



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

January 10, 1989

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

Chuska Energy Corporation  
P.O. Box 2118  
Farmington, NM 87499

Attention: Rick Allen,  
V.P., Drilling Operations

RE: Application for an Unorthodox Oil  
Well Location; Table Mesa Well No. 1  
to be located 1190 FSL - 1850 FEL,  
17-T27N-R17W, San Juan County,  
New Mexico.

Dear Mr. Allen:

We received the subject application on October 17, 1988, per our telephone conversation concerning this matter a few days following where upon you were to submit additional information, such as this wells C-102, a copy of the archeological findings, the name(s) of the proposed completion zones and any other pertinent information to support your application. To date, we have not received this information. I am therefore writing to inquire as to the status of this application at this time.

Please contact me as soon as possible so that we may act on this matter in a timely fashion.

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Michael E. Stogner".

Michael E. Stogner  
Petroleum Engineer

MES/ag

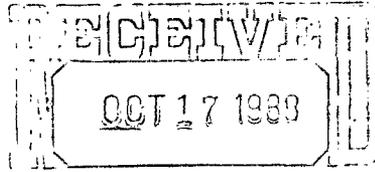
cc: NM Oil Conservation Division - Aztec  
Vic Lyon



*iltn.*

# CHUSKA ENERGY COMPANY

P.O. BOX 2118 • FARMINGTON, N.M. 87499 • PHONE: (505) 326-5525



New Mexico Oil Conservation Division October 12, 1988  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Attn: Mr. Bill LeMay, Director

Re: Non-Standard Location Request

Gentlemen:

Chuska Energy Company request administrative approval of a non-standard location of Table Mesa well #1 located in Section 17 T27N R17W of San Juan County, New Mexico. The well is to be located at 1190' FSL and 1850' FEL and will have the McCracken formation as its objective. This request is based on an archaeological find on the original location.

The offsetting 40 acre tracts are unleased as shown on the attached plat. The anticipated spud date of this well is December 1, 1988. Your expedient handling of this request would be greatly appreciated.

Regards,

Rick Allen  
V.P. Drilling Operations

CC:  
New Mexico Oil Conservation Division  
1000 Rio Brazos Rd.  
Aztec, N.M. 87410

Bureau of Land Management  
1235 La Plata Hwy.  
Farmington, N.M. 87401

*- Devonian Oil*  
*- Mississippian Oil*  
*- Navajo*

*is sending additional info.*

CHUSKA ENERGY COMPANY  
NON-STANDARD LOCATION PLAT

WELL NAME: TABLE MESA No.1

LOCATION: Sec. 17 T27N R17W  
1190' FSL & 1850' FEL  
San Juan County, New Mexico

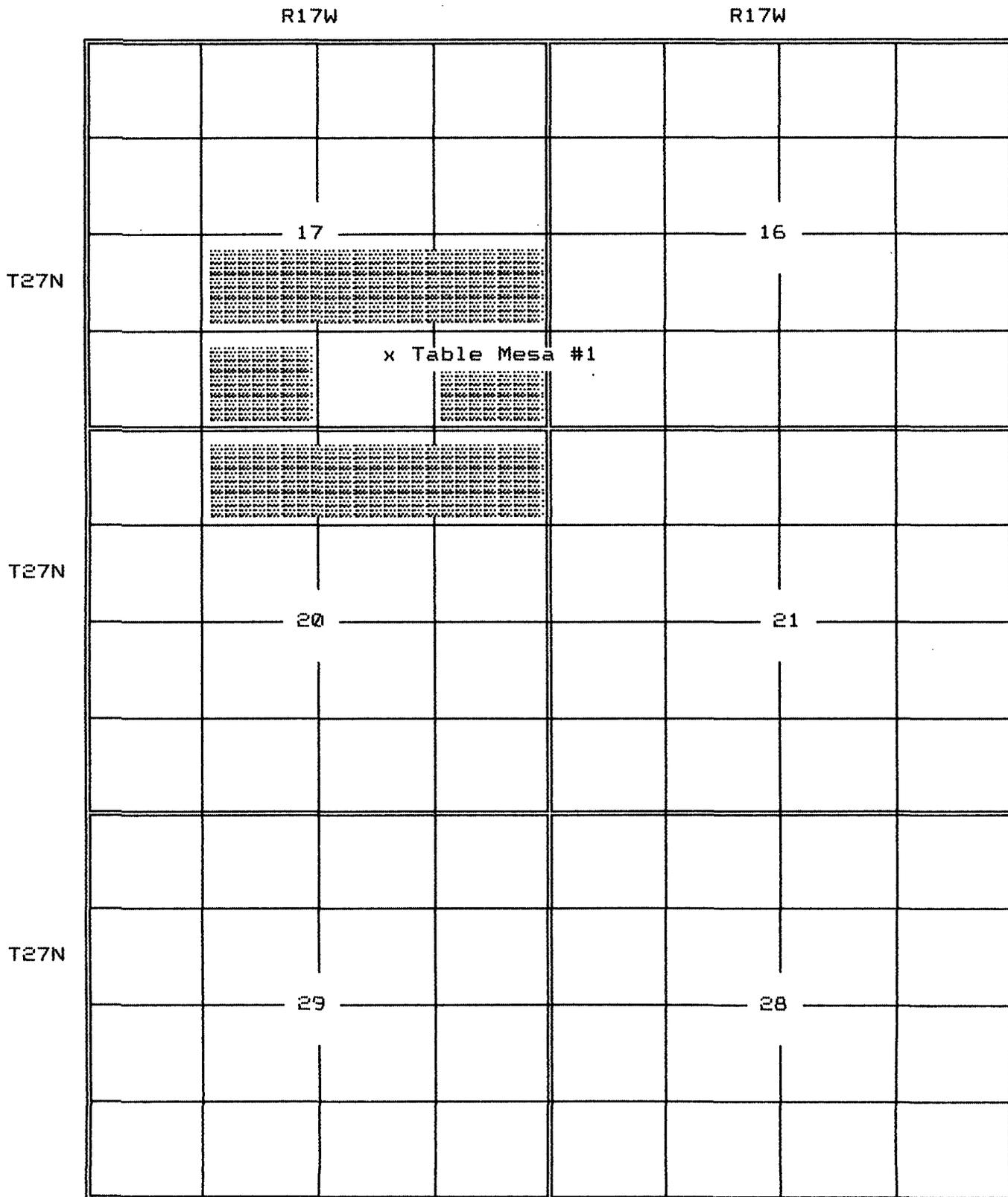


EXHIBIT "A"

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-4-85

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

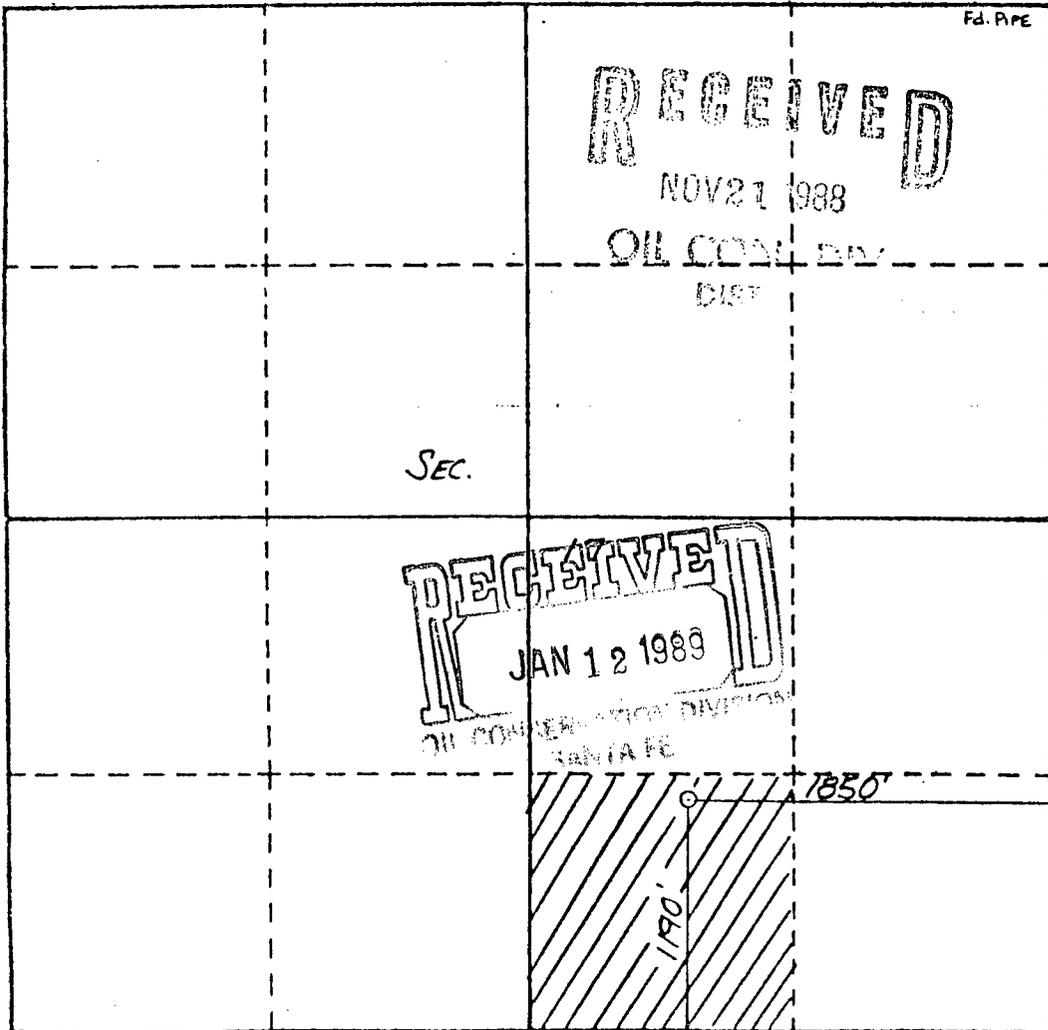
Operator <b>CHUSKA ENERGY COMPANY</b>		Lease <b>NAVAJO TRIBAL "B"</b>		Well No. <b>TABLE MESA #1</b>	
Unit Letter <b>0</b>	Section <b>17</b>	Township <b>27 N</b>	Range <b>17 W</b>	County <b>SAN JUAN</b>	
Actual Footage Location of Well: <b>1190</b> feet from the <b>South</b> line and <b>1850</b> feet from the <b>East</b> line					
Ground Level Elev. <b>5329</b>	Producing Formation <b>MCCRACKAN</b>		Pool <b>WILDCAT: MCCRACKEN</b>	Dedicated Acreage: <b>40</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.

*Rick Allen*

Name  
**RICK ALLEN**

Position  
**VP DRILLING OPERATIONS**

Company  
**CHUSKA ENERGY CO.**

Date

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  
**8-28-88**

WITNESSED BY  
**NEW MEXICO**

Registered Professional Engineer and/or Land Surveyor  
**#8466**

Certificate No. **PROFESSIONAL LAND SURVEYOR**

88-446



# THE NAVAJO NATION

**PETER MacDONALD, CHAIRMAN**  
*THE NAVAJO TRIBAL COUNCIL*  
**JOHNNY R. THOMPSON, VICE CHAIRMAN**  
*THE NAVAJO TRIBAL COUNCIL*

September 8, 1988

Navajo Nation  
Archaeology Department  
609 South Behrend, Unit A  
Farmington, NM 87401

Mr. John Alexander  
Chuska Energy Company  
315 North Behrend Ave.  
Farmington, NM 87401

Dear Mr. Alexander:

Enclosed for your file is one copy of the Navajo Nation Archaeology Department's archaeological clearance survey report NNAD 88-308 (BIA NTM- ) concerning the proposed well locations near Table Mesa and Rattlesnake, San Juan County, New Mexico, and Walker Creek, Apache County, Arizona. Three well locations, one alternative well location, and two access routes were surveyed. A total of 20.80 acres (8.42 hectares) was surveyed.

As a result of the survey, one archaeological site (NM-H-30-8) was recorded. The site is not Register eligible because of the 50-year guideline, nor is the site eligible for protection under ARPA, since it fails to meet the 100-year guideline. Portions of the site probably do warrant protection under AIRFA, however.

It is being recommended that the three proposed well locations and the alternative well location, as well as the access routes be given final archaeological clearance. If you have any questions or comments concerning this report, please contact me at 327-6115.

Sincerely,

Peter J. Kakos  
NNAD Archaeologist

Enclosure



An Archaeological Survey of Three Well  
Locations for Chuska Energy Company in  
San Juan County, New Mexico;  
and Apache County, Arizona

NNAD 88-308  
(BIA-NAO NTM-88- )

Prepared by  
Peter J. Kakos

Submitted by  
Anthony L. Klesert, Ph.D.; Director  
Navajo Nation Archaeology Department  
P. O. Box 689  
Window Rock, Arizona 86515

Tribal Permit No. NTC

To  
Area Director  
Attention: Area Archeologist  
BIA-NAO CRCS (Code 305)  
P. O. Box M  
Window Rock, Arizona 86515

Prepared for  
Mr. John Alexander  
Chuska Energy Company  
315 North Behrend Avenue  
Farmington, New Mexico 87401

Submitted September 8, 1988

## Abstract

The following report is submitted to the Bureau of Indian Affairs-Navajo Area Office, Cultural Resource Compliance Section (BIA-NAO-CRCS), for review as part of the archaeological clearance process. The report details the results of the archaeological survey conducted in conjunction with the proposed project entitled "*An Archaeological Survey of Three Well Locations for Chuska Energy Company in San Juan County, New Mexico and Apache County, Arizona*" (NNAD Project Number 88-308; BIA-NAO NTM-88- ). The proposed project will involve the construction of three wells and the construction of two access routes. The types of ground disturbance expected to result from the undertaking include the bulldozing of the well locations and access routes, and subsurface drilling. The project areas are located in San Juan County, New Mexico and Apache County, Arizona near the towns of Shiprock, New Mexico and Mexican Water, Arizona. The legal descriptions for the project areas are Township 27 North and Range 17 West, Township 29 North and Range 18 West, and Township 41 North and Range 25 East. The project areas can be located on the Table Mesa, New Mexico, 1966, 7.5 minute series; the Shiprock, New Mexico, 1966, 7.5' minute series; and the Mexican Water, Arizona-Utah, 1968, 7.5' minute series USGS quadrangle maps. The total number of acres surveyed in conjunction with this project was 20.80 acres (8.42 hectares). Only one archaeological site (NM-H-30-8) was identified during the course of the survey. The site is not eligible for nomination to the National Register of Historic Places because the site does not meet the 50-year guideline. The site does appear to qualify for protection under AIRFA, however. It is recommended that all three well locations, the alternative well location, and the access routes be given final archaeological clearance.

## Introduction

On August 22, 23, and 25, 1988, the Navajo Nation Archaeology Department (NNAD) conducted an archaeological survey of three proposed well locations, one alternative well location and two access routes for Chuska Energy Company. The survey was requested by John Alexander of Chuska Energy Company on August 11, 1988. The proposed well locations are located in San Juan County, New Mexico and Apache County, Arizona. The fieldwork was conducted by Peter J. Kakos, NNAD archaeologist. The archaeologist was accompanied in the field by Mr. Rick Allen of Chuska Energy Company.

A total of 20.80 acres (8.42 hectares) was surveyed for the project. One archaeological site was discovered during the course of the project. This survey was performed under the authority of the Navajo Tribal Code, Title Nineteen, Chapter 11.

## Description of Undertaking

Chuska Energy Company plans to conduct seismic exploration at various prospects on the Navajo Indian Reservation (see Anderson, Dykeman, and Kakos 1988). As part of Chuska Energy's continuing seismic work, specific well locations are to be tested for further development. The current project involves the proposed testing, drilling, and exploration of three well locations.

Extensive ground disturbance at the three proposed well locations is anticipated. Bulldozing the areas around the well locations, as well as the drilling itself will cause considerable surface and subsurface disturbance. In addition, access routes will be needed to reach the Table Mesa well locations. The other locations can be accessed by existing graded and well-used two-track roads. Table 1 provides information on the area of effect for Chuska Energy Company's proposed undertaking.

Table 1. Proposed Project Areas of Effect for Chuska Energy Company's Three Well Locations (and alternate well location) and Access Roads

Project Area Designation	Length (ft/m)	Width (ft/m)	Radius (ft/m)	Acres	Hectares
All well locations (4 total)			150'/45.73 m	1.62	.66 ea.
Access Route No. 1	1800'/548.78 m	50'/15.24 m	-	2.07	.84
Access Route No. 2	600'/182.93 m	50'/15.24 m	-	.69	.28
Total Area of Effect				9.24	3.74

## Location

The three well locations are located in San Juan County, New Mexico (Table Mesa Nos. 1 and 2 [Alternative Location]; Rattlesnake No. 1) and Apache County, Arizona (Walker Creek No. 1). The proposed well locations are located entirely on the Navajo Indian Reservation in the Tribal Chapters of Shiprock and Mexican

Water, and on lands administered by the BIA, Navajo Area Office, Shiprock Agency (Figures 1, 2, and 3). Table 2 provides information on the UTM coordinates and legal descriptions for the three well locations, the alternate well location, and the access routes. Two access routes were surveyed for the well locations at Table Mesa. Access to the other two locations is possible on existing bladed roads and well-used two-track roads.

Table 2. Legal Descriptions and UTM Coordinates (Zone 12) for Chuska Energy Company's Three Well Locations (and alternate well location) and Access Routes

Project Designation	1/4	1/4	1/4	Sec.	T.	R.	Northing	Easting
	(Projected)							
Table Mesa No. 1	NW	SW	SE	17	27N	17W	4050100	708480
Table Mesa No. 2 (alternate)	SE	SW	SE	17	27N	17W	4049900	708480
Access Route No. 1								
Beginning	NE	NW	NE	20	27N	17W	4049600	708570
Bend 1	NE	NW	NE	20	"	"	4049740	708560
Bend 2	SE	SW	SE	17	"	"	4049930	708570
End	NW	SW	SE	17	"	"	4050100	708480
Access Route No. 2								
Beginning	NE	NW	NE	20	27N	17W	4049600	708570
Bend 1	NE	NW	NE	20	"	"	4049740	708560
End	SW	SW	SE	17	"	"	4049900	708480
Rattlesnake No. 1	NE	NE	NW	19	29N	18W	4065700	698000
Walker Creek No. 1	SW	NE	SE	16	41N	25E	4090820	618920

#### Area Environmental and Cultural Setting

The well locations at Table Mesa are located about 12 miles south of Shiprock, New Mexico. The elevation this location is about 5300 feet (1615.86 m). The vegetation in the area is predominantly ring muhly (Muhlenbergia pungens) with some Indian ricegrass (Oryzopsis hymenoides), prickly pear cactus (Opuntia sp.), and various forbs. Sediments consist of deep aeolian and alluvial sand and silt. Some outcrops of sandstone are visible nearby, and calcite accretions are present within this project area. Barber Peak, which is a volcanic lacolith, is located about 1.5 miles to the northwest.

The well location Rattlesnake No. 1 is located about 10 miles south and west of Shiprock, New Mexico. The well location is adjacent to a seismic line surveyed by the NNAD in April 1988 (Anderson, Dykeman, and Kakos 1988). The elevation in this location is about 5280 feet (1609.76 m). The area is generally flat and slopes to the north-northeast. The nearest drainage is Rattlesnake

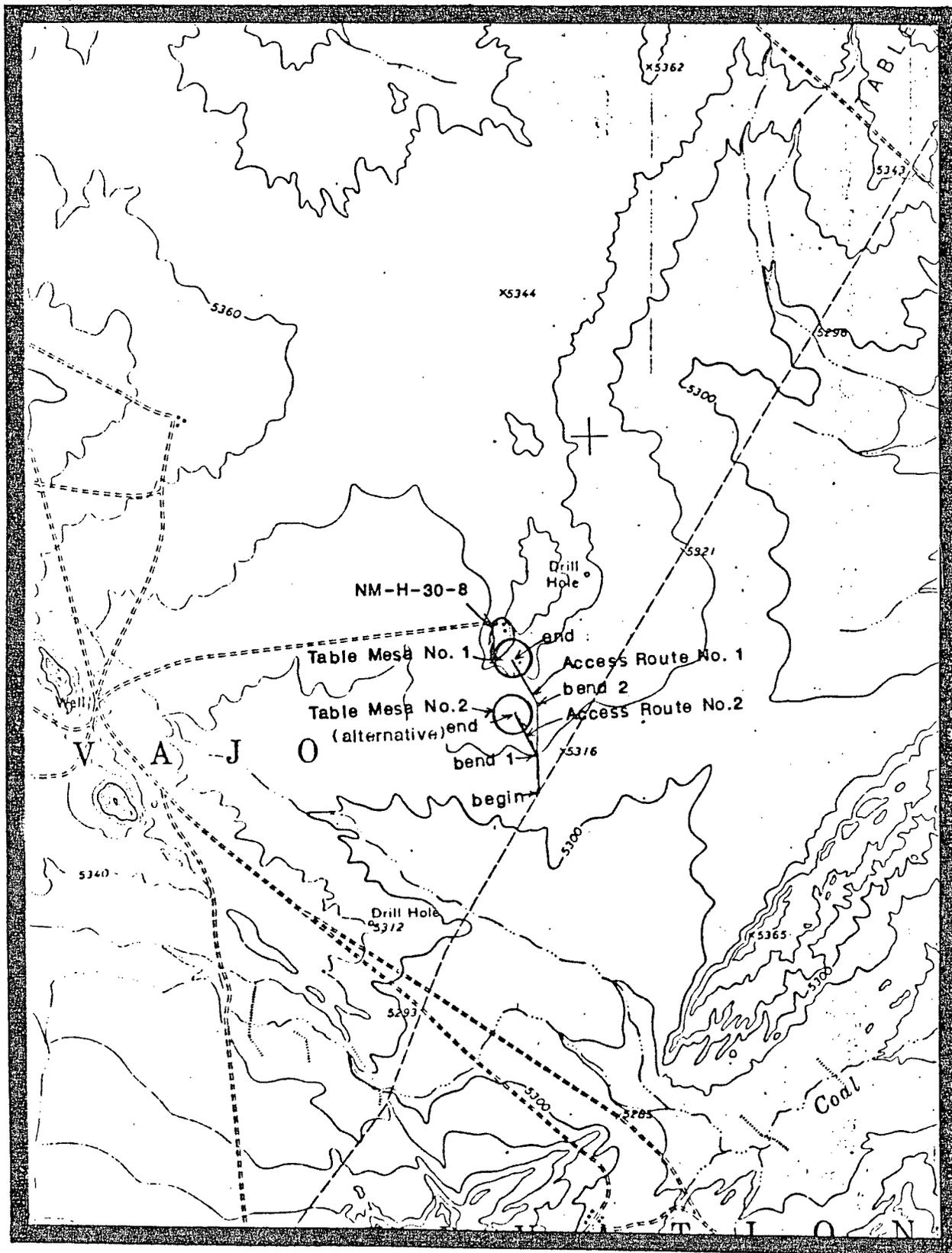


Figure 1. General project area map of proposed well locations, Table Mesa No. 1 and No. 2, Access Routes No. 1 and No. 2, and Site NM-H-30-8. Table Mesa, N.Mex., 1966 7.5' series; T.27N, R.17W (NNAD 88-308).

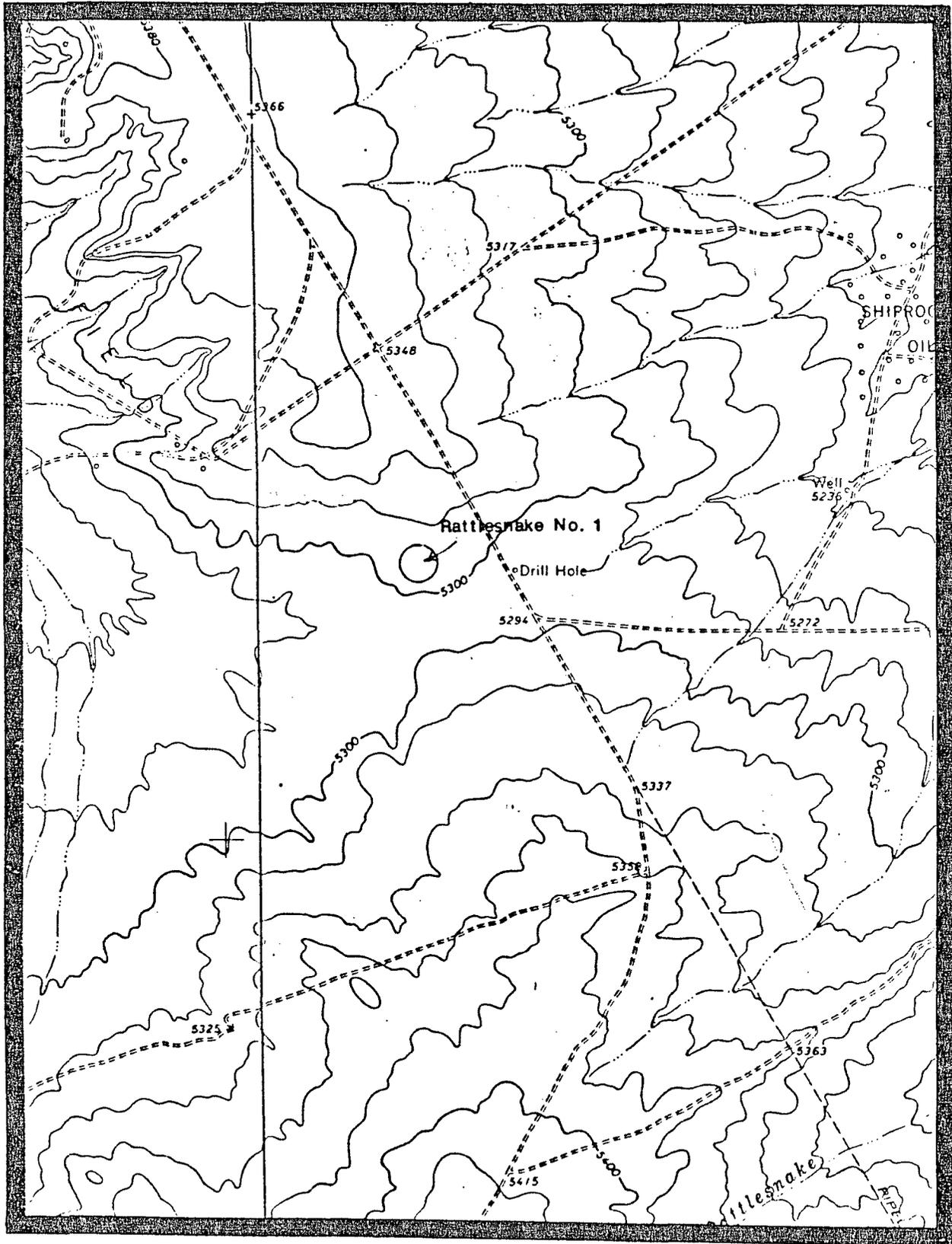


Figure 2. General project area map of proposed well location, Rattlesnake No. 1. Shiprock, N.Mex., 1966 7.5' series; T.29N, R.18W (NNAD 88-308).

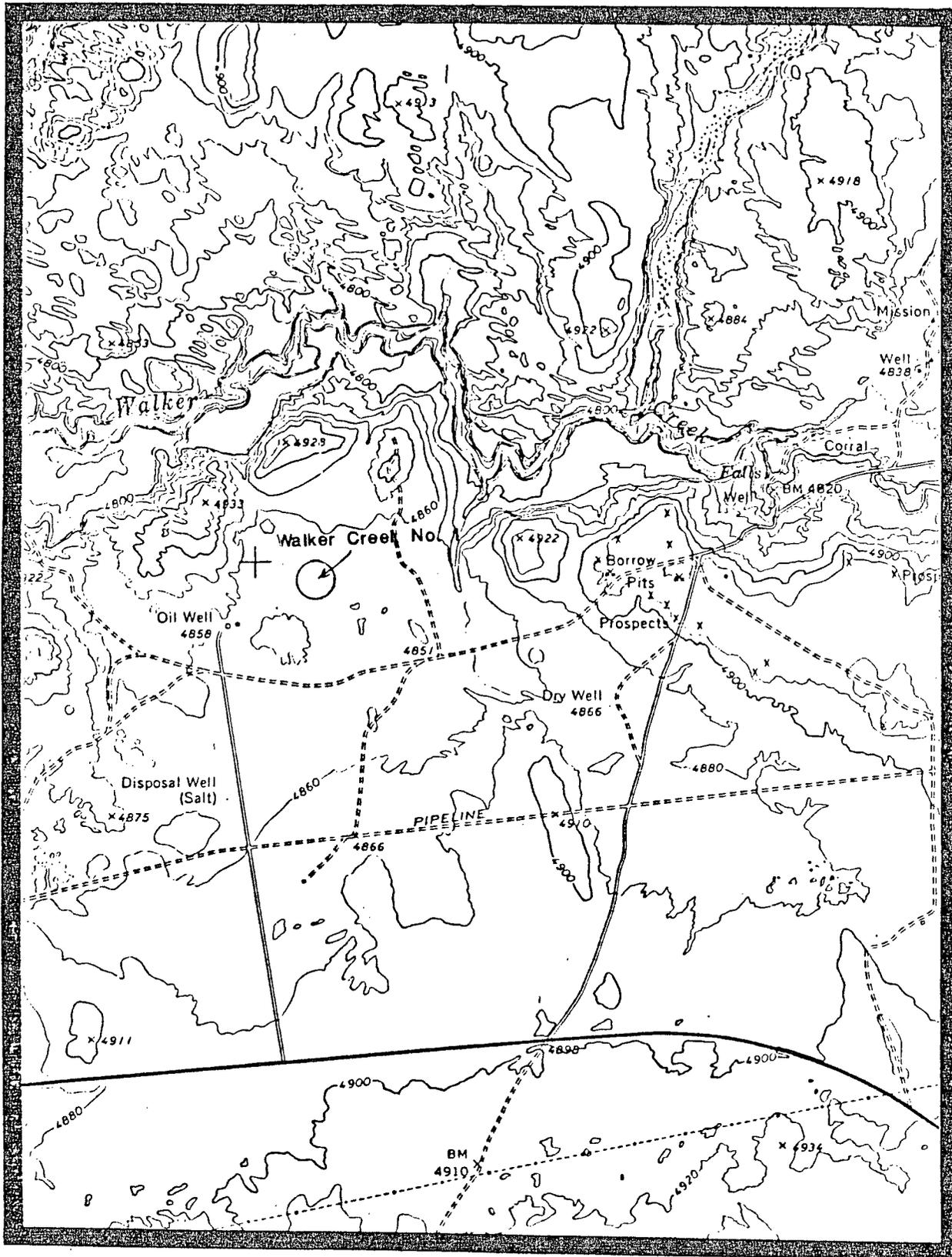


Figure 3: General project area map of proposed well location, Walker Creek No. 1. Mexican Water, Ariz.-Utah, 1968; T.41N, R.25E (NNAD 88-308).

Wash, which flows to the north. Sediments in the area are primarily aeolian deposits of silt and sand, which are highly alkaline. Vegetation is fairly uniform consisting of snakeweed (Gutierrezia sarothrae), Indian ricegrass, galleta (Hilaria jamesii), prickly pear cactus, and alkali sacaton (Sporobolus airoides).

The well location at Walker Creek is located about 2 miles west of Mexican Water, Arizona just 1 mile north of High 160. The elevation in the project area is about 4860 feet (1481.71). Topographically, the area is fairly flat but rises abruptly to the southwest where the sandstone bedrock has been thrust up above Willow Spring Wash. The major drainage in the area, however, is a deeply entrenched arroyo called Walker Creek. Shiprock is a dominant feature of the area, especially to the north where aeolian sand and silt occur in isolated pockets and basins. Eroded sandstone, shale, and conglomerate, as well as dunal deposits are ubiquitous throughout the area. Vegetation seems to be dependent on soil depth in the area: snakeweed, cheatgrass (Bromus tectorum), yucca, and cactus occur in scattered stands throughout the area.

In all three well locations, population density is low with little or no development apparent. Near the Table Mesa locations only one Navajo homestead was observed within 2 miles of the project area. Near the Rattlesnake location the nearest homestead is about 3 miles away. At the Walker Creek location, several Navajo homesteads were observed within 1 mile or so of the project area. Also, a well-graded road is present near the Walker Creek locale.

#### Existing Data Review

A search of NNAD (Farmington) and BIA-NAO-CRCS site records has indicated the following information.

Only one previously recorded site (NM-H-18-1) is noted within 1 kilometer of the Rattlesnake well location (see Anderson, Dykeman, and Kakos 1988). A general overview (Rudecoff 1980), which discusses the results of a large-scale survey done just north of the project area, is available. During the survey of the Rattlesnake area, which comprised a survey of 4,000 acres (Rudecoff 1980:39), only one site was recorded. Other large-scale survey projects (Fehr 1981; McEnany 1985; Popelish and Fehr 1983) and one data recovery project (Huber 1983) have been done in the Red Rock Valley area to the west.

Four archaeological sites (AZ-I-14-5 to AZ-I-14-8) have been previously recorded within 1 kilometer of the Walker Creek Well Location (see Anderson, Dykeman, and Kakos 1988). Other than this survey done for Chuska Energy Company, little archaeological reconnaissance has been done in the immediate project area. The only general works available are those done by Kidder and Guernsey (1919) and Guernsey (1931) in the Kayenta area 20 miles to the west.

No previously recorded sites are indicated within 1 kilometer of the Table Mesa well location. Some survey and ethnographic work has been done in the general vicinity, however (see Martin and Werito 1986).

### Field Methods

During survey, the NNAD archaeologist was accompanied in the field by Mr. Rick Allen of Chuska Energy Company. Fieldwork was done at the request of Mr. Alexander of Chuska Energy Company, P. O. Box 2118, Farmington, New Mexico, 87499.

The three well locations are located entirely on the Navajo Indian Reservation in San Juan County, New Mexico and Apache County, Arizona. All three well locations were staked in advance by surveyors contracted by Chuska Energy Company. A 250 feet (76.22 m) survey radius which included a 50-foot buffer zone around each well was requested by Chuska Energy. Table 3 provides information on the total area surveyed for the three well locations, the alternative well location, and the access routes. An alternate well location was surveyed 660 feet (201.22 m) south of the Table Mesa No. 1 location. This was done to provide Chuska Energy Company options regarding placement of the Table Mesa well location, as requested by Mr. Allen.

Table 3. Total Area Surveyed for Chuska Energy Company's Three Proposed Well Locations (and alternate well location) and Access Road

Project Area Designation	Length (ft/m)	Width (ft/m)	Radius (ft/m)	Acres	Hectares
Table Mesa No. 1	-	-	250'/76.22 m	4.51	1.83
No. 2	-	-	250'/76.22 m	4.51	1.83
Access Route No. 1	1800'/548.78 m	50'/15.24 m	-	2.07	.84
No. 2	600'/182.93 m	50'/15.24 m	-	.69	.28
Rattlesnake No. 1	-	-	250'/76.22 m	4.51	1.83
Walker Creek No. 1	-	-	250'/76.22 m	4.51	1.83
Total Area Surveyed				20.80	8.44

The well location were surveyed using parallel pedestrian transects spaced 10 m apart over the entire project area. The access routes were surveyed using a single transect to cover a 50-foot (15.24 m) wide survey corridor. During survey, a 30-m tape, a Silva compass, and a 35-mm camera were used to record appropriate information on the cultural properties identified. Environmental information was also noted during the course of survey to provide the information detailed in this report.

### Cultural Resource Findings

One archaeological site (NM-H-30-8) was discovered during survey. Another site (AZ-I-14-7) is located 100 m northwest of the Walker Creek well location. This site has been previously recorded and reported on (Anderson, Dykeman, and Kakos 1988).

## Site

Site Number: NM-H-30-8 (Figure 4)

Map Reference: Table Mesa, N.Mex., 1966, 7.5' series

Legal Description: SW 1/4 NW 1/4 SE 1/4 and NW 1/4 SW 1/4 SE 1/4  
Sec. 17 (projected); T.27N, R.17W

UTM Coordinates: Zone 12, Northing 4050220, Easting 708440

Site Type: Navajo/Post-World War II-1960/Habitation

Site Size: 190 m by 90 m (17,100 sq. m)

Site Setting: The site is located on a southwest-facing ridge. Sediments include aeolian sand and alluvial sands and silt, which host a scatter of ring muhly, Indian ricegrass, and forbs. Some outcrops of calcite crystals and residual sandstone are present. Elevation is about 5260 feet (1603.66 m). The nearest named drainage is Coal Creek about 1.5 miles to the south.

Site Description: Site NM-H-30-8 is located on a low southwest-facing ridge which overlooks a broad, shallow flood basin. The main components of the site are located on the ridge itself; however, three features (1-3) are located south of the ridge on the alluvial flats. The site is the remains of a Navajo habitation site. The site contains the remains of four structures and associated features.

Feature 1 is the remains of a structure which measures 4.30 m by 4.10 m. The feature consists of four wall alignments made of shaped single-coursed sandstone blocks. Only the base of the structure is present. This feature probably represents a small dwelling unit.

Trash was also observed in this area and includes such items as sanitary seal cans (church key-opening), 6-ounce milk cans (solder-top), a white enamel water pail, a door to a wood-burning stove, clear and brown glass fragments, a rusted frying pan, and a blue mottled soup pan.

Feature 2 is an ash pile measuring 6 m by 5 m and is mounded, which indicates extensive deposition. It consists of a dense concentration of charcoal, ash, and some trash. The trash consists mainly of clear, white, and brown glass. Two bottle bases were observed with a Duraglas label dating to 1958 and 1954.

Feature 3 is a light trash scatter measuring 12 m by 7 m and consists mainly of sanitary seal cans. This feature is probably an extension of Feature 2, but the assemblage content is different, consisting of tin cans rather than charcoal, ash, and glass. It appears that some effort was made to keep the disposal of charcoal, ash, and glass separate from tin cans. The types of cans present in Feature 3 included coffee cans, and meat cans (key-opened lid).

Feature 4 is a small trash deposit measuring 2 m in diameter and consists of a broom handle, a side to a wood-burning stove, white glass fragments (no maker's

# NM-H-30-8

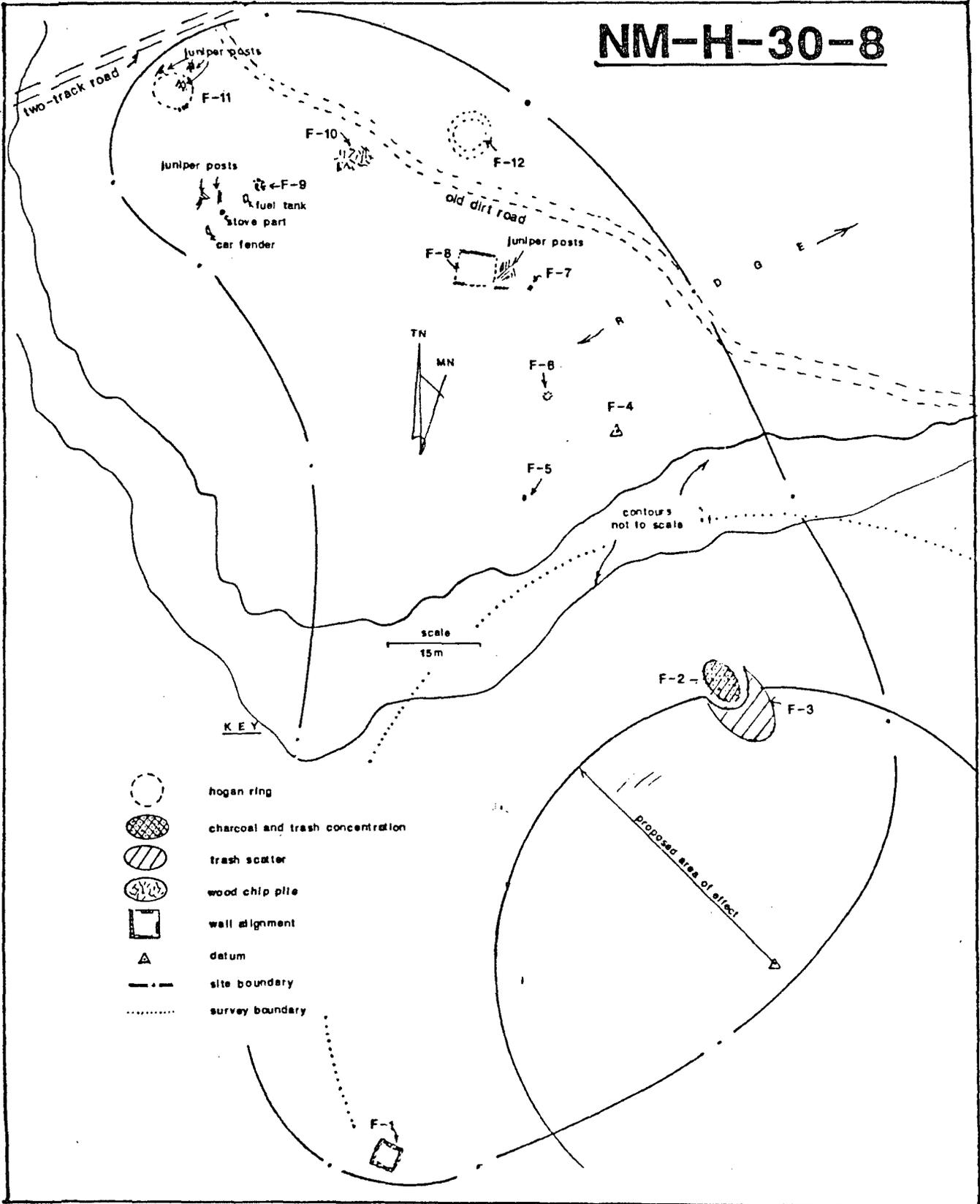


Figure 4. General plan map of Site NM-H-30-8 (NNAD 88-308).

mark), and a nickle-plated lighter. This feature was also used as a second datum for the site, and it is the first feature located on the ridge where most of the site features are.

Feature 5 is a trash deposit measuring 1.80 m in diameter and consisting of clear and brown glass fragments. No maker's marks were observed. A left humerus from a sheep (Ovis sp.) or goat (Capra sp.) was also observed.

Feature 6 is possibly the remains of an horno and measures 2.10 m in diameter. The feature consists of fire-reddened sandstone blocks, which appear to have been shaped. In addition, clear, green, and brown glass fragments were also observed in association. If this feature is the remains of an horno, it may have been dismantled since the amount of the material present would not be sufficient to construct and complete an horno.

Feature 7 is another area of fire-reddened sandstone blocks measuring 90 cm by 40 cm. This feature may also have been used as an horno or extramural hearth, which may have been associated with Feature 8.

Feature 8 is the remains of a rectangular structure measuring 8.50 m by 5.60 m. Juniper posts and juniper boughs are lying in the eastern portion of the structure. The structure appears to have been dismantled. In addition, a sharp-nosed shovel head is also associated with this structure. The structure appears to have served as a habitation.

Feature 9 is the remains of an horno measuring 1.50 m in diameter. The feature contains fire-reddened sandstone blocks that are still two to three courses high. Pieces of metal strips and a crowbar were found in association with this feature. The feature appears to have been dismantled given the disarray of the material around the horno.

Feature 10 is a wood chip pile measuring 6 m by 4.50 m. The feature consists of a light scatter of wood chips.

Feature 11 is the remains of a hogan measuring 6 m in diameter. The hogan remains consist of sandstone blocks which appear to have formed the base, and scattered juniper posts. In addition, red asphalt roofing material was present in bits and pieces.

Feature 12 is the remains of a hogan measuring 7 m in diameter (outside ring). The hogan base consists of a ring of earth (40 cm wide) and some sandstone fragments. There is a slight depression that may represent the opening (or doorway) to the hogan; the opening faces east. In addition, green asphalt roofing material, a wooden ladder, wooden window and frame, and scatter juniper posts were found in association.

The whole site area is covered with a light scatter of sanitary seal cans, glass fragments, and milled wood. A few oddities were also observed. One red chert core was noted, which measured 3.80 cm by 2.50 cm by 1.40 cm; also, there are natural deposits of calcite crystals in the area which may have been used culturally.

Datable artifact types indicate a late 1950s occupation, no artifacts dating to the 1960s or later, and no pre-World War II artifacts were noted. A good date of occupation for this site would probably be post-World War II to 1950s. The site also appears to have been partially dismantled; that is, the hogans (Features 11 and 12) and rectangular structures (Features 1 and 8), as well as the horno (Feature 9) appear to have been dismantled in some way. The crowbar observed in Feature 9 may have been used to dismantle that particular feature.

The red chert core observed on the site may or may not be associated with the Navajo occupation. The temporal or cultural assignment for the core cannot be made at this time.

#### Evaluation of Significance

Under 36 CFR Part 60.4, cultural resources may be eligible for nomination to the National Register of Historic Places if they "...possess integrity of location, design, setting, materials, workmanship, feeling, and association..." and if the resources in question are resources:

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

As defined in 36 CFR 60.4, ordinarily cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historical buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within categories a-g.

Concerning the Archaeological Resource Protection Act (ARPA) of 1979 (ARPA; 43 CFR Part 7) the Act has two fundamental purposes:

- 1) to protect irreplaceable archaeological resources on public lands and Indian lands from unauthorized excavation, removal, damage, alteration, or defacement; and
- 2) to increase communication and exchange of information among governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained prior to enactment of the Act.

In completing the assessment under 43 CFR Part 7 there are really only two concerns that need to be addressed. Under ARPA in order for a resource to be considered an archaeological resource and thus merit protection, it must both be greater than 100 years in age and be of archaeological interest.

AIRFA (P.L. 95-341): This Act is simply a resolution of Congress to the effect that American Indians shall have the right of freedom to believe, express and exercise their traditional religions and have access to sites, use and possession of sacred objects and freedom of worship through ceremonies and rites. Therefore, any site or place (prehistoric or historic) having religious, ceremonial or sacred aspects or components needs to be dealt with in light of this law. Anasazi sites with Navajo figurines present qualify for protection, for instance, as do Enemy Way sites, sweat lodges, blessed hogans and other blessed sites or buildings. It is also very important to realize that many places which lack any material cultural component also qualify, such as sacred landmarks and mineral or vegetal extraction areas.

Site NM-H-30-8 has integrity of location, workmanship, setting, feeling, and association. The site does not appear to be eligible to the National Register under criteria a-c, but is eligible under criterion d since it may provide information important to history. The site does not meet the 50-year guideline for National Register eligibility, however. Site NM-H-30-8 is of archaeological interest but fails to meet the 100-year guideline necessary to warrant protection under ARPA. The site also appears to qualify for protection under AIRFA since hogans are usually blessed and are an integral part of Navajo ritual and ceremonialism.

#### Recommendations

Site NM-H-30-8 is partially within the well location at Table Mesa (Table Mesa No. 1). Those portions of the site that may merit protection under AIRFA (Features 11 and 12) lie outside of the proposed project area of effect, and can be avoided during the proposed project undertaking. It is recommended that clearance be given for Table Mesa No. 1 if those areas of the site that are protected under AIRFA are avoided by strictly confining project activities to the proposed well pad location and surveyed access road.

It is also recommended that proposed actions at the well locations at Rattlesnake (Rattlesnake No. 1), Walker Creek (Walker Creek No. 1), and at the alternative location at Table Mesa (Table Mesa No. 2), as well as the access routes to the Table Mesa well locations (Nos. 1 and 2) be given archaeological clearance since no cultural properties were identified within those project areas. If the above recommendations are adhered to, final archaeological clearance is recommended for Chuska Energy Company's proposed undertaking.

References Cited

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APPENDIX A

NNAD SITE FORM AND LOCATIONAL MAP

NAVAJO NATION ARCHAEOLOGY DEPARTMENT

Site Survey and Management Form

SITE NO.: NM-H-30-8      FIELD OR OTHER NAME: Table Mesa No. 1      DATE RECORDED: 8/23/88

PROJECT NUMBER & NAME: NNAD 88-308--An Archaeological Survey of Three Well Locations for Chuska Energy Company in San Juan County, New Mexico and Apache County, Arizona

ORGANIZATION: NNAD      ARCHAEOLOGIST(S): Peter J. Kakos

USGS MAP REFERENCE: Table Mesa, N.Mex., 1966 7.5' series

LEGAL LOCATION: SW 1/4 NW 1/4 SE 1/4 and NW 1/4 SW 1/4 SE 1/4 SEC.: 17 (projected);  
T.27N, R.17W

UTM: Zone 12, Northing 4050220, Easting 708440

STATE: New Mexico      COUNTY: San Juan      CHAPTER: Shiprock

LAND STATUS: Navajo Indian Reservation

GROUND VISIBILITY: Kind and extent of cover? 90% ground visibility; 10% vegetation cover.

TOPOGRAPHY: The area is a relatively flat alluvial basin with outcrops of volcanic dikes; some sandstone with calcite concretions are also present.

DRAINAGE: Coal Creek is located 1.5 miles to the south.

ELEVATION (ft/m): 5260'/1603.66 m      Slope & Direction: 1-2<sup>o</sup> southwest-facing slope

SOIL TYPE: Mainly alluvial silt and clay      OTHER: Aeolian sand and silt

VEGETATION PRESENT: Ring muhly, Indian ricegrass, and forbs.

CULTURAL AFFILIATION(S): Navajo      SITE TYPE: Habitation

PERIOD(S) OF OCCUPATION (Date, if known): Post-WWII-1960      HOW DATED? Bottlemaker's mark

DIMENSIONS OF SITE (l x w): 190 m by 90 m      Total Area (sq. m): 17,100 sq. m

How Determined: Metric tape

ARCHITECTURE PRESENT? Describe: The remains of two hogans, foundations for two rectangular structures, and one horno.

ARTIFACTS OBSERVED/COUNTED: Observed--100s of artifacts which included glass shards, sanitary seal cans, car parts, and domestic items.

COLLECTIONS MADE? No      OF WHAT? N/A      METHOD: N/A

PHOTOS TAKEN: Yes      COLOR: Roll 88-017(F), Frame(s) 10 to 12

SITE DESCRIPTION: Site NM-H-30-8 is located on a low southwest-facing ridge which overlooks a broad, shallow flood basin. The main components of the site are located on the ridge itself; however, three features (1-3) are located south of the ridge on the alluvial flats. The site

is the remains of a Navajo habitation site. The site contains the remains of four structures and associated features.

Feature 1 is the remains of a structure which measures 4.30 m by 4.10 m. The feature consists of four wall alignments made of shaped single-coursed sandstone blocks. Only the base of the structure is present. This feature probably represents a small dwelling unit.

Trash was also observed in this area and includes such items as sanitary seal cans (church key-opening), 6-ounce milk cans (solder-top), a white enamel water pail, a door to a wood-burning stove, clear and brown glass fragments, a rusted frying pan, and a blue mottled soup pan.

Feature 2 is an ash pile measuring 6 m by 5 m and is mounded, which indicates extensive deposition. It consists of a dense concentration of charcoal, ash, and some trash. The trash consists mainly of clear, white, and brown glass. Two bottle bases were observed with a Duraglas label dating to 1958 and 1954.

Feature 3 is a light trash scatter measuring 12 m by 7 m and consists mainly of sanitary seal cans. This feature is probably an extension of Feature 2, but the assemblage content is different, consisting of tin cans rather than charcoal, ash, and glass. It appears that some effort was made to keep the disposal of charcoal, ash, and glass separate from tin cans. The types of cans present in Feature 3 included coffee cans, and meat cans (key-opened lid).

Feature 4 is a small trash deposit measuring 2 m in diameter and consists of a broom handle, a side to a wood-burning stove, white glass fragments (no maker's mark), and a nickle-plated lighter. This feature was also used as a second datum for the site, and it is the first feature located on the ridge where most of the site features are.

Feature 5 is a trash deposit measuring 1.80 m in diameter and consisting of clear and brown glass fragments. No maker's marks were observed. A left humerus from a sheep (Ovis sp.) or goat (Capra sp.) was also observed.

Feature 6 is possibly the remains of an horno and measures 2.10 m in diameter. The feature consists of fire-reddened sandstone blocks, which appear to have been shaped. In addition, clear, green, and brown glass fragments were also observed in association. If this feature is the remains of an horno, it may have been dismantled since the amount of the material present would not be sufficient to construct and complete an horno.

Feature 7 is another area of fire-reddened sandstone blocks measuring 90 cm by 40 cm. This feature may also have been used as an horno or extramural hearth, which may have been associated with Feature 8.

Feature 8 is the remains of a rectangular structure measuring 8.50 m by 5.60 m. Juniper posts and juniper boughs are lying in the eastern portion of the structure. The structure appears to have been dismantled. In addition, a sharp-nosed shovel head is also associated with this structure. The structure appears to have served as a habitation.

Feature 9 is the remains of an horno measuring 1.50 m in diameter. The feature contains fire-reddened sandstone blocks that are still two to three courses high. Pieces of metal strips and a crowbar were found in association with this feature. The feature appears to have been dismantled given the disarray of the material around the horno.

Feature 10 is a wood chip pile measuring 6 m by 4.50 m. The feature consists of a light scatter of wood chips.

Feature 11 is the remains of a hogan measuring 6 m in diameter. The hogan remains consist of sandstone blocks which appear to have formed the base, and scattered juniper posts. In addition, red asphalt roofing material was present in bits and pieces.

Feature 12 is the remains of a hogan measuring 7 m in diameter (outside ring). The hogan base consists of a ring of earth (40 cm wide) and some sandstone fragments. There is a slight depression that may represent the opening (or doorway) to the hogan; the opening faces east. In addition, green asphalt roofing material, a wooden ladder, wooden window and frame, and scatter juniper posts were found in association.

The whole site area is covered with a light scatter of sanitary seal cans, glass fragments, and milled wood. A few oddities were also observed. One red chert core was noted, which measured 3.80 cm by 2.50 cm by 1.40 cm; also, there are natural deposits of calcite crystals in the area which may have been used culturally.

Datable artifact types indicate a late 1950s occupation, no artifacts dating to the 1960s or later, and no pre-World War II artifacts were noted. A good date of occupation for this site would probably be post-World War II to 1950s. The site also appears to have been partially dismantled; that is, the hogans (Features 11 and 12) and rectangular structures (Features 1 and 8), as well as the horno (Feature 9) appear to have been dismantled in some way. The crowbar observed in Feature 9 may have been used to dismantle that particular feature.

The red chert core observed on the site may or may not be associated with the Navajo occupation. The temporal or cultural assignment for the core cannot be made at this time.

CONDITION OF SITE: Good      Causes of disturbance: Portions of the site appear to have been dismantled; erosion is also effecting the site.

LOCATION OF SITE RELATIVE TO PROJECT AREA: The site is partially within the project area of effect.

EXTENT OF INVESTIGATION TO DATE: Recording only

RESEARCH POTENTIAL: The site may yield important information on post-World War II Navajo settlement and subsistence strategies. Ethnographic work could also provide important information to archaeologists on similar sites in the area.

RECOMMENDATIONS: Portions of Site NM-H-30-8 appear to warrant protection under AIRFA, and it is recommended that these portions of the site (Features 11 and 12) be avoided by any project-related activities.

SITE ASSESSMENT UNDER 36 CFR 60.4 (National Register):

INTEGRITY: Site NM-H-30-8 appears to have integrity of location, workmanship, setting, feeling, and association.

and CRITERIA a-d: The site does not appear to be eligible to the National Register under criteria a-c, but is eligible under criterion d since it may provide information important to history. The site does not meet the 50-year guideline for Register eligibility, however.

EXCLUSIONS: No exclusions appear to apply.

SITE ASSESSMENT UNDER 43 CFR 7.3 (Archaeological Resources Protection Act): The site is of archaeological interest, but fails to meet the 100-year guideline necessary to warrant

protection under ARPA.

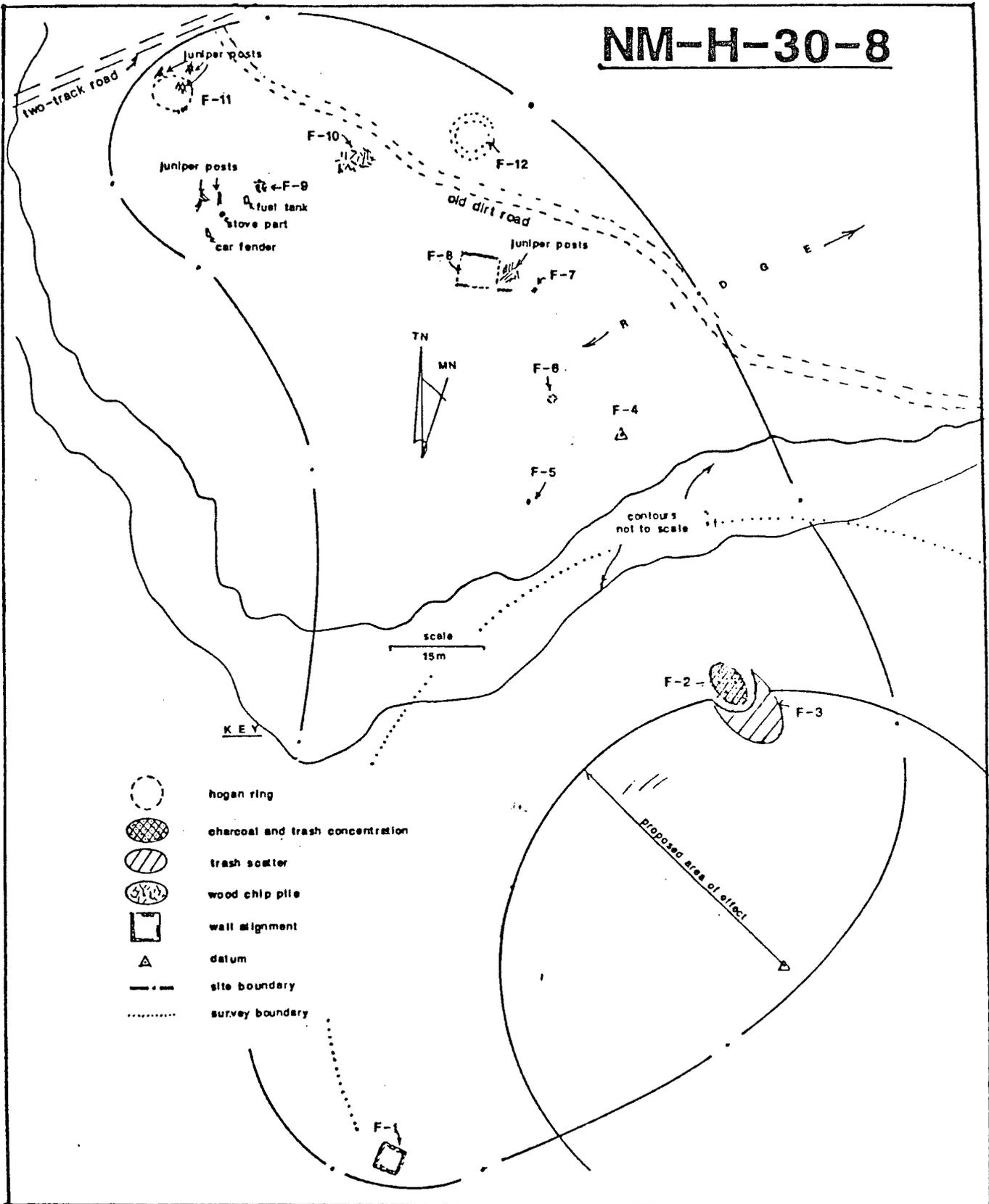
SITE ASSESSMENT UNDER AIRFA (American Indian Religious Freedom Act): The site appears to qualify for protection under AIRFA since most Navajo hogans and many habitation structures are blessed and are an integral part of Navajo ritual and ceremonialism.

PROVIDE A SITE MAP (including site designation, North arrow, scale, recognizable features, landmarks and relationship to project area).

HOW CAN THE SITE BE REACHED? (See attached U.S.G.S. map)

OTHER COMMENTS (Ethnographic Data, etc.): None

# NM-H-30-8



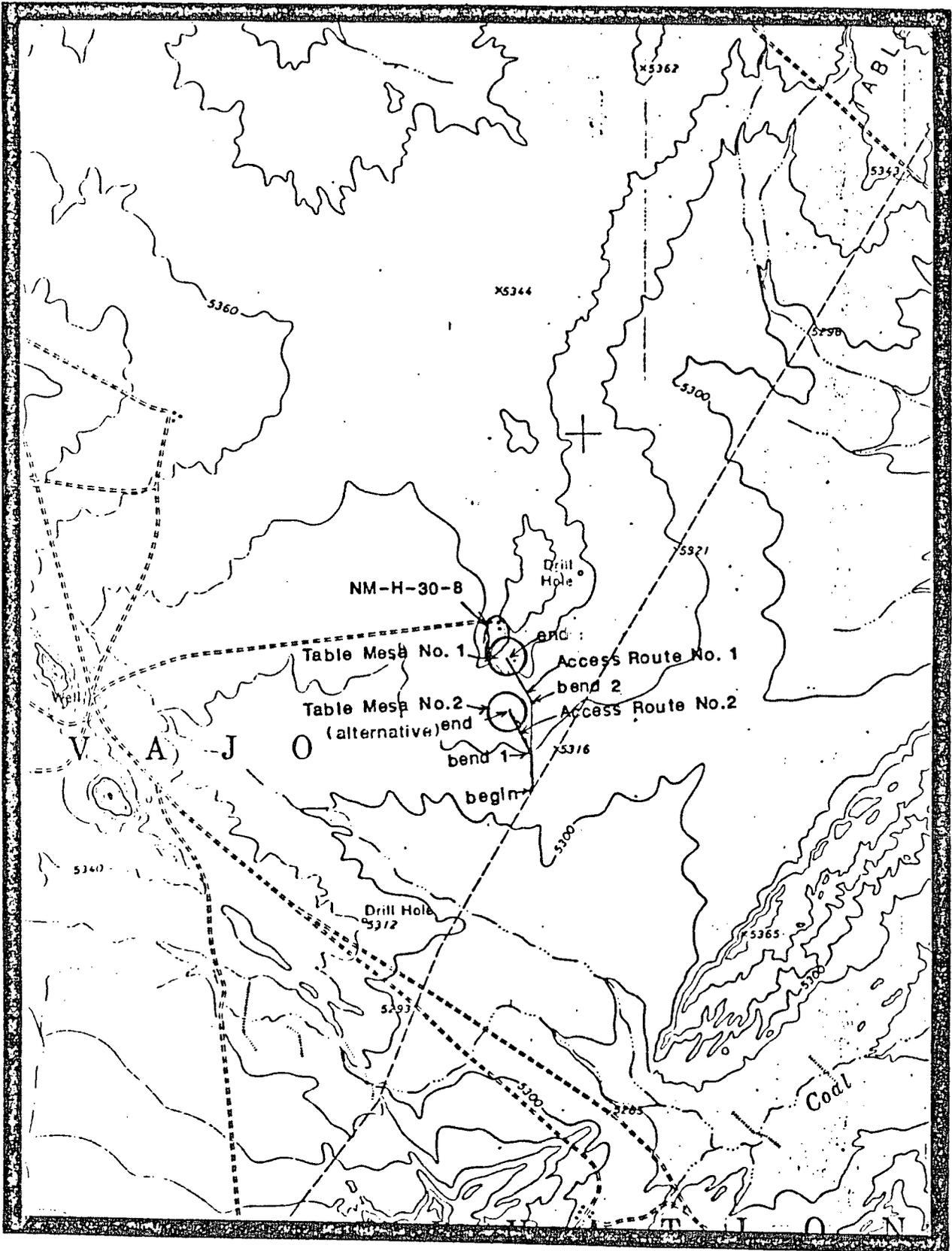


Figure 1. General project area map of proposed well locations, Table Mesa No. 1 and No. 2, Access Routes No. 1 and No. 2, and Site NM-H-30-8. Table Mesa, N.Mex., 1966 7.5' series; T.27N, R.17W (NNAD 88-308).

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-4-85

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

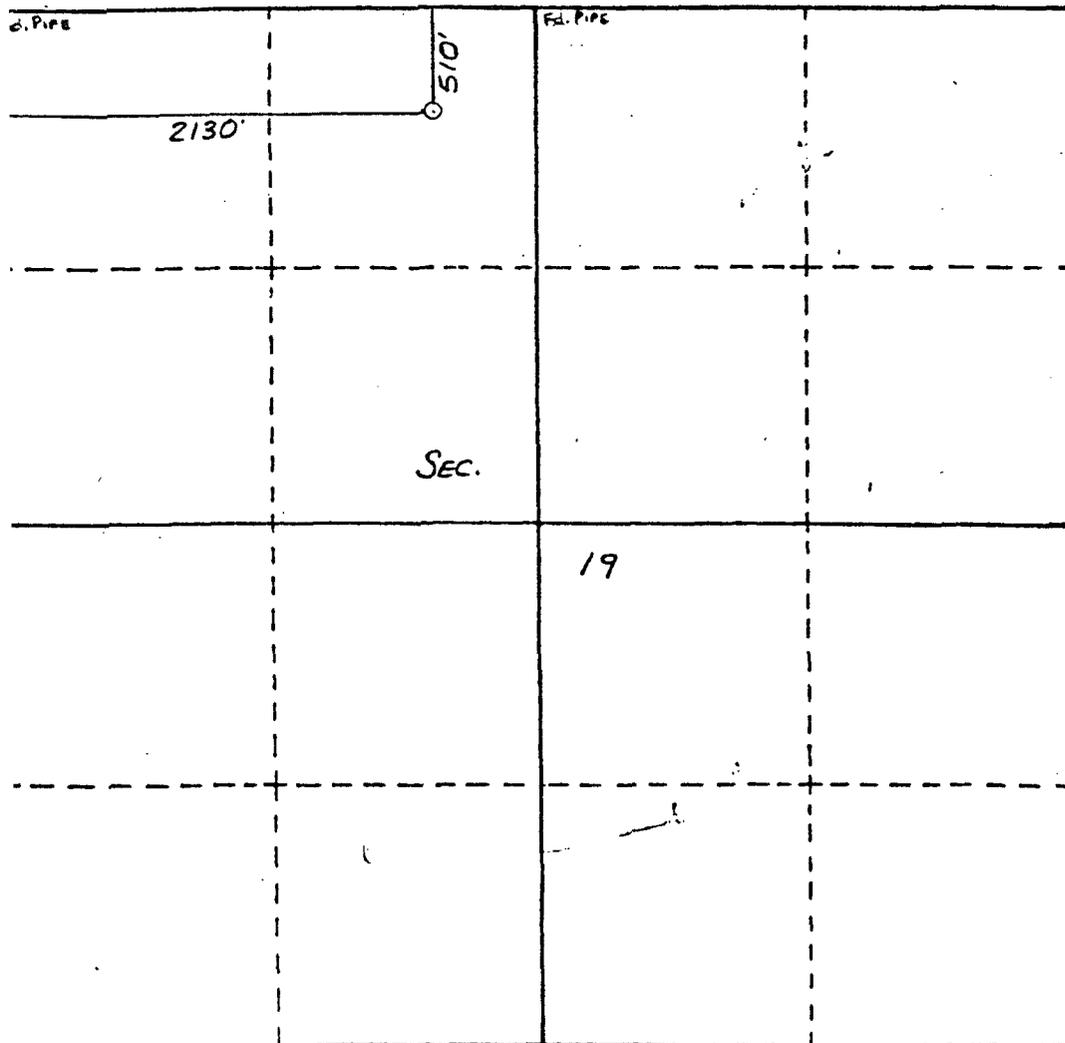
Operator <b>CHUSKA ENERGY COMPANY</b>		Lease <b>NAVAJO TRIBAL B</b>			Well No.
Unit Letter <b>C</b>	Section <b>19</b>	Township <b>29 N</b>	Range <b>18 W</b>	County <b>SAN JUAN</b>	
Actual Footage Location of Well: <b>510</b> feet from the <b>North</b> line and <b>2130</b> feet from the <b>West</b> line					
Ground Level Elev: <b>5297</b>	Producing Formation	Pool	Dedicated Acreage:		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 \_\_\_\_\_

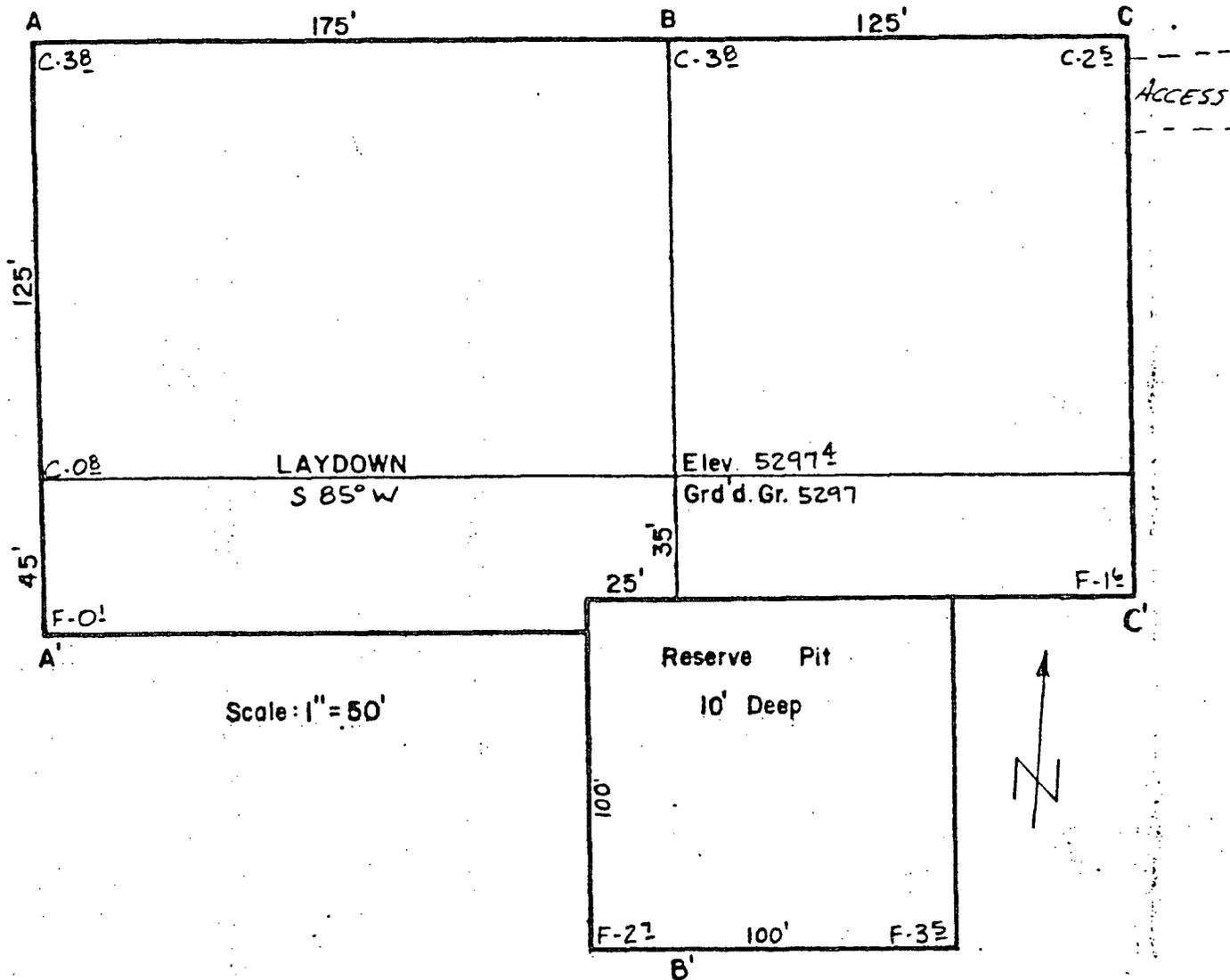
If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

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.



<b>CERTIFICATION</b>	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Name	
Position	
Company	
Date	
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	8-24-88
Registered Professional Engineer and/or Land Surveyor	WILLIAM E. MAHNEK II #8466
Certificate No.	

CHUSKA ENERGY COMPANY  
 NAVAJO TRIBAL B  
 510' FNL & 2130' FWL  
 Sec. 19, T29N, R18W  
 San Juan Co., N.M.



A-A'      Vert.: 1" = 30'      Horiz.: 1" = 100'      C/L

5300	-----	-----	-----	-----	-----	-----
5290	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----

B-B'

5300	-----	-----	-----	-----	-----	-----
5290	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----

C-C'

5300	-----	-----	-----	-----	-----	-----
5290	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-85

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

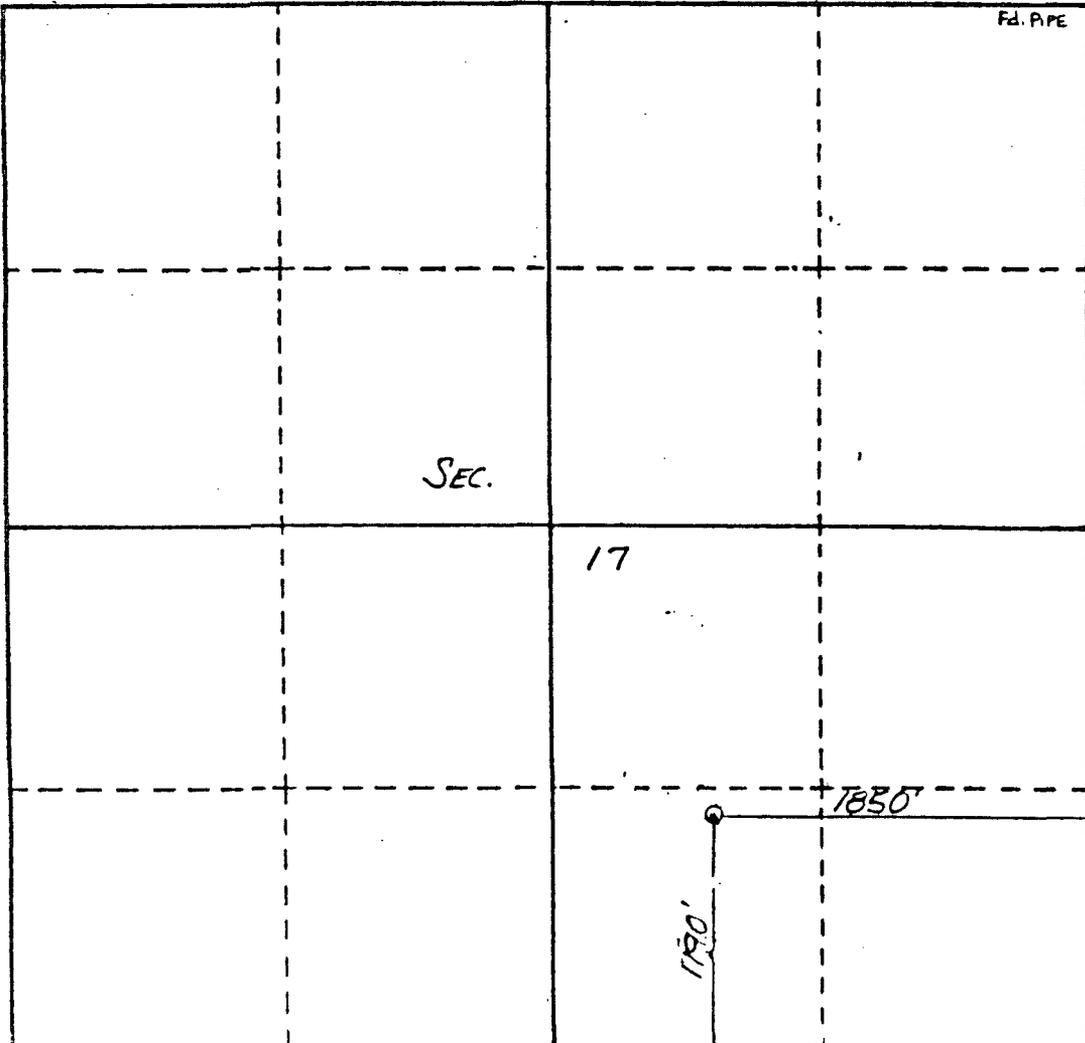
Operator <b>CHUSKA ENERGY COMPANY</b>		Lease		Well No.	
Unit Letter <b>0</b>	Section <b>17</b>	Township <b>27 N</b>	Range <b>17 W</b>	County <b>SAN JUAN</b>	
Actual Footage Location of Well: <b>1190</b> feet from the <b>South</b> line and <b>1850</b> feet from the <b>East</b> line					
Ground Level Elev: <b>5329</b>	Producing Formation	Pool	Dedicated Acreage:  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

Position

Company

Date

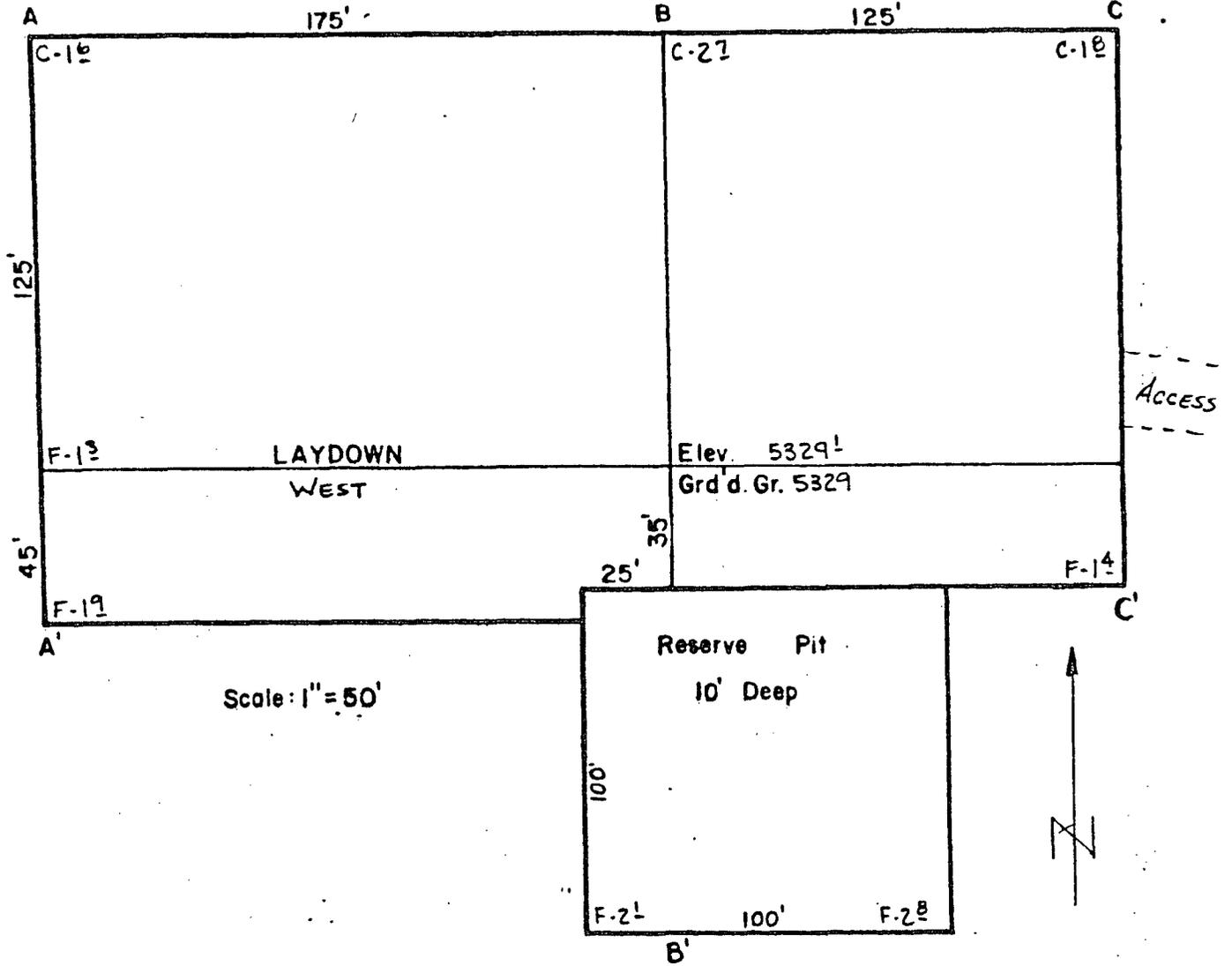
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed \_\_\_\_\_  
 Registered Professional Engineer and/or Professional Surveyor  
 No. \_\_\_\_\_

WILLIAM E. MAHAN  
 STATE OF NEW MEXICO  
 Registered Professional Engineer and/or Professional Surveyor  
 License No. 48466  
 CERTIFICATE OF PROFESSIONAL LAND SURVEYOR

CHUSKA ENERGY COMPANY

1190' FSL & 1850' FEL  
 Sec. 17, T27N, R17W  
 San Juan Co., N.M.



A-A'      Vert: 1" = 30'      Horiz: 1" = 100'      C/L

5330	-----	-----	-----	-----	-----	-----
5320	-----	-----	-----	-----	-----	-----

B-B'

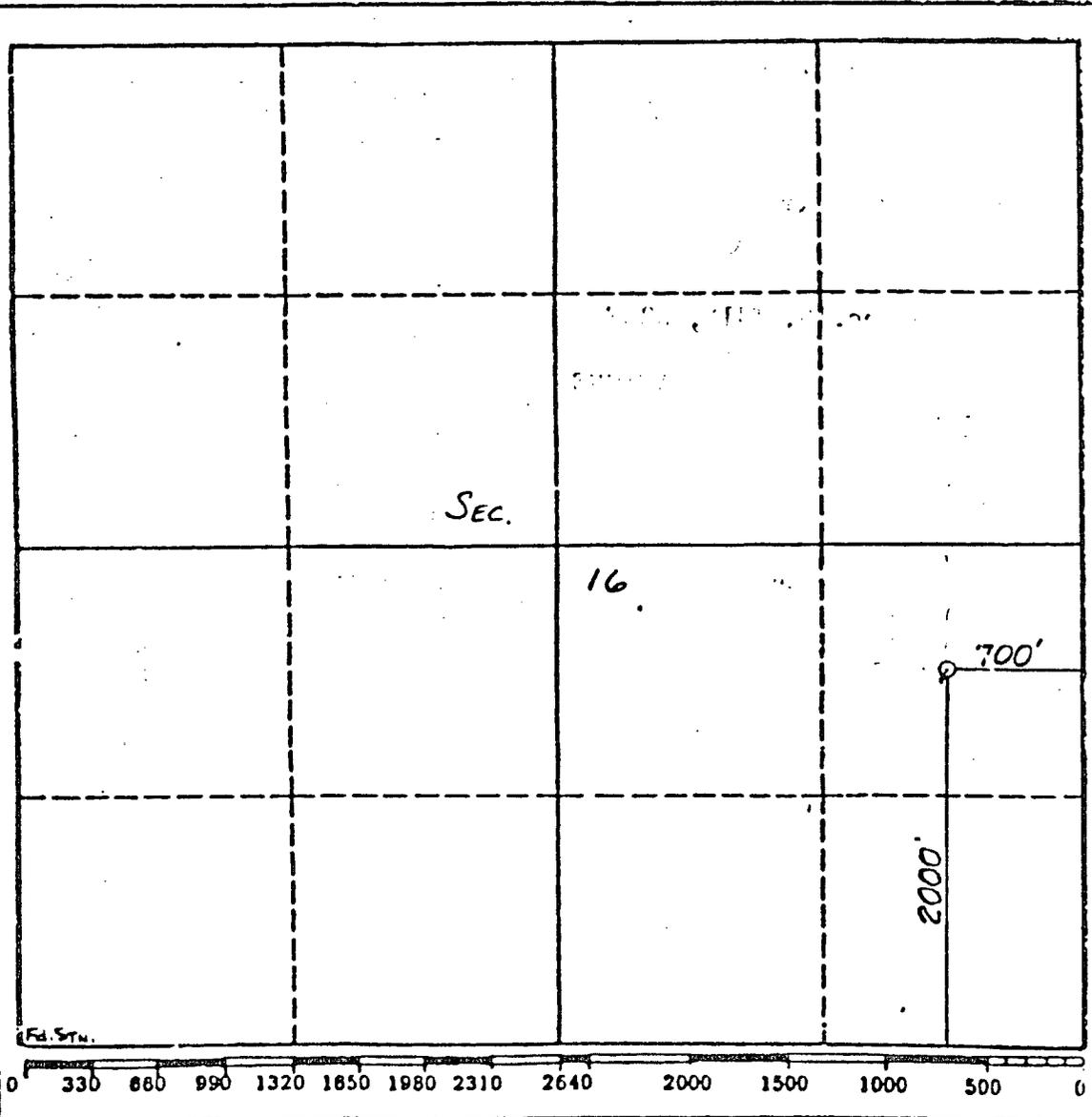
5330	-----	-----	-----	-----	-----	-----
5320	-----	-----	-----	-----	-----	-----

C-C'

5330	-----	-----	-----	-----	-----	-----
5320	-----	-----	-----	-----	-----	-----

- Operator shall outline the dedicated acreage for both oil and gas wells on the plat.
- A registered professional engineer or land surveyor registered in the State of Arizona or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
- All distances shown on the plat must be from the outer boundaries of the Section.
- Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES \_\_\_\_\_ NO \_\_\_\_\_
- If the answer to question four is "no," have the interests of all the owners been consolidated by contract or other agreement or otherwise? YES \_\_\_\_\_ NO \_\_\_\_\_. If answer is "yes," Type of Consolidation \_\_\_\_\_
- If the answer to question four is "no," list all the owners and their respective interests below:

Owner	Land Description

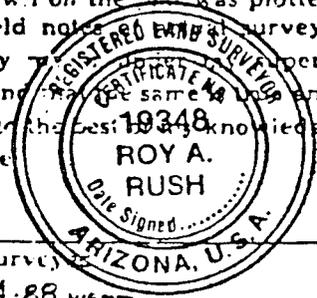


**CERTIFICATION**

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

Name \_\_\_\_\_  
 Position \_\_\_\_\_  
 Company \_\_\_\_\_  
 Date \_\_\_\_\_

I hereby certify that the well location shown on the plat was plotted from field notes of surveys made by \_\_\_\_\_, under my supervision, and that the same are true and correct to the best of my knowledge and belief.

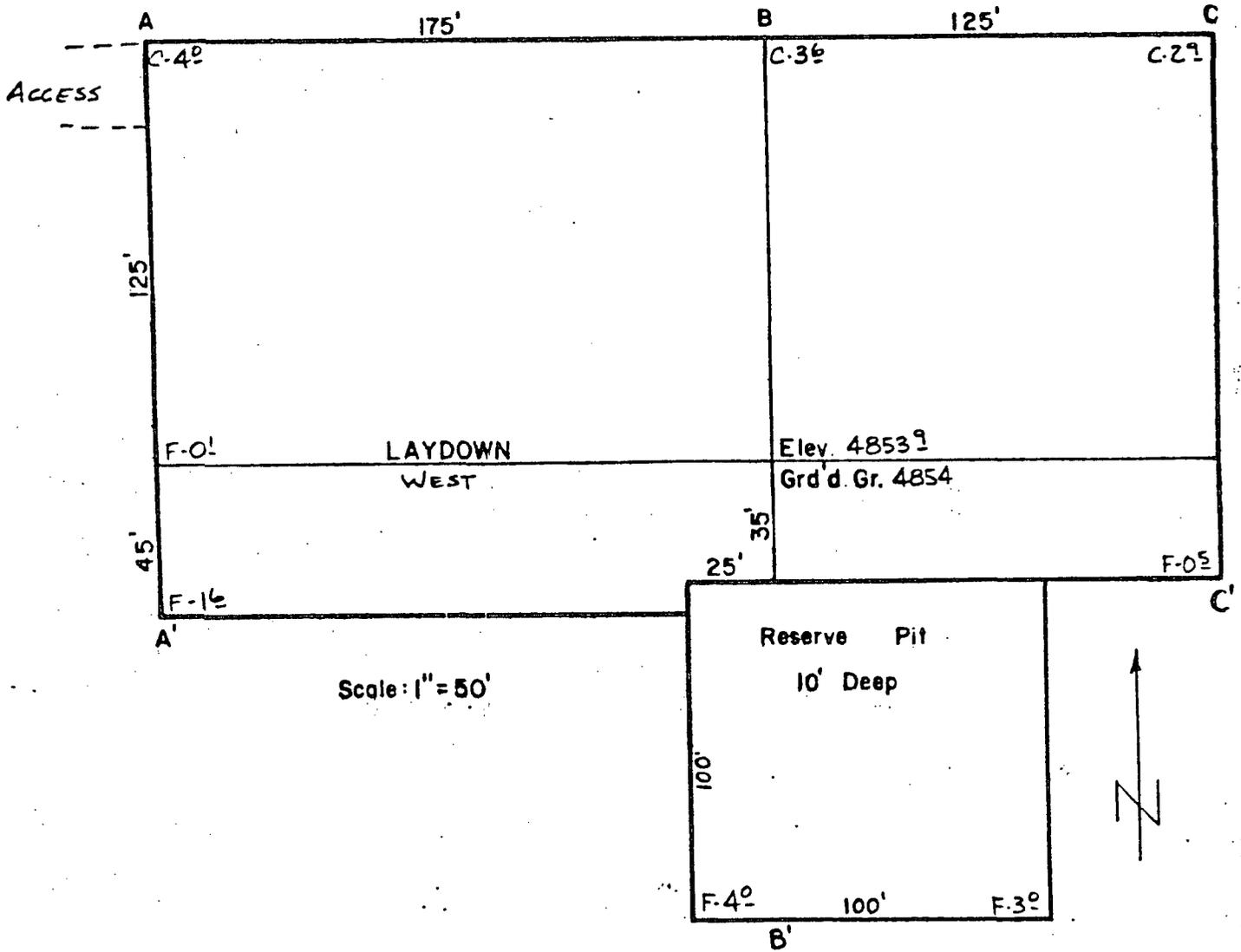


Date Surveyed 8-24-88  
 Registered Professional Engineer and/or Land Surveyor  
*Roy A. Rush*  
 Certificate No. 19348

**PROPOSED CASING PROGRAM**

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement

CHUSKA ENERGY COMPANY  
 NAVAJO TRIBAL B  
 2000' FSL & 700' FEL  
 Sec. 16, T41N, R25E  
 Apache Co., Ariz.



A-A' Vert: 1" = 30' Horiz: 1" = 100' C/L

4860	-----	-----	-----	-----	-----	-----
4850	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----

B-B'

4860	-----	-----	-----	-----	-----	-----
4850	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----

C-C'

4860	-----	-----	-----	-----	-----	-----
4850	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
 OIL CONSERVATION DIVISION  
 AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD  
 AZTEC, NEW MEXICO 87410  
 (505) 334-6178

OIL CONSERVATION DIVISION  
 BOX 2088  
 SANTA FE, NEW MEXICO 87501

DATE 2-14-89

RE: Proposed MC \_\_\_\_\_  
 Proposed DHC \_\_\_\_\_  
 Proposed NSL X \_\_\_\_\_  
 Proposed SWD \_\_\_\_\_  
 Proposed WFX \_\_\_\_\_  
 Proposed PMX \_\_\_\_\_

*NSL-2629*

Gentlemen:

I have examined the application dated \_\_\_\_\_

for the CHUSKA ENERGY CO. TABLE MESA #1 0-17-27N-17W  
 Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Yours truly,

*Earl Burch*

**RECEIVED**  
 FEB 21 1989  
 OIL CONSERVATION DIVISION  
 SANTA FE