

NMOCC COPY

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

## 12. TYPE OF WORK

DRILL ☒PLUG BACK ☐

## 13. TYPE OF WELL

OIL  
WELL ☐GAS  
WELL ☒OTHER ☐

## 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

1650' FNL X 1980' FWL Sec 35, (Unit F, SE/4, NW/4

At proposed prod. zone

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

16 miles southeast of Loco Hills

## 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

320-56.0

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

320-160

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

## 19. PROPOSED DEPTH

13,300'

## 20. ROTARY OR CABLE TOOLS

Rotary

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

3637.9 GL

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

June 5, 1978

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	54.5#	750'	Circulate
12 1/4"	9 5/8"	40#	6500'	Circulate
8 3/4"	7"	23#, 26#	11860'	Tie back to 9 5/8"
6 1/4"	5"	18#	11300' to 13300'	Tie back to 7"

Propose to drill and equip well in the Silurian Devonian formation. After reaching TD, logs will be run and evaluated; perforate and stimulate as necessary in attempting commercial production.

Mud program:

0' -	750' -	Native mud and fresh water
750' -	6500' -	Native mud and brine water
6500' -	10450' -	Commercial mud and cut brine water
10450' -	13300' -	Commercial mud w/KCL for 6% system and cut brine water.

BOP Program attached.

Gas is committed - Ideal Basic Industries

Archaeological Clearance Report attached.

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

TITLE

Administrative Analyst (SG)

DATE

5-22-78

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

JUL 03 1978

APPROVED BY

ACTING DISTRICT ENGINEER

DATE

JUL 03 1978

CONDITIONS OF APPROVAL, IF ANY:

0+5-USGS-A

1-Div

1-Susp

1-RC

THIS APPROVAL IS RESCINDED IF  
OPERATIONS  
ARE NOT COMMENCED WITHIN 3 MONTHS.  
EXPIRES OCT 03 1978

\*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>Amoco Production Co.</b>		Lease <b>Greenwood Unit Federal</b>		Well No. <b>12</b>
Unit Letter <b>F</b>	Section <b>35</b>	Township <b>18 South</b>	Range <b>31 East</b>	County <b>Eddy</b>
Actual Footage Location of Well:				
1650 feet from the North line and		1980 feet from the West line		
Ground Level Elev. <b>3637.9</b>	Producing Formation <b>SILURIAN - DEVONIAN</b>	Pool <b>und. SHUGART Siluro Don.</b>	Dedicated Acreage: <b>160</b> Acres	

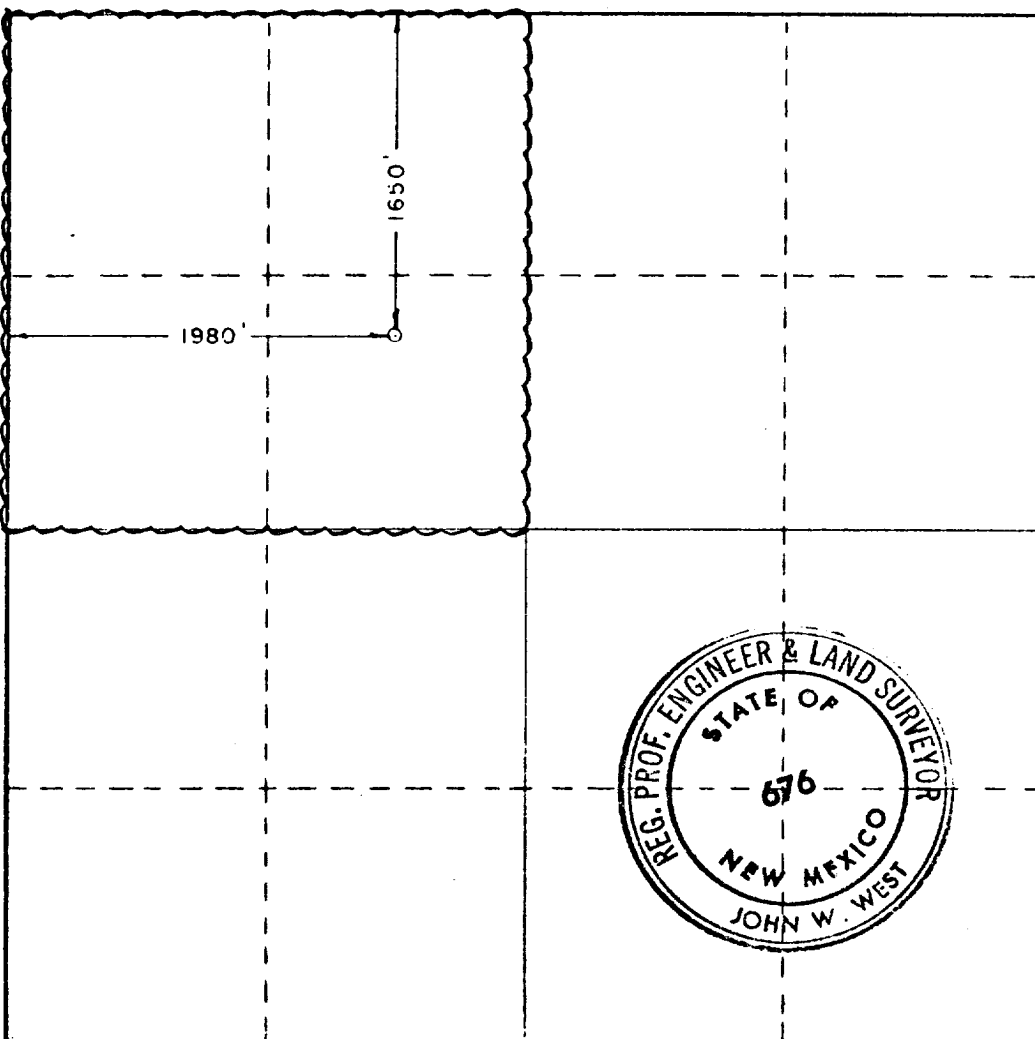
- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated 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 UNITIZATION

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.

**RECEIVED**  
JUN 29 1978  
U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO



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

Name: A.V. Huddy  
Position: ADMINISTRATIVE ANALYST  
Company: Amoco Production Co.  
Date: 6-28-78

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: 4/15/78

Registered Professional Engineer and/or Land Surveyor

John W. West

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

0 13. 660 90 1320 1680 1980 2310 2640 2000 1800 1000 800 0

1. BOP'S TO BE FLUID OVERVIEW.
2. BOP'S AND ALL FITTINGS MUST BE IN GOOD CONDITION AND RATED 3000 PSI W.P. MINIMUM.
3. EQUIPMENT THROUGH WHICH BIT MUST PASS SHALL BE AT LEAST AS LARGE AS CASING SIZE BEING DRILLED THROUGH.
4. RIGGERS ABOVE BOP'S SHALL BE SAME SIZE AS LAST CASING SET.
5. UPPER KELLY COCK IS REQUIRED AND SHALL BE 3000# W.P. MINIMUM.
6. T. 1. V. OR COMPARABLE SAFETY VALVE SHALL BE AVAILABLE ON RIG FLOOR WITH CONNECTION OR SUBS TO FIT ANY TOOL JOINT IN THE STRING. VALVE TO BE FULL BORE 5000# MIN.
7. VALVE NEXT TO SPOOL SHALL BE 4". OTHER EQUIPMENT MAY BE 3" OR 4". ALL CHOKE MANIFOLD EQUIPMENT SHALL BE FLANGED. FLOW LINE FROM MANIFOLD TO BE MINIMUM OF 3" AND STRAIGHT AS POSSIBLE WITH MINIMUM BENDS.
8. FLUID LINES FROM ACCUMULATOR TO BOP'S AND ALL REMOTE CONTROL FLUID LINES SHALL BE STEEL, AND RATED AT OR ABOVE MAXIMUM ACCUMULATOR PRESSURE. LINES SHALL BE ROUTED IN BUNDLES AND ADEQUATELY PROTECTED FROM DAMAGE.
9. USE RAMS IN FOLLOWING POSITIONS:\*

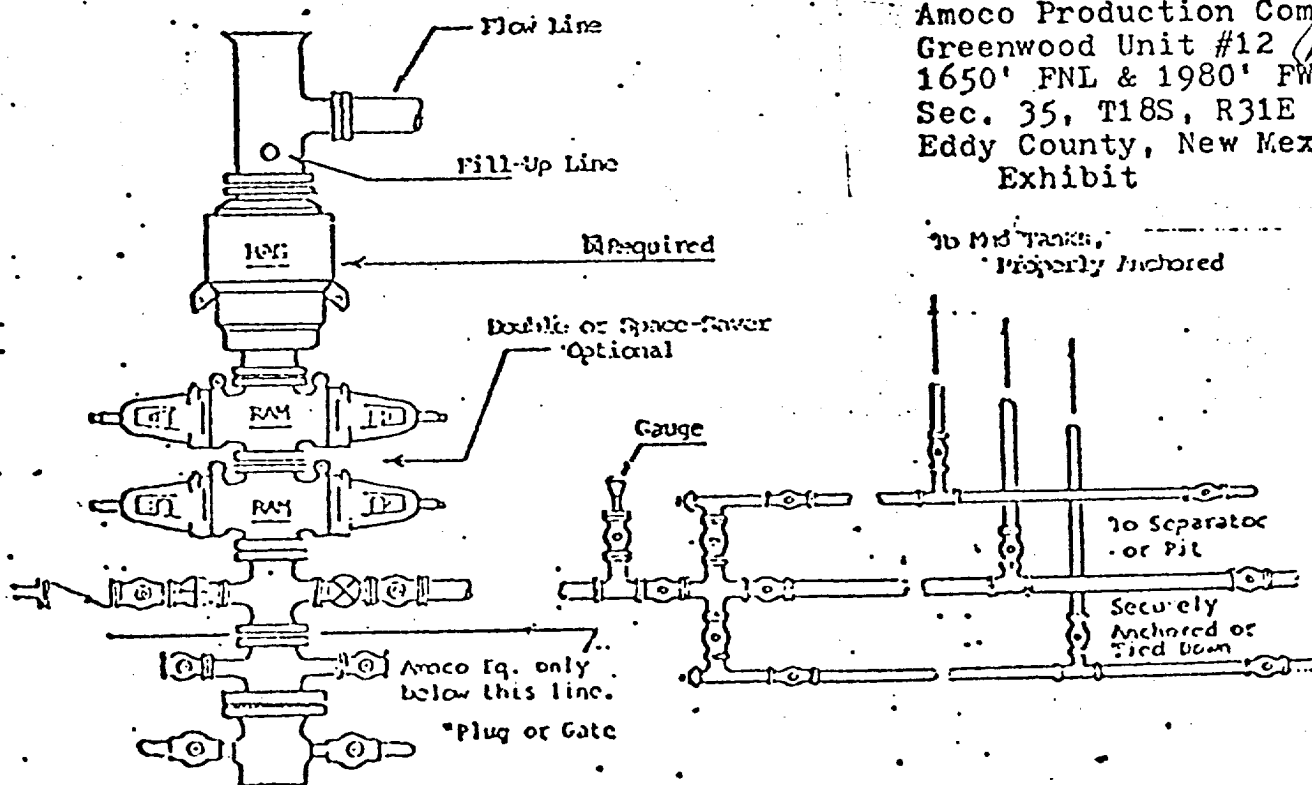
	DRILLING	RUNNING CASING
UPPER RAM	DRILL PIPE	CASING
LOWER RAM	BLIND	BLIND

\*AMOCO AREA SUPT. MAY REVERSE LOCATION OF RAMS.

10. CHOKE MANIFOLD, BEYOND SECOND VALVE FROM CROSS MAY BE OPTIONALLY POSITIONED OUTSIDE OF SUBSTRUCTURE.
11. EXTENSIONS AND HAND WHEELS TO BE INSTALLED AND BRACED AT ALL TIMES.
12. TWO INCH (2") LINES AND VALVES ARE PERMITTED ON THE KILL LINE.

NOTE: ALL UNMARKED VALVES MAY BE PLUG OR GATE VALVE, METAL TO METAL SEAL.

Amoco Production Company  
Greenwood Unit #12 (FEDERAL)  
1650' FNL & 1980' FWL  
Sec. 35, T18S, R31E  
Eddy County, New Mexico  
Exhibit



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

Amoco Production Company's Greenwood Unit Federal Well No. 12  
Unit F, 1650' FNL X 1980' FWL, Sec 35, T-18-S, R-31-#, Eddy County, NM

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.

Delaware 4870'	Wolfcamp 9670'	Morrow-10920'	Devonian 12480'
Bone Springs 6370'	Atoka 10565'	Mississippian 11860'	

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

Bone Springs 6370'	Morrow 10920'
Wolfcamp 9670'	Devonian 12480'
Atoka 10565'	

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

<u>Depth</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>New or Used</u>
750'	13 3/8"	54.5#	K-55	New
6500'	9 5/8"	40#	K-55	New
11860'	7"	23#, 26#	K-55	New
11300' to 13300'	5"	18#	K-55	New

9. Proposed cementing program.

13 3/8" csg - circulate to surface  
9 5/8" csg - circulate to surface  
7" csg - sufficient to tie back to 9 5/8"  
5" csg - sufficient to tie back to 7"

10. Blowout Preventer Program 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' -     | 750' -   | Native mud and fresh water                                  |
| 750' -   | 6500' -  | Native mud and brine water                                  |
| 6500' -  | 10450' - | Commercial mud and cut brine water                          |
| 10450' - | 13300' - | Commercial mud and W/KCL for 6% system and cut brine water. |
12. Testing, logging and coring programs to be followed with provisions made for required flexibility.
- GR-CNL-FDC w/caliper - surf to TD  
DLL s/MSFL - GR - Surf to TD  
BHC Sonic - surf to 6500'
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.
- June 5, 1978 July 5, 1978
15. Other facets of the proposed operation operator wishes to point out for the Geological Survey's consideration of the application.
- None

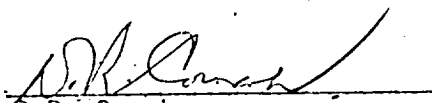
ATTACHMENT TO FORM 9-331C

APPLICATION FOR PERMIT TO DRILL

LEASE Greenwood Unit Federal WELL NO. 12  
LOCATION 1650' FNL & 1980' FWL, Sec 35, T-18-S, R-31-E  
POOL Shugart - Silurian - Devonian  
COUNTY Eddy

The undersigned hereby states that Amoco's representative, Mr. E.E. Pauley, personally contacted Snyder Ranch (Larry Squires) Lovington the 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.

  
D.R. Couch  
Administrative Analyst (SG)

May 22, 1978  
Date

Proposed Development Plan for Surface

RECEIVED

Amoco Production Company's Greenwood Unit Federal Well No. 12  
Unit F, 1650' FNL X 1980' FWL Sec 35, T-18-S, R-31-E, Eddy County

MAY 24 1978

U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

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 Loco Hills, go east on Hiway 82, 5.8 miles, turn south on Hiway 31, 6.7 miles, turn east on dirt road 2.1 miles, south .7 mile and east .1 mile. 600' new road will be built south to well location.
2. Planned access roads.  
600' of new road will be built from existing road to location. Caliche will be used.
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, separators and treaters) will be located on the southeast end of the drilling pad.  
See Exhibit D.
5. Location and type of water supply.  
Both fresh water and brine water will be obtained from Steve Carter & Son, Inc. Maljamar, New Mexico.
6. Source of construction materials.  
Caliche will be obtained from a pit in the NW/4 of SE/4 Sec 34, T-18-S, R-31-E, Eddy County.
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 - 330' x 210' x 6"
- b. Compacted - Caliche
- c. Surfaced - No
- d. 450' square area around 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 - Flat, featureless, plain with sand dunes.
- b. Soil - Sandy loam.
- c. Vegetation - Mesquite, broom snakeweed, yucca, oak brush, burrograss, grama grass
- d. Surface Use - Grazing. Lovegrass.
- e. Ponds and Streams - None
- f. Water Wells - None
- g. Residences and Buildings - None
- h. Arroyos, Canyons, etc. - None
- i. Well Sign - Will be posted at drillsite.
- j. Open Pits - All pits containing liquid or mud will be fenced.
- k. Archaeological Resources - Drillsite, which is in flat plain, is in a low environmental risk area. The total effect of drilling and producing would be minimal. No known archaeological, historical, or cultural sites exist in 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 Greenwood Unit Federal Well No. 12

LOCATION Unit F, 1650' NW 1/4 X 1980' FWL, Sec. 35, T-18-S, R-31-E, Eddy County

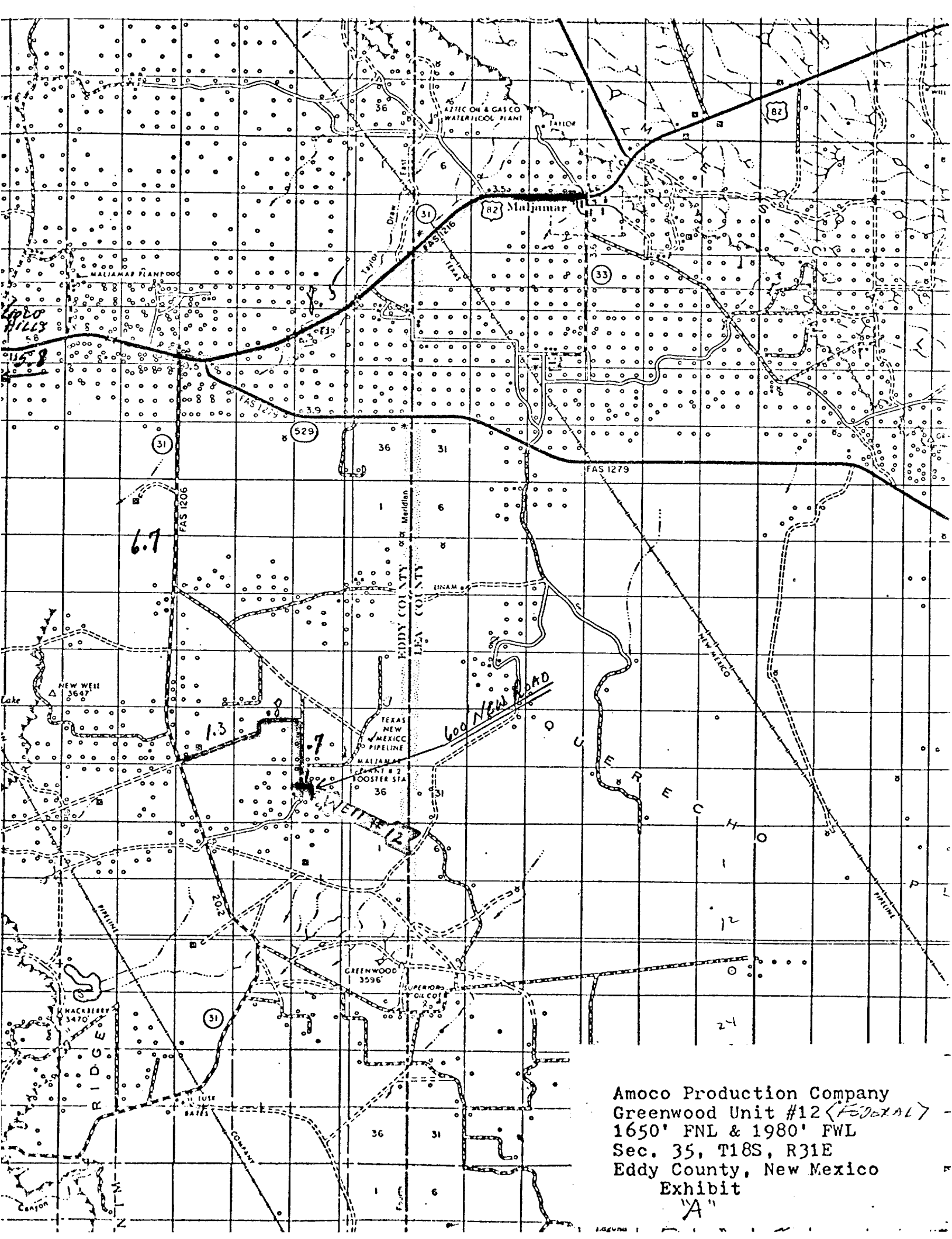
Certification: The following statement is to be incorporated in the plan and must be signed by the lessee's or operator's field representative who is identified in Item No. 12 of the plan.

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.

May 22, 1978  
DATE

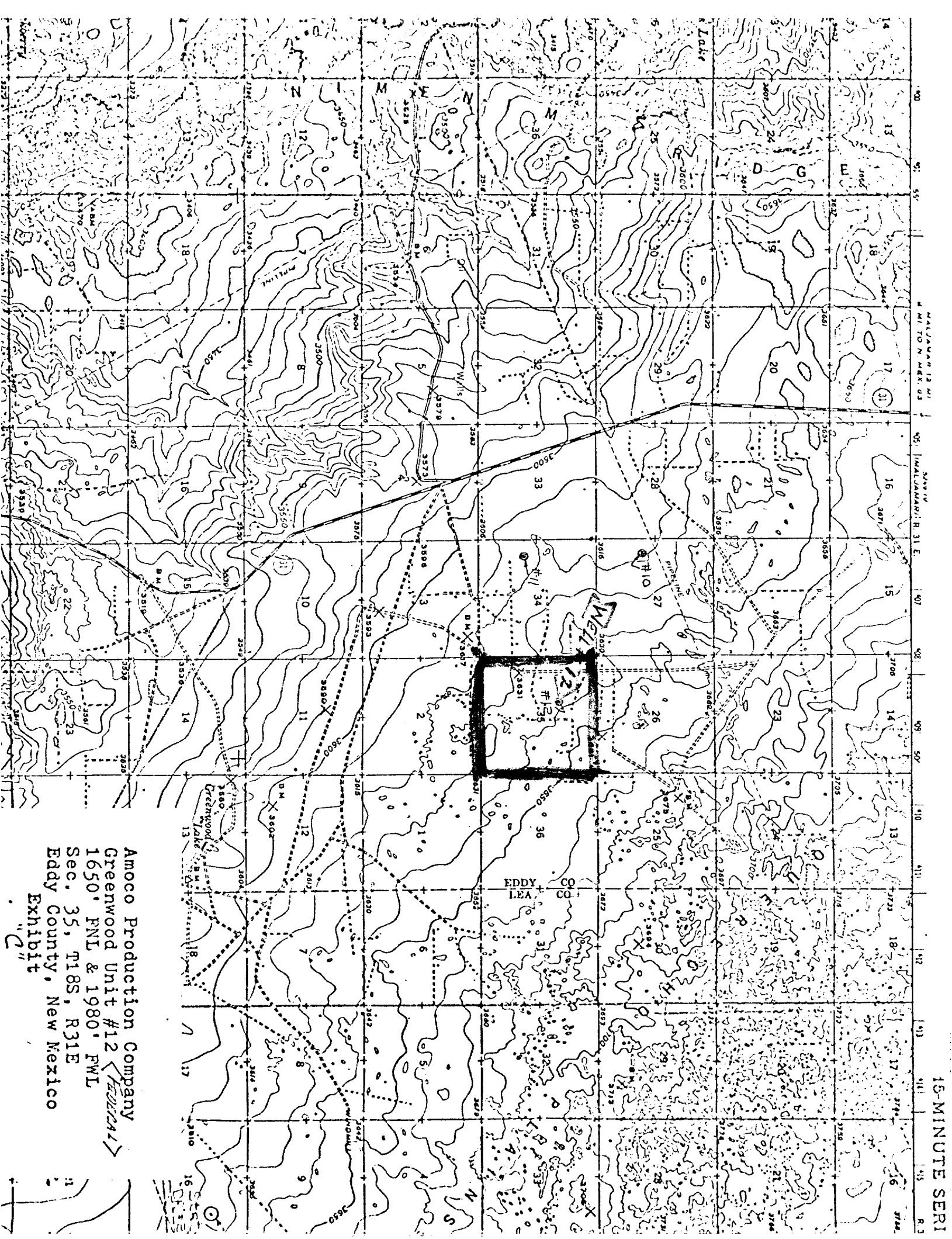
*J. H. Harrison*  
NAME AND TITLE

Sr. Drilg. Foreman



Amoco Production Company  
Greenwood Unit #12 (FEDERAL)  
1650' FNL & 1980' FWL  
Sec. 35, T18S, R31E  
Eddy County, New Mexico  
Exhibit  
"A"

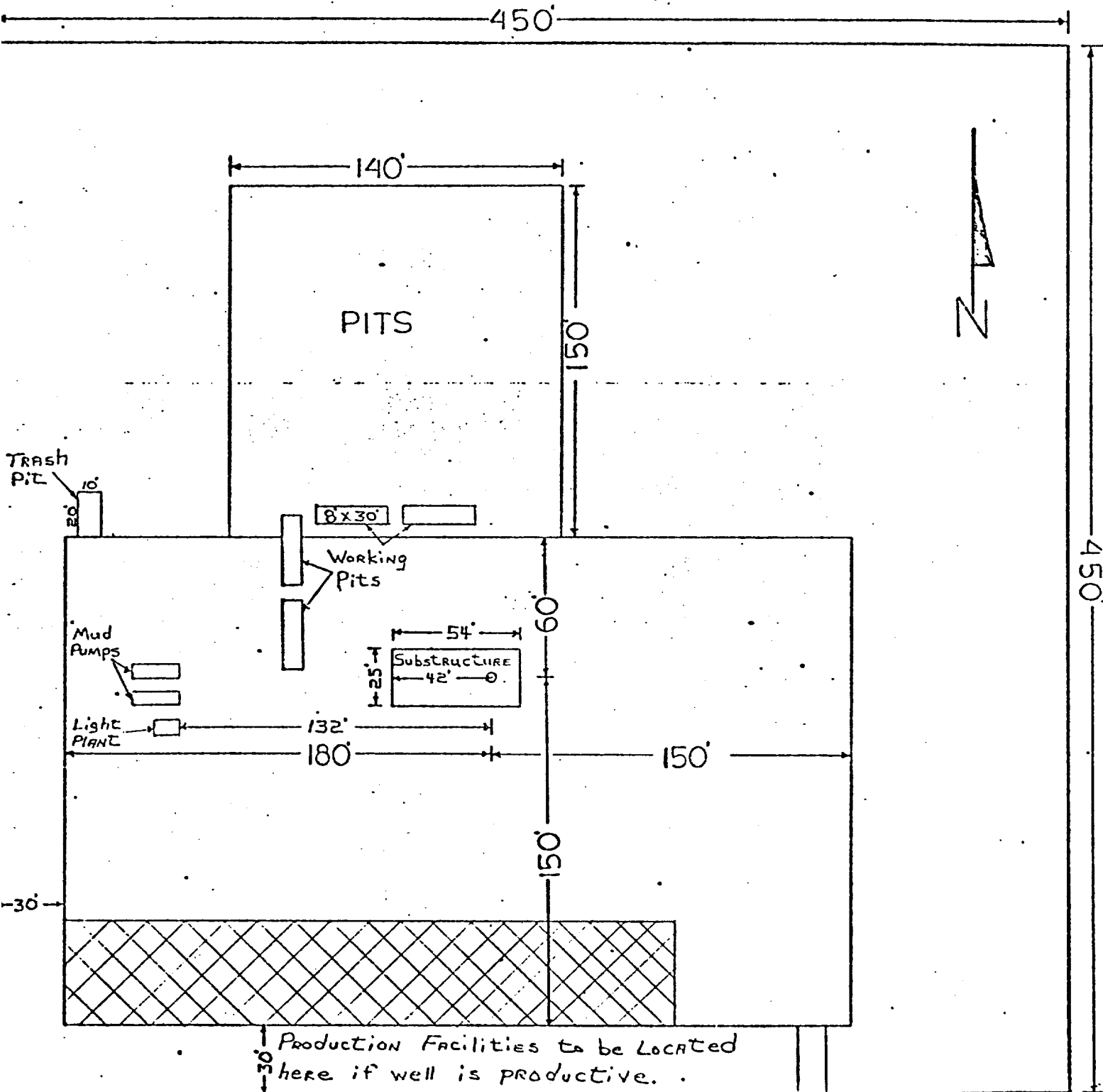




Amoco Production Company  
Greenwood Unit #12 *(F02121)*  
1650' FNL & 1980' FWL  
Sec. 35, T18S, R31E  
Eddy County, New Mexico  
Exhibit  
"C"

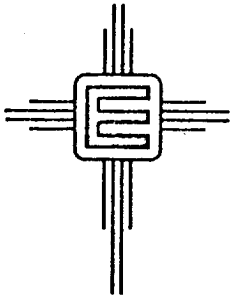
# DRILL SITE DIMENSIONS

8,000' TO 14,000'



Amoco Production Company  
 Greenwood Unit #12 (FEDERAL)  
 1650' FNL & 1980' FWL  
 Sec. 35, T18S, R31E  
 Eddy County, New Mexico  
 Exhibit

"D"



18 May 1978

Mr. Bob Couch  
Amoco Production Company  
P. O. Drawer A  
Levelland, TX 79336

Dear Mr. Couch:

Enclosed please find the Agency for Conservation Archaeology's clearance report for Amoco Production Company. Although no sites were recorded, three isolated manifestations were noted on the drilling location during the course of this reconnaissance.

If I may be of further service to you, do not hesitate to call me at (505) 562-3332.

Yours sincerely,

Dr. J. Loring Haskell  
Director - Principal Investigator

dlg

Enclosure

Archaeological Clearance Report  
for  
Amoco Production Company

Greenwood Unit Well No. 10  
Greenwood Unit Well No. 11  
Greenwood Unit Well No. 12  
Federal "H" Well No. 1

by

Thomas F. Zale

Edited and Submitted by

Dr. J. Loring Haskell  
Director - Principal Investigator  
Agency for Conservation Archaeology  
Eastern New Mexico University  
Portales

18 May 1978



## INTRODUCTION

An archaeological reconnaissance was recently completed by the Agency for Conservation Archaeology, (ACA), Eastern New Mexico University, Portales, for Amoco Production Company in Eddy and Lea Counties, New Mexico. Reconnoitered areas will be impacted by the construction of drilling locations and their associated access roads. This project was completed under Federal Antiquities Permit No. 78-NM-015 and was administered by Mr. Bob Couch, representative for Amoco Production Company, and Dr. J. Loring Haskell, Director - Principal Investigator, ACA. The reconnaissance was conducted on 12 May 1978 by Thomas F. Zale.

## SURVEY TECHNIQUE

The archaeologist accomplished the reconnaissance of each of the proposed drilling locations by walking a tightly spaced (20 ft) series of parallel transects over a 500 X 500 ft area. The length and breadth of each access right-of-way was walked in a zigzag pattern. These techniques permitted optimal conditions for the visual examination of areas of primary and secondary impact resulting from the proposed construction. As a result, each of the proposed construction sites and their immediate environs have been thoroughly scrutinized for visual evidence of man's past cultural activities.

### Greenwood Unit Well No. 10

#### Location

The proposed drill location measures 450 X 450 ft and is situated in the:

NW $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 27, T18S, R31E, NMPM, Eddy County, New Mexico (BLM)

The proposed access right-of-way measures 12 X 120 ft and is situated in the:

NW $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 27, T18S, R31E, NMPM, Eddy County, New Mexico (BLM)

Map Reference: USGS Clayton Basin Quadrangle, 15 Minute Series, 1942.

and on the location. Detritus includes oil cans and drums, tin cans, and a soda bottle.

### Recommendations

ACA recommends clearance for the proposed drill location and associated access and suggests that work-related activities proceed without modification of existing plans.

### Greenwood Unit Well No. 12

#### Location

The proposed drilling location measures 450 X 450 ft and is situated in the:

SE $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 35, T18S, R31E, NMPM, Eddy County, New Mexico (BLM)

The proposed access right-of-way measures 12 X 600 ft and pass through the:

E $\frac{1}{2}$ NW $\frac{1}{4}$ , Section 35, T18S, R31E, NMPM, Eddy County, New Mexico (BLM)

Map Reference: USGS Clayton Basin Quadrangle, 15 Minute Series, 1942.

#### Terrain

The proposed construction site lies within a dune field on the Querecho Plains. Locally, the sand dunes formed of soils of the Haplargids-Torripsamments Association average .75 m in height, albeit some approach 1 m. Soils, particularly in the deflation basins, are composed of sandy clay loams and contain gravel-sized caliche inclusions.

#### Floristics

The local plant community is dominated by Opuntia spp. (platyopuntia), Yucca glauca, Quercus havardii, Gutierrezia sarothrae, Artemisia filifolia, Prosopis juliflora, Eriogonum annuus, Bouteloua eriopoda, Scleropogon brevifolius, and Muhlenberiga porteri. Shrubs characteristically occupy dunes lending to their

stabilization, whereas grasses are most often found in deflation basins. Vegetation covers between 20 and 30% of the surface.

#### Cultural Resources

No archaeological sites were recorded during this reconnaissance; however one isolated manifestation (IM-1) was noted. IM-1 consists of a chert secondary decortication flake found on the south side of the proposed well pad. Additionally, contemporary trash is present throughout the area and includes fragments of window glass and a glass jar.

#### Recommendations

ACA recommends clearance for the proposed location and associated access and suggests that work-related activities proceed without modification of existing plans.

#### Federal "H" Well No. 1

##### Location

The proposed drill location measures 450 X 450 ft and is situated in the: NW $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 26, T23S, R33E, NMPM, Lea County, New Mexico (BLM)

The proposed access right-of-way measures 12 X 1980 ft and passes through the:

W $\frac{1}{2}$ SW $\frac{1}{4}$ , Section 26, T23S, R33E, NMPM, Lea County, New Mexico (BLM)

Map Reference: USGS Hat Mesa Quadrangle, 15 Minute Series, 1963.

##### Terrain

The proposed construction site is situated on an undulating plain which lies south and slightly east of Antelope Ridge. Slope is slight but is toward the south-east. Locally, soils consist of sandy loams of the Paleorthids-Haplargids Association and sporadically contain gravel-sized caliche inclusions. Sheet wash has resulted