

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## 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

Union Oil Company of California

## 3. ADDRESS OF OPERATOR

P. O. Box 2620 - Casper, WY 82602

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

At surface

1800' FSL &amp; 790' FWL

At proposed prod. zone

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

25 miles south of Bloomfield, New Mexico

## 15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

790'

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.760' from  
well to be  
P & A.

## 16. NO. OF ACRES IN LEASE

158.80

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

318.80

## 19. PROPOSED DEPTH

6125'

## 20. ROTARY OR CABLE TOOLS

Rotary

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

6563' G.L.

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

Immediately

## 23.

## 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"	24#	750'	300 sx.
7-7/8"	5-1/2"	15.50#	6125'	300 sx.

## PROPOSED DRILLING PROGRAM:

Drill 12-1/4" hole to 750'. Run and cement 8-5/8" casing with cement calculated to circulate. Drill 7-7/8" hole to 6125'. Log and if production is indicated, run and cement 5-1/2" casing. The actual amount of cement for the 5-1/2" casing will be calculated from the caliper log. Perforate and complete using 2-3/8" tubing.

The BOP will be given a daily operational test and each test logged.

Subject acreage is dedicated to gas purchaser.

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 R. G. Ladd, Jr. TITLE District Drilling Supt. DATE 7-31-78

(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_

APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

OK Frank

\*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 <b>Union Oil Company of California</b>			Lease <b>Navajo K19</b>		Well No. <b>424</b>
Unit Letter <b>M</b>	Section <b>19</b>	Township <b>25 North</b>	Range <b>10 West</b>	County <b>San Juan</b>	
Actual Footage Location of Well: <b>1800</b> feet from the <b>South</b> line and <b>790</b> feet from the <b>West</b> line					
Ground Level Elev. <b>6563</b>	Producing Formation <b>Graneros</b>		Pool <b>Basin Dakota</b>	Dedicated Acreage: <b>318.80</b> 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 Communitization

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.

SEC. 19

W.I. Owner - Union	W.I. Owner - Union
Royalty Interest - Navajo	Royalty Interest - Navajo

**CERTIFICATION**

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

Name Ralph S. Ladd

Position District Drilling Supt.

Company Union Oil Co. of California

Date July 28, 1978

REGISTERED LAND SURVEYOR

STATE OF NEW MEXICO

Reg. No. 3602

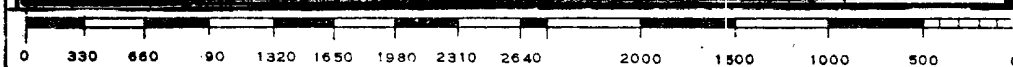
E.V. Echohawk

DATE SURVEYED July 19, 1978

Registered Professional Engineer and/or Land Surveyor

Certificate No. 3602

E.V. Echohawk LS



☐ Area Communitized.    ☐ Lease Lines

Attachment #1

NORTHERN ROCKY MOUNTAIN AREA  
NTL-6

NAVAJO NO. 4X-L19  
SAN JUAN COUNTY, NEW MEXICO

1. Existing Roads:

A. Proposed well site as staked:

The proposed well site is located 1800' FSL & 790' FWL of Section 19, Township 25 North, Range 10 West, San Juan County, New Mexico. (See Attachment No. 1) There will be 200' directional reference stakes on the location.

B. Route & distance from nearest town:

The proposed location is approximately six miles southwest of Huerfano Trading Post and N.M. Highway No. 44

Go to Bloomfield, New Mexico, and turn south on Highway 44 and go 15 miles to Huerfano Trading Post, turn right 3.9 miles, then turn right and follow existing roads and trails 3.1 miles to location. (See Attachments No. 2 & No. 2(a).)

C. Access road(s) to location:

The access road to the location will be approximately 1000' long following an existing jeep trail, and will branch off of an existing unimproved road as shown on the attached map. Road construction will be kept to a minimum. The access road will be made by merely blading away existing vegetation. Existing roads will be used wherever possible. In the event that the well is a commercial producer, the access road will be improved in the manner customary to the area. Water bars will be built on the new road and added to the old road as needed. (See Attachment No. 2)

D. If exploratory well, all existing roads within a 3-mile radius:

Not applicable.

E. If development well, all existing roads within a 1-mile radius:

See attached map. (Attachment No. 2)

F. Plans for improvement and/or maintenance of existing roads:

Existing roads are dirt roads. The only maintenance would be blading the roads leading to the rig.

2. Planned Access Roads:

- (1) Width: 12'
- (2) Maximum grades: 10%
- (3) Turnouts: No turnouts will be made
- (4) Drainage design: Drainage will be diverted to the southwest.
- (5) Location & size of culverts & description of any major cuts and fills:

There will be no culverts needed and no cuts or fills on the road.

- (6) Surfacing material:

No surfacing material is planned to be used other than that off of the location.

- (7) Necessary gates, cattleguards, or fence cuts:

There will be no gates, cattleguards, or fence cuts necessary.

- (8) New or reconstructed roads to be center-line flagged at time of staking:

There are roads and trails leading to the location requiring some blade work.

3. Location of Existing Wells: (See Attachment No. 3)

- (1) Water Wells: None
- (2) Abandoned Wells: Two in Section 19; four in Section 24; three in Section 25; and three in Section 30.
- (3) Temporarily Abandoned Wells: None
- (4) Disposal Wells: None
- (5) Drilling Wells: None
- (6) Producing Wells: One in Section 18, two in Section 19; one in Section 24; and one in Section 25.
- (7) Shut-In Wells: One in Section 19.
- (8) Injection Wells: None
- (9) Monitoring or Observation Wells for Other Resources: None

4. Location of Existing and/or Proposed Facilities:

A. Existing facilities within one-mile radius:

- (1) Tank Batteries  
A storage tank is located on each of the locations located in Sections 18, 19, 24, and 30.
- (2) Production Facilities  
Production facilities are located on each of the above locations.
- (3) Oil Gathering Lines  
No oil gathering lines.
- (4) Gas Gathering Lines  
A gas gathering line is buried from Union's Navajo Well No. 8-L18, in Section 18, to the Navajo Well No. 4-K19, in Section 19.
- (5) Injection Lines  
No injection lines.
- (6) Disposal Lines  
No disposal lines.

B. New facilities contemplated in the event of production:

- (1) Proposed Location  
The existing production facilities located on the Navajo #4-K19 location will be utilized for the new well, requiring the burying of a 790' gas line to this facility. The new line is flagged.
- (2) Dimensions of Facilities  
See attachment of existing facility. (Attachment No. 4)
- (3) Construction Methods & Materials  
Not applicable.
- (4) Protective Measures & Devices to Protect Livestock & Wildlife  
The pits, firewall, and tank are fenced.

C. Plan for rehabilitation of disturbed areas no longer needed for operations after construction completed:

Areas no longer needed for operations will have the topsoil redistributed and will be reseeded with the recommended mixture.

5. Location and Type of Water Supply:

A. Location & type of water supply:

Water will be hauled to the location from the Giegus Wash at the Carson Trading Post located 11 miles northwest of the well site.

B. Method of transporting water:

Water will be trucked utilizing existing roads. No pipe lines are needed.

C. Water wells to be drilled on lease:

No water well will be drilled.

6. Source of Construction Materials:

A. Information on map or by written description:

The proposed road and location will utilize soil material which is on the drill site.

B. Federal or Indian Land:

The proposed location and roads are on Indian land.

C. Where materials are to be obtained and used:

Topsoil from the location will be stockpiled at the site for restoration purposes. The soil material will be obtained from the immediate area of the drilling operations and will be used to fill in the low areas.

D. Access roads crossing Federal or Indian Lands:

(See Attachment No. 2.)

7. Methods for Handling Waste Disposal:

(1) Cuttings: Will be buried in the reserve pit.

(2) Drilling Fluids: Will be disposed of in the reserve pit. The water will be allowed to evaporate and the remaining solids buried.

(3) Produced Fluids: Produced fluids will be contained in the tank battery. The water will be disposed of per NTL-2B.

(4) Sewage: All sewage will be buried.

(5) Garbage and Other Waste Material: Garbage and other waste material will be disposed of in a small burn pit which will be covered with small mesh wire.

(6) Statement Regarding Proper Cleanup of Well Site Area When Rig Moves Out:

All extraneous material on the location will be gathered and disposed of as garbage or hauled to town. Topsoil stockpiled will be distributed and the location reseeded.

8. Ancillary Facilities:

No camps or airstrips are necessary.

9. Well Site Layout:

(1) Cross sections of drill pad with cuts and fills

There will be a 4' to 5' cut on the northeast side of the location, a 2' cut towards the east, and a 3' fill south of the location. A 4' gully immediately northwest of the location will be filled. (See Attachment No. 5)

(2) Location of mud tanks, reserve, burn and trash pits, pipe racks, living facilities, and soil material stockpiles

(See Attachment Nos. 6 & 6(a) for rig size & layout.)

(3) Rig orientation, parking areas, and access roads

(See Attachment No. 6.)

(4) Statement as to whether pits are to be lined or unlined.

The pits will not be lined.

10. Plans for Restoration of Surface:

Restoration program upon completion of operations, including:

(1) Backfilling, leveling, contouring, and waste disposal:

All topsoil will be stockpiled to be evenly distributed over the surface after drilling is completed.

(2) Revegetation and rehabilitation:

The location will be reseeded with a recommended mixture.

(3) Care of pits prior to rig release:

Prior to rig release, pits will be fenced and so maintained until cleanup.

(4) Removal of oil on pits:

If oil is on the pits, it will be removed.

(5) Timetable for commencement and completion of rehabilitation operations:

Immediately following the completion of operations, cleanup will commence. As soon as the pits are dry enough to facilitate a bulldozer, the pits will be filled and the cleanup finalized. The cleanup should be completed within one week.

11. Other Information:

(1) Topography, soil characteristics, geologic features, flora and fauna:

The topography consists of rolling sand hills sparsely covered with sagebrush and native grasses.

(2) Other surface-use activities and surface ownership of all involved lands:

The surface is used for grazing and is administered by the Bureau of Indian Affairs.

(3) Proximity of water, occupied dwellings, archeological, historical or cultural sites:

There is no "near" fresh water or occupied dwellings.

An archeological study will be made of the area and a report forwarded to your office.

12. Operator's Field Representative:

Mr. R. G. Ladd, Jr.  
Union Oil Company of California  
P. O. Box 2620  
Casper, Wyoming 82602  
Phone - (307) 234-1563

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 Union Oil Company of California



and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

7-31-78

Date

  
District Drilling Superintendent

NTL-6

ADDITIONAL INFORMATION

NAVAJO NO. 4X-L19  
SAN JUAN COUNTY, NEW MEXICO

1. The geologic name of the surface formation:

The surface formation is the Tertiary-Nacimientos.

2. The estimated tops of important geologic markers:

See attached Drilling Program for important geologic markers.  
(Attachment No. 7)

3. Estimated depths at which anticipated water, oil, gas, or other mineral-bearing formations are expected to be encountered:

No water, oil, or other mineral bearing formations are anticipated.

Gas is expected in the Graneros from 6054-6125'.

4. Proposed casing program:

Surface Casing:

Surface casing will be 300' of 8-5/8", 24#, K-55, new casing.

Production Casing:

Production casing will be 6125' of 5-1/2", 15.50#, K-55, new casing.

5. Minimum specifications for pressure control equipment to be used:

See attached schematics of BOP, choke manifold, and well head. BOP's shall be pressure tested before drilling out below surface casing. The mechanical operating conditions will be checked daily. (See Attachment Nos. 8, 9, & 10.)

6. Proposed circulating medium to be employed for rotary drilling and the quantities and types of mud and weighting material to be maintained:

The drilling fluid will be water to 5600' and then 9# to 9.5#/gal. mud to 6125' T.D. No wt. material will be used. Approximately 400-500 bbls. mud will be maintained at the surface. Sufficient mud materials to maintain mud requirements and to meet minor lost circulation and blowout problems shall be maintained at well site.

7. Auxiliary equipment to be used:

The auxiliary equipment will consist of a kelly cock and a safety valve which can be stabbed into the drill string when the kelly is not in service. No floats will be used on the drill string and no monitoring equipment will be used on the pits.

8. Proposed testing, logging, and coring programs:

See attached Drilling Program. (Attachment No. 7)

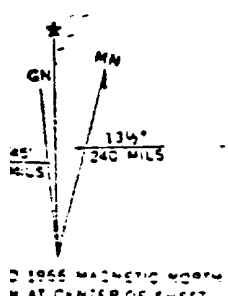
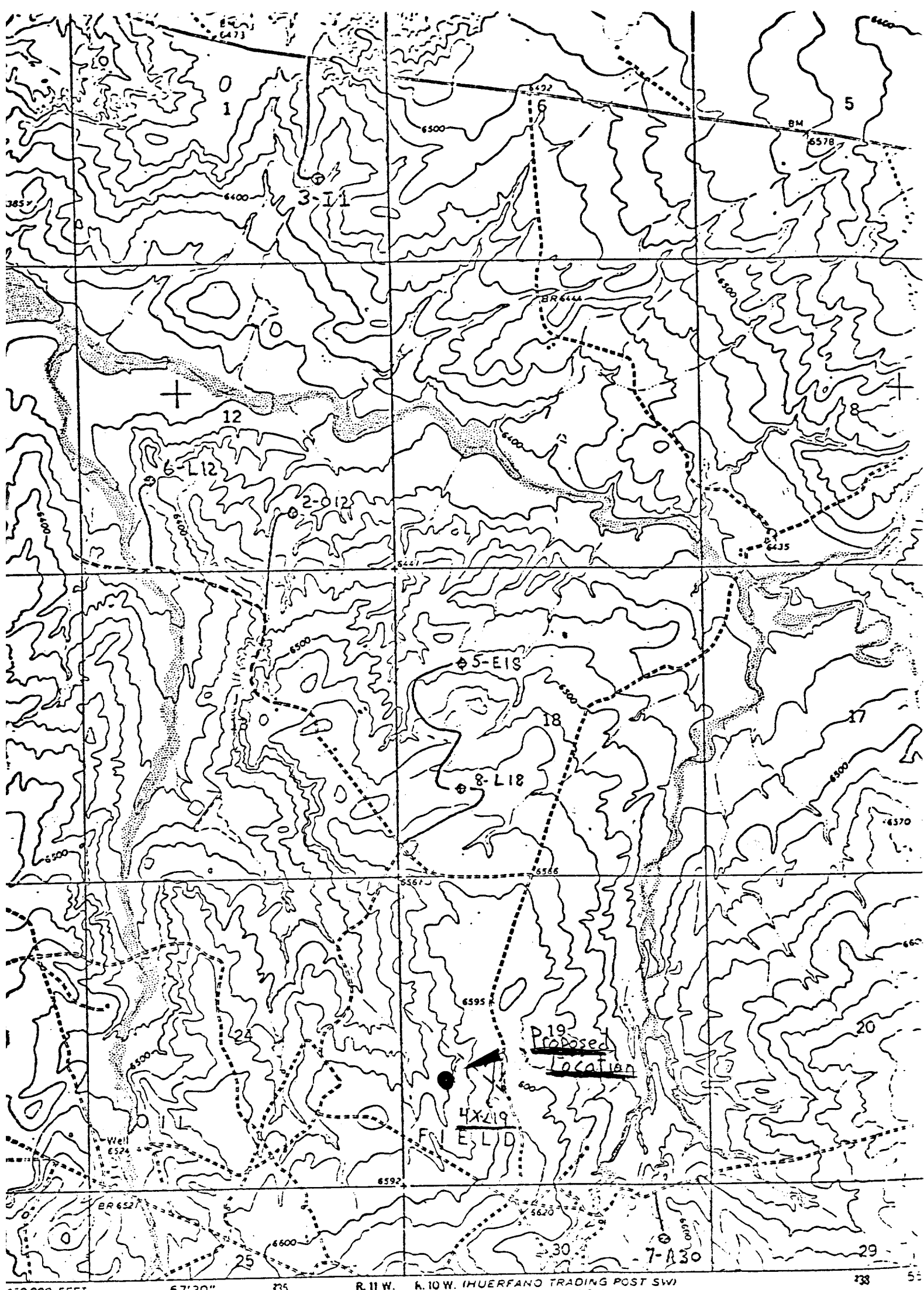
The Graneros sand will be selectively perforated from 6060-6090'. and sandfraced with +60,000 gallons gelled KCl water with 2# sand/gal. down tubing below a packer.

9. Anticipated abnormal pressures or temperatures expected to be encountered or potential hazards:

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

10. Anticipated starting date and duration of the operations:

The well will be spudded immediately upon approval of this application and when a rig is available. It is anticipated the well will be drilled and completed in 30 days.



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N AT CENTER OF SHEET

DIRECTIONS TO NAVAJO #4X-L19

Go south from Bloomfield, New Mexico, on Highway 44 for 15 miles to Huerfano Trading Post. Turn right on dirt road and go 3.9 miles (pass compressor station on right) to the Navajo Miracle Church sign on the right. Turn right and go 1/2 mile then take right fork past house on left and go 1.1 miles to fence and high line. Do not go through fence. Turn right down fence line and high line and go 0.1 miles. Turn right and stay to the left for 0.5 miles. Take left fork (right fork goes to house with elevated water tank) and go 0.1 mile to fence and go through fence. Continue 0.6 miles and you will pass existing Navajo No. 4-K19 well on your left. Turn left and continue on for 0.2 miles to new location.

CHUGH  
ERIN  
6207  
3-77  
PF 1850

TENNECO  
19  
6154  
12-76  
PF 3425

x572

TENNECO  
11  
6100  
9-74  
IPF 7926  
SITP 2020

TENNECO  
8  
6146  
12-73  
IPOF 1077/108C  
SITP 2038

BC/

TENNECO  
20-CANYON  
6105  
2-77  
IPF 12,215  
SITP 1997

TENNECO  
22  
6101  
10-76

TENNECO  
9  
6343  
2-74  
IPOF 8170  
SITP 1820

UNION  
3-11 NAV.  
6336  
6-76

UNION  
6-L12 NAV.  
6220  
7-76  
IPF 1690/5 BC

UNION  
2-012 NAV.  
6157  
2-76  
IPF 1580/20 BC

TENNECO  
12  
6170  
9-74  
IPOF 14,219  
SITP 1980

x709

UNION  
1-H 24  
6181  
11-75  
IPF 8013

TENNECO  
17  
6215  
9-74  
IPF 4038  
SICP 1994

x468

IPF 7020  
SICP 2075

TENNECO  
2  
6370  
3-74

UNIV. RES.  
1-7  
6269  
2-74  
IPF 3878  
SITP 1980

x519

UNIV. RES.  
2-7 GRIGSBY  
62281  
7-74  
IPF 2105  
SITP 1785

UNION  
5-E18 NAV.  
6315  
6-76  
IPF 1680

UNION  
8-L18 NAV.  
6225  
7-76  
IPF 1808

TENNECO  
2-MOUNTVIEW  
6240  
12-76  
IPF 4018

UNION  
4-K19 NAV.  
6320  
8-76

TENNECO  
3  
6830  
3-74  
IPF 627/3

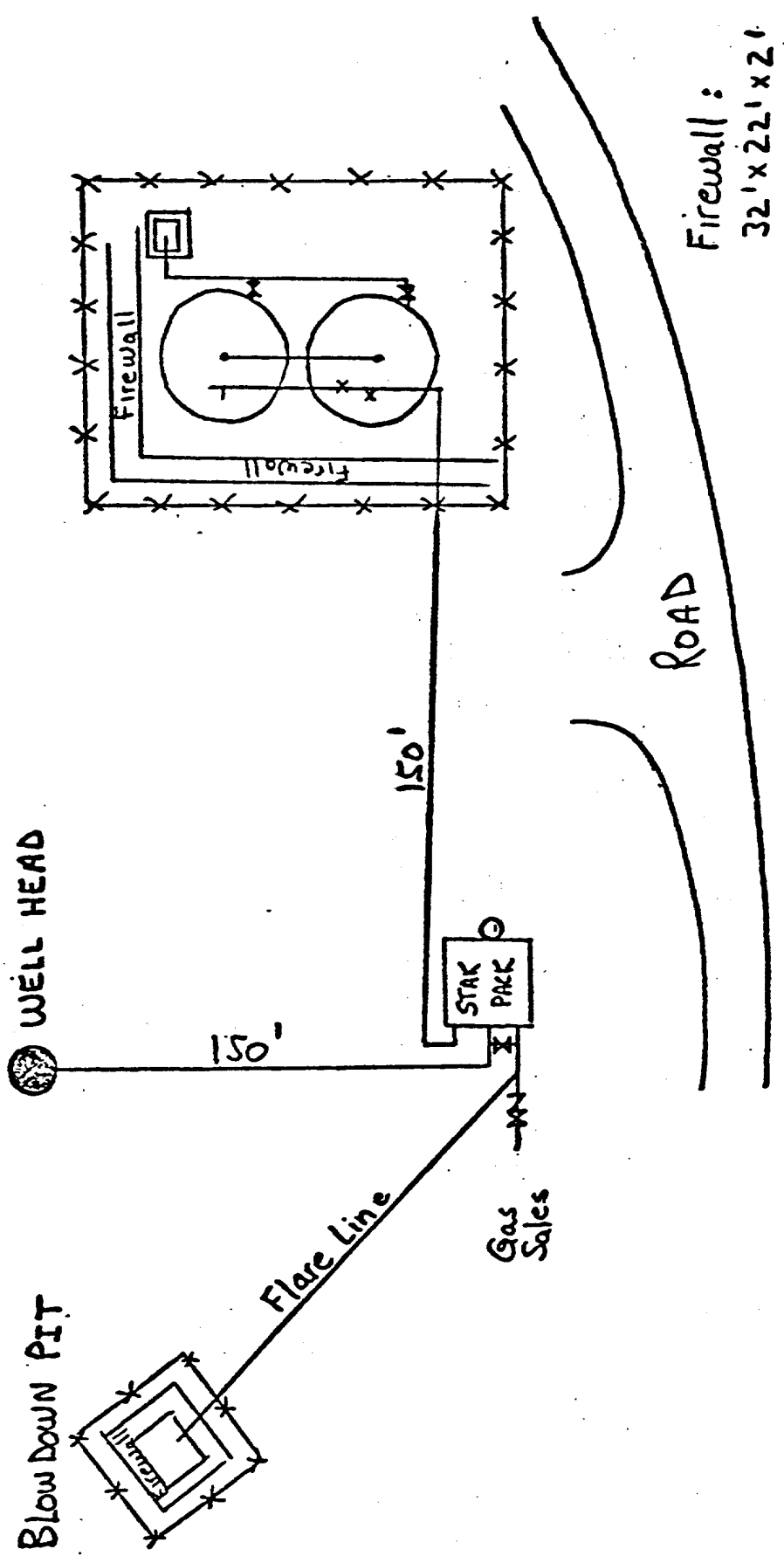
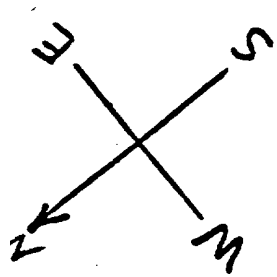
x447

UNIV. RES.  
3-8 GRIGSBY  
6375  
10-74  
IPF 1971  
SITP 1766

x471

UNIV. RES.  
4-8 GRIGSBY  
6345  
5-75  
IPF 250/18  
SITP 1710

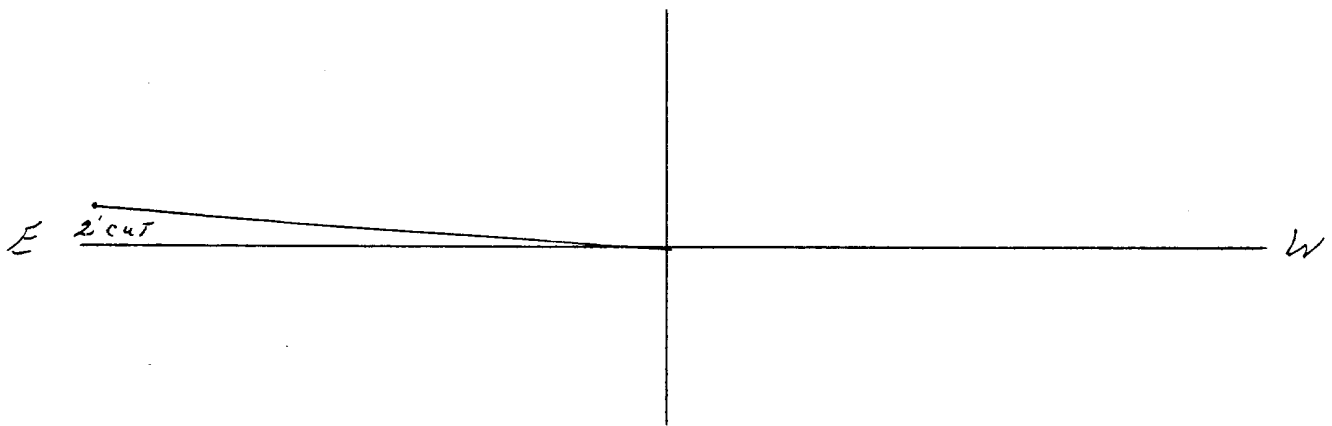
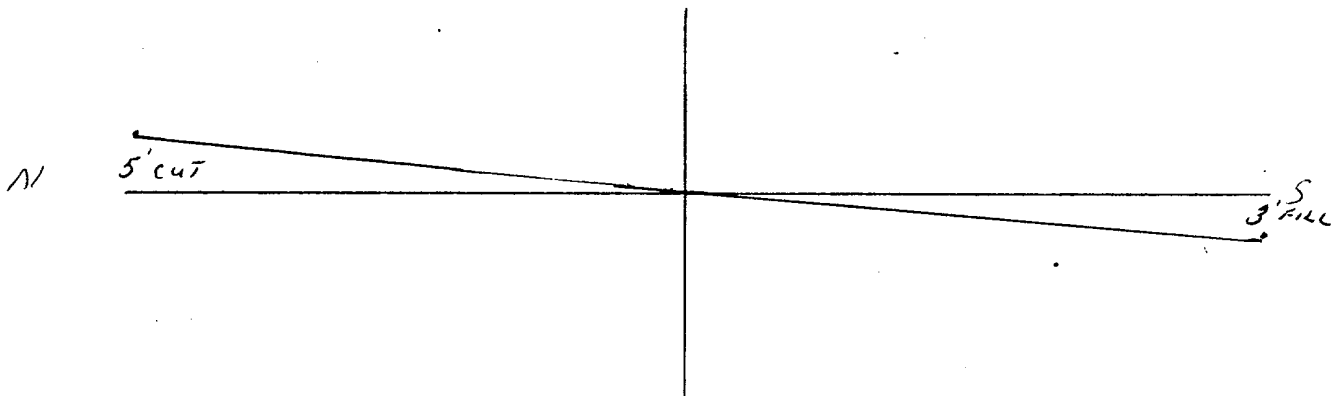
UNION  
1-M17 FED.  
6225  
9-77



Existing  
PRODUCTION FACILITIES

Navajo No. 4-K19  
(Existing Well)

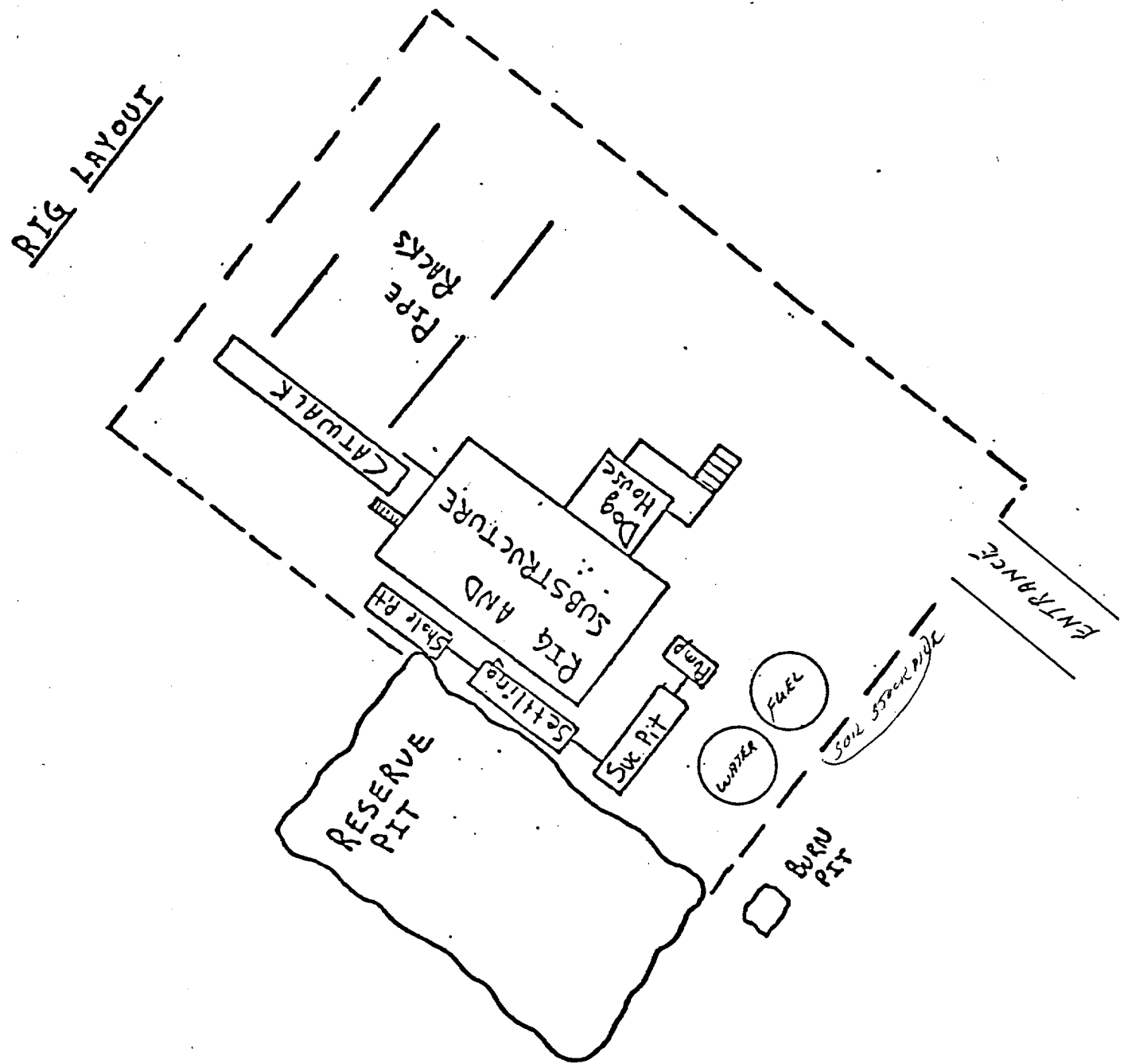
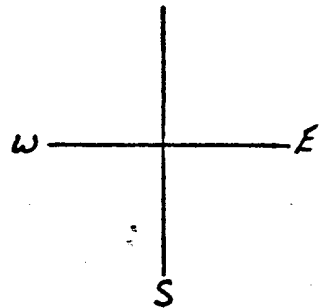
CROSS SECTIONS  
OF DRILL PAD



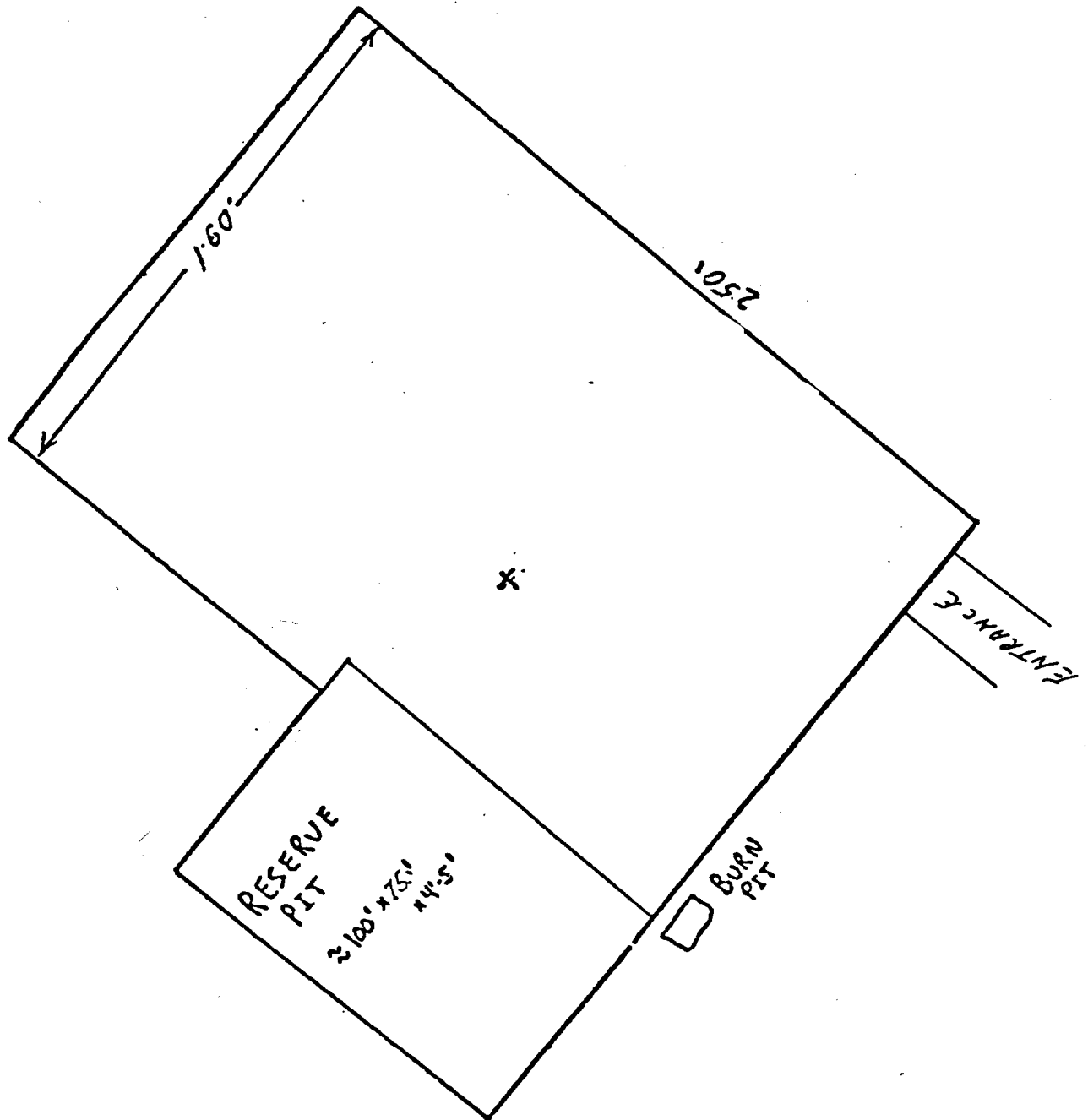
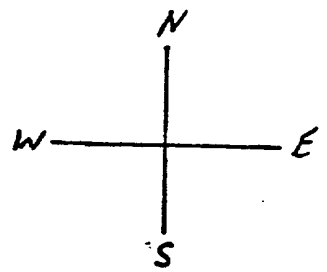
Navajo #4X-L19  
San Juan Co., NM (NTL-6)

ATTACHMENT #5





RIG LAYOUT  
NAVAJO NO. 4X-L19  
SAN JUAN CO., NM



LOCATION SIZE  
NAVAJO NO. 4X-L19

ATTACHMENT #6(a)

UNION OIL COMPANY OF CALIFORNIA  
CENTRAL REGION

CASPER DISTRICT

DRILLING & COMPLETION PROGRAM

FIELD: Basin Dakota

LOCATION:

WELL NAME: Navajo Well No. 4X-L19

1800' FSL & 790' FWL, Sec. 19,  
Township 25 North, Range 10 West,  
San Juan County, New Mexico

ESTIMATED TOTAL DEPTH: 6125'

GEOLOGIC DATA: 30' Samples - Bottom of surface to 4550'  
10' Samples - 4550' to T.D.

Drilling Time - Continuous Geolograph

Sample Storage - Four Corners Sample Cut - Farmington, New Mexico

ESTIMATED ELEVATION: 6560' G.L.

ESTIMATED GEOLOGIC TOPS:	Mancos	4149'	Jicarilla Sand	5984'
	Gallup	4957'	Lower Graneros Sands	6054'
	Greenhorn	5853'	Total Depth	6125'

LOGS: Bottom of Surface to T.D. - Dual Induction (DIL)  
Bottom of Surface to T.D. - Density Neutron (CNL/FDC)

DST'S: NONE

CORES: NONE

DEVIATION: 0-750', 1°; 750'-T.D., 4°; Not to exceed 1°/100'

CASING & MUD PROGRAM:

Depth	Size Hole	Casing	Cement	W.O.C.	Mud		
					Wt.	Vis.	W.L.
0-750'	12-1/4"	8-5/8"	300*	12		Spud Mud	
750-5600'	7-7/8"	- -	- -	- -		Water	
5600-T.D.	7-7/8"	5-1/2"	**	12	9.5#	35	Below 6

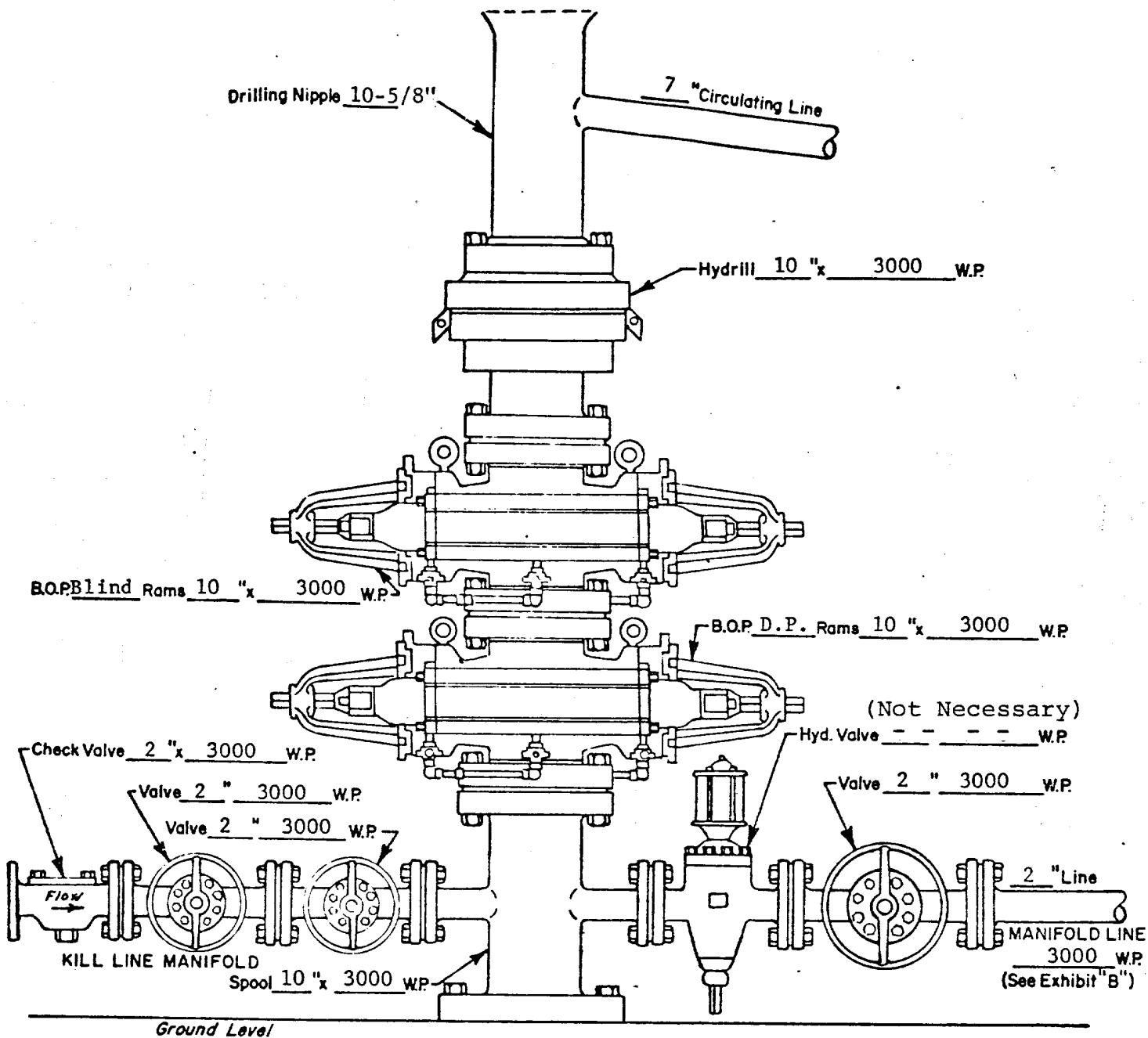
Rig to be released after nipping up 5-1/2" casing and picking up tubing.

NOTE: Changes in the above program will be at the direction of a qualified Union Oil Company of California representative and should be clearly indicated on the program posted at the rig.

REMARKS:

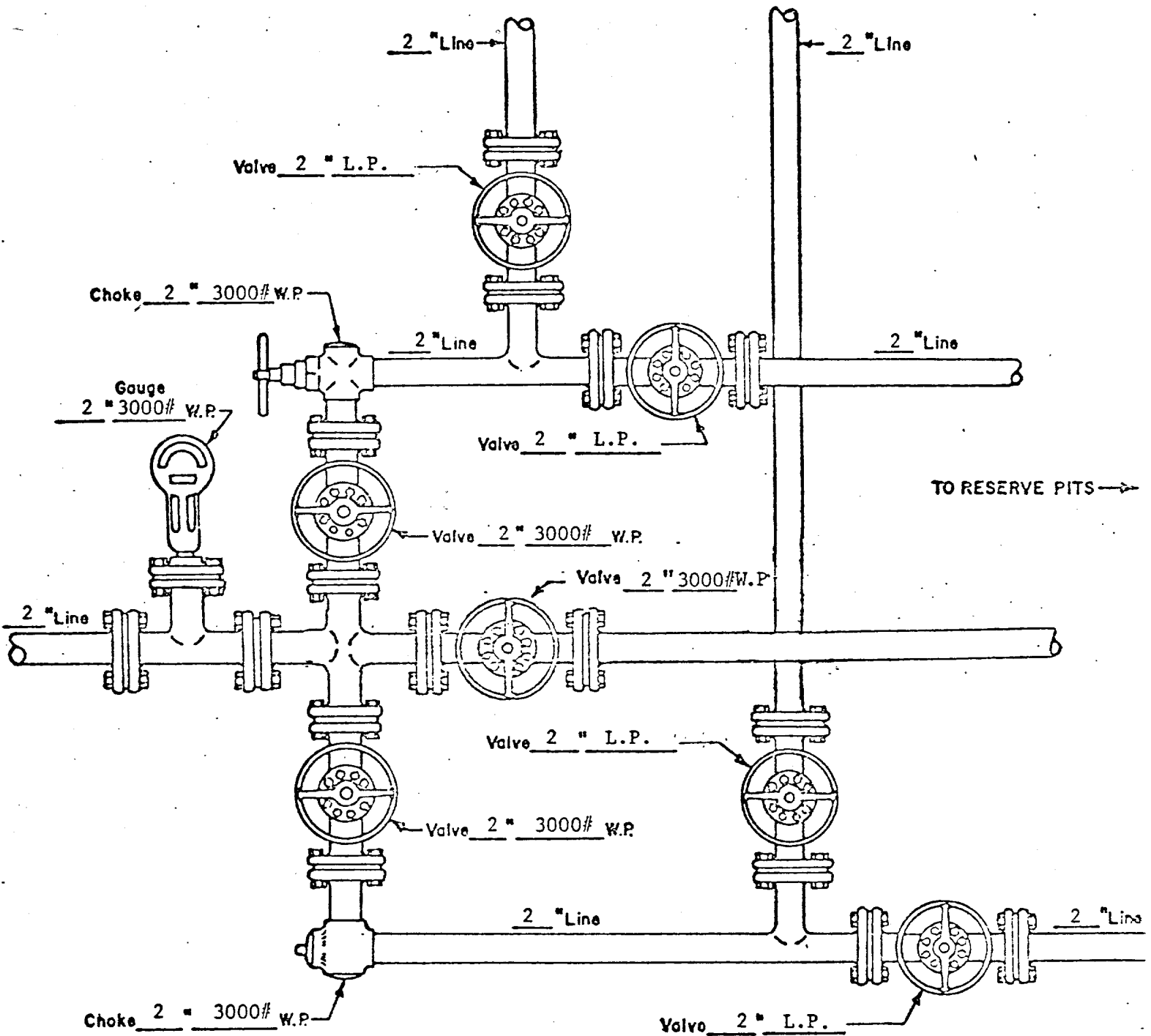
\* Cement calculated to circulate.

\*\* Cement to be calculated from caliper.



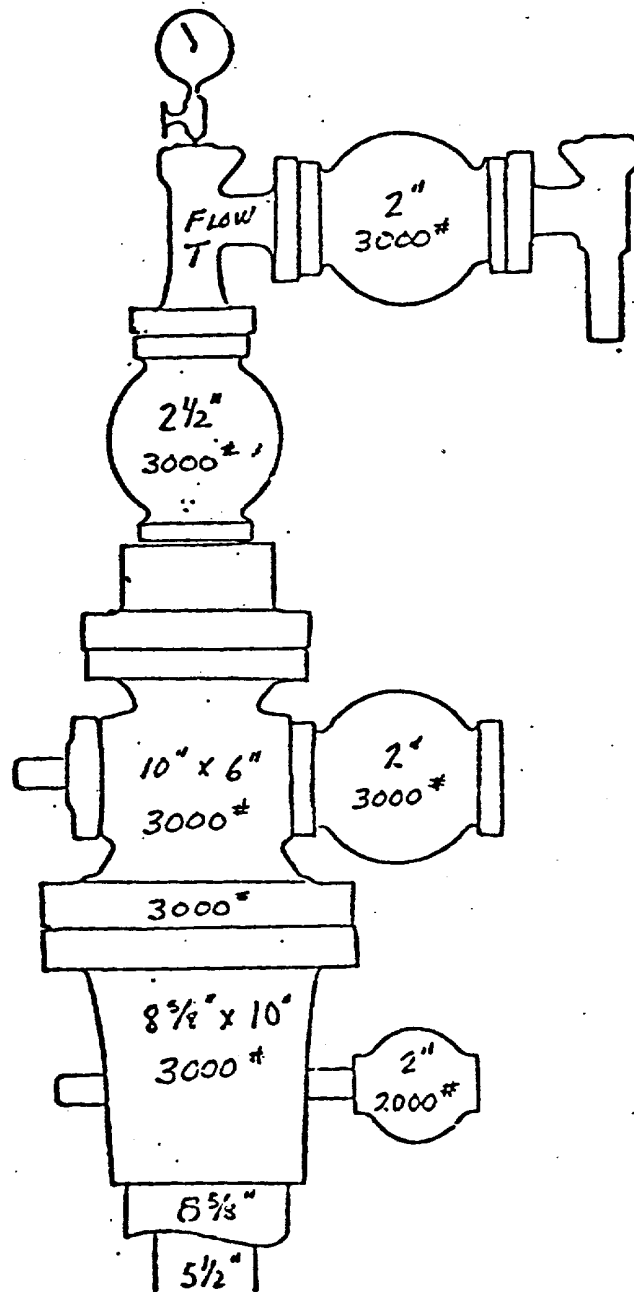
WELL HEAD B.O.P.  
3000 # W.P.

☐ Manual  
☐ Hydraulic



MANIFOLD  
3000 # W.P.

☐ Manual  
☒ Hydraulic



WELL HEAD  
 NAVAJO NO. 4X-L19  
 SAN JUAN COUNTY, NM

ATTACHMENT #10