

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

30-043-24343

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  
Sun Oil Company

3. ADDRESS OF OPERATOR  
2525 Northwest Expressway, Oklahoma City, Oklahoma 73112

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*  
At surface 1120'FNL & 1120'FWL (NW NW)  
At proposed prod. zone same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
5.2 miles Northwest of Farmington, New Mexico

10. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 1120'

16. NO. OF ACRES IN LEASE 1920

17. NO. OF ACRES ASSIGNED TO THIS WELL 320 *N 319.50*

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 2640'+

19. PROPOSED DEPTH 6900'

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 5911'GR

22. APPROX. DATE WORK WILL START\* March 15, 1980

5. LEASE DESIGNATION AND SERIAL NO. 047 NM  
6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A  
7. UNIT AGREEMENT NAME N/A  
8. FARM OR LEASE NAME New Mexico Federal "N"  
9. WELL NO. #4E  
10. FIELD AND POOL, OR WILDCAT Basin Dakota  
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 7 T30N R12W  
12. COUNTY OR PARISH San Juan  
13. STATE New Mexico

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	8-5/8" new	24# K-55 ST&C	350'	250 sxs Class "A" plus additives
7-7/8"	4-1/2" new	9.5# K-55 ST&C	6900'	425+1300 sxs plus additives

1. Drill 12-1/4" hole and set 8-5/8" surface casing to 350' with good returns.
2. Log B.O.P. checks in daily drill reports and drill 7-7/8" hole to 6900'.
3. Run tests if warranted and run 4-1/2" casing if productive.
4. Run logs as needed and perforate and stimulate as needed.

EXHIBITS ATTACHED:

- "A" Location & 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 & Cut-Fill Cross Section
- "H" Drill Rig Layout
- "K" Fracturing Program Layout *good exhibit*

15. 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.

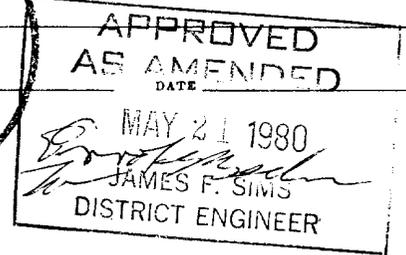
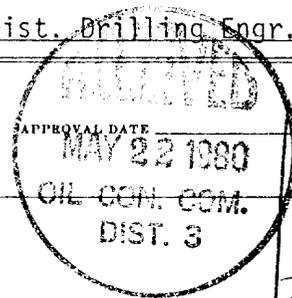
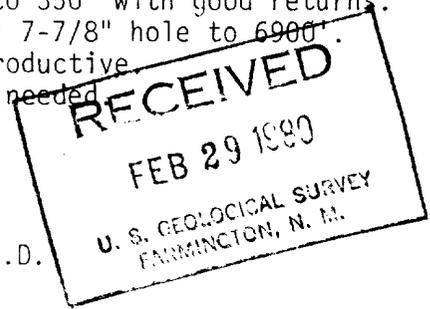
24. SIGNED *R. L. Maness* TITLE Dist. Drilling Engr. DATE 2/25/80  
(This space for Federal or State office use)

PERMIT NO. APPROVAL DATE MAY 22 1980 OIL CON. COM. DIST. 3 APPROVED AS AMENDED DATE

APPROVED BY *James F. Sims* TITLE DISTRICT ENGINEER  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

NMCCC



B

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-12B  
Effective 1-1-65

EXHIBIT "A"-Location & Elevation Plat

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

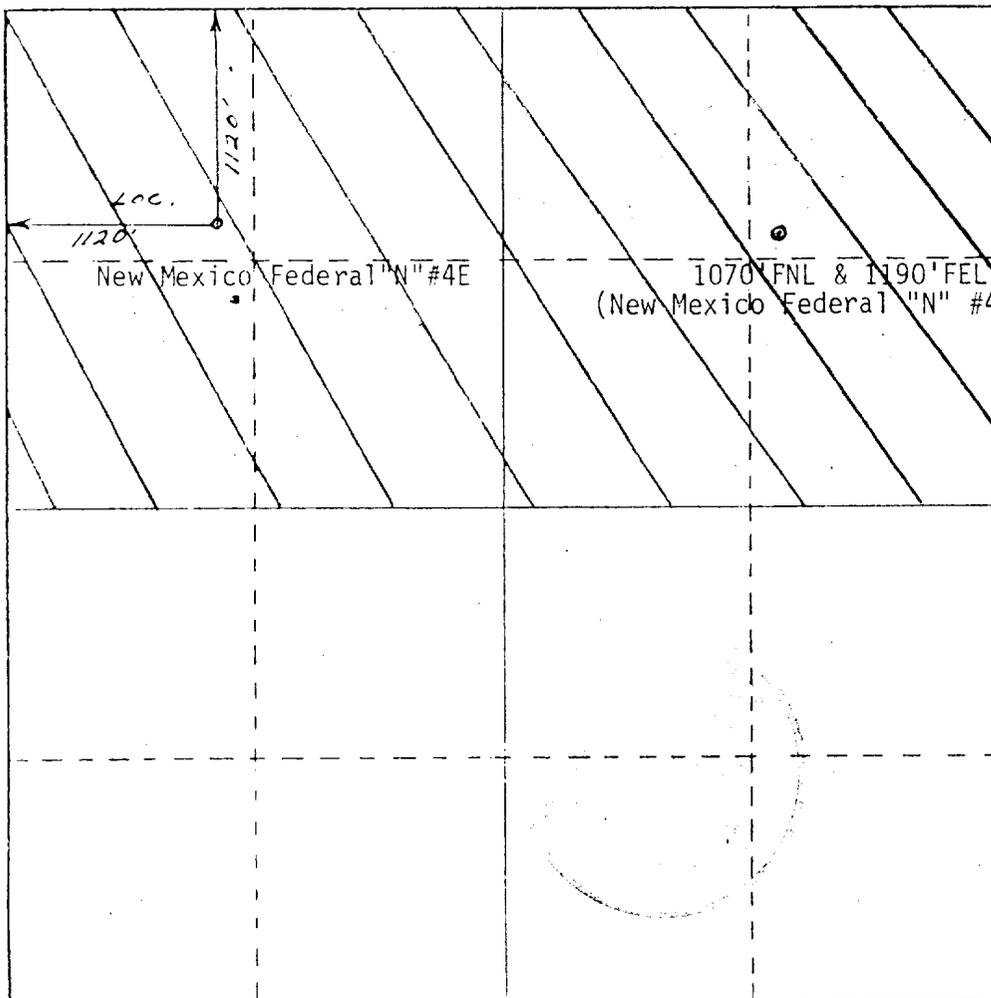
Operator <b>Sun Oil Company</b>		Lease <b>USA 047 NM</b>			Well No. <b>Federal N#4E</b>
Section <b>D</b>	Section <b>7</b>	Township <b>30 North</b>	Range <b>12 West</b>	County <b>San Juan</b>	
Actual Footage Location of Well: <b>1120'</b> feet from the <b>North</b> line and <b>1120'</b> feet from the <b>West</b> line					
Ground Level Elev. <b>5911'</b>	Producing Formation <b>Basin Dakota</b>		Pool <b>Basin Dakota</b>	Dedicated Acreage: <b>320</b> 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.

Name **George Lapaseotes**  
 V. Pres. Powers Elevation  
 Position  
 Agent Consultant for  
 Company  
**Sun Oil Company**  
 Date  
**2/25/80**

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.



**17 Feb. 80**

Date Surveyed  
**Gerald G. Huddleston**  
 Registered Professional Engineer  
 and/or Land Surveyor

**6844**

Certificate No.

330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500



POWERS ELEVATION

OIL WELL ELEVATIONS AND LOCATIONS  
CHERRY CREEK PLAZA, SUITE 1225  
800 SOUTH CHERRY STREET  
DENVER, COLORADO 80222  
PHONE NO. 303/321-2217

February 26, 1980

U.S. Geological Survey  
Mr. James Simms, District Engineer  
P.O. Box 959  
Farmington, New Mexico 87401

RE: Filing NTL-6 and A.P.D. Form 9-331C  
Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 T30N R12W  
1120'FNL & 1120'FWL  
San Juan County, New Mexico

Dear Mr. Simms:

Enclosed are five copies of the NTL-6 program and A.P.D. Form 9-331C for the above-referenced well location.

The archaeological report is not included with the NTL-6 but will be forwarded to your office, and to the B.L.M. office from our Archaeological Division in Eagle, Colorado.

We shall appreciate your earliest attention to this matter.

Sincerely yours,

POWERS ELEVATION

*Connie L. Frailey*  
Connie L. Frailey

CLF/cw  
Enclosure

cc: Ralph Maness - Sun Oil Company - Oklahoma City, Oklahoma  
Gerald Huddleston - Powers Elevation - Durango, Colorado  
Allen Construction - Farmington, New Mexico

Powers Elevation  
Suite 1201 Cherry Creek Plaza  
600 So. Cherry Street  
Denver, Colorado 80222

RE: Filing NTL-6 and A.P.D. Form 9-331C  
Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 T30N R12W  
1120'FNL & 1120'FWL  
San Juan County, New Mexico

Gentlemen:

This is to confirm our understanding with you that Powers Elevation is authorized to act as our agent in the following capacities:

- A. In surveying, staking, and preparing and filing necessary applications, permits and compliance programs, including complete NTL-6 reports.
- B. In accepting on our behalf any changes to location, proposed facilities and/or surface use plan and compliance program requested at on-site inspections, when we are unable to have a Company representative present. Such changes will then be binding upon us or designated Operator.
- C. In performing the following rehabilitation work: None

Powers' responsibilities do not include supervision of drilling, completion or rehabilitation operations, except as specifically noted in "C" above.

SUN OIL COMPANY  
Company

by: J. P. Hendrup  
Title DISTRICT MANAGER  
Date 1/24/80

EXHIBIT "B"

TEN-POINT COMPLIANCE PROGRAM

OF NTL-6 APPROVAL OF OPERATIONS

Attached to Form 9-331C  
Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 T30N R12W  
1120'FNL & 1120'FWL  
San Juan County, New Mexico

1. The Geologic Surface Formation

Torrejon - Puerco

2. Estimated Tops of Important Geologic Markers

Ojo Alamo	780'
Picture Cliffs	1953'
Cliff House	3530'
Point Lookout	4329'
Gallup	5596'
Basin Dakota	6535'
Total Depth	6900'

3. \* Estimated Depths of Anticipated Water, Oil, Gas or Minerals

Ojo Alamo	780'	Water
Picture Cliffs	1953'	Gas
Cliff House	3530'	Gas
Point Lookout	4329'	Gas
Gallup	5596'	Gas
Basin Dakota	6535'	Gas

4. The Proposed Casing Program

<u>HOLE SIZE</u>	<u>INTERVAL</u>	<u>SECTION LENGTH</u>	<u>SIZE (OD)</u>	<u>WEIGHT, GRADE &amp; JOINT</u>	<u>NEW OR USED</u>
12-1/4"	0-350'	350'	8-5/8"	24# K-55 ST&C	New
7-7/8"	0-6900'	6900'	4-1/2"	9.5# K-55 ST&C	New

Cement Program

- (a) Surface Casing: Set 8-5/8" casing at 350' and cement with 250 sacks Class "A" + 2% CaCl<sub>2</sub> + 1/4#/sack Flake. Circulate to surface.
- (b) Production Casing: 1st Stage: Set 4 1/2 casing at 6900' and cement with 425 sacks light + 6% Gel + 10#/sack Gilsonite. Tail in with 100 sacks Class "A" .75% CFR-2.  
2nd Stage: Set DV tool at 4200' and cement with 1300 sacks 50-50 Pozmix + 2% Gel + 10#/sack Gilsonite. Calculated top of cement = 650'.

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 1/3 working pressure of casing 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 water-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>WEIGHT</u>	<u>WATER LOSS</u>	<u>VISCOSITY</u>	<u>MUD TYPE</u>
0-350'	8.5-9.0ppg	NC	28-40 sec.	Water-Gel & Lime
350'-4000'	8.8-9.5ppg	15-25cc	28-30 sec.	Water-Gel & Soda Ash
4000'-6900'	9.0-9.5ppg	10-12cc	34-36 sec.	Low Solids-Dispersed Loss Circ. Material as Required

7. The Auxiliary Equipment to be Used

- (a) A kelly cock will be kept in the string.
- (b) A float will not be used at the bit.

- (c) Neither a mud logging unit or a gas detecting device will be monitoring the system. The system will be monitored visually.
- (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) No DST's are anticipated.
- (b) The logging program will consist of a DIL-LL from 350' to total depth, and a CNL-FDC from 350' to total depth; other logs will be determined at well site to best evaluate any shows.
- (c) No coring is anticipated.
- (d) Completion program will consist of acidizing perforations down the tubing and cleaning up; and fracturing down the casing with gelled water and sand. Maximum treating pressure will be 3500#. See EXHIBIT "K" for equipment layout diagram.

9. Any Anticipated Abnormal Pressures or Temperatures

No abnormal pressures or temperatures have been noted or reported in wells drilled in this area nor at the depths anticipated in this well. Bottom hole pressure expected is 3250 psi.

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 March 15, 1980, or as soon as possible after examination and approval of drilling requirements. Operations should be completed within 30 days after spudding the well and drilling to casing point.

BLOWOUT PREVENTER  
DIAGRAM

PLAN VIEW - CHOKE MANIFOLD

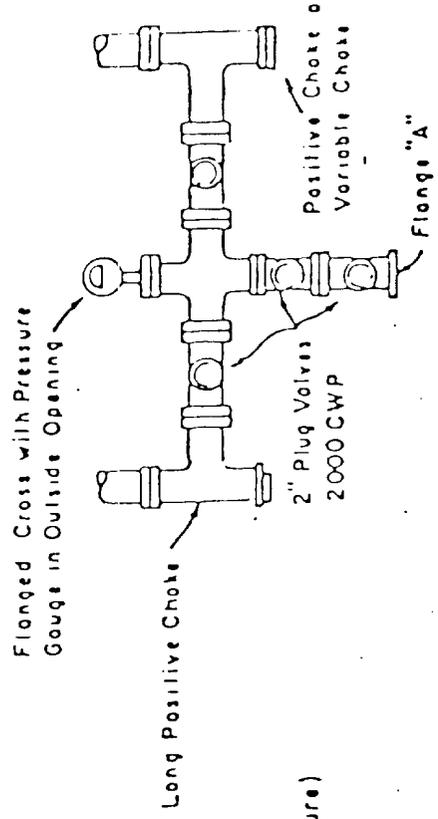
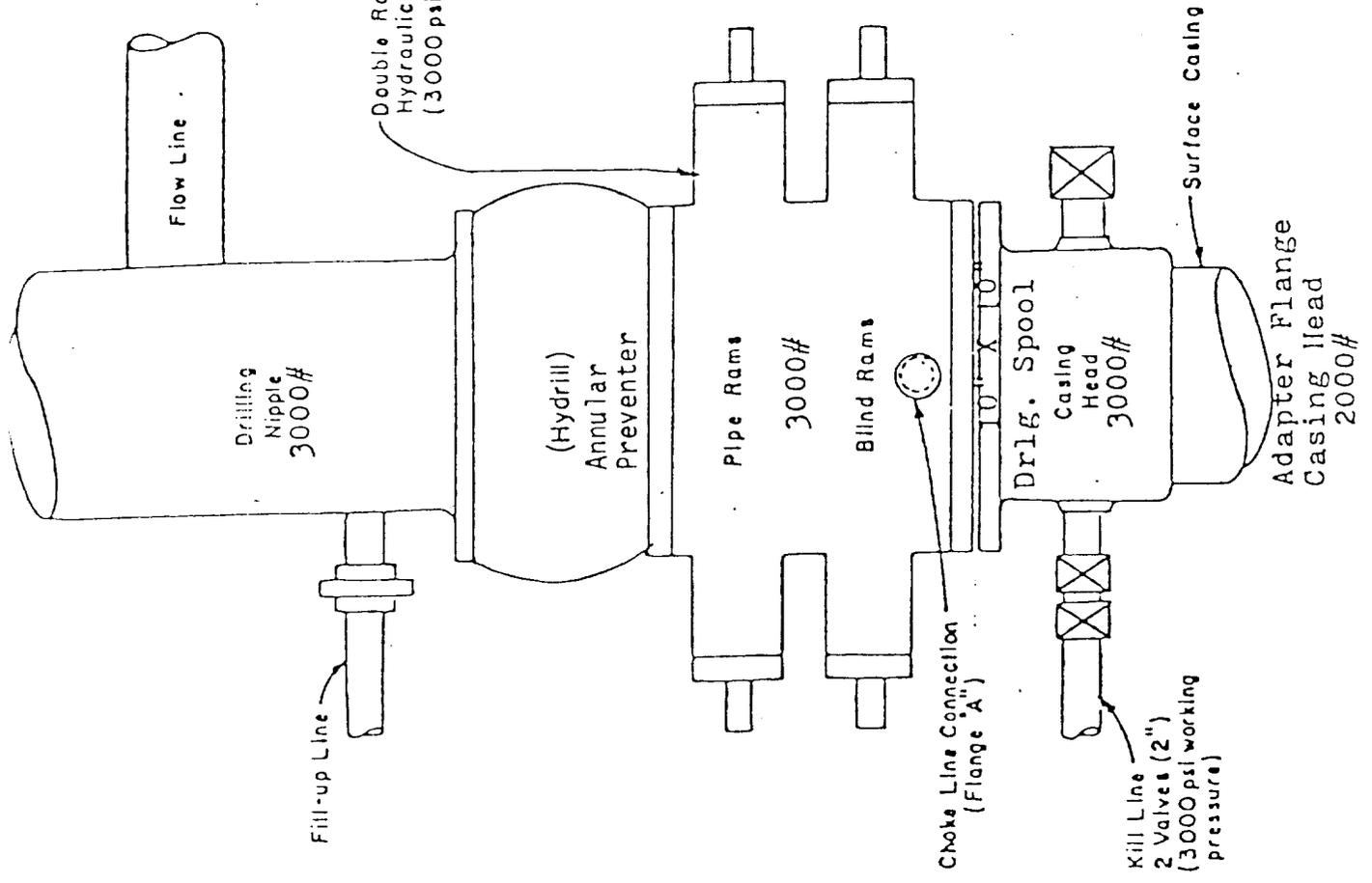


EXHIBIT "D"

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

Attached to Form 9-331C  
Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 T30N R12W  
1120' FNL & 1120' FWL  
San Juan County, New Mexico

1. Existing Roads

- A. The proposed well site and elevation plat is shown as EXHIBIT "A".
- B. The distance from Farmington, New Mexico is 5.2 miles. From the intersection of Mayfair Drive and Highway #550 proceed North and West 3.0 miles to intersection of dirt roads, thence West and North on same dirt road 1.7 miles. Thence West 0.5 mile on proposed access road to location, as shown on EXHIBIT "E".
- C. All roads to location are color-coded on EXHIBIT "E". An access road 0.5 mile from the existing graded 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.

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 0.5 mile of access road, extending beyond the existing graded road will be 18'.
- (2) The grade will be 8% (eight percent) or less.
- (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) There are no abandoned wells in this one-mile radius.
- (3) There are no temporarily abandoned wells.
- (4) There are no disposal wells.
- (5) There are no wells presently being drilled.
- (6) There are 6 producing wells within this one-mile radius.
- (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:

- (1) Tank Batteries: None
- (2) Production Facilities: Yes
- (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) All well flow lines will be buried and will be on the well site and battery site.
  - (3) Facilities will be 300 feet long and 220 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. The source of water will be the La Plata River, 4.3 miles West of the location.
- 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 well or constructing 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.
- B. No construction materials will be taken off Federal 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.
- (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 toilet facilities will be provided for human waste.
- (5) Garbage, waste, salts and other chemicals produced during drilling or testing will be handled in trash/burn pit. Drill fluids, water, drilling mud and tailings will be kept in reserve pit, as shown on EXHIBIT "H". The trash/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 the pit has dried and is filled.

#### 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 BLM specifications determined at time of pre-drill inspection.
- (2) EXHIBIT "H" is a plan diagram of the proposed rig and equipment, reserve pit, trash/burn 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 not 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 BLM. 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, 1981, unless requested otherwise.

11. Other Information

- (1) The soil is a sandy-clay loam. No distinguishing geological features are present. The area is covered with cactus, sagebrush, cheat grass, cedar, juniper, pinon and native grass. There are rabbits and deer in the area. The topography is sloping North and West.
- (2) The surface is not in use. The surface is owned by the U.S. Government.
- (3) The closest live water is the Las Animas River 4.5 miles South of the location as shown on EXHIBIT "E".

The closest occupied dwelling is located in SW Sec. 18 T30N R12W as shown on EXHIBIT "E".

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 March 15, 1980. It is anticipated that the casing point will be reached within 30 days after commencement of drilling.

12. Lessee's or Operator's Representative

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

Ralph Maness  
Sun Oil Company  
2525 Northwest Expressway  
Oklahoma City, Oklahoma 73112  
Phone (405) 843-9711

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 Sun Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date

2-26-80

  
George Lapaseotes  
Agent Consultant for  
Sun Oil Company



RIVER

EXHIBIT "F"  
Radius Map of Location

Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7-T30N R12W  
1120' FNL & 1120' FWL  
San Juan County, New Mexico

AZTEC  
6194' \*5  
7232'

T 30 N  
R 12 W

BYRD-FROST  
#1  
5849'  
2095'

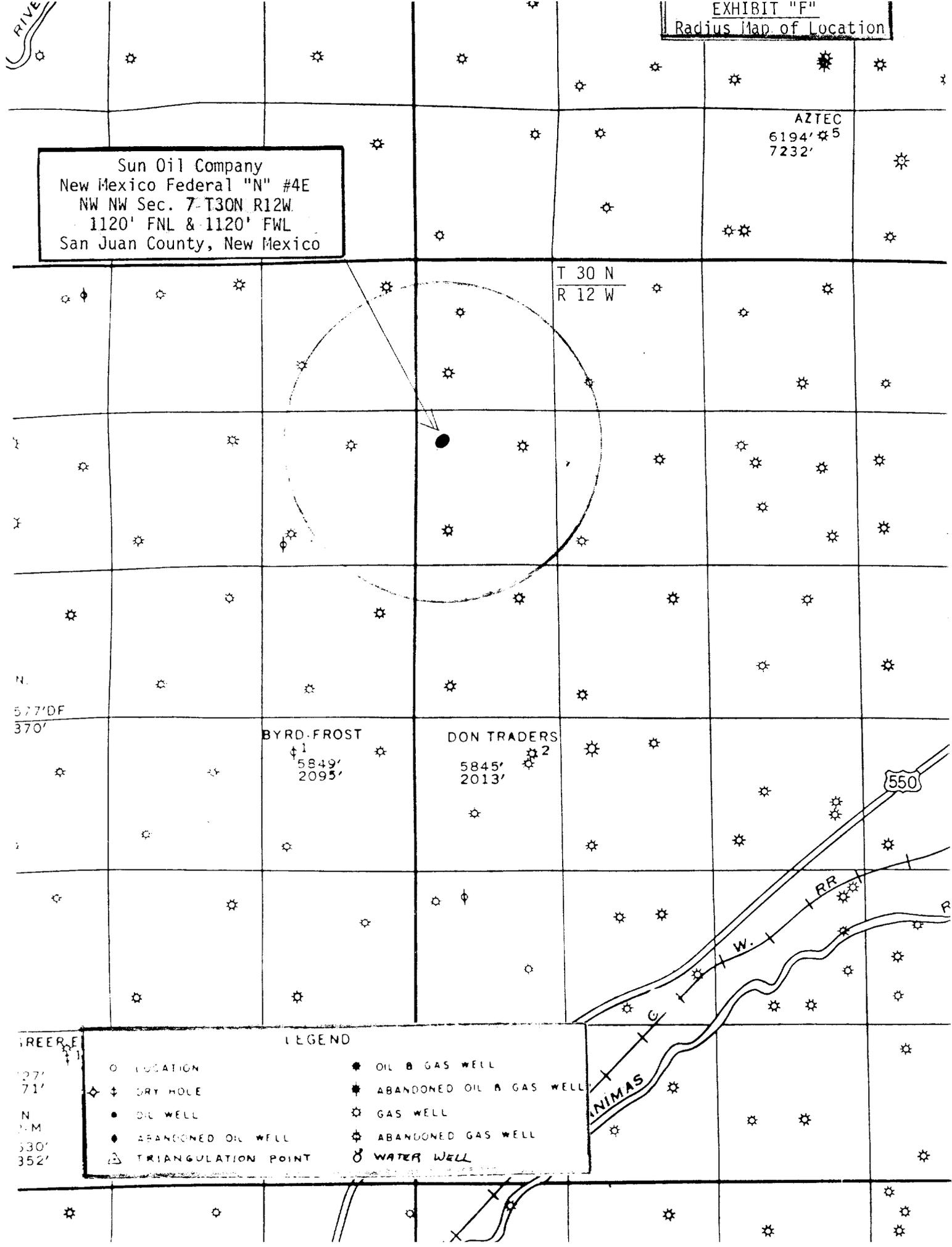
DON TRADERS  
#2  
5845'  
2013'

550

GREER E  
157'  
71'  
N  
2-M  
530'  
352'

LEGEND

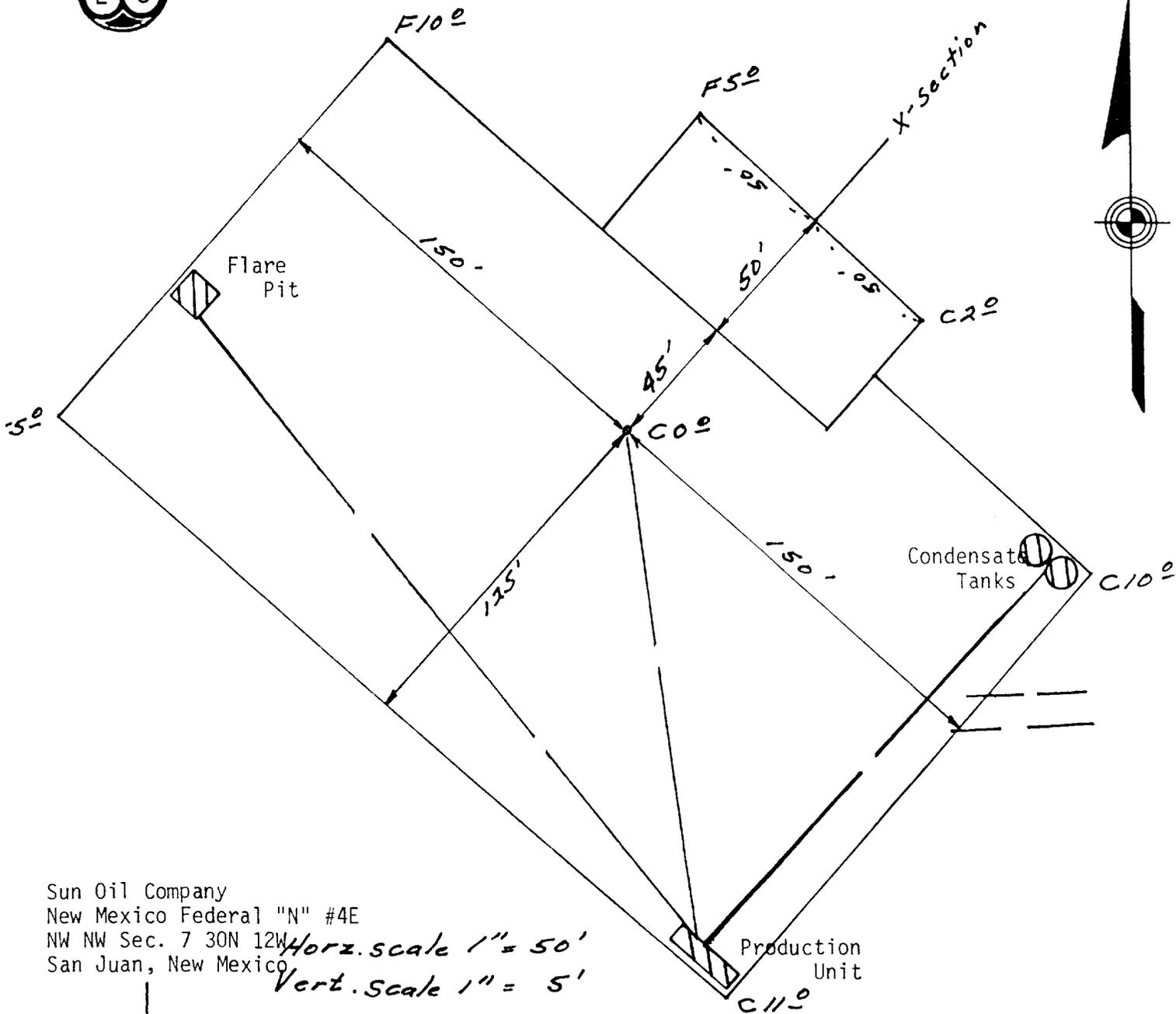
○ LOCATION	● OIL & GAS WELL
◇ † DRY HOLE	● ABANDONED OIL & GAS WELL
● OIL WELL	○ GAS WELL
● ABANDONED OIL WELL	○ ABANDONED GAS WELL
△ TRIANGULATION POINT	♂ WATER WELL





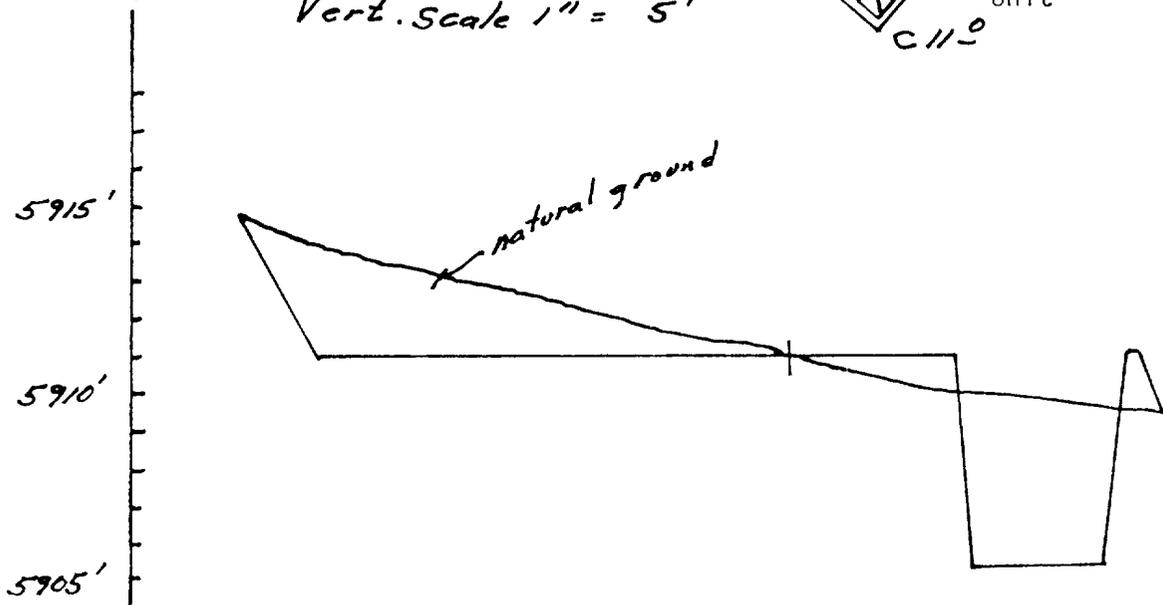
POWERS ELEVATION COMPANY, INC.

EXHIBIT "G"  
Drill Pad Layout, Production  
Facilities & Cut-Fill Cross Section



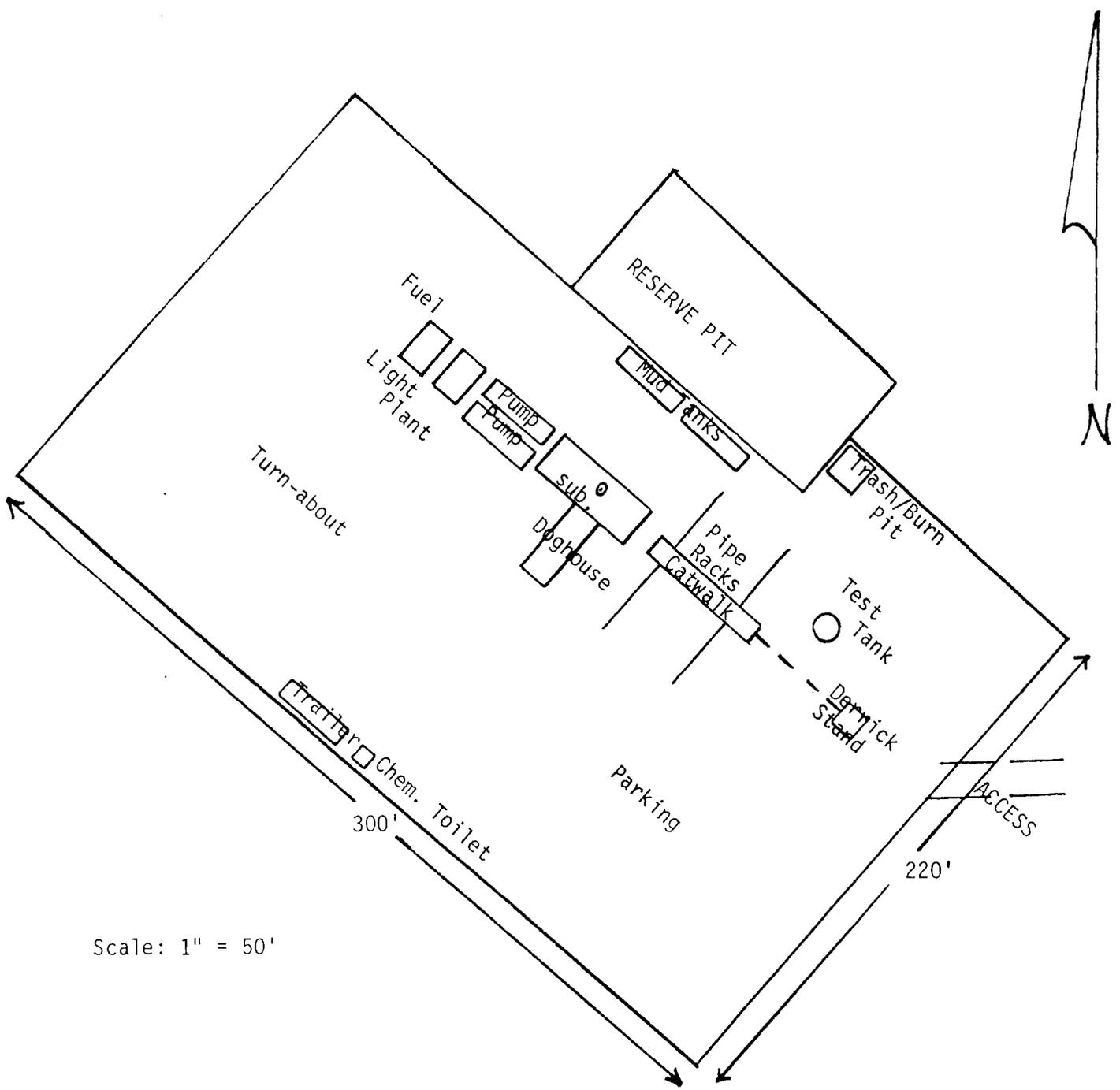
Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 30N 12W  
San Juan, New Mexico

Horz. scale 1" = 50'  
Vert. scale 1" = 5'



Sun Oil Company  
New Mexico Federal "N" #4E  
SW SW Sec. 7 T30N R12W  
San Juan County, New Mexico

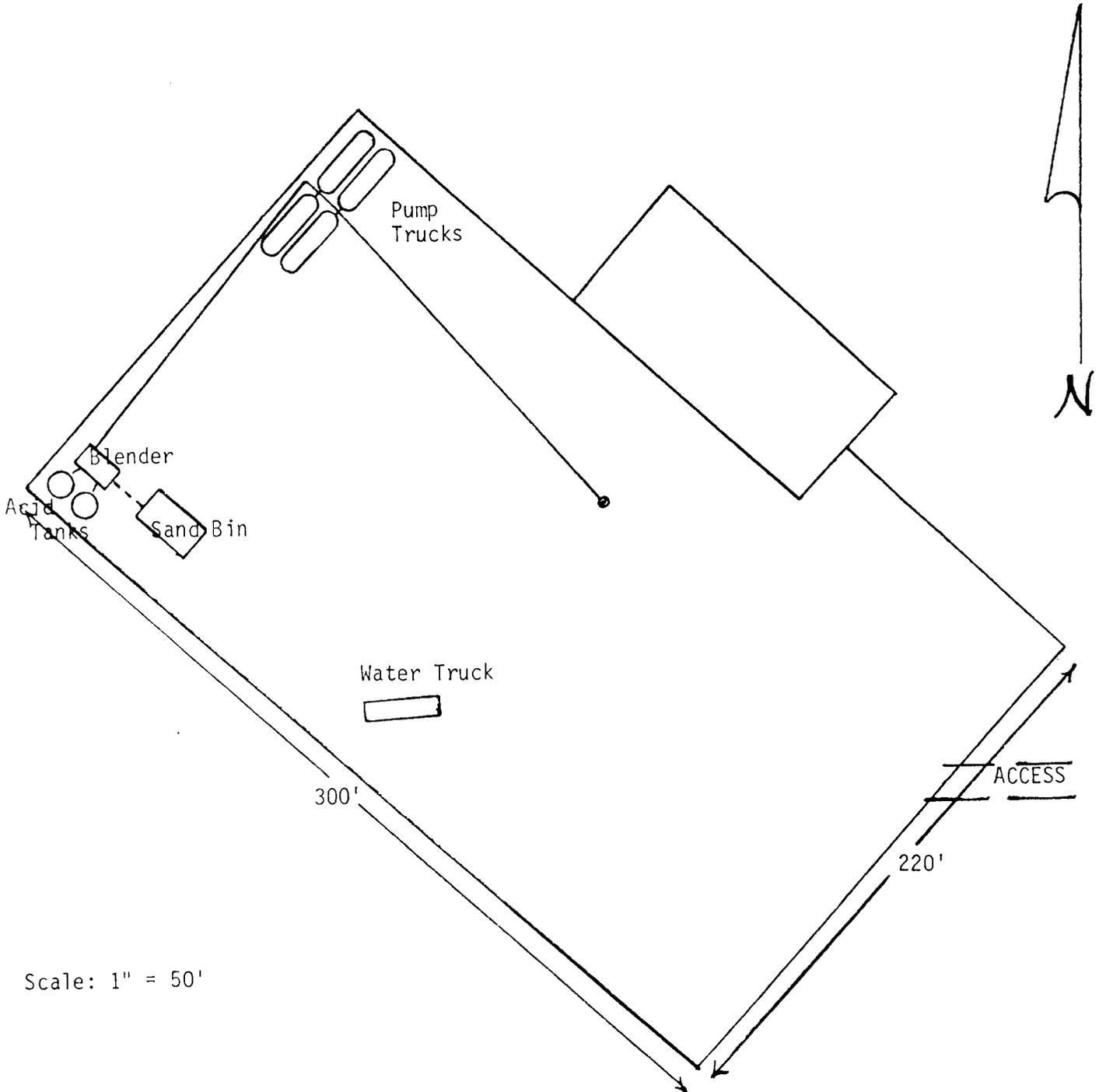
EXHIBIT "H"  
Drill Rig Layout



Scale: 1" = 50'

EXHIBIT "K"  
Fracturing Program Layout

Sun Oil Company  
New Mexico Federal "N" #4E  
NW NW Sec. 7 T30N R12W  
San Juan County, New Mexico



Scale: 1" = 50'