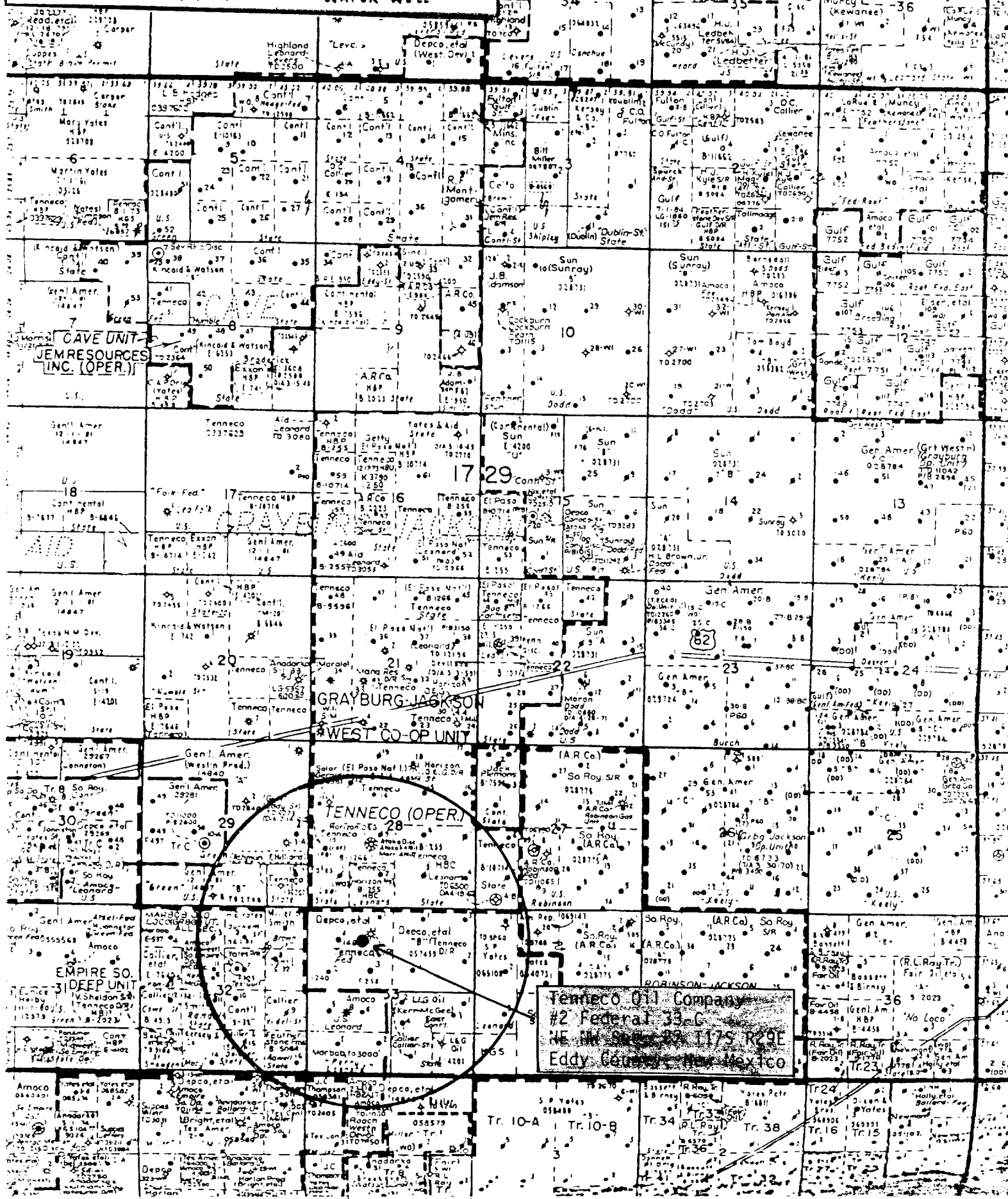
- Oil Road
- Oil Field Road
- New Access Road

EXHIBIT "F"
Radius Map of Location

OIL WELL

ABANDONED GAS WELL

WATER WELL

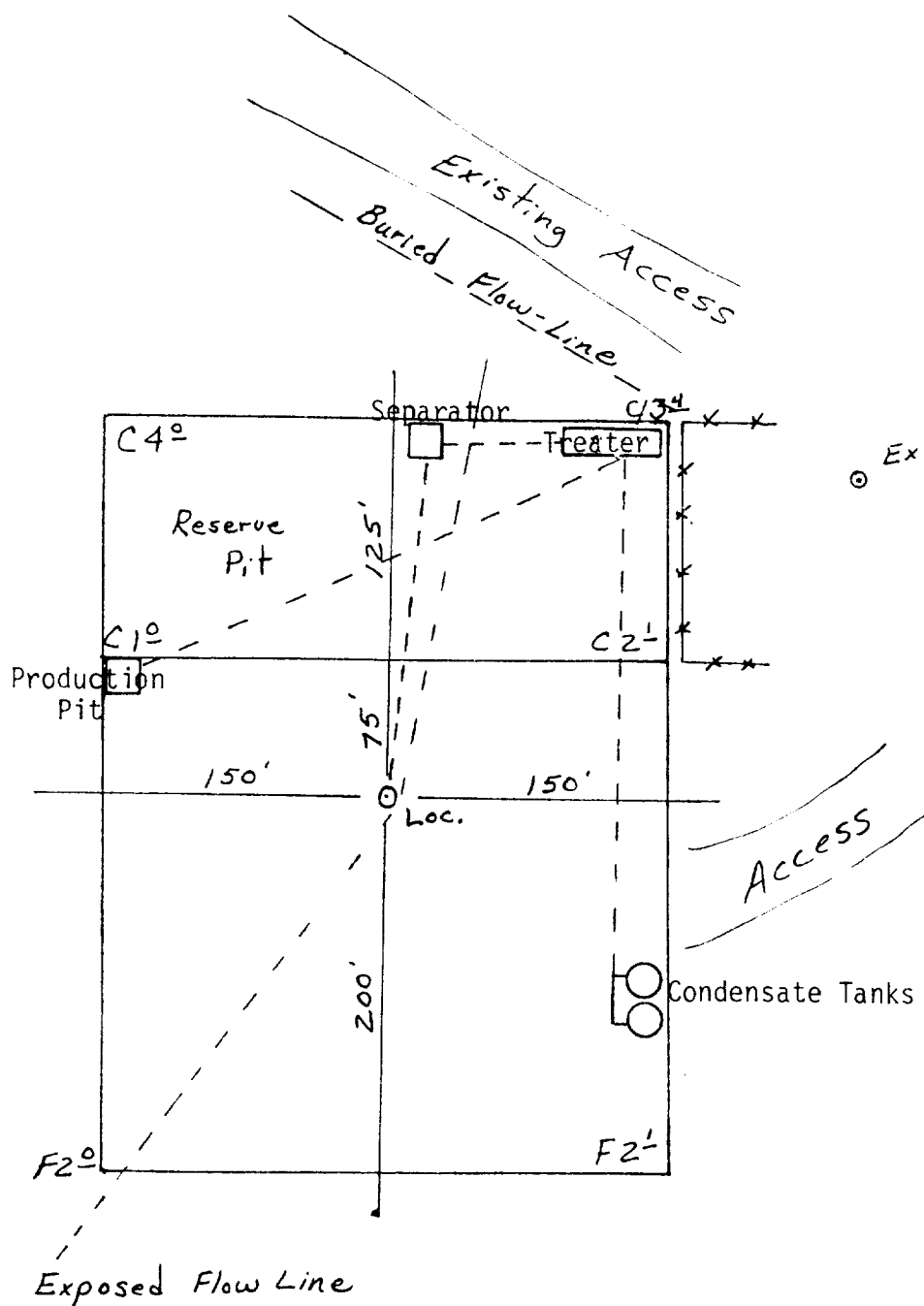
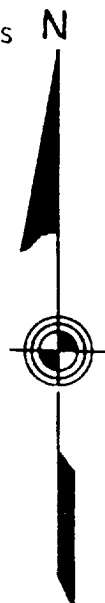




POWERS ELEVATION COMPANY, INC.

EXHIBIT "G"

Drill Pad Layout &
Production Facilities



Existing Well

Scale 1"=100'

Tenneco Oil Co.

2 Federal 33-C

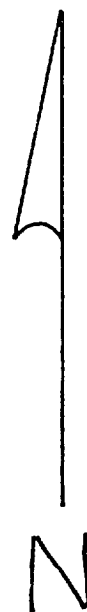
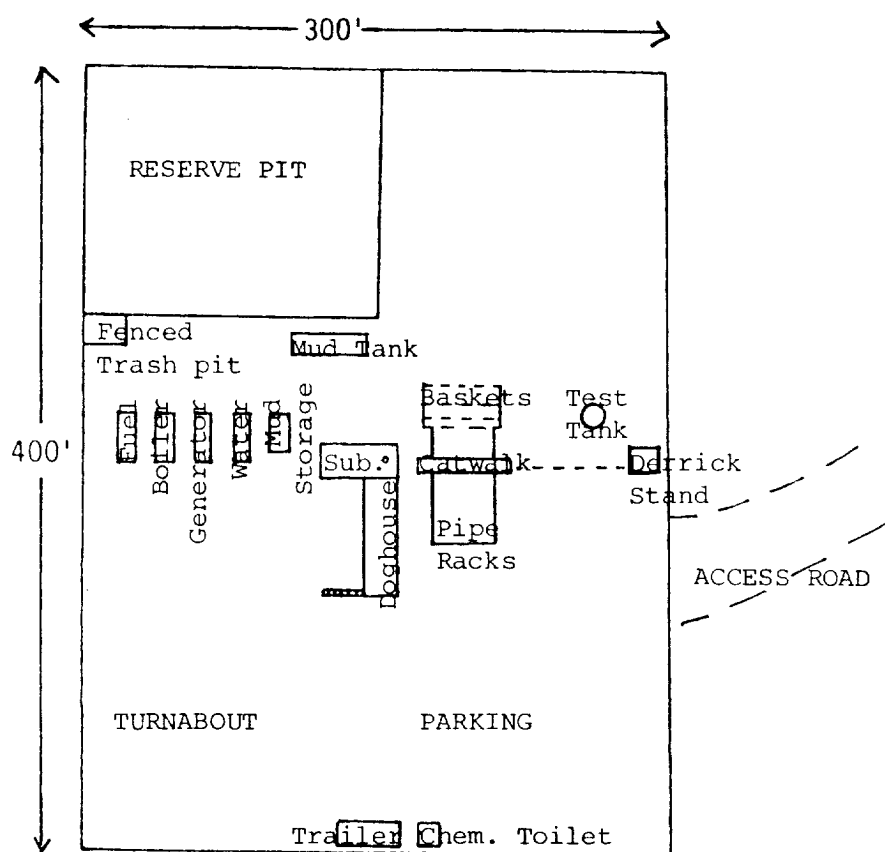
910' FNL 1710 FWL

Sec. 33, T-17-S, R-29-E

Eddy Co, N. Mex.

Tenneco Oil Company
#2 Federal 33-C
910' FNL & 1710' FWL
Sec. 33 T17S R29E
Eddy County, New Mexico

EXHIBIT "H"
Drill Rig Layout



Scale: 1" = 100'