Form 9-331 C
(May 1963)

COPY TO O.C.C.

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42 R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: LC - 030180-b

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Farnsworth "B" Federal

9. WELL NO.: 10

10. FIELD AND POOL, OR WILDCAT: Scarbrough-Yates-Seven River

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 7-26-37

12. COUNTY OR PARISH: Lea

13. STATE: NM

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

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: P.O. Drawer "A", Levelland, Texas 79336

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 950 FNL & 1857 FWL, Sec. 7(Unit C, NE¼,NW¼)

At proposed prod. zone:

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 3.7 miles south Jal

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: 40

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

19. PROPOSED DEPTH: 3500'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 2963.1 GR

22. APPROX. DATE WORK WILL START*: Jan 1, 1979

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	9 5/8"	36#	1200'	Circulate to surface
8 3/4"	7"	23# - 26#	3500'	Circulate to surface

After reaching TD, logs will be run and all formations evaluated. Perforate and/or stimulate as necessary in attempting commercial production.

Mud Program:
0 - 1200' Native Mud and fresh water
1200' - 3500' Brine water and commercial mud to maintain good hole condition

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

BOP program attached

Archaeological reconnaissance attached

RECEIVED
NOV 28 1978
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

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 Dennis Evans TITLE Assist. Admin. Analyst DATE 11-17-78

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

0 + 4-USGS-H
1-Houston
1-Susp
1-DE

APPROVED AS AMENDED
DEC 5 1978
James F. Sims
JAMES F. SIMS
DISTRICT ENGINEER

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Amoco Production Co.	Farnsworth "B" Federal	10

Unit Letter	Section	Township	Range	County
C	7	21 South	37 East	Lea

Actual Footage Location of Well:
950 feet from the North line and 1857 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
2963.1	YATES SEVEN RIVERS	SCARBOROUGH	40 Acres

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

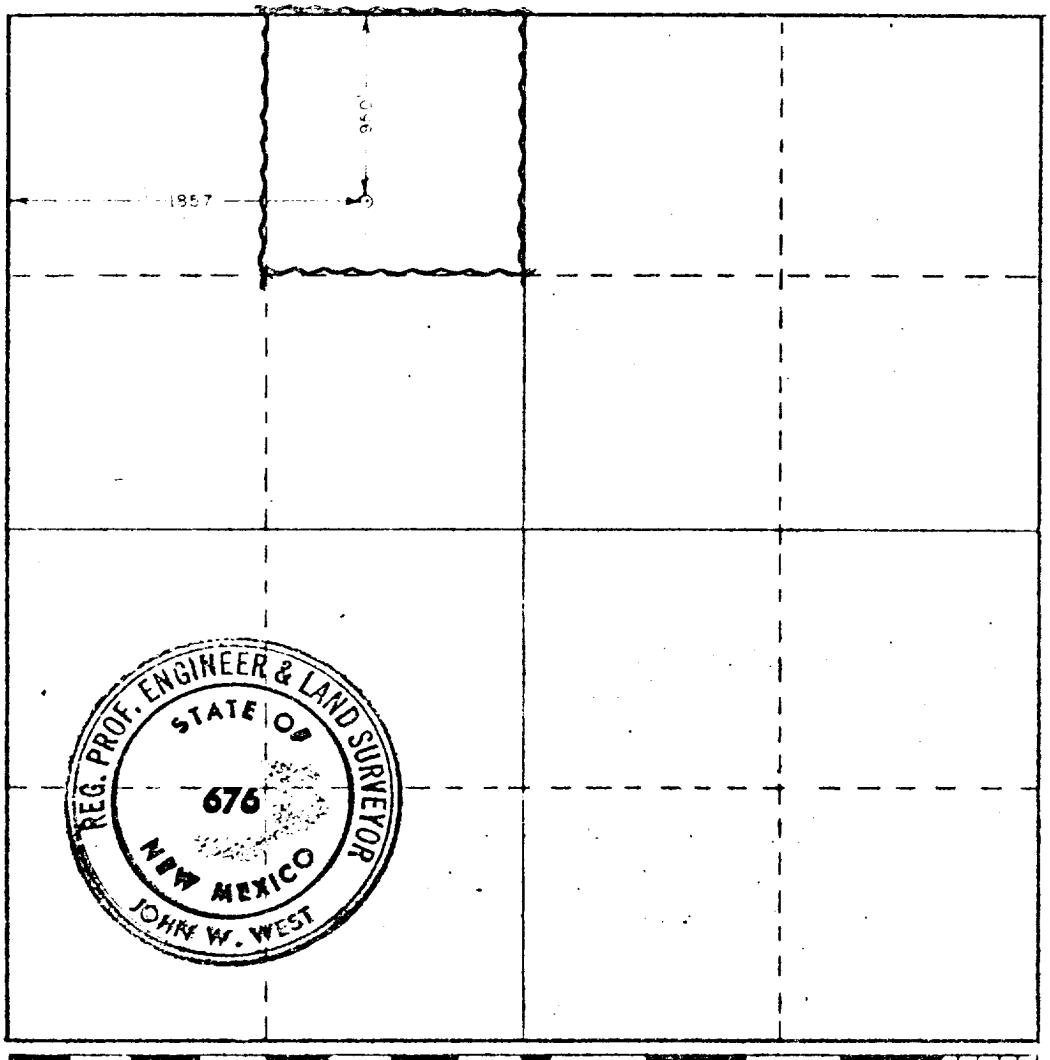
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.

Name: Dennis Evans

Position: Assist. Admin. Analyst

Company: Amoco Prod. Co.

Date: 10-30-78

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: October 20, 1978

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

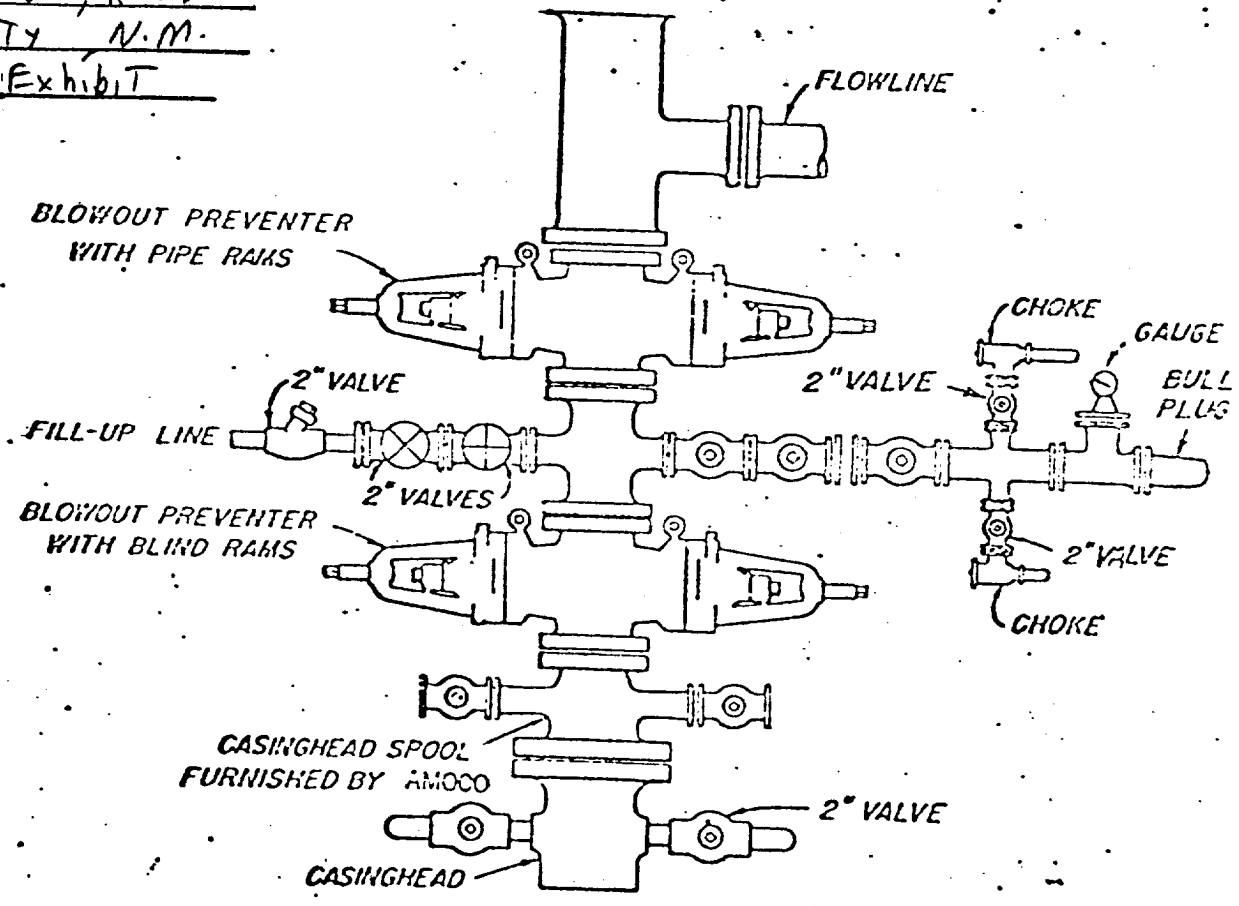
ATTACHMENT "B"
NOTES

1. Blow-out preventers and master valve to be fluid operated and oil fittings must be in good condition, 3,000# W.P. (6,000 p.s.i. test), minimum.
2. Equipment through which bit must pass shall be as large as the inside diameter of the casing that is being drilled through.
3. Nipple above blow-out preventer shall be same size as casing being drilled through.
4. Kelly cock required, 3,000# W.P. (6,000 p.s.i. test) minimum.
5. OMSCO or comparable safety valve must be available on rig floor at all times with proper connection or sub, 3,000# W.P. (6,000 p.s.i. test), minimum.
6. Blow-out preventers and master valve while drilling intermediate hole to 6000' may be 2,000# W.P. (4,000 p.s.i. test), minimum.
7. Choke assembly, beyond second valve from cross, may be positioned (Optional) outside of derrick foundation.
8. Spool or cross may be climinated if connections are available in the lower part of the blow-out preventer body.
9. Plug valves - gate valves are optional. Valves shown as 2" are minimum size.
10. Casing head and casing head spool, including attached valves, to be furnished by Amoco.
11. Rams in preventers will be installed as follows:

When drilling, use:
Top Preventer - Drill pipe rams
Bottom Preventer - Blind rams or master valve

When running casing, use:
Top Preventer - Casing rams
Bottom Preventer - Blind rams or master valve

Amoco Production Co.
Farnsworth "B" Fed #10
Sec 7, T-26-S, R-37-E
Lea County, N.M.
Exhibit



BLOWOUT PREVENTER HOOK-UP

AMOCO PRODUCTION COMPANY

EXHIBIT D-1 MODIFIED

JUNE 1, 1962

Attachment to "Application for Permit to Drill", Form 9-331 C

Farnsworth "B" Federal Well No. 10, 950' FNL & 1857' FWL,
Section 7, T-26-S, R-37-E, Lea County, New Mexico

1. Location

   See attached Form C-102

2. Elevation

   See attached Form C-102

3. Geologic name of surface formation.

   Quaternary

4. Type of drilling tools and associated equipment to be utilized.

   See Form 9-331 C

5. Proposed drilling depth.

   See Form 9-331 C

6. Estimated tops of important geologic markers.

   Anhydrite 1040'
   Yates 2800'
   Seven Rivers 3070'

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

   Yates 2800'
   Seven Rivers 3070'

8. Proposed casing program, including size, grade, and weight of each string and whether it is new or used.

Depth	Size	Weight	Grade	New or Used
1200'	9-5/8"	36#	K-55 ST&C	New
3500'	7"	23#-26#	K-55 ST&C	New

9. Proposed cementing program.

   9-5/8" Casing - Sufficient cement to circulate to surface.
   7" Casing - Sufficient cement to circulate to surface.

10. Blowout Preventer Progarm is attached.

11. Type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling, and the quantities and types of mud and weighting material to be maintained.

0 - 1200'	Native mud & fresh water
1200'- 3500'	Brine water, native mud & sufficient commercial mud to maintain good hole conditions.

12. Testing, logging and coring programs to be followed with provisions made for required flexibility.

Surface to 3500' - GR-CKL-FDC w/ caliper
Surface to 3500' - Dual laterlog - Micro SFL

13. Any anticipated abnormal pressure or temperatures expected to be encountered or potential hazards, such as hydrogen sulfide gas, along with plans for mitigating such hazards.

None anticipated.

14. Anticipated starting date and duration of operation.

Start December 1, 1978. Complete December 15,1978.

15. Other facets of the proposed operation operator wishes to point out for the Geological Survey's consideration of the application.

None

ATTACHMENT TO FORM 9 - 331C

APPLICATION FOR PERMIT TO DRILL

LEASE FRANSWORTH "B" FEDERAL WELL NO. 10

LOCATION Unit C, Section 7, T-26-S, R-37-E

POOL Scarbrough (SEVEN RIVERS)

COUNTY Lea STATE New Mexico

The undersigned hereby states the Amoco's representative, Mr. Steve Hardin, personally contacted James Permenter (El Paso Gas), the owner/lessee of the surface land where the proposed work is to be conducted and advised him of the proposed work, the construction site and pertinent roads included in the project. It is further stated that, upon being fully advised of the extent of the work and the effect upon the surface, said owner has consented to the said work and that agreement as to the compensation for damages to the surface estate has been reached.

If the well is a producer, all pits will be cut, filled and leveled as soon as practical after the pits are dry. If the well is a dry hole, pits will be filled as above, a dry hole marker will be installed, and the location and pad will remain intact.

Dennis Evans

Assistant Administrative Analyst

11-27-78
Date

Proposed Development Plan for Surface Use

1. Existing roads including location of exit from main highway.

   Detailed map showing drillsite location in relation to the nearest town and all existing roads within one mile of the wellsite are shown on Exhibit A. From Jal go south on paved road 3 miles; 2 miles south on dirt road; no new lease road will be built.

2. Planned access roads. No new road required.

3. Location of existing wells.

   All existing wells within one mile radius are shown on Exhibit C.

4. Location of tank batteries and flow lines.

   If the well is commercially productive, the production facilities (i.e. tanks, seperators, and treaters) will be produced into existing tank battery.

5. Location and type of water supply.

   Fresh and brine water to be hauled by commercial hauler, XL Transport Co. Jal, NM.

6. Source of construction materials.

   Caliche will be obtained from an existing pit located 4 mile N of well location. SE/4 SW/4 Section 19, T-25-S, R-37-E.

7. WASTE DISPOSAL

   a. Drill cuttings will be disposed of in the reserve pit.
   b. Drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry.
   c. Trash, waste paper, garbage and junk will be burned or buried with a minimum of 24" cover. Waste material will be contained to prevent scattering by wind prior to ultimate disposal.
   d. Any produced water will be contained in tanks and be disposed of in an approved manner. Oil produced will be stored in tanks until sold, at which time it will be hauled from location.
   e. Current laws and regulations pertaining to disposal of human waste will be complied with.
   f. If productive, maintenance waste will be placed in special containers and buried or hauled away periodically.

8. ANCILLARY FACILITIES

No camps, airstrips, etc. will be constructed.

9. WELLSITE LAYOUT

a. Size of Drilling Pad - 220' x 150' x 6"
b. Compacted - caliche
c. Surfaced - no
d. 450' square area aroung wellsite has been cleared by archaeologist.
e. See Exhibit "D".

10. RESTORATION OF SURFACE

Producing Well - all pits will be cut, filled, and leveled as soon as practical to original condition with rehabilitation to commence following removal of drilling and completion equipment. Rehabilitation to be completed in 180 days if possible.

Dry Hole - same as above with dry hole marker to be installed and surface reseeded if required.

11. OTHER INFORMATION

a. Terrain - Undulating plain with low, coppice-type, sand dunes.
b. Soil - Deep loamy sand.
c. Vegetation - Sparse, mesquite, oak brush, sage brush, yucca, gramma-bush muhly, fluffgrass and other grass.
d. Surface Use - grazing
e. Ponds and streams - none
f. Water wells - none
g. Residences and buildings - none
h. Arroyos, canyons, etc. - none
i. Well Sign - Posted at drillsite
j. Open Pits - All pits containing liquid or mud will be fenced.
k. Archaeological Resources - Drillsite, which is in undulating plain, semi-arid, desert county, is in a low environmental risk area. The total effect of drilling and producting in this area would be minimal. No known archaeological, historical, or cultural sites exist in the drill or road areas.

12. OPERATOR'S REPRESENTATIVE

Field personnel responsible for compliance with development plan for surface use is:

J. H. Hankins, Senior Drilling Foreman
P. O. Drawer "A"
Levelland, TX 79336
Office phone: 806-894-3163

LEASE & WELL NUMBER Farnsworth Federal "A" No. 12

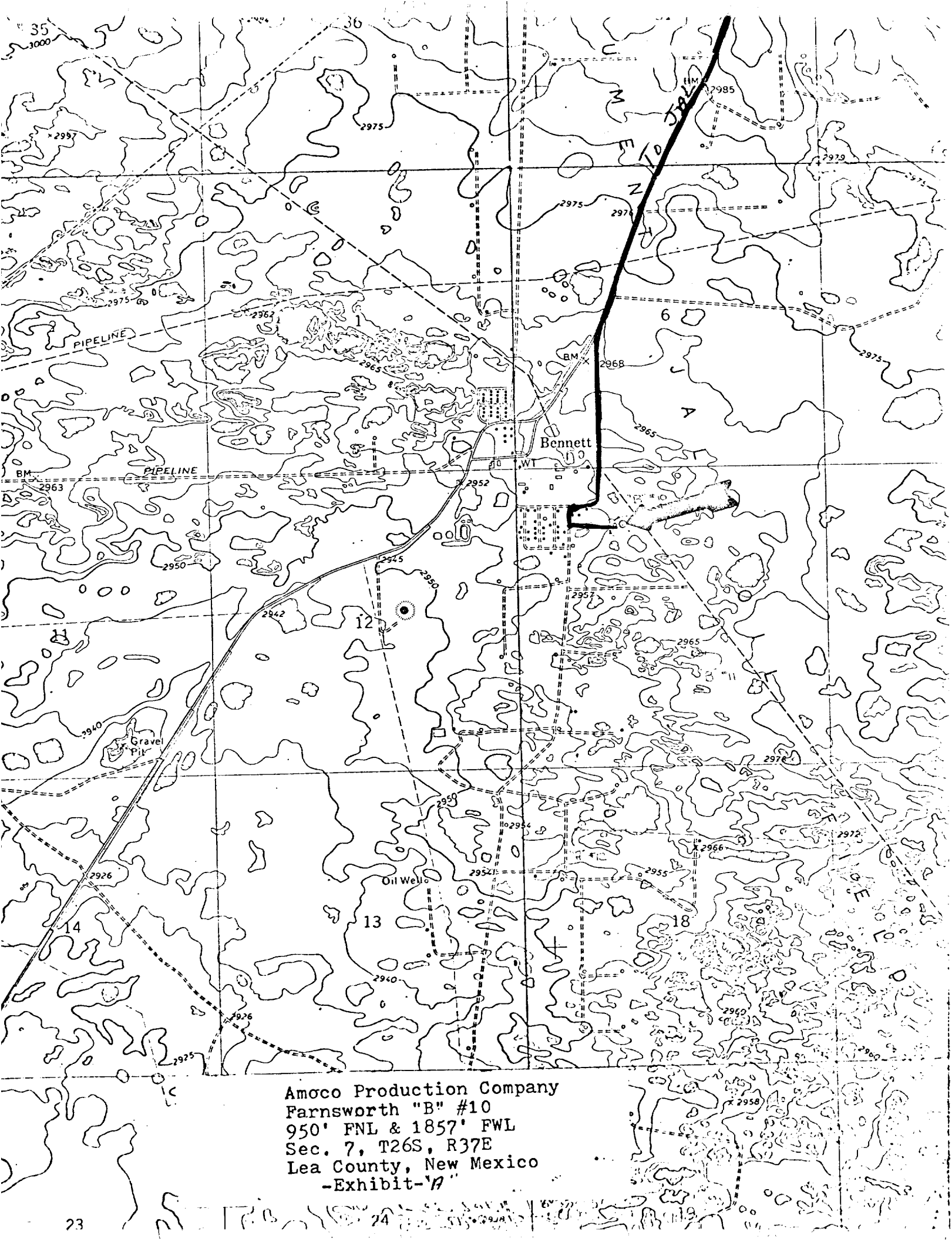
LOCATION D Unit, 890' FNL X 890' FWL, Sec. 18, T-26-S, R-37-F, Lea County

Certification: The following statement is to be incorporated in the plan and must be signed by the lessee's or operator's field representative who is identified in Item No. 12 of the plan.

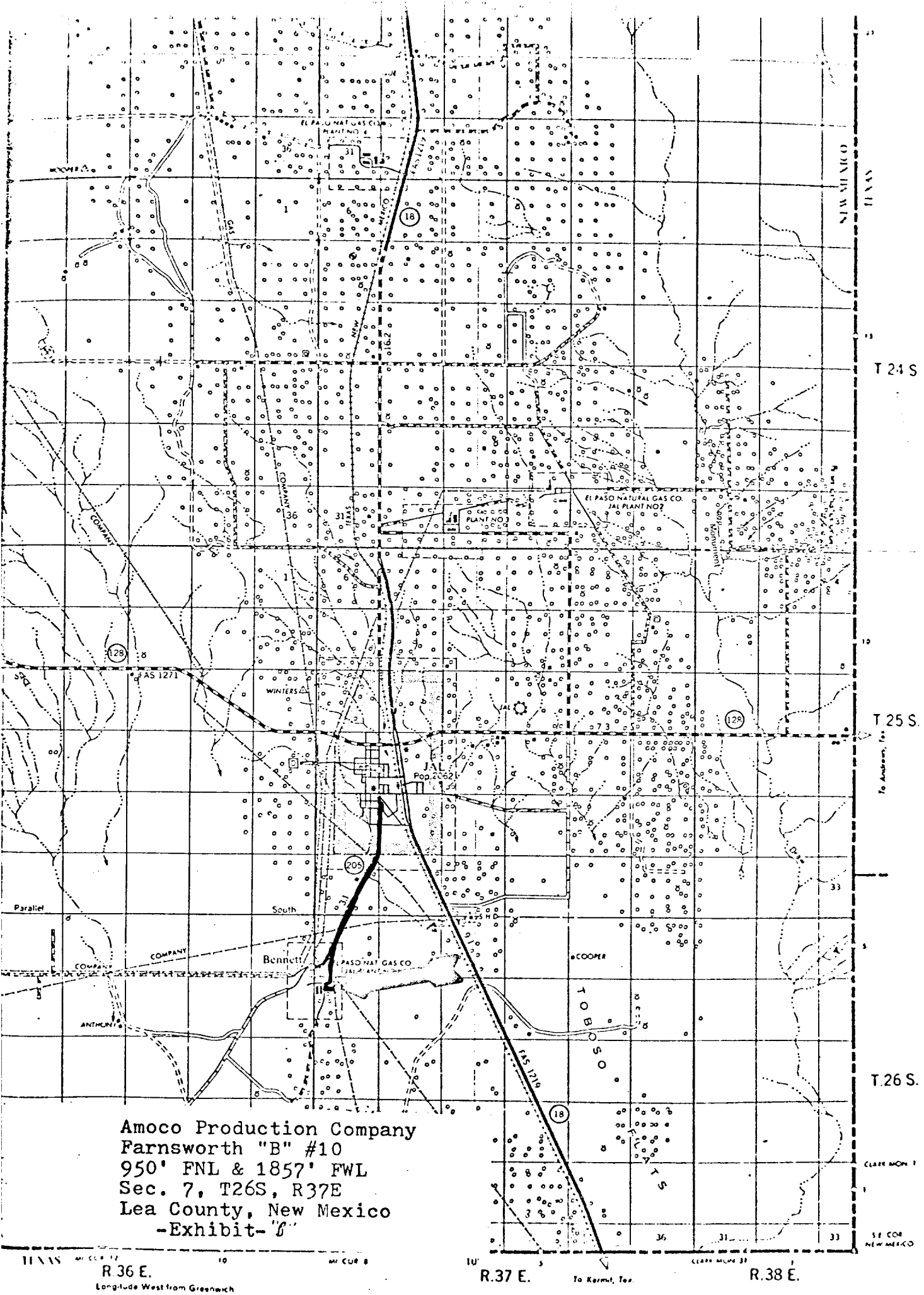
I hereby certify that I, or persons under my direct supervision have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated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

11-27-78
DATE

J. A. Hankins - Sr. Drlg. Foreman
NAME AND TITLE



Amoco Production Company
Farnsworth "B" #10
950' FNL & 1857' FWL
Sec. 7, T26S, R37E
Lea County, New Mexico
-Exhibit-"A"



Amoco Production Company
Farnsworth "B" #10
950' FNL & 1857' FWL
Sec. 7, T26S, R37E
Lea County, New Mexico
-Exhibit- "C"

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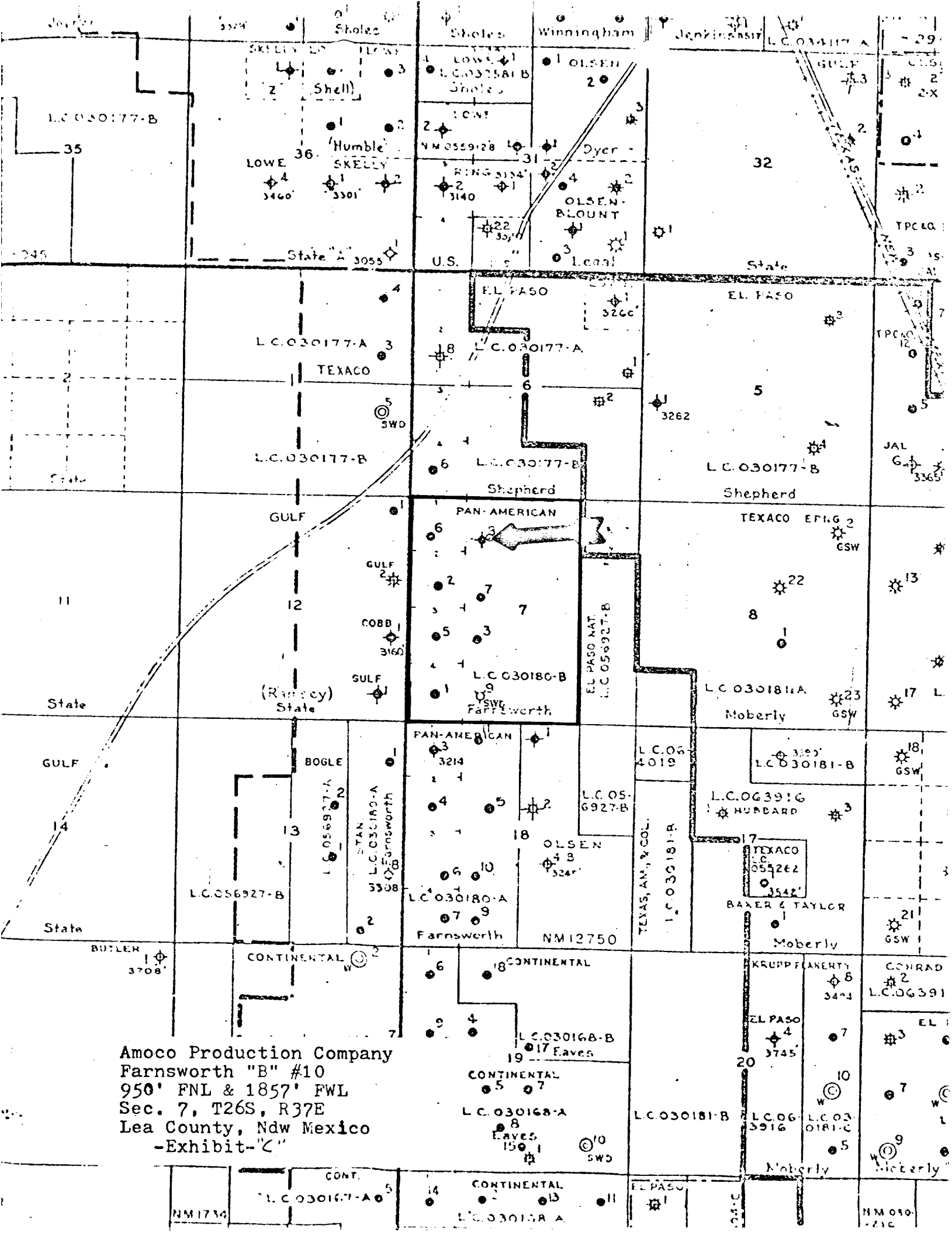
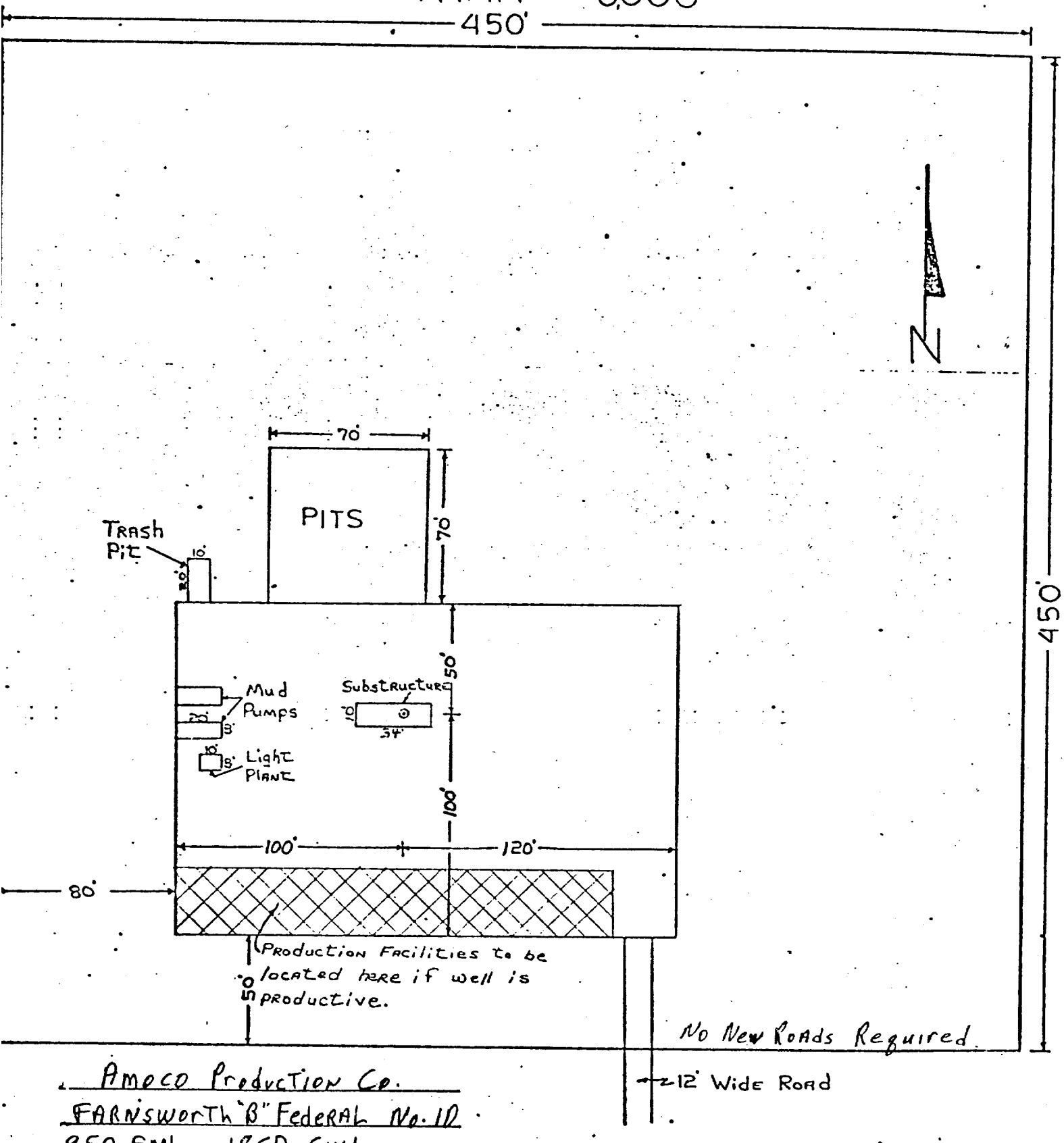
QUADRA



Amoco Production Company
Farnsworth "B" #10
950' FNL & 1857' FWL
Sec. 7, T26S, R37E
Lea County, Ndw Mexico
-Exhibit-"C"

DRILL SITE DIMENSIONS

LESS THAN 8,000'



Amoco Production Co.
FARNSWORTH "B" FEDERAL No. 10
950 FNL x 1850 FWL
Sec. 7, UNIT C, T-26-S, R-37-E
Exhibit "D"

Archaeological Clearance Report

for

Amoco Production Company

Farnsworth "B" Federal Well No. 10
Farnsworth "B" Federal Well No. 11
Farnsworth "A" Federal Well No. 12

Prepared

By

J. Loring Haskell

and

Bill Sweetland

Submitted

By

Dr. J. Loring Haskell
Principal Investigator
New Mexico Archaeological Services, Inc.
Carlsbad, New Mexico

2 November 1978

Permit No. 78-NM-120

Introduction

On 31 October 1978, New Mexico Archaeological Services, Inc., (NMAS), Carlsbad, conducted an archaeological reconnaissance for Amoco Production Company, Levelland, Texas, on lands administered by the Bureau of Land Management in Lea County, New Mexico. This project was expedited by Mr. Bob Couch, Administrative Analyst, and Mr. Dennis Evans, Assistant Administrative Analyst, Amoco Production Company. Dr. J. Loring Haskell, Principal Investigator, administered the project for NMAS. Mr. Bill Sweetland, Archaeological Associate, performed the reconnaissance under excellent field and weather conditions.

Survey Technique

For this project, each well location was investigated by walking them in a series of 20 ft wide, close interval (15° or less), zigzag corridors. In addition, a strip of land measuring 20 ft in width on each of the pads was reconnoitered for evidence of man's past activities. The access road was investigated in a similar fashion.

Farnsworth "B" Federal Well No. 10

Location

Farnsworth "B" Federal Well #10 will measure 450 x 450 ft and will be situated 950 ft from the north line and 1857 ft from the west line of:

Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)

Thus, as proposed, this well will be situated in the:

NE¼NW¼, Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)

This location is situated on an existing right-of-way.

Map Reference: USGS Jal Quadrangle, 7.5 Minute Series, 1969.

Terrain

This portion of the Eunice Plain is marked by low, semi-stable to stabilized sand dunes, with associated deflation basins. These deposits, of Holocene age, overlie former Jal Lake which in late Pleistocene times occupied the southern portion of the plain. Contemporary drainage is toward the east-southeast, i.e., in the direction of Monument Draw. San Simon Swale, a large collapse structure, lies to the northwest. Local soils belong to the Haplargid-Torripsamment association. Typic Torripsamments, however, are the sole sub-group present in the investigated area. Soil individuals consist of deep, coarse-textered, sandy loams and loamy sands. Owing to the thickness of Holocene sands, lacustrine sediments are not visible in the immediate vicinity.

Floristics

Although much of the area has been impacted due to previous construction, the southern segment of the Eunice Plain supports an overstory dominated by Quercus havardii, Artemisia filifolia, Yucca glauca, and Prosopis juilflora. Associated grasses include Muhlenbergia porteri, Sporobolus flexuosus, Sporobolus cryptandrus, Andropogon glomeratus, Setaria mocrostachya, and Stipa neomexicana. Owing to the lateness of the season, many annual forbs have already withered; however, Euphorbia spp., Chamaesarachae sp., Eriogonum spp., Suaeda sp., Solanum sp. and Senecio sp. are present.

Cultural Resources

No archaeological sites, or isolated manifestations, were recorded during this reconnaissance. Locally, the lack of

cultural resources can be attributed to the fact that this location is situated within an area devoid of lithic material suitable for tool manufacture. Chert and quartzite cobbles do occur on Triassic-aged deposits beyond the confines of Jal Lake. The immediate area, however, undoubtedly has been utilized by man on a transitory basis beginning in Archaic times. Hunting pursuits and related maintenance activities probably figured prominently in the local economies of these peoples.

Recommendations

NMAS recommends clearance for Farnsworth "B" Federal Well No. 10 and suggests that Amoco's work-related activities proceed without interruption of existing plans.

Farnsworth "B" Federal Well No. 11

Location

Amoco's location will measure 450 x 450 ft and will be situated 1980 ft from the south line and 1980 ft from the east line of:

Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)

As proposed, it will be located in the:

NW¼SE¼, Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)

Farnsworth "B" Federal Well No. 11's proposed access road will measure 12 x 1500 ft and will pass through the:

NW¼SE¼, Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)
NE¼SW¼, Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)
NW¼SW¼, Section 7, T26S, R37E, NMPM, Lea County, NM (BLM)

Map Reference: USGS Jal Quadrangle, 7.5 Minute Series, 1969.

Terrain

Topographically, this locality is characterized by a semi-

stablized dune field with associated inter-dunal areas. While most dunes range between 1 and 1.5 m in height, the location is situated on the edge of a field which has crests averaging 5 m. Drainage is toward the east-southeast. Without exception, soil individuals belong to the Typic Torripsamment subgroup which are noted for their absence of soil horizons. Soils consist of deep, coarse-textured sandy loams devoid of lithic inclusions. Lacustrine deposits are not evidenced in deflation basins.

Floristics

The floral assemblage at Amoco's Farnsworth "B" Federal Well No. 11 is dominated by Prosopis juliflora, Artemisia filifolia, Yucca glauca, and Quercus havardii. These plants are frequently associated with a diverse array of forbs and grasses on dunes. Principal denizens making up the understory include Solanum elaeganifolium, Chamaesarocha sp., Pectis sp., Palafoxia sphacelata, Helianthus spp., and Aster sp. Graminacae is represented by Muhlenbergia porteri, Sporobolus flexuosus, Sporobolus cryptandrus, Andropogon glomeratus, Munroa squarrosa, Stipa sp., Aristida sp., and Cenchrus incertus.

Cultural Resources

No archaeological sites, or isolated manifestations, were recorded during NMAS' reconnaissance. Although no cultural resources were recorded in the surveyed area, the Eunice Plain per se has been occupied by man since Paleo-Indian times. During that period, the local economy was based on the exploitation of late Pleistocene fauna and megafauna. Ancient Jal Lake was a major center of this activity. By Archaic times, although

hunting still played a significant role in the local of economy, milling pursuits entered the picture. Thereafter, the immediate vicinity continued to be used on a sporadic basis up to the 1870's.

Recommendations

NMAS recommends clearance for Amoco's Farnsworth "B" Federal Well No. 11 and suggests that work-related activities proceed without modification of existing plans.

Farnsworth "A" Federal Well No. 12

Location

As proposed, Farnsworth "A" Federal Well No. 12 will measure 450 x 450 ft and will be situated 890 ft from the north line and 890 ft from the west line of:

Section 18, T26S, R37E, NMPM, Lea County, NM (BLM)

It will be located in the:

NW¼NW¼, Section 18, T26S, R37E, NMPM, Lea County, NM (BLM)

This proposed location is located on an existing right-of-way.

Map Reference: USGS Jal Quadrangle, 7.5 Minute Series, 1969.

Terrain

Areal terrain is marked by an undulating plain with low, conrice-type, sand dunes. This landform embraces the southern segment of the Eunice Plain. Soil individuals belong to the Haplargid-Torripsamment asscoiation with Typic Torripsamments and Typic Haplargids occurring in the general area. Soils are coarse- to medium-grained, sandy loams and loamy sands, Typic Torripsamments, and fine sandy loams and loamy sands, Typic

Haplargids.

Floristics

Within the reconnoitered location, Prosopis juliflora, Artemisia filifolia, Quercus havardii, and Yucca glauca dominate the overstory. Commonly observed forbs include Palafoxia sphacelata, Solanum elaeagnifolium, Pectis sp., Euphorbia spp., Zinnia acerosa, and Kallstroemia sp. Principal grasses occurring in this floral community are Sporobolus spp., Bouteloua eriopoda, Muhlenbergia porteri, Tridens pulchellus, and Munroa squarrosa.

Cultural Resources

No archaeological sites, or isolated manifestations, were recorded during this reconnaissance. Lack of cultural resources can be attributed to a general absence of lithic material suitable for tool manufacture and a scant supply of potable water from Archaic times onward.

Recommendations

NMAS recommends clearance for Amoco's proposed location and suggests that work-related activities proceed without modification of existing plans.