Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-031-20616

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM081208

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Hospah "[redacted]"

9. WELL NO.: 2 67

10. FIELD AND POOL, OR WILDCAT: S Hospah Lower Sand

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 12, T17N, R9W

12. COUNTY OR PARISH: McKinley | 13. STATE: N.M.

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [ ] OTHER ~~Air~~ Injection well SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Tenneco Oil Company

3. ADDRESS OF OPERATOR: 720 So. Colorado Blvd., Denver, Colorado 80222

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1532' FNL 2718' FEL
At proposed prod. zone:

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: One mile south of Hospah.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
	air well	~~air well~~ 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH: 1715'	20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6998 GR

22. APPROX. DATE WORK WILL START*: ASAP

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13 3/8" new	61# K55	±120'	Circulate to surface
12¼"	dual 4½" new	10.5# K55	±1715'	Circulate to surface

Set one joint of 20" conductor pipe.

See Attached.

RECEIVED
JUN 20 1980
U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

RECEIVED
JUL 25 1980
OIL CON. COM.
DIST. 3

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 M. L. Freeman TITLE Staff Production Analyst DATE June 17, 1980

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED AS AMENDED
JUL 24 1980
JAMES F. SIMS
DISTRICT ENGINEER

NMOCC

*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	Lease	Well No.
TENNECO OIL COMPANY	HOSPAH	367

Unit Letter	Section	Township	Range	County
G	12	17N	9W	McKinley

Actual Footage Location of Well: 1532 feet from the North line and 2718 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6998	~~air well~~ S. Hospah	S. Hospah Lower Sand	~~air well~~ 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

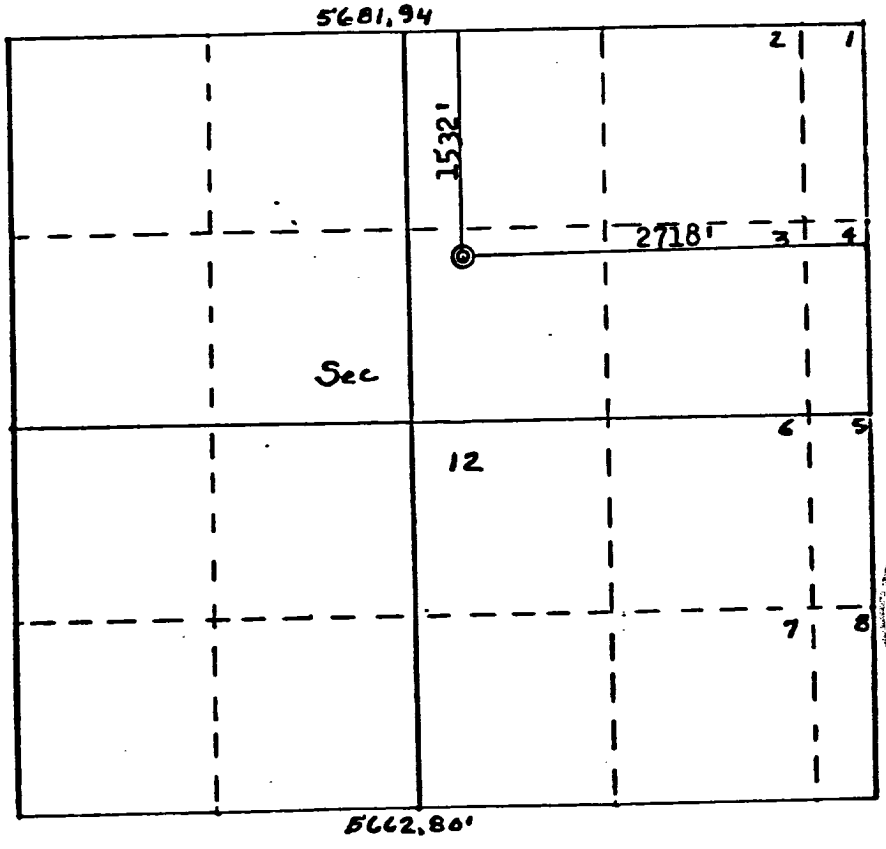
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.



Scale: 1"=1320'

CERTIFICATION

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

Name: M. L. Freeman

Position: Staff Production Analyst

Company: Tenneco Oil Company

Date: June 17, 1980

RECEIVED JUL 25 1980 OIL CON. COM. DIST.

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: May 27, 1980

Registered Professional Engineer and Land Surveyor

Fred B. Kerr Jr.

REGISTERED LAND SURVEYOR 3950 NEW MEXICO FRED B. KERR, JR.

Certificate No. 3950

FORM 24-11

TENNECO OIL COMPANY - 10 POINT PLAN

1. The geological name of the surface formation:

2 & 3. Estimated Formation Tops:

(See Attached Drilling Procedure)

4. Proposed Casing Program:

(See Attached Drilling Procedure)

5. Blowout Preventors:
Hydraulic double ram. One set of rams will be provided each size drill pipe in the hole. One set of blind rams at all times. Fill line will be 2", kill line will be 2", choke relief line will be 2". BOP's, drills and tests will be recorded in the driller's log. BOP will be tested every 24 hours and recorded in IADC Log.

6. Mud Program: (Sufficient quantity of mud and weight material will be available on location).

(See Attached Drilling Procedure.

7. Auxiliary Equipment:
   a. Kelly cock will be in use at all times.
   b. Stabbing valve to fit drill pipe will be present on floor at all times.
   c. Mud monitoring will be visual. No abnormal pressures are anticipated.
   d. Floats at bits.
   e. Drill string safety valve(s) to fit all pipe in drill string will be maintained on the rig floor while drilling operations are in progress.

8. Coring, Logging, and Testing Program:

(See Attached Drilling Procedure)

9. No abnormal pressures, temperatures or potential hazards such as H_2S are expected to be encountered.

10. The drilling of this well will start approximately (July 1980) and continue for 10 to 12 days.

Your office will be notified of spudding in sufficient time to witness cementing operations. Immediate notice will be given on blowouts, fires, spills, and accidents involving life threatening injuries or loss of life. Prior approval will be obtained before appreciably changing drilling program or commencing plugging operations, plug back work, casing repair work or corrective cementing operations.

ROCKY MOUNTAIN DIVISION - TENNECO OIL COMPANY

DATE 4/30/80

WELL: Hospah AI-1 FIELD: S. Hospah COUNTY McKinley, N.

PROPOSED TD: 1715' TYPE OF WELL Dual Air Inj. SECURITY STATUS None

AFE Not Est. LOCATION: 1475' FNL & 2725' FEL 12-17N-9W

Submitted BY: [signature]

Approved By: [signature] [signature]

DRILLING PROCEDURE

1. Set 1 jt 20" as conductor pipe. Drill rat hole and mouse hole.
2. MIRU. Fill mud pit with FSW.
3. Drill 17-1/2" hole to ± 120' and set 13-3/8" surface pipe to TD and cement w/Class C + 2% $CaCl_2$ (Dowell). WOC 6 hrs.
4. Screw on lower casing head and adapter flange. NUBOP stack and test.
5. RIH w/12-1/4" RB and drill out shoe.
   a) Drill string should be 4-1/2" drill pipe, 50000 lb 8" drill collars, stabilizers (above bit and 60' above bit), bit sub and bit.
6. Drill 12-1/4" hole to 1715' using FSW.
7. Circulate 2 hrs on bottom to condition and clean hole.
   Call Magcobar (Larry Wattenburger) to add gel for conditioning.
8. POOH.
9. Log hole w/Schlumberger.
10. GIH and condition to run casing. POOH laying down.
11. Gemoco (Houma, La. 504/872-3266) will supply turbolizers and dual elevators and slips.
12. Run dual strings of 4-1/2" casing in tandem to TD at 1715'. Cement through 1 string and bull plug the other and run dry.
13. RU Dowell to cement. Aluminate cement should be brought up to 1450' with Class H w/40% silica flour to surface.
14. Land casing in dual hanger and cement.
15. Remove BOP stack and NU wellhead.
16. RDMO.

DRILLING PROGRAM

LEASE & WELL NO. Hospah AI-1 FIELD S. Hospah COUNTY McKinley,

PROPOSED DEPTH 1715' GR ELEV ± 6998'

CASING PROGRAM: See attachment for casing and tubing design.

	SURFACE	INTERMEDIATE	LONG STRING
HOLE SIZE	17-1/2"	-	12-1/4"
CASING SIZE	13-3/8"	-	2-4-1/2"
DEPTH	120'	-	1715'

WELL-HEAD DESCRIPTION:

CASING HEAD (SIZE & WP) 13-3/8" & Dual 4-1/2",2000 lb SPOOLS

TUBING HEAD 2000 lb WP 4-1/2" & 2-3/8" M-VALVES 2000 lb WP 2" full openi

OTHER Gulfco - Tom Hawkins (Denver

FORMATION TOPS:

NAME	DEPTH	ESTI BHP	OFFSET WELL DATA
Upper Hospah	1555'	400#	
Lower Hospah	1620'	400#	
OWC	1648'		
TD	1715'		

HOLE DEVIATION:

Deviation surveys shall be taken every 500 feet or each trip, whichever occurs first and at other times as deemed necessary by Tenneco representative. Maximum deviation shall be 1° on surface hole with max change of 1° per 100'. Maximum rate of change below surface casing shall be 1° per 100' or a total of 2-3° degree at TD. Record each totco on the IADC Drilling Report.

MUD PROGRAM:

See attached mud program.

DRILL PIPE MEASUREMENTS:

Drill pipe ~~will be steel line~~ measured out of the hole at all coring, logging, and casing points.

CASING & CEMENTING PROGRAM

SURFACE CASING: 13-3/8 inch OD in a 17-1/2 inch hole set at ± 120 feet.

83 ft^3 required with zero wash-out and desired cement top at surface feet.

Percent excess to be used 100 (which is an estimated 3-1/4 " hole enlargement).

Therefore, mix 160 ft^3. Lead Slurry (125 sx)

Class C w/2% $CaCl_2$

Yield 1.32 ft^3/sx; WT 14.9 PPG; Mix Water 6.3 gal/sx; Pumping time 120 min.

Remarks

Tail-in slurry (sx)

Yield ft^3/sx; WT PPG; Mix Water gal/sx; Pumping time min

Remarks

INTERMEDIATE CASING: inch OD in a inch hole set at feet,

ft^3 required w/zero wash-out and desired cement top at feet.

Percent excess to be used (which is in addition to calipered-hole). Therefore,

mix ft^3. Lead Slurry (sx)

Yield ft^3/sx; WT PPG; Mix Water gal/sx; Pumping time min

Remarks

Tail-in Slurry (sx)

Yield ft^3/sx; WT PPG; Mix Water gal/sx; Pumping time mi

Remarks

PRODUCTION CASING: 2-4-1/2 inch OD in a 12-1/4 inch hole set at ± 1715 feet.

1025 ft^3 required w/zero wash-out and desired cement top at surface feet.

Percent excess to be used 20 (which is in addition to calipered-hole). Therefore,

mix 1230 ft^3. Lead Slurry (700 sx) 1450' to surface

Run Class H W/40% silica flour and fluid loss additive

Run 31 BBl spacer

Yield 1.49 ft^3/sx; WT 16.2 PPG; Mix Water 5.87 gal/sx; Pumping time 180 mi

Remarks

Tail-in Slurry (190 sx) From TD to 1450

Hi-alumina (calcium aluminate cement) w/fluid loss

Yield 1.01 ft^3/sx; WT 16.3 PPG; Mix Water 40% by weight gal/sx; Pumping time - mi

Remarks Column weight is .8475 psi/ft. Frac gradient in area is .94 psi/ft.

FLOAT EQUIPMENT, CENTRALIZER, SCRATCHER PROGRAM

SURFACE CASING: 13-3/8

Run Dowell float equipment and 1 centralizer on bottom joint

INTERMEDIATE CASING:

PRODUCTION CASING (LINER) Dual strings of 4-1/2 casing.

Run Dowell float equipment on 1 string (shoe, 1 joint, collar) and bull plug the second string. Turbolizer program to be developed by Gemoco. Run Bull plugged string dry.

EVALUATION PROGRAM (FROM CATEGORY II)

LOGGING:

COMPANY	OVER INTERVALS	SCALES	TYPE LOGS
Schlumberger	TD to surface	2", 5"	DIL w/MSFL/GR
Schlumberger	"	"	CNL/FDC/GR
Schlumberger	"	"	BHC Sonic - GR

CORING: None

CATCHING SAMPLES: None

MUD LOGGING INSTRUCTIONS: None

DRILL STEM TESTS: None

REMARKS:

BLOWOUT PREVENTERS

Use BOP design as per attachment. The minimum assembly will consist of 3 preventors----2 ram type and one bag type. An accumulator with a closing unit is required. Accumulator reservoir pressure shall be sufficient to close all three preventors simultaneously in 20 seconds with the charging pumps closed-down. Minimum accumulator pressure shall be 1500 PSI initially and not less than 1200 PSI when all preventers are closed.

When nippling-up, test all BOPS, lines, and choke manifold to 1000 PSI with cold water, not mud, or to pressure specified by Tenneco representative.

Operate BOPS, choke manifold valves and kelly cock on each tour and report in IADC Report Book. Operate blind rams when out of hole each trip. Have extra pipe rams on location at all times while drilling and completing. Have a 3000 PSI WP full opening valve stab-valve, with proper connections, on the rig floor.

Locate all choke manifolds, lines, and valves at the side of and away from the substructure. Adequately support and tie-down the manifold.

The drilling spool below the BOP's shall have adequate I.D. to permit the casing hanger to drop-through on any subsequent string of casing.

DEPTH FROM	DEPTH TO	WEIGHT		WL	PV	YP	SOLIDS	OIL	DESCRIPTION - DISCUSSION
Surf	120		8.33	-	-	-	-	-	Field salt water
120	1715		8.33	-	-	-	-	-	Field salt water
TD			8.7	20	40				Soda ash and gel to stabilize and clean hole for logging and running pipe

	Interval	Length of Int.	Wt. #/Ft.	Interval Weight	Cum Weight	Grade	Joint	Design Factors 1.2 Col.	1.6 Ten.	Top 1.0 Burst	Btm Burst	Casing Cost/Ft.
CONDUCTOR 20 in. OD	Surface to 40'	40'										
SURFACE 13-3/8 in. OD	Surface to 120'	120'	61	7320	7320	K-55	40'	16.6	86			
INTERMEDIATE ____ in. OD												
PRODUCTION 4-1/2 in. OD	Surface to TD Dual strings	1715'	10.5	36,015	36,015	K-55	40'	2.8	8.1			
LINER ____ in OD												

REPORTS

Drilling reports for the past 24 hours will include depth, footage, time distribution, activity breakdown, mud properties, bit record, bottom hole assembly, daily and cumulative mud costs, plus any other pertinent information, will be called into Tenneco Oil Company, Denver, Colorado, between 7:30 a.m. and 8:00 a.m.

1. 303-758-7130 (Office) Don Barnes
   303-758-7287 (Office) Don Barnes' private line, Monday-Friday (before 7:45 a.m)
   303-936-0704 (Home) Don Barnes, weekends and holidays.
2. George Ramsey (Home) 303-771-5154.
3. John Owen (Home) 303-795-0221.

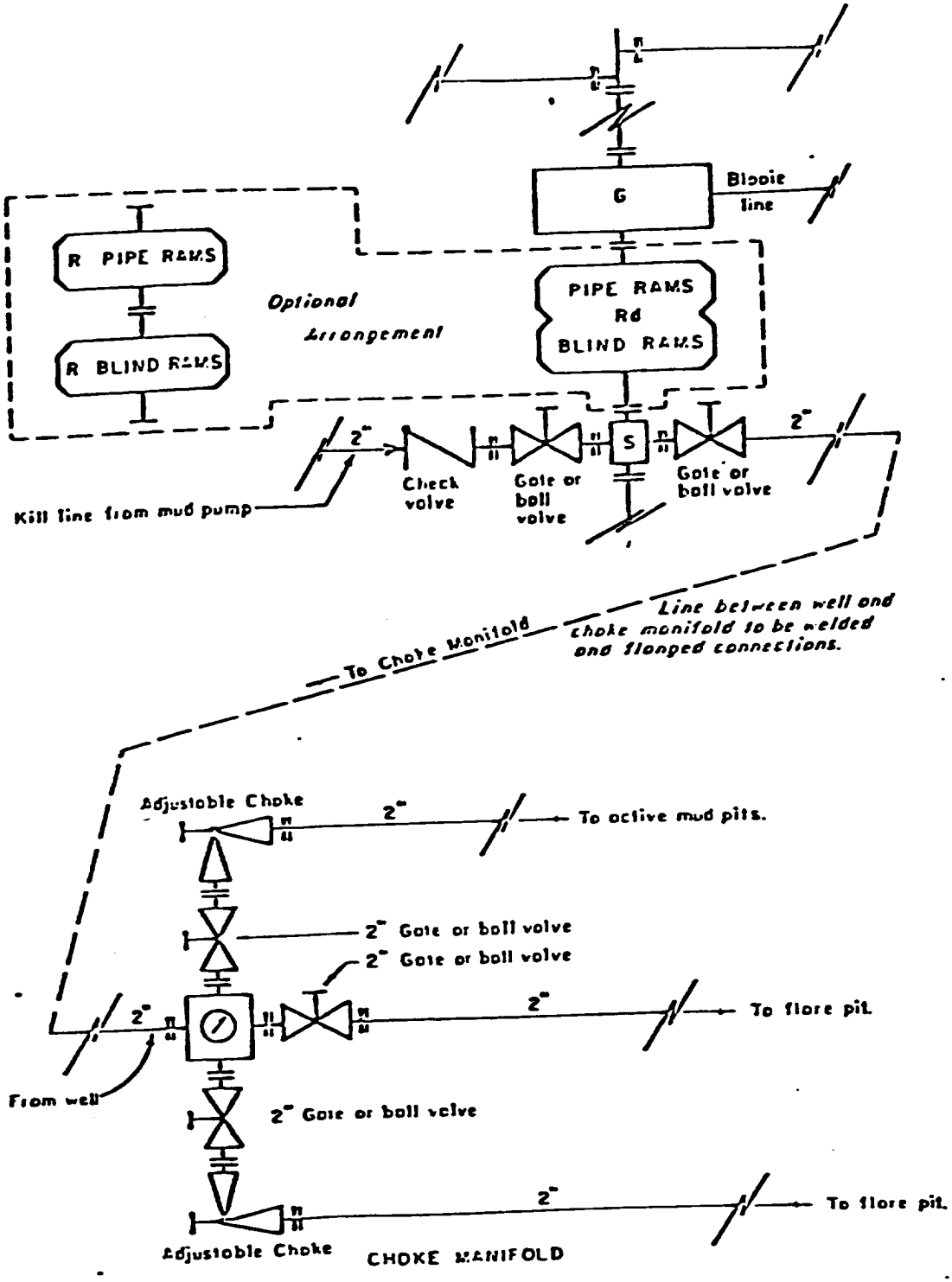
The yellow sheet of the IADC Report is to be filled out completely. The original copy of the drilling time recorder, and copies of any invoices from this well, signed and received for Tenneco Oil Company, will be mailed daily to:

TENNECO OIL COMPANY
ROCKY MOUNTAIN DIVISION
PENTHOUSE, 720 SOUTH COLORADO BOULEVARD
DENVER, COLORADO 80222

ATTENTION: Drilling Department

IN CASE OF EMERGENCY, NOTIFY THE FOLLOWING:

1. Mr. Don Barnes, Division Drilling Engineer.
2. Mr. George E. Ramsey, Jr., Drilling Engineers Supervisor
3. Mr. John W. Owen, Project Drilling Engineer.
4. Mr. Mike Lacey, Division Production Manager (Home 303-979-0509).



All equipment to be 3,000 psi working pressure except as noted.

- Rd Double ram type preventer with two sets of rams.
- R Single ram type preventer with one set of rams.
- S Drilling spool with side outlet connections for choke and kill lines.
- G Rotating head 150 psi working pressure minimum

ARRANGEMENT C

TENNECO OIL COMPANY
ROCKY MOUNTAIN DIVISION

REQUIRED MINIMUM
BLOWOUT PREVENTER AN
CHOKE MANIFOLD

J. MAGILL 10-26-79 EVI

SURFACE USE PLAN

1. Existing Road - Please refer to Map No. 1 which shows the existing roads. New roads which will be required have been marked on this map. All existing and new roads will be properly maintained during the duration of this project.

2. Planned Access Roads - Please refer to Map No. 1. The grade of the access roads will be consistent with that of the local terrain. The road surface will not exceed twenty feet (20') in width. Upon completion of the project, the access road will be adequately drained to control soil erosion. Drainage facilities may include ditches, water bars, culverts or any other measure deemed necessary by trained Company personnel to insure proper drainage. Gates and/or cattleguards will be installed if necessary.

3. Location of Existing Wells - Please refer to Map No. 2.

4. Location of Tank Batteries, Production Facilities, and Production Gathering and Service Lines - Please refer to Maps No. 1 and No. 2. Map No. 2 shows the existing roads and new proposed access roads. All known production facilities are shown on these two maps.

5. Location and Type of Water Supply - Water for the proposed project will be obtained from

6. Source of Construction Materials - No additional materials will be required to build either the access road or the proposed location.

7. Methods of Handling Waste Materials - All garbage and trash materials will be put into a burn pit shown on the attached Location Plat No. 1. When clean-up operations are begun on the proposed project, the burn pit with its refuse will be buried to a depth of at lease three feet (3'). A latrine, the location of which is also shown on Plat No. 1. will be provided for human waste. If large amounts of liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying any of these materials into the watershed. No earthen pit will be located on natural drainage; all earthen pits will be so constructed as to prevent leakage from occurring.

8. Ancillary Facilities - No camps or airstrips will be associated with this project.

9. Wellsite Layout - Please refer to the attached Plat No. 1.

10. Plans for Restoration of the Surface - After completion of the proposed project the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding operation will be performed during the time period set forth by the regulatory body. The location production equipment will be painted as designated by the responsible government agency.

11. Other Information - The proposed site is located in the Hospah oil field. The topography is gently rolling hills supporting sparce vegetation. The soil is sandy, sandy loam. The surface and minerals are held in public domain.

12. Operator's Representative -

SEE DRILLING PROGNOSIS

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

L. Freeman
Staff Production Analyst

LF/gh

841 - 7-61

TENNECO OIL COMPANY

CALCULATION SHEET

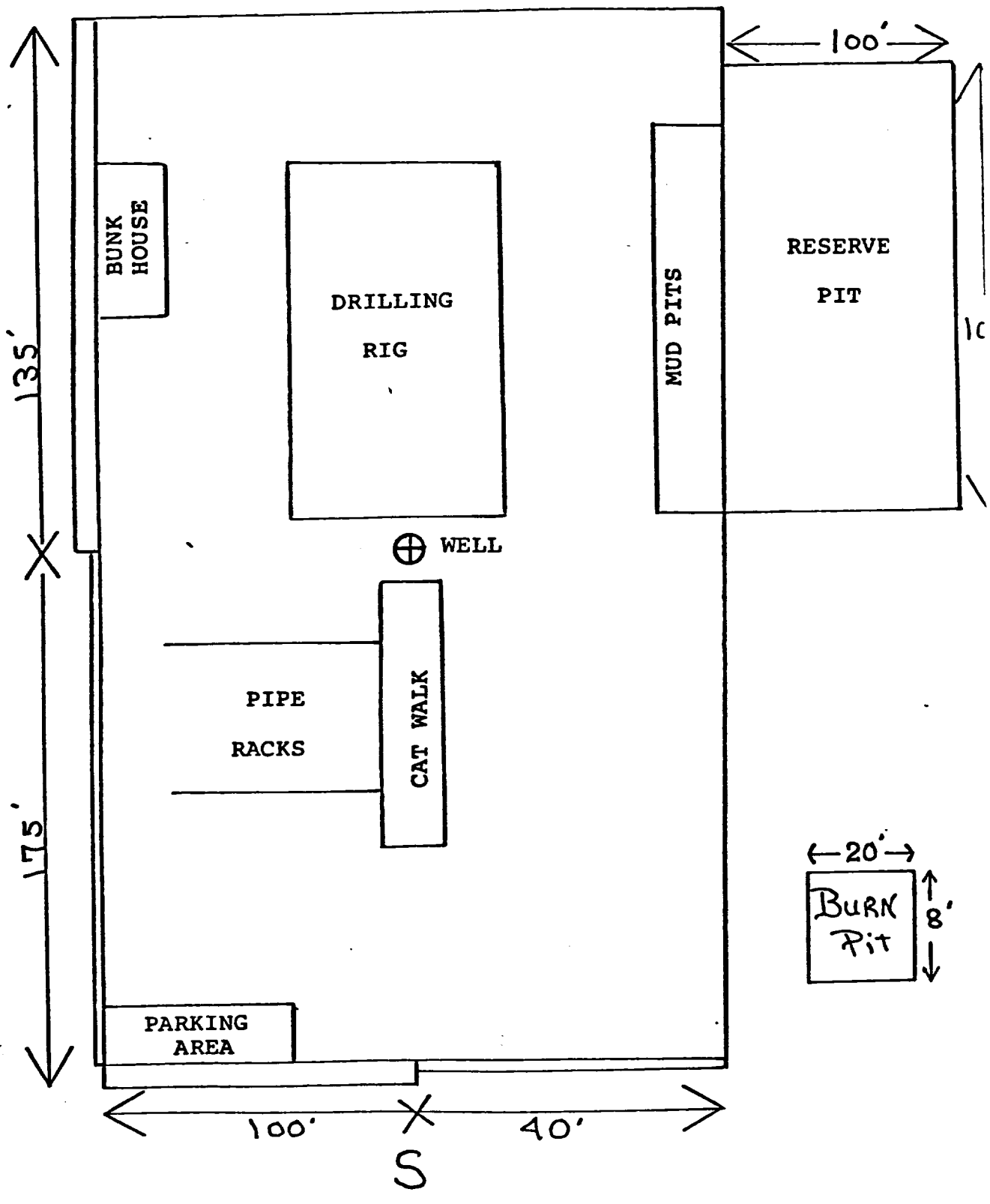
PANY

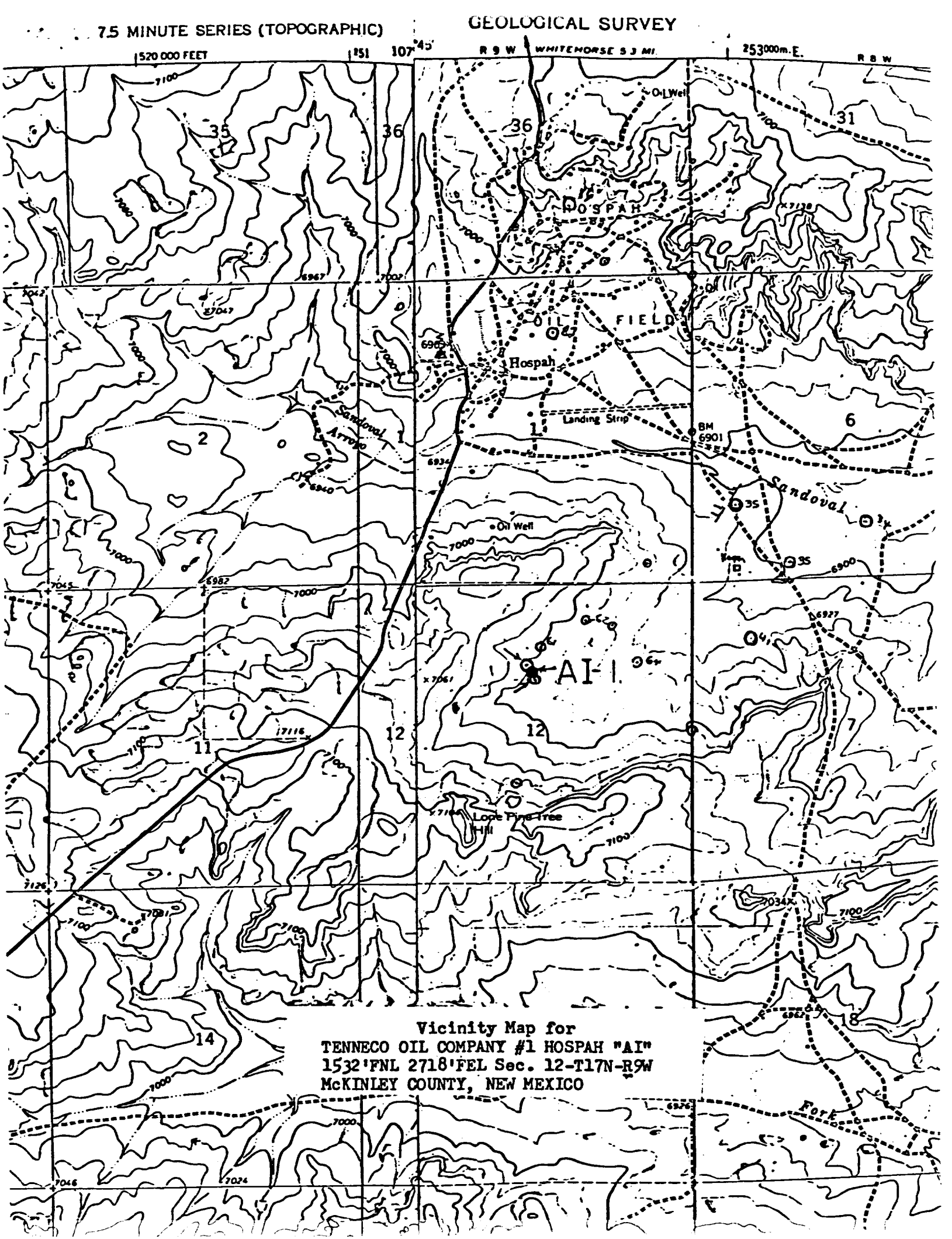
EXHIBIT

JECT DRILLING WELL SITE LAYOUT Hospah AI-1

ATION

DATE





Vicinity Map for
TENNECO OIL COMPANY #1 HOSPAH "AI"
1532'FNL 2718'FEL Sec. 12-T17N-R9W
McKINLEY COUNTY, NEW MEXICO