MINUTE ITEM C11

W 40632

Kruger

APPROVE A PROSPECTING PERMIT FOR MINERALS OTHER THAN OIL, GAS, GEOTHERMAL RESOURCES, SAND AND GRAVEL, SIERRA COUNTY

Consent Calendar Item C11 was moved and considered during the regular session.

Calendar Item C11 was presented by Al Willard, Supervising Mineral Resources Engineer, in regards to Tenneco Minerals proposing a mineral prospecting program consisting of drilling up to a maximum of 96 exploratory holes at 46 sites along existing dirt roads and jeep trails.

Fred Balderson wrote a letter on July 21st to Charles Warren, Executive Officer of State Lands Commission, and presented an addendum to the letter. This addendum stated his concern regarding the proposed negative declaration on Tenneco Minerals Company's application for a minerals prospecting permit.

Tom Young, Project Manger of Tenneco, advised that all drilling on adjacent property had been restored to its original state.

Commissioner Tucker asked for a report back on the restoration of this property and that a copy of this report be sent to Mr. Balderson.

The Calendar Item was approved 3-0.

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FREDERICK E. BALDERSTON
641 ALVARADO ROAD
BERKELEY, CALIFORNIA 94705

Charles Warren, Executive Officer
State Lands Commission
1807 - 13th St.
Sacramento, Ca. 95814

August 10, 1991

Dear Mr. Warren: File Ref: W-406332, EIR ND:558.

This is an addendum to the letter of comments that we wrote to you on July 21, 1991, concerning the proposed negative declaration on Tenneco Minerals Company's application for a minerals prospecting permit in Antelope Valley, near Loyalton, California.

In our previous letter, we discussed several major issues of concern about the proposed negative declaration.

At page 1 of the Detailed Project Description, paragraph 1 states:

"The project site is accessible by travelling west from Loyalton on State Highway 49 for about four miles, and then south for about three miles on Antelope Valley Road to the site which is just south of the Antelope Mine which is located in Section 27. This route will provide the main access for drilling equipment to be used during the proposed project. These access roads will not require any modification or excessive maintenance work during the approximate eleven days of the drilling program."

"Antelope Valley Road", as it is referred to in the above paragraph, starts at Highway 49 and proceeds through our private property for a little more than two miles to our south boundary. There is no easement recorded on our property deed to show that this road is on a publicly owned right of way. Sierra County apparently began to undertake a modest amount of annual road maintenance in the early 1950's. Since that time, ranchers, hunters and visitors as well as the National Forest Service and the California Department of Fish and Game have used the road for light-weight vehicles and on an occasional basis.

We have not objected to this light usage since we acquired the property in 1975, but a change in the usage pattern or a widening or modification of the road would, in our view, require our permission. We have, in fact, notified Sierra County of our objection that recent road grading has widened the road several feet from its original width. We want to be sure that the State Lands Commission is aware that we reserve our rights with respect to any change in the pattern of usage of "Antelope Valley Road."

Cordially,

Fred Balderston

Judith Balderston

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MINUTE ITEM
This Calendar Item No. C11
was approved as Minute Item
No. 11 by the State Lands
Commission by a vote of 3
to 0 at its 8.12.91
meeting.

CALENDAR ITEM

A 3

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C 1 1

08/12/91
W 40632 PRC 7561
Kruger

APPROVE A PROSPECTING PERMIT FOR MINERALS OTHER THAN OIL, GAS, GEOTHERMAL RESOURCES, SAND AND GRAVEL, SIERRA COUNTY.

APPLICANT:
Tenneco Minerals Company
5301 Longley Lane, Suite 113
Reno, Nevada 89511

AGENT:
Tenneco Minerals Company
Attn: Thomas Young
P. O. Box 1035
Loyalton, Ca 96118

AREA, TYPE LAND AND LOCATION:
Approximately 320 acres of proprietary lands administered by the California Department of Fish and Game (CDFG) situated within the Antelope Valley Wildlife Area (WLA) and further described as portions of Sections 27, 28, 33 and 34, T21N, R15E, MDM:

Section 27: $SW\frac{1}{4}SW\frac{1}{4}$.

Section 28: $SE\frac{1}{4}SW\frac{1}{4}$, $SW\frac{1}{4}SE\frac{1}{4}$.

Section 33: $SE\frac{1}{4}NE\frac{1}{4}$, $NE\frac{1}{4}NW\frac{1}{4}$ and $N\frac{1}{2}NE\frac{1}{4}$.

Section 34: $NW\frac{1}{4}NW\frac{1}{4}$.

These lands are located in east-central Sierra County and about five miles northeast of the town of Sierraville, California. Natural wildlife habitats within the WLA consist mostly of transitional range for migrating herds of mule deer.

PROPOSED PROJECT:
Tenneco Minerals proposes a mineral prospecting program which consists of drilling up to a maximum of 96 exploratory holes at 46 sites along existing dirt roads and jeep trails. The drilling

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equipment to be utilized is compact and designed for operations in environmentally sensitive areas. Either small drilling rigs with large rubber tires or track-mounted drill rigs will be used during the project. Support equipment will include the minimum number of vehicles necessary to transport personnel and equipment. Vehicles will be restricted to existing dirt roads and access routes.

The drilling method for each hole employs reverse circulation. No mud pits or drilling fluids are required, and no hazardous materials will be used on the site. Core drilling might be used for a small number of the holes. Non-toxic drilling fluids will be used if core drilling becomes necessary. These fluids are contained in tanks while on site. The drill hole diameters will vary from 4-1/8 to 5-1/4 inches, and the total depth of each hole will be 200 vertical feet. The maximum displacement of subsurface material will be approximately 134 cubic yards if all 96 holes were to be drilled to maximum depth. Subsurface samples will be collected at regular intervals from either drill cuttings or core samples, and be assayed off-site for chemical signatures. Should water zones be encountered during drilling, these will be sealed off in accordance with existing State Department of Water Resources regulations.

Drill holes will be abandoned by backfilling each hole with drill cuttings and removing any casing or drill pipe left in the hole. Unused cuttings will be removed from the project area. Drill sites will not require any pad preparation and will be reseeded following abandonment. No new access routes are required and there will be minimal new surface disturbance. Some of the drill sites will necessitate going off-road with the track-mounted or rubber-tired drill rig. Surfaces in the off-road areas are rock-strewn, and covered by some bushes and clay-rich soil.

EIR ND 558, SCH# 91072018, was prepared and circulated for the proposed Antelope Valley Project. Several mitigation measures were incorporated into the project description prior to the public circulation of this document. With these measures included in the project, there is no substantial evidence that this project will have a significant adverse impact on the environment. In order to provide for the compatibility of a drilling program in the WLA with wildlife and recreational uses, CDFG has stipulated that no prospecting or reclamation activities be conducted during licensed deer hunting seasons scheduled for August 17th through September 8th and September 21st through October 6th. The later season would preclude any exploratory or reclamation activities following that season. No activities will

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be allowed after October 6, 1991 that would conflict with the winter deer migration into Antelope Valley Wild Life Area. Activities can be resumed about May 15, 1992.

To ensure conformance with all mitigation measures, a staff member of the Commission will perform periodic inspections of the permit area.

SPECIFICATIONS OF THE PROSPECTING PERMIT:

Term: The primary term of this mineral prospecting permit shall be two years. In its discretion, the Commission may extend the term for one additional year.

Royalty: Royalty payable under the permit shall be 20 percent of the minerals secured from the permit area, and sold or otherwise disposed of or held for sale or other disposition.

Royalty payable under any preferential lease issued shall not be less than ten percent of the gross value of all mineral production from the leased lands, less any charges approved by the Commission made or incurred with regard to transporting or processing the State's royalty share of production or the equivalent Net Smelter Return (NSR). The determination of said royalty and charges shall be at the discretion of the Commission, and set forth in the lease.

P.R.C. 6890.5 provides that the Commission when entering into a lease for the extraction of commercially valuable minerals from lands owned by another State agency may provide the State agency receive land as payment for royalty due under the lease. Upon lease issuance and accrual of mineral royalties, CDFG could acquire up to 720 acres of ranch land adjacent to the WLA currently owned by the applicant. CDFG believes that these adjacent lands possess natural wildlife habitat equal to that in the Antelope Valley WLA.

Upon acquisition of these adjacent lands or additional lands or in-kind payments and at the end of each fiscal year, a sum equal to 50 percent of the revenue received by the State for this lease shall be available for appropriation by the California State Legislature for the support of, and apportionment and transfer by the State Controller to CDFG.

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PREREQUISITE CONDITIONS, FEES AND EXPENSES:

1. Required filing fee, acreage deposit and permit processing fee have been submitted by the applicant.

2. At this time, the subject lands are not known to contain commercially valuable mineral deposits.

STATUTORY AND OTHER REFERENCES:

A. P.R.C.: Div. 6, sections 6890 and 6891.

B. Cal. Code Regs.: Title 2, Section 2200.

AB 884:

09/20/91.

OTHER PERTINENT INFORMATION:

1. In 1990, the Commission issued Mineral Prospecting Permit PRC 7417 on State proprietary lands within the WLA surrounding the Antelope Valley Project site to Tenneco Minerals for precious metals exploration. Geologic data collected from prospecting activities conducted under PRC 7417 indicate the Antelope Valley Project site contains exploratory targets that warrant subsurface testing to determine the nature and extent of possible gold mineralization.

   With the exception of a portion of Section 33, the environmental impacts to lands covered under the subject Antelope Valley Project (W 40632) have been previously analyzed in EIR ND 420, SCH# 87052507, in conjunction with the prior prospecting permit PRC 7417. At the conclusion of that project, the lands were inspected by State Lands Commission staff for compliance with the conditions in the authorization of PRC 7417. Staff determined that all mitigation and permitting conditions had been satisfactorily met.

2. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines, staff prepared a proposed Negative Declaration EIR ND 558 SCH# 91072018 for the Antelope Valley Project. The proposed Negative Declaration was circulated for public review pursuant to the provisions of CEQA. A copy of this environmental document is attached hereto as Exhibit "C". There is no substantial evidence that the Antelope Valley Project will have a significant effect on the environmental (14 Cal. Code Regs. 15074(b)).

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3. Pursuant to P.R.C. Section 6895, upon establishing to the satisfaction of the Commission that a commercially valuable mineral deposit has been discovered within the limits of the permit area, the applicant may have a preferential right to a lease for a maximum of 320 acres embraced within the permit. Said right shall be subject to all necessary environmental approvals. The issuance of this permit shall not affect the discretion of the Commission in granting or denying such a lease because of environmental or other conditions.

4. The prospecting permit document shall provide for a performance bond or other security device of $25,000 in favor of the State.

5. Portions of the subject lands have been purchased through the Land and Water Conservation Fund. As such, approval was sought from the State Department of Parks and Recreation on the basis the proposed activity is a temporary non-conforming use of the subject lands. However, should the permittee apply for a preferential lease, Tenneco would have to provide equivalent acreage for the leased lands to be selected by DFG as consideration for the right to its lands.

APPROVALS OBTAINED:

1. Pursuant to P.R.C. Section 6890, the permit application and permit form have been approved by the Office of the Attorney General for compliance with relevant provisions of the law.

2. CDFG has approved the work to be performed under the authority of the permit, and has specified terms and conditions required to ensure the work shall be performed in a manner which is not inconsistent with the purposes for which the permitted lands are owned. Pursuant to P.R.C. Section 6890(c), CDFG has advised the Commission, in writing, that the proposed activity will not cause a net loss of wildlife habitat value or acreage in that area.

EXHIBITS:

A. Land Description.
B. Site Map.
C. Negative Declaration.

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IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT NEGATIVE DECLARATION EIR ND 558, SCH NO. 91072018, WAS PREPARED FOR THE ANTELOPE VALLEY PROJECT PURSUANT TO THE PROVISIONS OF CEQA, AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. ADOPT SAID NEGATIVE DECLARATION AND DETERMINE THAT THE PROJECT, AS PROPOSED, WILL NOT HAVE SIGNIFICANT EFFECT ON THE ENVIRONMENT.

3. DETERMINE THAT THE LANDS DESCRIBED IN THE PERMIT ARE NOT PRESENTLY KNOWN TO CONTAIN COMMERCIALLY VALUABLE MINERAL DEPOSITS.

4. AUTHORIZE THE ISSUANCE OF A MINERAL PROSPECTING PERMIT TO TENNECO MINERALS COMPANY FOR A PRIMARY TERM OF TWO YEARS, FOR VALUABLE MINERALS OTHER THAN OIL, GAS, GEOTHERMAL RESOURCES, SAND AND GRAVEL ON 320 ACRES, MORE OR LESS, OF CALIFORNIA DEPARTMENT OF FISH AND GAME LANDS SITUATED WITHIN THE ANTELOPE VALLEY WILDLIFE AREA OF SIERRA COUNTY FURTHER DESCRIBED IN EXHIBIT "A", IN ACCORDANCE WITH THE STANDARD FORM OF PERMIT. ROYALTY PAYABLE UNDER THE PERMIT SHALL BE TWENTY PERCENT. ROYALTY PAYABLE UNDER ANY PREFERENTIAL LEASE ISSUED UPON THE DISCOVERY OF COMMERCIALLY VALUABLE MINERAL DEPOSITS SHALL NOT BE LESS THAN TEN PERCENT OF THE GROSS VALUE OF ALL MINERAL PRODUCTION FROM THE LEASED LANDS, LESS ANY CHANGES APPROVED BY THE COMMISSION MADE OR INCURRED WITH REGARD TO TRANSPORTING OR PROCESSING THE STATE'S ROYALTY SHARE OF PRODUCTION OR THE EQUIVALENT NET SMELTER RETURN (NSR). THE DETERMINATION OF SAID ROYALTY AND CHARGES SHALL BE AT THE DISCRETION OF THE COMMISSION.

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EXHIBIT "A"

LAND DESCRIPTION

W 40632

Four parcels of land in Sierra County, State of California. Said parcels are more directly described as follows:

Parcel 1:

The SW 1/4 of the SW 1/4 of Section 27, T 21 N, R 15 E, MDM

Parcel 2:

The SE 1/4 of the SW 1/4 and the SW 1/4 of the SE 1/4 of Section 28, T 21 N, R 15 E, MDM

Parcel 3:

The SE 1/4 of the NE 1/4 and the NE 1/4 of the NW 1/4 and the N 1/2 of the NE 1/4 of Section 33, T 21 N, R 15 E, MDM

Parcel 4:

The NW 1/4 of the NW 1/4 of Section 34, T 21 N, R15 E, MDM

END OF DESCRIPTION

PREPARED JULY, 1991 BY LLB

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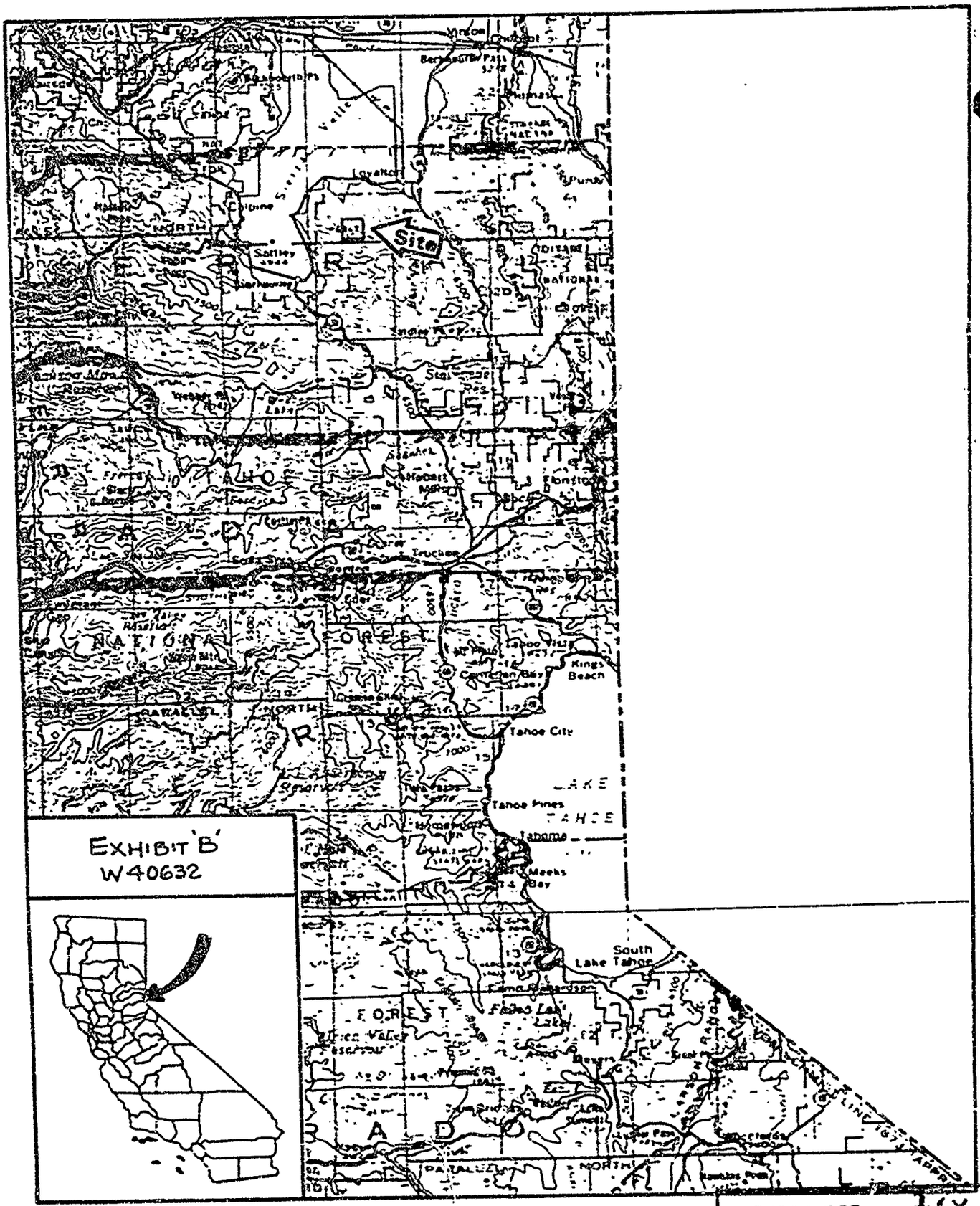

EXHIBIT 'B'
W40632

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Date: June 26, 1991

File: W 40632

ANTELOPE VALLEY PROJECT

Initial Study - Introduction

The State Lands Commission has received an application from Tenneco Minerals Company of Loyalton, CA to conduct a mineral prospecting activity, specifically an exploratory drilling program. The permit application was submitted on February 19, 1991 and was deemed complete on March 19, 1991. If approved by the Commission, the prospecting permit will have an initial term of two years. In its discretion, the Commission may extend the term of the permit for an additional year. The proposed project site is located in portions of Sections 27, 28, 33, and 34, T21N, R15E, MDM and contains approximately 320 acres:

Section 27: SW1/4SW1/4.
Section 28: SE1/4SW1/4, SW1/4SE1/4.
Section 33: SE1/4NE1/4, NE1/4NW1/4 and N1/2NE1/4.
Section 34: NW1/4NW1/4.

These are proprietary lands of the Antelope Valley Wildlife Management Area which are administered by California Department of Fish and Game (CDFG). The Management Area which contains approximately 4500 acres, was acquired by the Wildlife Conservation Board for CDFG in 1980.

Except for the SE1/4NE1/4 of Section 33, the project site was analyzed in EIR ND 420, SCH# 87052507 in conjunction with Tenneco Minerals' prospecting permit PRC 7417.2 as part of an exploration program consisting of geologic mapping, surface sampling and geophysical surveys. In 1990, these lands were inspected by staff of the Commission to determine compliance with the terms of the prior authorization (PRC 7417.2). Staff determined that all conditions had been satisfactorily met.

The proposed project site is on the east side of the Sierra Nevada Range in east-central Sierra County. The site is about 5 miles northeast of the town of Sierraville and about 3.5 miles southwest of Loyalton, CA. The general area of the proposed project is uninhabited, and is adjacent to lands in the Tahoe National Forest.

The Initial Study/Mitigated Project-Proposed Negative Declaration includes an Introduction, Detailed Project Description, Environmental Setting, maps of the project area, an Environmental Impact Assessment, and attachments consisting of botanical and archaeological survey reports.

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Detailed Project Description

The project site is accessible by travelling west from Loyalton on State Highway 49 for about four miles, and then south for about three miles on Antelope Valley Road to the site which is just south of the Antelope Mine which is located in Section 27. This route will provide the main access for drilling equipment to be used during the proposed project. These access routes will not require any modification or excessive maintenance work during the approximate eleven days of the drilling program.

Sierra County's General Plan designates the vicinity of the project site as Intermediate Forest. This designation is compatible with mineral development. Presently, this area has no development. Current land uses include grazing and recreation. Past uses include some mining and logging operations.

Tenneco Minerals proposes a mineral prospecting program which consists of drilling up to a maximum of 96 exploratory holes at 46 sites along existing dirt roads and jeep trails. The drilling equipment to be utilized is compact and designed for operations in environmentally sensitive areas. Either small drilling rigs with large rubber tires or track-mounted drill rigs will be used during the project. Tracks on this type of rig are made with the minimum number of smooth cleats for positive traction, thereby reducing the evidence of passage. Both types of rigs will distribute the ground weight of the equipment more evenly, and are the least surface disturbing of any drilling equipment available. Support equipment will include the minimum number of vehicles necessary to transport personnel and equipment. Vehicles will be restricted to the existing dirt roads and access routes.

The drilling method for each hole employs reverse circulation. No mud pits or drilling fluids are required, and no hazardous materials will be used on the site. Core drilling might be used for a small number of the holes. Non-toxic drilling fluids will be used if core drilling becomes necessary. These fluids are contained in tanks while on site. The drill hole diameters will vary from 4-1/8 to 5-1/4 inches, and the total depth of each hole will be about 200 vertical feet. The maximum displacement of subsurface material will be approximately 134 cubic yards if all 96 holes were to be drilled to maximum depth. Subsurface samples will be collected at regular intervals from either drill cuttings or core samples, and be assayed off-site for chemical signatures. Should water zones be encountered during drilling, these will be sealed off in accordance with existing State Department of Water Resources regulations.

Drill holes will be abandoned by backfilling each hole with drill cuttings, and removing any casing or drill pipe left in the hole. Excess cuttings will be used to return any of the drill sites to original contour. Unused drill cuttings will be removed from the project area. Drill sites will not require any pad preparation, and will be reseeded following abandonment. No new access routes are required, and there will be minimal new surface disturbance.

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Some of the drill sites will necessitate going off-road with the track-mounted or rubber-tired drill rig. Off-road areas are shown on Figure 2 of the Special-Status Plant Survey attached hereto. Surfaces in the off-road areas are rock-strewn, and covered by some bushes and clay-rich soil.

Tenneco personnel will return any disturbed area to original contour and natural state to the extent possible. Reclamation activities will be conducted both during and after completion of the drilling program.

Mitigation Measures to be Incorporated into the Detailed Project Description:

With the incorporation of the following mitigation measures into the project description there is no substantial evidence that the Antelope Valley Project will have a significant adverse impact on the environment.

1. Mineral prospecting will not occur in the WLA during periods of recreational activity, specifically deer hunting seasons licensed by the Department of Fish and Game scheduled for Aug. 17 through Sep. 8 and Sep. 21 through Oct. 6. The later season would preclude any exploratory or reclamation work following that season.

2. Use of vehicles will be governed by a transportation plan subject to approval by Commission staff prior to project consideration by the Commission. Vehicles will maintain a speed of 15 miles per hour or below while at the project site.

3. Only drilling equipment as described in the project description above will be used throughout the span of the project.

4. Work sites will be consolidated according to a plan submitted to and approved by the Department of Fish and Game prior to site access.

5. A special status plant survey of the site has indicated one of the plant species observed, Lemmon's clover, is located between proposed drill sites 39 and 40. This plant will be avoided by the drilling equipment.

6. If any cultural resource is discovered during the course of the exploratory drilling program, an archaeologist shall be summoned to examine the site. Prospecting activity shall not be resumed until the site is cleared by the archaeologist.

7. Work shall be performed in a safe, professional manner according to accepted engineering practices.

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8. Drill sites 2, 6, 16, 25 as indicated in Figure 2 of the "Special-Status Plant Survey for Exploratory Drilling Adjacent to the Golden Dome Mine Project" are eliminated from the proposed drilling program because of potential effects on special status plants.

9. All drill pads or areas disturbed by drilling activities shall be scarified and seeded by hand-broadcasting. The seed mixture type may be either that provided by the U.S. Forest Service for use in the area or be in accordance with the "Erosion and Sediment Control Guidelines for Developing Areas in the Sierra."

10. Drillholes which do not encounter water shall be backfilled by replacement of drill cuttings into the hole. Drillholes which encounter water shall be abandoned in accordance with California Department of Water Resources Water Well Standards. Impervious sealing material is restricted to the use of bentonite clay only. Mixing of the bentonite clay is restricted to portable tanks or troughs only. No mud pits may be excavated. The top five feet of holes which are abandoned using bentonite clay shall be filled with drill cuttings so as to blend with the existing soil. Drill cuttings which are not utilized in backfilling operations shall be promptly removed from the State parcel.

11. Archaeological considerations:

    a. Move Drill Site #5 north a minimum of 30 meters, use existing road only, stake;

    b. Delete Drill Site #33, change access route to follow existing road, stake;

    c. Move Drill Site #46 south a minimum of 30 meters, access drill site via existing road, stake.

Environmental Setting

Antelope Valley is on the east side of the Sierra Nevada Range, and is within a transitional area that exhibits characteristics of both the Sierra Nevada and Great Basin geomorphic provinces. The valley is a broad, relatively flat floor. The Antelope Valley project site is situated along the west side of the Valley. The terrain of the project site generally slopes north and east, and is covered by alluvium. Elevations range from about 5000 feet on the valley floor to 6800 on the surrounding ridges. Elevations at the project site vary from about 5400 to 5550 feet.

Forested ground covers much of the proposed project site. This includes junipers, Jeffrey pine, sagebrush and grasses. Soils are clay-rich and of variable thicknesses. Much of the terrain is wooded rolling hills, and there are no unique physical aspects at the site. There no habitable structures at the project site. The climate is relatively dry except for snowfalls,

and supports ecosystems typical of the western Great Basin. The surrounding ridges are also dominated by juniper and pine trees, mountain mahogany, grasses, sage and bitterbrush.

Wildlife

Natural habitats in the vicinity area of the Antelope Valley project consist mostly of transitional range for migrating herds of mule deer. No state or federally listed, candidate, or proposed rare, threatened, or endangered species or USFS sensitive species have been observed in the vicinity of the proposed project according to recent studies. The project site also appears to be suitable for goshawks, a USFS sensitive species, but none have been observed in the general area of the proposed project. These studies have identified several different types of habitats including pine forest areas, Juniper woodlands, brush areas and ephemeral creeks. The pine forest habitats are sparse to open stands. There are no dense forested stands occurring in the project area. These habitats support a moderate diversity of wildlife species consisting mostly of birds and some mammals. The proposed project site is situated near the edge of the range of pine forest distribution, and probably because of this location support, low densities of wildlife species.

Botanical Survey

A special status plant survey was conducted on the site of the Antelope Valley Project by Jones & Stokes Associates, Inc. of Sacramento, CA on May 9, 1991. The plant survey consisted of a reconnaissance of Tenneco Minerals' proposed drill sites and access routes. The objective of the survey was to determine if special status plants or their habitats are located at the proposed drill sites or along the access routes. All potential habitats of all special status plants potentially occurring in the area of the project site were evaluated.

Results of the survey indicate the following with regard to nine special status plants which could potentially occur in the project area:

Special Status Plants	Botanical Survey Results
Sierra Valley primrose Plumas ivesia Bailey ivesia	Habitats capable of supporting these plants were not present at the drill sit, routes.
lens-pod milkvetch Webber's milkvetch Dog Valley ivesia	No populations of these plants were observed in the area of the project sites.
Sierra Valley ivesia	This plant was growing in the area of the project, but no identifiable populations were observed in the drill sites or access routes.

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Webber's ivesia	It may have been too early in the growing season to detect this species.
Lemmon's clover	One population of this species was found during the survey between proposed drill sites 39 and 40.

The survey concludes that the exploratory drilling program has the potential to affect special status plants, and that Tenneco Minerals has proposed to delete any activity which has the potential of causing impacts to special plants (see Number 8 above). A copy of the plant survey is attached hereto.

Cultural Resources

Archaeological Services, Inc. of Stockton, CA conducted a cultural resources investigation of the project site. A comprehensive archaeological records search covering the project site was completed on May 10, 1991 by the California Archaeological Inventory Information Center in Chico, CA. Results of the records search indicate that there are no recorded prehistoric sites of this type known to be located within the project boundaries. However, one site of this type has been recorded within a one mile radius of the project. Numerous sites of this type have been recorded in similar environmental zones to the north, south and west of the project site. With regard to historic resources, there are no previously recorded sites of this type known to be located within the boundaries of the project site or within a one mile radius. However, the search notes USGS Sierraville, Calif. 15 minute quadrangle map shows the presence of two sites in the vicinity of the site that are probably unrecorded historic cultural resources. The records search concludes that based on available information, portions of the site appear to be sensitive for cultural resources. A copy of this material is attached.

The field survey conducted by Archaeological Services is also attached hereto.

Geology

Antelope Valley is on the east side of the main Sierra Nevada Range. This is part of a volcanic geological terrain common to western portions of the Great Basin geomorphic province. However, because drainages empty through the Sierra Nevada, this valley is technically within the Sierra Nevada geomorphic province. Specific reasoning for consideration of this site as a viable prospect for precious metal mineralization is derived from the exploration program conducted to date. This includes the completion of several exploratory drillholes in the vicinity of the Antelope Mine on the east side of the valley, surface mapping and using geophysical surveys. These surveys have shown the rock material at the site is silicified and contains indications of pyritic minerals at depth. These targets warrant subsurface testing to determine the nature and extent of mineralization. Exploration data further indicate that the targets may occur in hydrothermally altered

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volcanic strata similar to other areas of known mineral development. Additional verification of the existence of precious metal mineralization is suggested by anomalous concentrations of indicator elements such as copper, silver, antimony, zinc and barium.

Mineral exploration and development have been conducted in the vicinity of the proposed project site since the mid 1800s especially around the abandoned Antelope Mine. As recently as the early 1970s, attempts have been made to develop showings of copper, silver and gold. Numerous prospect pits and abandoned mine works can be found throughout Antelope Valley.

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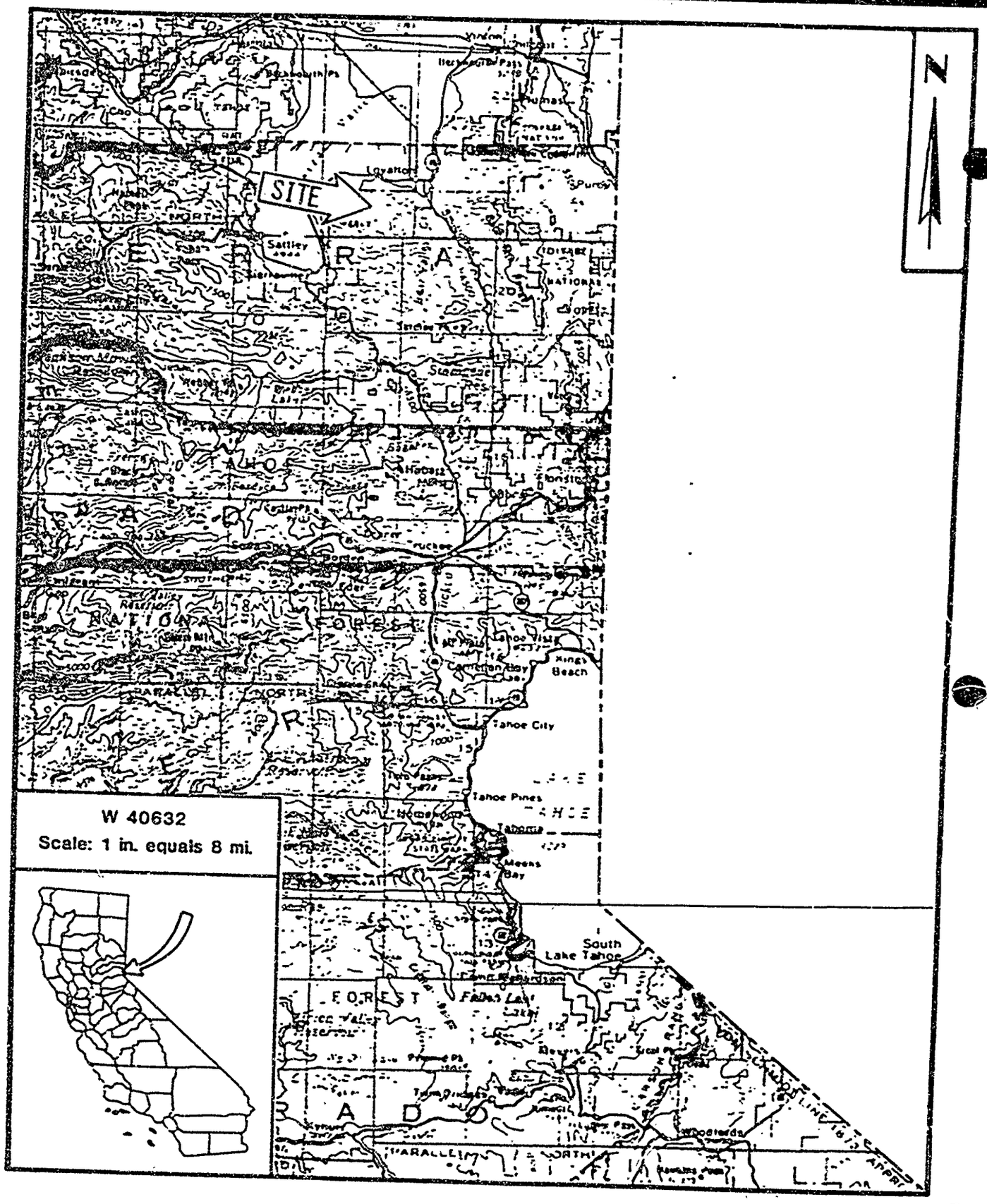

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MINUTE PAGE 246 r

U. S. G. S.

SIERRAVILLE, CALIF.

15 MINUTE QUAD.

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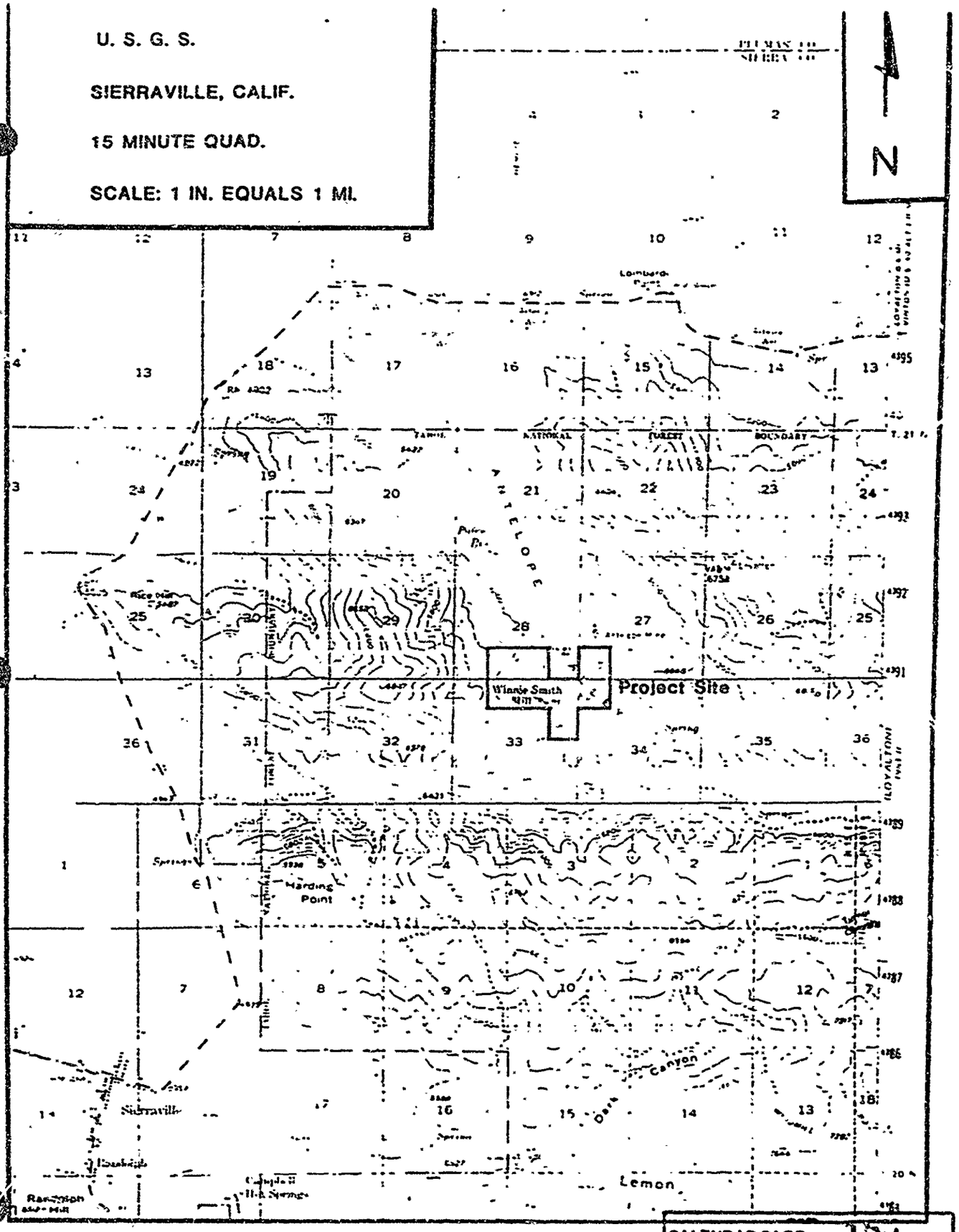

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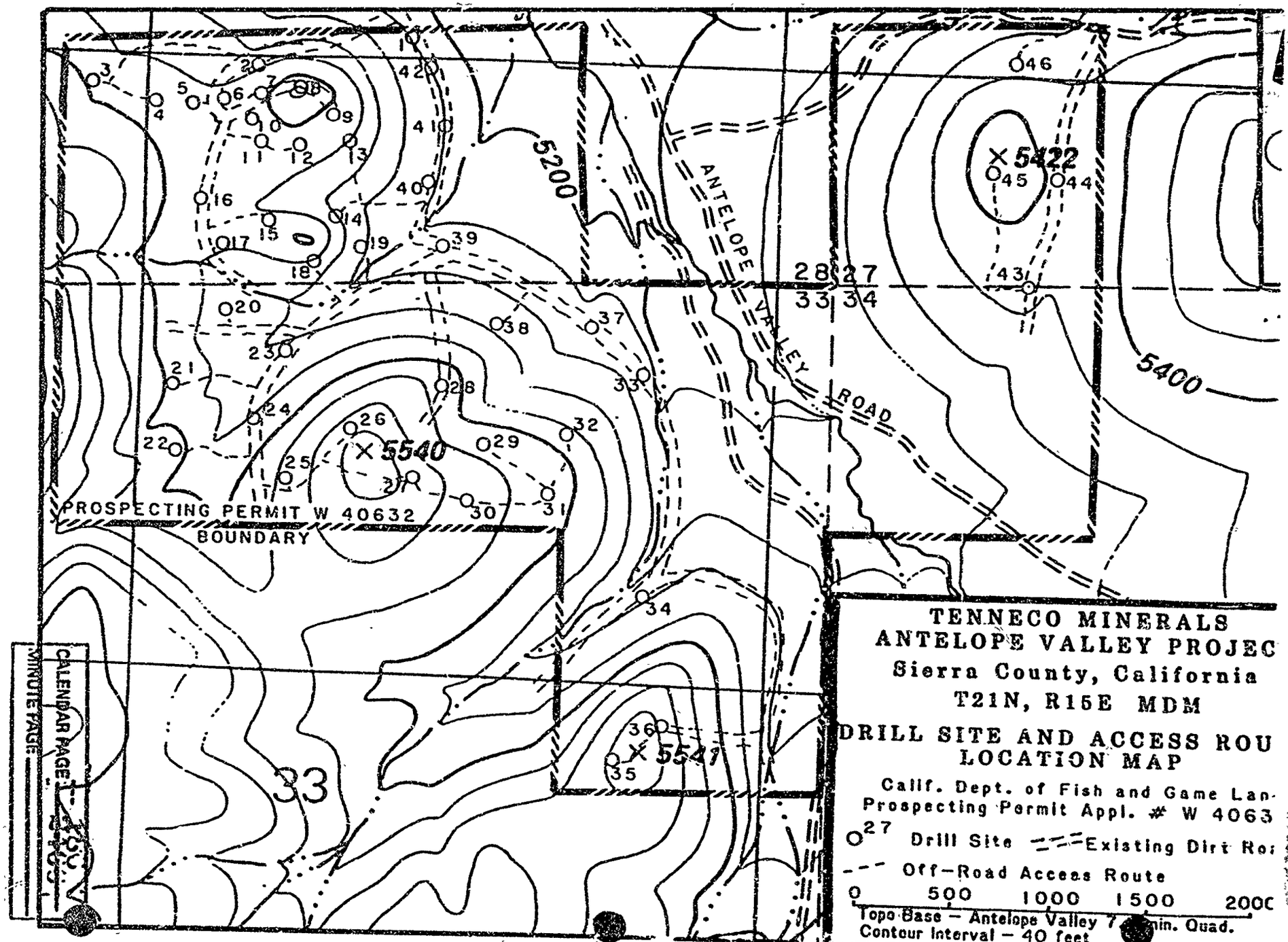
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5400
ANTELOPE VALLEY ROAD
X 5422
X 5540
X 5541
PROSPECTING PERMIT W 40632
BOUNDARY
28
27
33
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CALENDAR PAGE
MINUTE PAGE
TENNECO MINERALS
ANTELOPE VALLEY PROJEC
Sierra County, California
T21N, R15E MDM
DRILL SITE AND ACCESS ROU
LOCATION MAP
Calif. Dept. of Fish and Game Lan
Prospecting Permit Appl. # W 4063
Drill Site
Existing Dirt Ro
Off-Road Access Route
0 500 1000 1500 200C
Topo Base – Antelope Valley 7 min. Quad.
Contour Interval – 40 feet

ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST

File Ref. W 40632

I. BACKGROUND INFORMATION

A Applicant Tenneco Minerals Company
35 E. First St.
Loyalton, CA 96118
Attention: Thomas Young

B. Checklist Date: 05/ 21 / 91

C Contact Person Eric Kruger
Telephone. (213) 590-5201

D Purpose proposed exploratory drilling program is to prospect for precious metals and other valuable minerals.

E Location portions of Sections 27, 28, 33 and 34 of T21N, R15E, MDM, Sierra County.

F Description Tenneco is proposing an exploratory drilling program that consists of drilling a maximum of 96 holes from 46 surface locations along existing dirt roads.

G. Persons Contacted Karl Kahre
California Dept. of Fish and Game-Region 2
1701 Nimbus Rd., Suite A
Rancho Cordova, CA 95670
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1117 Aberdeen Ave.
Stockton, CA 95209
(916) 474-7185

II. ENVIRONMENTAL IMPACTS. *(Explain all "yes" and "maybe" answers)*

A. *Earth.* Will the proposal result in:	Yes	Maybe	No
1. Unstable earth conditions or changes in geologic substructures?			X
2. Disruptions, displacements, compaction, or overcovering of the soil?	X		
3. Change in topography or ground surface relief features?			X
4 The destruction, covering, or modification of any unique geologic or physical features?			X
5 Any increase in wind or water erosion of soils, either on or off the site?		X	
6 Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?			X
7 Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?			

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	1 Substantial air emissions or deterioration of ambient air quality?				X
	2 The creation of objectionable odors?			X	
	3 Alteration of air movement, moisture or temperature or any change in climate, either locally or regionally?				X
C	*Water.* Will the proposal result in				
	1 Changes in the currents or the course or direction of water movements, in either marine or fresh waters?				X
	2 Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff?				X
	3 Alterations to the course or flow of flood waters?				X
	4 Change in the amount of surface water in any water body?				X
	5 Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?				X
	6 Alteration of the direction or rate of flow of ground waters?				X
	7 Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?				X
	8 Substantial reduction in the amount of water otherwise available for public water supplies?				X
	9 Exposure of people or property to water-related hazards such as flooding or tidal waves?				X
	10 Significant changes in the temperature, flow or chemical content of surface thermal springs?				X
D	*Plant Life.* Will the proposal result in				
	1 Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops and aquatic plants)?				X
	2 Reduction of the numbers of any unique, rare or endangered species of plants?				X
	3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?				X
	4 Reduction in acreage of any agricultural crop?				X
E	*Animal Life.* Will the proposal result in				
	1 Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?				X
	2 Reduction of the numbers of any unique, rare or endangered species of animals?				X
	3 Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			X	
	4. Deterioration to existing fish or wildlife habitat?			X	
F	*Noise.* Will the proposal result in				
	1 Increase in existing noise levels?		X		
	2 Exposure of people to severe noise levels?				X
G.	*Light and Glare.* Will the proposal result in				
	1 The production of new light or glare?				X
H	*Land Use.* Will the proposal result in				
	1 A substantial alteration of the present or planned land use of an area?				X
I	*Natural Resources.* Will the proposal result in				
	1 Increase in the rate of use of any natural resources?				X
	2 Substantial depletion of any nonrenewable resources?				X

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		Yes	Maybe	No
J.	*Risk of Upset.* Does the proposal result in:			
	1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?			X
	2. Possible interference with emergency response plan or an emergency evacuation plan?			X
K.	*Population.* Will the proposal result in:			
	1. The alteration, distribution, density, or growth rate of the human population of the area?			X
L.	*Housing.* Will the proposal result in:			
	1. Affecting existing housing, or create a demand for additional housing?			X
M.	*Transportation/Circulation.* Will the proposal result in:			
	1. Generation of substantial additional vehicular movement?			X
	2. Affecting existing parking facilities, or create a demand for new parking?			X
	3. Substantial impact upon existing transportation systems?			X
	4. Alterations to present patterns of circulation or movement of people and/or goods?			X
	5. Alterations to waterborne, rail, or air traffic?			X
	6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?			X
N.	*Public Services.* Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
	1. Fire protection?			X
	2. Police protection?			X
	3. Schools?			X
	4. Parks and other recreational facilities?			X
	5. Maintenance of public facilities, including roads?			X
	6. Other governmental services?			X
O.	*Energy.* Will the proposal result in:			
	1. Use of substantial amounts of fuel or energy?			X
	2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?			X
P.	*Utilities.* Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
	1. Power or natural gas?			X
	2. Communication systems?			X
	3. Water?			X
	4. Sewer or septic tanks?			X
	5. Storm water drainage?			X
	6. Solid waste and disposal?			X
Q.	*Human Health.* Will the proposal result in:			
	1. Creation of any health hazard or potential health hazard (excluding mental health)?			X
	2. Exposure of people to potential health hazards?			X
R.	*Aesthetics.* Will the proposal result in:			
	1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?			X
S.	*Recreation.* Will the proposal result in:			
	1. An impact upon the quality or quantity of existing recreational opportunities?			X

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I	*Cultural Resources*		
	Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?		X
	2 Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?		X
	3 Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?		X
	4 Will the proposal restrict existing religious or sacred uses within the potential impact area?		X
J	*Mandatory Findings of Significance.*		
	1 Does the project have the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X
	2 Does the project have the potential to achieve short term, to the disadvantage of long-term, environmental goals?		X
	3 Does the project have impacts which are individually limited, but cumulatively considerable?		X
	4 Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X

III. DISCUSSION OF ENVIRONMENTAL EVALUATION *(See Comments Attached)*

IV. PRELIMINARY DETERMINATION

On the basis of this initial evaluation:

[X] I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

[ ] I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date 09 / 21 / 91

ERIC L. KRUGER
For the State Lands Commission

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Environmental Impact Assessment Checklist:

Discussion of Environmental Evaluation

A. Earth.

A1. The proposal will not result in unstable earth conditions or changes in geologic substructures. Maximum displacement of subsurface material is about 134 cubic yards from drill holes locations scattered throughout the 320 acre project site.

A2. The proposal will probably result in minimal displacement of surface material during the proposed drilling program. However, this should be a short term condition as Tenneco will return any disturbed area to original contour and natural state to the extent possible during reclamation.

A3. The proposal will not result in any significant change in topography or relief features. New surface disturbance will be minimal.

A4. The proposal will not result in any destruction, covering or modification of any unique geologic or physical features. There are no known unique surface features at this site, and new surface disturbance is minimal.

A5. The proposal may increase soil erosion in areas of surface material displacement. Reclamation of the proposed project area is to begin during and after the completion of exploratory drilling. This should eliminate any erosional condition caused by short term surface disturbance.

A6. The proposal will not result in any changes of near shore areas since there are none of those types of environments in the Antelope Valley project site.

A7. The proposal will not result in exposure of people or property to geologic hazards. New surface disturbance is mimimal, and the extent of the project is exploratory.

B. Air.

B1. The proposal will not result in substantial air emissions. Tenneco will use compact drilling equipment.

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B2. The proposal may result in creation of objectionable odors in the immediate vicinity of the drilling equipment. This would be a temporary condition that would dissipate rapidly and will not extend past the completion of drilling.

B3. The proposal will not result in climatic changes. The drilling equipment will not produce extensive energy during the project to change local or regional air movement, moisture or temperature.

C. Water.

C1. The proposal will not result in any changes in water movement since the project site does not contain bodies of marine or fresh waters.

C2. The proposal will not result in any changes to surface water runoff. Fluids, if required, will be contained in on-site tanks.

C3. The proposal will not result in any changes in the coruse of flood water since the amount of surface water at the site is negligible.

C4. The proposal will not result in any changes to amounts of surface water since no bodies of standing water exist within the project site.

C5. The proposal will not result in any discharge into surface waters since fluids to be used on-site will be contained in tanks. No permanent bodies of water exist on the site.

C6. The proposal will not result in any alteration of groundwater since the drill holes will be only about 200 feet. If water zones are encountered, these will be abandoned according to standards of the California Department of Water Resources.

C7. The proposal will not result in any change in the quantity of groundwater. Water zones will sealed if encountered, and the extent of the drilling is limited to small diameter holes. There will be minimal new surface disturbance, and no interception of aquifers by cuts or excavations is proposed.

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C8. The proposal will not result in any substantial reduction of water for public supplies. The project site is uninhabited, and the drilling will not require large quantities of water.

C9. The proposal will not result in flooding since no large amounts of water are required to complete the drilling.

C10. The proposal will not result in changes to thermal springs since there are none of these on site nor in the vicinity of the project.

D. Plant Life.

D1. The proposal will not result in a change to plant species since most of the work sites are along existing dirt roads. Minimal surface disturbance will take place in the off-road areas.

D2. The proposal will not result in reduction of unique, rare or endangered species since none of these types were identified during a recent special status plant study. However, one sensitive status plant was discovered and will be avoided if encountered.

D3. The proposal will not introduce new plant species and will not affect replenishment of existing species since the nature of the project is mineral exploration that will be conducted for the most part along existing dirt roads.

D4. The proposal will not reduce agricultural areas sir[illegible] there are no agricultural areas within the site.

E. Animal Life.

E1. The proposal will not result in changes in diversity or numbers of species since the scope of the project is limited to exploratory drilling by environmentally sensitive equipment to be used along existing roads. Off-road travel amounts to about 8200 feet.

E2. A recent biological study states that there are no unique, rare or endangered species in the vicinity of the project.

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E3. Drilling activity may temporarily displace wildlife from the immediate area of the work site. This should be a short term effect, and no long term adverse effects are anticipated.

E4. There may be some deterioration of wildlife habitat in the immediate area of the proposed drill sites while the drilling rig is at work. This is a temporary condition that will not extend past the completion of the exploratory drilling program. Proposed project conditions have also been incorporated into the detailed project description to insure that habitats are not harmed. These include consolidation of work areas and minimal use of vehicles.

F. Noise.

F1. The proposed exploratory drilling program will result in an increase to noise levels at the drill sites while the rig is in operation. This is a temporary condition that will not extend past the completion of the proposed drilling program.

F2. The site is uninhabited and therefore will not cause exposure of people to severe noise levels.

G. Light and Glare.

G1. The proposal will not result in production of new light or glare since the drilling would take place during daylight hours of late summer. No night work using lights has been proposed.

H. Land Use.

H1. The proposal will not result in substantial alteration of land use of the project site. The site is designated Intermediate Forest by Sierra County which is compatible with mining, and CDFG has previously approved a similar type of exploration project (PRC 7417.2) by Tenneco on lands adjacent to the site of the Antelope Valley project.

I. Natural Resources.

I1. The proposal will not result in increased use of natural resources since the project is limited to exploration.

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I2. There will be no substantial depletion of nonrenewable resources since this project is exploratory in scope.

J. Risk of Upset.

J1. The proposal will not present the risk of an explosion or release of hazardous substances. Tenneco does not propose to use any explosive devices during the project site, and there will be no hazardous substances on the site.

J2. The proposal will not interfere with emergency response or evacuation plans. The project site is currently uninhabited.

K. Population.

K1. The proposal will not change the human population. The project site and its vicinity are uninhabited.

L. Housing.

L1. The proposal will not affect housing since there are no habitable structures on the site.

M. Transportation/Circulation.

M1. The proposal will not generate substantial additional vehicular movement. A proposed project condition stipulates that traffic will kept to a minimum.

M2. The proposal will not affect parking or create a new demand. The site is currently uninhabited.

M3. The proposal will not impact existing transportation systems. The site and its vicinity are uninhabited.

M4. The proposal will not affect economic activity in the vicinity since this area is uninhabited.

M5. The proposal will not alter water, rail or air traffic since the site is relatively isolated, and no facilities currently exist to facilitate those types of travel.

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M6. The proposal will not cause traffic hazards. Project conditions stipulate keeping vehicle movements to a minimum throughout the span of the project.

N. Public Services: the proposal will not have an effect upon new altered government services in any of the areas listed. The scope of the proposal is mineral exploration and is limited to activities contained in the project description.

N1. Fire protection. No hazardous materials are proposed for use during the span of this project.

N2. Police protection. The project will not require policing. Tenneco personnel live in Loyalton, and are readily available.

N3. Schools. The nature of the proposal is mineral exploration.

N4. Parks or recreation facilities. Proposed project conditions would limit the duration of equipment on the site.

N5. Maintenance of public facilities including roads. Proposed access routes into the site will not require maintenance.

N6. Other government servies. The proposal is currently limited to mineral exploration activity utilizing a limited number of personnel.

O. Energy.

O1. The proposal will not consume substantial amounts of fuel or energy. It is limited in scope to activity detailed in the project description.

O2. The proposal will not substantially increase the demand for energy since it limited in scope and duration. Currently, there is no requirement to develop new sources.

P. Utilities: The proposal will not require a need for new utility systems or substantial alteration of existing systems. The scope of the project is limited to mineral exploration utilizing equipment that will be on site for a specific duration of time.

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P1. Power or natural gas will not be required during the project since the proposed equipment does not require public utility services, and the Tenneco personnel will not be in permanent residence at the site.

P2. Communication systems will not be used since there are no public outlets on the site, and the site is uninhabited.

P3. Water if needed will be trucked into the site.

P4. Sewer or septic systems will not be used since there are no habitable structures on site.

P5. Storm drains are not necessary since the scope of the project is limited to mineral exploration.

P6. Solid waste disposal facilities will not be used since there are no outlets, and there is no housing on the site.

Q. Human Health.

Q1. The proposal will not create any human health hazards. A project condition stipulates that the work will be carried out in a safe manner.

Q2. The scope of the proposal will be limited to the activity detailed in the project description. This will not cause potential health hazards.

R. Aesthetics.

R1. There are no unique physical or scenic features in the vicinity of the project site. The project is of temporary duration, reclamatoin will commence during the drilling activity and will continue after drilling until the site is returned to original condition to the extent possible.

S. Recreation.

S1. The proposal will be limited to the time frames recommended by CDFG to coincide with their seasonal recreation requirements, and therefore should not create an impact on these opportunities.

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T. Cultural Resources.

T1. The proposal will not alter or destroy prehistoric or historic archaeological sites. A comprehensive records search was conducted and no previously recorded sites were found. However, portions of the site appear sensitive for cultural resources, and a survey is recommended.

T2. The proposal will not adversely effect cultural resources. A cultural resource survey was conducted, Exhibit B, and changes made in the project consistent with its findings and recommendations.

T3. The proposal does not have the potential to cause any changes to known cultural resources. A report for the cultural survey scheduled to be completed at the end of May will be available about June 15th, and will include any avoidance measures.

T4. The proposal will not restrict any religious or sacred uses of the site. The records search included a letter from the Native American Heritage Commission stating their records search indicated that there are no known Native American cultural resources in the immediate area of the project site.

U. Mandatory Findings of Significance.

U1. The proposed Antelope Valley project does not have the potential to degrade the environment. The project is limited in its scope, and will be of temporary duration. The project may have the potential to reduce natural habitat in the immediate areas of the work sites. However, this is temporary and will not last after the end of the drilling program. The project will be conducted for the most part along existing dirt roads. New surface disturbance will be minimal.

U2. The proposed project is of limited duration, and as described and conditioned has no short term or long term potential adverse effects.

U3. The cumulative impacts of the project to the environment of the site are minimal. The project as described and conditioned should not cause any adverse effects.

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U4. The project does not have environmental effects which will be adverse to humans. The scope of the project is limited to short term mineral exploration.

Doc#:5.4

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Special-Status Plant Survey for Exploratory Drilling Adjacent to the Golden Dome Mine Project

Prepared for:

Tenneco Minerals
P.O. Box 1035
35 East First Street
Loyalton, CA 96118

Prepared by:

Jones & Stokes Associates, Inc.
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Contact: Steve Holl
916/737-3000

May 16, 1991

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INTRODUCTION

The Golden Dome Mine Project, proposed by Tenneco Minerals Company (Tenneco), is located in Antelope Valley, Sierra County, California. The botanical, wildlife, aquatic, and soil resources of a 164-acre project area have already been analyzed (Jones & Stokes Associates 1987). The project area included private land, and lands administered by the Tahoe National Forest (TNF) and the California Department of Fish and Game (DFG).

No state or federally listed, candidate, or proposed rare, threatened, or endangered species occurred within project area, nor was any significant aquatic habitat found capable of supporting game fish species. Numerous populations of one special-status plant, Sierra Valley ivesia (*Ivesia aperta aperta*), and potential goshawk (*Accipiter gentilis*) habitat were identified during the surveys. The site was not considered critical deer winter range, nor was it on an important migration corridor.

Tenneco has proposed additional exploratory drilling adjacent to the 164-acre project area on lands administered by TNF and DFG (Figure 1). The State Lands Commission (SLC) and U.S. Forest Service (USFS) determined that additional surveys for special-status plants would be required before permits to allow drilling could be approved. Tenneco hired Jones & Stokes Associates to conduct surveys and assess potential impacts of the proposed drilling operation on special-status plants.

Proposed Project

Drilling would occur on 28 sites distributed among three parcels of TNF land and on 46 sites on DFG lands. Most of the TNF land west and north of the Tenneco land had been previously surveyed (Jones & Stokes Associates 1987).

The drilling would be conducted in late summer and early fall. No drilling will be done during deer hunting season (August 17 to September 8 and September 21 to October 6), because of potential conflicts between drillers and hunters, and during deer migration in late October (Young pers. comm.).

A rubber-tired or track-mounted portable drill would be used for the drilling, and existing roads would be used where available. No trees or shrubs would be removed where cross-county travel was required to reach a drill pad. No vegetation would be removed; however, some vegetation would be trampled within each 100-foot by 100-foot drill pad. The drill cuttings would be back-filled in the holes or scattered over each drill pad.

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Tenneco has further proposed that the exploratory drilling project would not affect special-status plants (Young pers. comm.). If special-status plants should occur on drill pads or access routes, they will be realigned to avoid the plants. If the drill pads or access routes cannot be feasibly realigned to avoid special-status plants, then Tenneco has agreed to abandon the site from its proposed drilling program.

METHODS

On May 9, 1[illegible] Jokerst, botanist and plant ecologist with Jones & Stokes Associates, conducted a reconnaissance survey of the areas proposed for the exploratory drilling. Mr. Jokerst has extensive experience with the special-status plants of the Sierra Valley region. He is familiar with their geographic distributions and habitat requirements and has studied each of the species in the field on previous occasions. The objective of the survey was to determine if special-status plants or their habitats were located at the proposed drill pads or access routes.

Habitats of all special-status plants potentially occurring in the project area were evaluated because the surveys were conducted early in the growing season and many of the special-status plants had not sprouted and become identifiable.

RESULTS

The project site is dominated by stands of open-forested Jeffrey pine and a sagebrush understory. Nine special-status plants have the potential to occur in the project area (Table 1), based on their geographic ranges and association with Jeffrey pine forests and sagebrush.

Sierra Valley evening primrose, Plumas ivesia, and Bailey ivesia would not be affected by the project. The seasonal wetlands capable of supporting the Sierra Valley evening primrose and Plumas ivesia and the bedrock outcrops required by the Bailey ivesia were not present on the proposed drill pads or access routes.

No populations of lens-pod milkvetch, Webber's milkvetch, and Dog Valley ivesia were observed in the project area. Although it was early in the growing season, the potential for these species to occur in the project area is very low. The nearest known locations are quite distant and no populations of any of these species have ever been observed in the project area despite numerous surveys by consultants and the USFS. Nonetheless, surveys should be conducted later in the growing season to confirm the absence of these species.

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Table 1. Target Special-Status Plant Species Searched for at the Golden Dome Mine Project Site

Species	Status				Known Geographic Range	Known Habitat Associations
	State	Federal	USFS	CNPS		
Astragalus lentiformis Lens-pod milkvetch	--	C2		1b	Sporadic and rare in Nevada and Oregon, known in California from two populations in northern Sierra Valley, historic collection from Sierra County.	Well-drained soil in sparse Jeffrey pine forest with a sagebrush understory.
Astragalus webberi Webber's milkvetch	--	C2	W	1b	Plumas and Sierra Counties, not restricted to Sierra Valley.	Limited information is available; open arid slopes in conifer forest.
Camissonia tanacetifolia ssp. *quadricostata* Sierra Valley evening primrose	--	C3		3	Sierra Valley in Plumas and Sierra Counties, from an area approximately 25 miles across at its widest point.	Vernal pools and drainage low-lying areas with heavy clay soils; sagebrush scrub vegetation.
Ivesia aperta ssp. *aperta* Sierra Valley ivesia	--	--	S	1b	Sierra Valley in Plumas and Sierra Counties.	Well-drained rocky/loamy soil; alkali flats; low sage scrub; and ephemeral creeks.
Ivesia aperta ssp. *canina* Dog valley ivesia	--	C1	S	1b	Dog Valley in Sierra County.	Well-drained soils, open pine forests.
Ivesia baileyi Bailey ivesia	--	--	--	2	Uncommon, three locations in Lassen and Plumas Counties.	Moist, shaded, steep to vertical crevices on bedrock; steep canyon walls with protected exposures.
Ivesia sericoleuca Plumas ivesia	--	--	S	1b	Plumas, Sierra and Nevada Counties from north of Sierra Valley to north of Truckee.	Mesic sites in pine forest and vernally flooded, alkali pools and drainages in low sage scrub vegetation.
Ivesia webberi Webber's ivesia	--	C2	S	1b	Plumas County in Sierra, American and Indian Valleys and Nye County, Nevada; known just north of Loyalton.	Limited information is available; open patches of volcanic ash, dry barren ground on gravelly, open ridgetops and summits.
Trifolium lemmonii Lemmon's clover	--	C3c	W	4	Plumas, Sierra, and Nevada Counties, in the region of Squaw, Red Clover, and Sierra Valleys, and southward in areas just north of Truckee. Also in Washoe County, Nevada.	Variable; metavolcanic barrens, rocky flats, sandy openings, and vernally wet low-lying areas in sagebrush scrub and yellow pine forest vegetation.

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Table 1. Continued

Status:

Federal

C1 = Category 1 candidate for federal listing. Category 1 includes species for which USFWS has on file enough substantial information on biological vulnerability and threat to support proposals to list them.

C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.

C3 = no longer a candidate for federal listing. Category 3 species have been dropped from the candidate list because they are extinct (C3a), taxonomically invalid or do not meet the USFWS definition of a "species" (C3b), or too widespread or not threatened at this time (C3c).

W = U.S. Forest Service "watch list". Potential impacts on these species are evaluated on a case-by-case basis.

State

-- = not listed.

California Native Plant Society

1b = List 1b species: rare, threatened, or endangered in California and elsewhere.

2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

3 = List 3 species: plants about which more information is needed to determine their status.

4 = List 4 species: plants of limited distribution.

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Sierra Valley ivesia was growing in the project area, but no identifiable populations were observed in the drill pads or access routes. Three small, dry, grassy meadows at drill pads 6 to 16 and 25 on DFG lands and on one drill pad on TNF parcel III provided potential habitat for Sierra Valley ivesia and Webber's ivesia, although no individuals of either species were observed following a close examination of the sites. The chance of Sierra Valley ivesia occurring was considered low because the plant was growing elsewhere and the sites did not have the hydrologic or edaphic conditions normally associated with Sierra Valley ivesia. The habitat requirements of Webber's ivesia are not well understood and it may have been too early in the growing season to detect the species. Additional surveys will identify the distribution of these species at these drilling sites.

One population of Lemmon's clover was found during the reconnaissance surveys. An extensive population occurred on DFG lands between drill pads 39 and 40 and on an existing road that would be used as an access route (Figure 2). Although Lemmon's clover has a limited distribution (CNPS list 4) and is on the USFS watch list, impacts may not be considered significant because only a small portion of the population would be affected, additional populations probably occur in the project area, and it is no longer a federal candidate species. Impacts on Lemmon's clover could be reduced by avoiding as much of the population as possible.

CONCLUSION

Tenneco has proposed to avoid all activity that would cause significant impacts for special-status plants. The proposed drilling operation has the potential to affect special-status plants; however, the actual impacts cannot be determined until surveys are completed in late June or July when the plants are identifiable. The potential for impacts on three species was considered very low because they probably don't occur in the project area. No identifiable populations of Sierra Valley ivesia would be affected by the project. Sierra Valley ivesia and Webber's ivesia could be affected if they occur at drill pads on DFG and TNF lands. A small portion of one extensive population of Lemmon's clover would be affected, but the impacts may be less than significant.

Tenneco can avoid all significant impacts on special-status plants by taking the following steps:

- Survey all areas potentially affected by the drilling operation by mid-July, 1991. The boundary of the survey area should be broad enough to ensure that any access roads or drill sites can be realigned to avoid conflicts with special-status plants.

- Prepare a report that documents the locations of special-status plants located in or near project impact areas and submit the report SLC and USFS.

- Identify all populations of special-status plants within 200 feet of drill pads or access routes with brightly colored surveyor's flagging.

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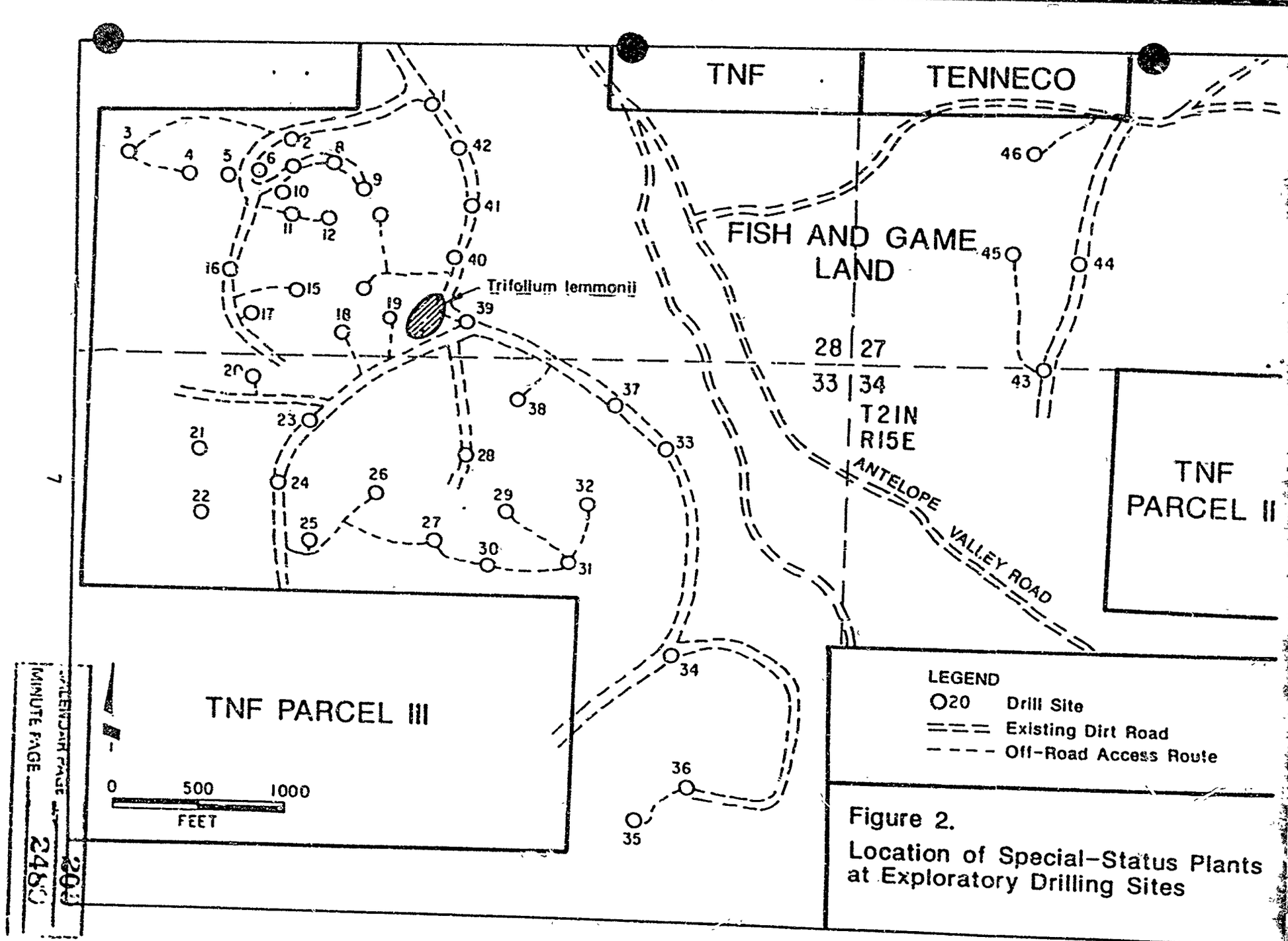

Figure 2.
Location of Special-Status Plants at Exploratory Drilling Sites

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- Identify all access routes and the boundary of each drill pad by using brightly colored surveyor's flagging.

- Ensure that a qualified botanist or biologist be present during any drilling activities if a population of special-status plants is found within 200 feet of project activities.

ACKNOWLEDGEMENTS

Mr. Steve Holl was the project manager and reviewed the report. Mr. James Jokerst conducted all of the field surveys and prepared the report. Jane Palik, Tony Rypich, and Jack Whelehan assisted with preparation of the report.

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PERSONAL COMMUNICATION

Young. Thomas. Project manager. Tenneco Minerals Company. Loyalton, CA. May 9, 1991 - personal conversation.

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California
Archaeological
Inventory

Information
Center

BUTTE SIERRA
GLENN SISKIYOU
LASSEN SUTTER
MODOC TEHAMA
PLUMAS TRINITY
SHASTA

Department of Anthropology
California State University, Chico
Chico, CA 95929
(916) 895-6256

May 10, 1991

Archaeological Services, Inc.
8110 Lorraine Ave., Suite 408
Stockton, CA 95210
ATTN: Suzanne B. Stewart

RECEIVED MAY 14 1991

RE: ANTELOPE VALLEY MINING PROJECT; IC# D91-19
T21N, R15E, Sec. 21,22,27,28,33,34;
USGS Sierraville 15'quad
600 acres

Dear Ms. Stewart,

In response to your request received April 26, 1991, a record search for the above cited project was conducted by examining the official maps and records for archaeological sites in Sierra County.

RESULTS:

PREHISTORIC RESOURCES: There are no recorded sites of this type known to be located within the project boundaries. However, one site of this type has been recorded within a one-mile radius of the project area. This site, CA-SIE-397, is recorded as a prehistoric campsite. A copy of the site record has been enclosed, and the site has been plotted on the enclosed map in red ink. Numerous sites of this type have been recorded in similar environmental zones to the north, south, and west of the project area.

HISTORIC RESOURCES: There are no previously recorded sites of this type known to be located within the boundaries of the project area or within a one-mile radius of the project area. However, the USGS quad map notes the presence of two sites which are probably unrecorded historic cultural resources. Antelope Mine, located in Section 27, is located within project boundaries. Our records indicate that this mine was first discovered in 1863, and that gold, silver, and copper were extracted from this mine. The ruins of the Winnie Smith Mill are located in Section 33, also within the boundaries of the project area. We were not able to located any information on Winnie Smith or the mill. The nearby historic town of Sierraville is a California Inventory of Historic Resources property, and was a supply center for area mines, camps, and

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towns.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS: According to our records, the project area has not been previously surveyed for cultural resources.

LITERATURE SEARCH: Reviewed were the official records and maps for archaeological sites and surveys in Sierra County. Also reviewed were the National Register of Historic Places-Listed Properties and Determined Eligible Properties (1988, Computer Listing 1966 through 3-10-88 by National Park Service), the California Inventory of Historic Resources (1976), California Points of Historical Interest, California Historical Landmarks (1982), History of Plumas, Lassen, and Sierra Counties, California (1882), Gold Districts of California (1970), and Historic Spots in California (1966).

RECOMMENDATIONS: Based upon the above information obtained as a result of this search and the local topography, this project is located in an area considered to be extremely sensitive for both prehistoric and historic cultural resources. Therefore, we recommend that the entire project area be surveyed for cultural resources by a professional archaeologist prior to any project operations. The project archaeologist should evaluate both Antelope Mine, and the Winnie Smith Mill to determine if these are unrecorded historic cultural resources. All cultural resources encountered should be formally recorded and appropriate mitigation measures should be prepared for any sites which may be affected by project operations. Thank you for your concern in preserving California's cultural heritage. The cost of this record search is $90.00, and an invoice will follow for billing purposes.

Sincerely,

Makoto Kowta

Dr. Makoto Kowta
Coordinator, Northeast Information Center

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STATE OF CALIFORNIA

PETE WILSON, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 288
SACRAMENTO, CALIFORNIA 95814
(916) 322-7791

RECEIVED MAY 14 1991

May 10, 1991

Suzanne B. Stewart, Senior Staff Archaeologist
Archaeological Services, Inc.
8110 Lorraine Avenue, Suite 408
Stockton, California 95210

RE: Sierra Valley Site

Dear Ms. Stewart:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

CEQA, Appendix K gives directions to follow in the event any previously undetected archaeological sites are inadvertently discovered during any phase of construction. Use of the language in Appendix K, or reference to the standardized procedures therein, helps to eliminate costly delays and assures more adequate protection of such cultural resources. I would also recommend that you contact and work closely with the appropriate Native American groups in the area during the initial planning stages. They may be able to offer input regarding sites in the area.

The Native American Heritage Commission has prepared a pamphlet for use by lead agencies, planners, developers, and property owners. It provides an easy-to-read breakdown of the California Codes pertaining to Native American human remains and their disposition. I have included a copy of this brochure for your information.

If you have any questions or need any additional information, please contact this office.

Sincerely,

Debbie Pilas-Treadway
Staff Analyst

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Archaeological
Services, Inc.
8110 Lorraine Avenue, Suite 408 • Stockton, California 95210 • (209) 474-3121

CULTURAL RESOURCES PROGRESS REPORT:

PREFIELD RESEARCH SUMMARY

TENNECO MINERALS EXPLORATORY DRILLING PROJECT

ANTELOPE VALLEY, SIERRA COUNTY, CALIFORNIA

Submitted by

Suzanne E. Stewart
Project Coordinator

Roger H. Werner
Principal Investigator

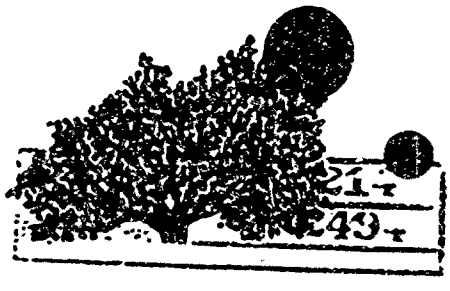
Submitted to

Tom Young
Tenneco Minerals Company
Loyalton, Sierra County, California

14 May 1991

ASI 91-0422-V-TGD

(209) 224-9077
Fresno, California



PREFIELD RESEARCH SUMMARY

Introduction

Tenneco Minerals of Reno, Nevada, proposes to conduct exploratory drilling in and adjacent to Antelope Valley, Sierra County, California, situated in Sections 27, 28, 33, and 34 of Township 21 North, Range 15 East, Mount Diablo Base and Meridian (see Map). Project-area lands are controlled by the California State Department of Fish and Game (320 acres) and the U.S. Department of Agriculture, Tahoe National Forest (240 acres). Also included in the exploratory drilling project are approximately 180 acres of non-Federal land that was studied in 1987 by Roger Werner of Archaeological Services, Inc.

Archaeological Services has been contracted to conduct a cultural resources investigation of these lands prior to ground-disturbing activity. To date, a records search and literature review for both State and Federal lands have been completed. Field survey is currently planned for 15-18 May 1991. Separate reports detailing field survey and results will be completed for the Tahoe National Forest and the State Lands Commission in accordance with the particular requirements of each agency: the Federal report will be prepared in accordance with standards of the Secretary of Interior; the State report in accordance with California Environmental Quality Act guidelines. The present document, however, reports the results of prefield research for the full acreage encompassing the exploratory drilling project.

Prefield Research Methods

Prefield research included a records search conducted by the California Archaeological Inventory for this project, and a literature and environmental review by the author. The purposes of this prefield research were to identify: (1) all reported field or archival studies of the project area and immediate vicinity; (2) the nature of any recorded or otherwise known prehistoric or historic-period cultural resources within the project-area boundaries; and (3) the potential for the presence of unrecorded archaeological sites based on the project area's environmental setting and the nature of recorded sites in the vicinity.

The records search was conducted by the staff of the Northeast Information Center of the California Archaeological Inventory, California State University, Chico (IC# D91-19). The records search included review of archaeological base maps, site records, and reports on file at the Information Center. Also consulted were the National Register of Historic Places (1988) showing Listed Properties and Determined Eligible Properties; Department of Parks and Recreation (1976, 1982); Clark (1970); and Hoover, Rensch, and Rensch (1966). The Information Center's letter documenting their record search, dated 10 May 1991, is included as an attachment to this report.

Additional archaeological, ethnographic, and historic sources were consulted by the author to place the project area in cultural context. Among the works consulted were various cultural

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resources overviews and reports prepared by the Tahoe National Forest (Carlson 1986; Jackson, Herbert, and Wee 1982; Markley and Henton 1985; Payen 1976); as well as more general references (e.g., D'Azevedo 1978; Kowta 1988; Kroeber 1925; Moratto 1984; and Riddell 1978). The results of this prefield research are briefly presented below; further nonfield research may be conducted for the final reports, particularly if archaeological sites require fuller historical context for preliminary significance evaluations. Brief ethnographic, historic, and archaeological overviews will be prepared for the reports.

Also as a part of prefield study, contacts were made with organizations that might have concerns regarding, or special knowledge of, the project area. Contacted prior to field work were the Native American Heritage Commission regarding their Sacred Lands File and the Washo Tribe of California and Nevada. The District Archaeologist of the TNF Sierraville District was also contacted; as noted below, that office will be visited and pertinent records and reports obtained prior to field survey. The Sierra County Historical Society will be contacted while in Sierra County.

Previous Cultural Resources Investigations

According to Information Center files, no recorded archaeological sites are located within the project area, and no archaeological or other cultural resource studies have been conducted on National Forest or State lands considered in this report. In 1987, Roger Werner of Archaeological Services, Inc., conducted a field survey for Hecla Mining Company's proposed Golden Dome Mine. The survey area consisted of approximately 180 acres of non-Federal land, primarily in the eastern half of Section 28 and the western half of Section 27, immediately adjacent to the current project area (see Map). Drill sites on National Forest land within this area had been surveyed previously by Forest Service personnel (ARR 05-17-385 and addendum), resulting in the identification of isolated mining features. Werner revisited these features; because they were within lands under the jurisdiction of Tahoe National Forest (TNF), they were not considered further in his report. On non-Federal land to the south of these mining features, Werner identified a large scattering of trash, milled wood, and other debris probably dating to post-1930s; the feature was not recorded. (These finds, apparently representing the Antelope Mine, are discussed further below.)

Recently, TNF personnel surveyed lands within and adjacent to the project area (Baldrica, personal communication 1991). From verbal descriptions of the areas surveyed, it appears that most TNF acreage in the project area has been surveyed; of the total 240 Federal acres to be surveyed in the present project, only the 80 acres in Section 33 received no coverage, while the 80 acres outlined in Section 34 received general coverage, and should be revisited for the present study. The exact locations included in the TNF survey will be identified at the Sierraville Ranger District office prior to our survey, and a copy of the survey report will be obtained. Decisions regarding which TNF areas will require re-survey, if any, will be made in consultation with the District Archaeologist.

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Prehistoric Archaeological Sites

The Information Center, which has not accessioned the results of the above-mentioned TNF survey, shows that one prehistoric campsite (CA-SIE-397), has been recorded within a 1-mile radius of the project area, and numerous such sites have been recorded in similar environmental zones to the north, south, and west. Among the recorded sites are 15 prehistoric sites recorded by Payen in 1976; prehistoric sites were categorized as (1) base camps; (2) task-specific or temporary camps; and (3) hunting loci. Also identified were curvilinear petroglyphs, apparently associated with Martis Complex habitation sites. Most of the sites appeared to be sparse lithic scatters with little depth. The small number of diagnostic artifacts encountered were primarily Martis Complex basalt items, with only a single obsidian projectile point identified. Payen (1976:14) also noted possible cultural materials on the old terraces of "Lake Sierra," around the margins of the Sierra Valley, at elevations between 5000 and 5050 feet above mean sea level; this ancient lake, which had not yet been dated, appears to have been a body of water comparable in size to Lake Tahoe. A small area containing terraces at this elevation is present within the current project area and will receive close attention in the field.

The recent TNF survey within and adjacent to the present project area identified several prehistoric and historic sites; as noted above, the report and records for these sites will be obtained from the District office prior to field survey.

Ethnographic Sites

The project area and nearby Sierra Valley were within territory controlled by the Washoe; some researchers contend that the valley and surroundings were held jointly by the Washoe and the Northeastern Maidu, with the former group exploiting the drier eastern and southern portions of the area and the latter group focusing on the well-watered area in the north and northwest (Payen 1976:4). For the Maidu, Sierra Valley was occupied only in warmer months (Riddell 1978:370), while Washoe maintained year-round settlements in the eastern valley (D'Azevedo 1986:467). No ethnographic villages are shown in or near the project area on Kroeber's map (1925:plate 37); several 19th-century settlements are shown in the vicinity of the project area on D'Azevedo's (1986:468) map, all probably on the valley floor. Antelope Valley is a winter range for deer today (Baldrica, personal communication 1991), and probably was a focus of hunting prehistorically.

Historic Archaeological Sites

No historic-period sites had been recorded within the project area prior to the recent TNF survey. Two possible historic sites are suggested by notations on a 15' USGS topographic map of the area. "Antelope Mine" is depicted in the southwest quarter of Section 27, outside the present study area but within the property to be explored by Tenneco (see Werner 1987). Records consulted by the Information Center note that the mine was first discovered in 1865, and that gold, silver, and copper were extracted from it. The mine was sold as a copper mine in the 1920s but was apparently only briefly explored. The "Winnie Smith Mill (Ruins)" is

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indicated in the northeast quarter of Section 33; to date, no information has been gathered on the history of this mill. At the location at which the mill is plotted, Tom Young of Tenneco Minerals recently noted sawdust and the remains of an old cabin (personal communication, 5/10/91). The 1877 General Land Office (GLO) survey plat shows "Wilson's House" in the northwest quarter of the southeast quarter of Section 28, possibly within the property surveyed by Werner in 1987. Since potentially significant resources within Werner's former survey area are also to be addressed in this study, this location and the location of the Antelope Mine will be revisited and reassessed. Another house is shown on the GLO plat outside the Tenneco exploration area, in the southwest quarter of the southwest quarter of Section 22. It is possible that features associated with this occupation might extend into the project area.

Survey Predictions

Based on the preliminary records search and literature review outlined above, the project area exhibits high potential for containing extensive evidence of prehistoric and historic-period use, although many sites in the project area may have been destroyed by logging and grazing activities. The most appropriate locations for large occupation sites in Antelope Valley are outside the boundaries of the present project: on level, well-draining terraces adjacent to confluences of permanent or established intermittent creeks. Such locations are somewhat common in the valley but are rare within the project area. Large occupation sites are therefore not anticipated. There are numerous locations suitable for hunting stations or small camp sites, and at least one base camp may be present. Isolated finds, such as single bifacially worked tools or milling equipment items, are considered likely, and petroglyphs may be found in isolation or as components of habitation sites.

The remains of small cabins and deposits of domestic refuse are considered possible adjacent to water courses, as indicated by the 1877 GLO map. Non-residential use of the project area was predominantly focused on grazing and logging; the former activity may be minimally evidenced, but extensive evidence of historic-period logging in the form of old roads, high tree stumps, and discarded logging equipment is anticipated. Presumably associated with the logging in the area are the ruins depicted as the Winnie Smith Mill; some evidence of these remains is known to be present. The Antelope Mine appears to be the only mining concern within the project area, although more claims may be identified through additional research. While the noted remains of this mine was considered to be insignificant on Werner's survey, the mapped location of the mine will be revisited and thoroughly examined to learn whether undetected, more intact, remains are present.

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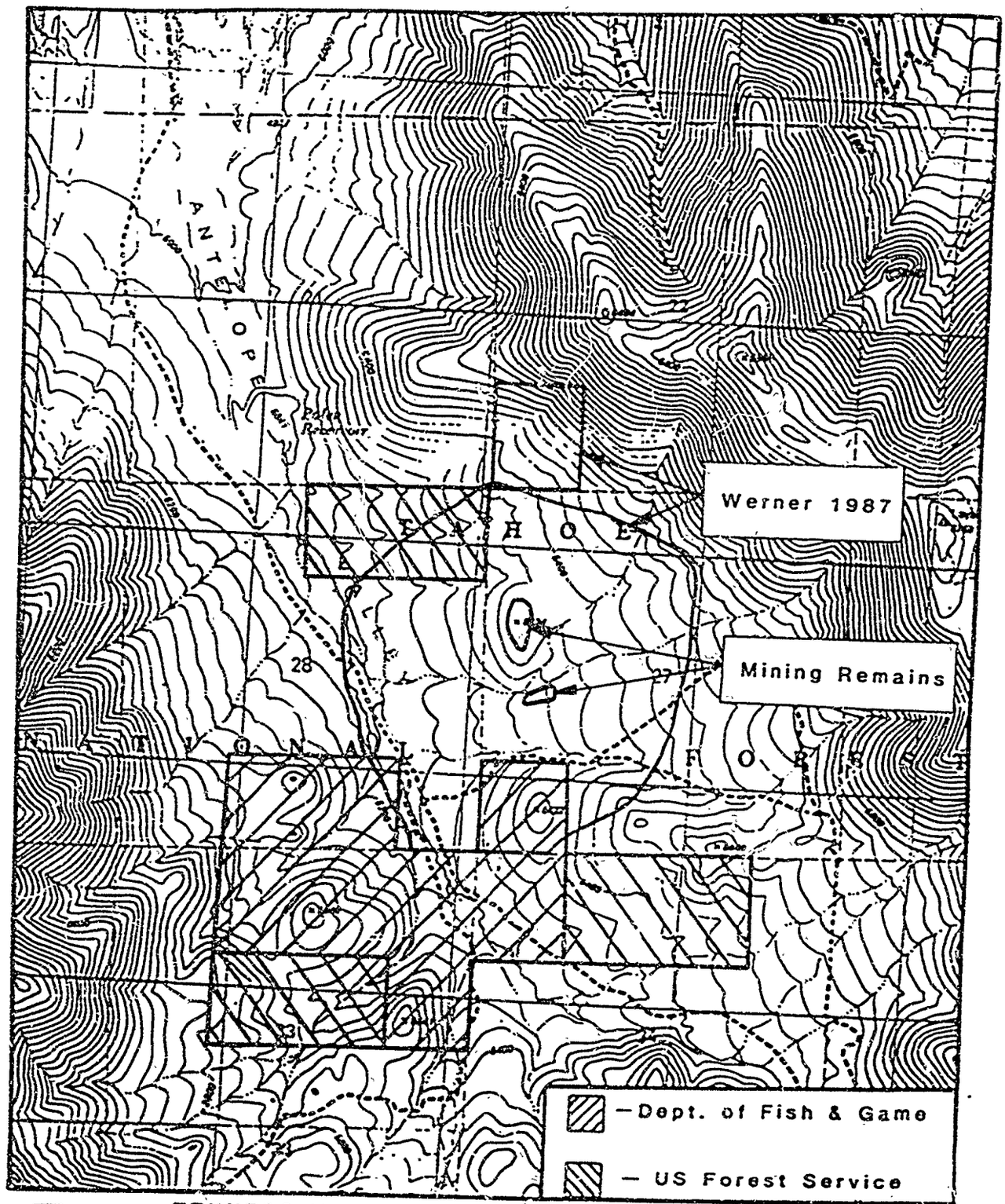

TENNECO MINERALS GOLDEN DOME PROJECT

SIERRA COUNTY, CALIFORNIA

Quadrangle Location

0 Mile 1

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Archaeological Services, Inc.

8110 Lorraine Avenue, Suite 408 • Stockton, California 95210 • (209) 474-3121

CULTURAL RESOURCES INVENTORY

TENNECO MINERALS GOLDEN DOME EXPLORATORY DRILLING PROJECT

ANTELOPE VALLEY, SIERRA COUNTY, CALIFORNIA

Submitted by

Suzanne B. Stewart
Project Coordinator

Submitted to

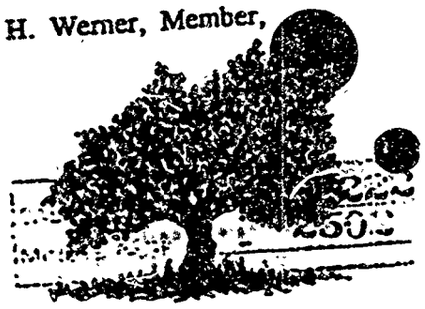
Tom Young
Tenneco Minerals Company
Loyalton, Sierra County, California

Prepared for

Tahoe National Forest
and
State Lands Commission

19 June 1991

Project conducted under the auspices of Principal Investigator Roger H. Werner, Member, Society of Professional Archaeologists.



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INTRODUCTION

Description of Undertaking

Tenneco Minerals of Loyalton, California, proposes to conduct exploratory drilling in and adjacent to Antelope Valley, Sierra County, California, on lands situated in portions of Sections 27, 28, 33, and 34 of Township 21 North, Range 15 East, Mount Diablo Base and Meridian, approximately 3 air miles southwest of the town of Loyalton (see Map 1). Project-area lands are controlled by the California State Department of Fish and Game (approximately 320 acres) and the U.S. Department of Agriculture, Tahoe National Forest (approximately 240 acres). Also included in the exploratory drilling project are Federal, State, and private lands that were studied in 1987 by Roger Werner of Archaeological Services, Inc.

Tenneco proposes to use a four-wheel drive drilling rig to excavate drill holes; thus construction of new access roads will not be required. Only minimal surface preparation will be necessary at each drill pad, and no explosives will be used. The maximum Area of Potential Effect at each drill site will be approximately .25 acre.

Summary of Findings

Under a contract with Tenneco Minerals, Archaeological Services, Inc., agreed to conduct a cultural resources investigation of the above-mentioned lands prior to ground-disturbing activity. Field work was conducted in approximately 12 person days between 15 May and 1 June 1991. As a result of the cultural resources inventory, three previously unrecorded archaeological sites were identified and recorded and two previously recorded archaeological sites were found to be located within the project area. Several isolated finds were also identified. Recommendations for the protection of identified archaeological sites are given in this report.

PROJECT BACKGROUND

Project-Area Description

The project area is in varied terrain adjacent to the floor of Antelope Valley, a small valley extending north into the southeastern end of Sierra Valley, California, in the eastern Sierra Nevada (Maps 1 and 2). Elevations range from 5200 to more than 5500 feet above mean sea level. Terrain is level to gently sloping around the margins of the valley and at the summits of the several small mountains (locally called "domes") surrounding it; moderately steep to steep slopes lead to the summits, but few very steep slopes are present. The climate of the greater Sierra Valley area is characterized by warm dry summers and cold wet winters. Mid-summer temperatures range from 30 degrees to the upper 80s; mid-winter temperatures, from below freezing to the 40s. Frost can occur at any time of the year. Annual precipitation in the

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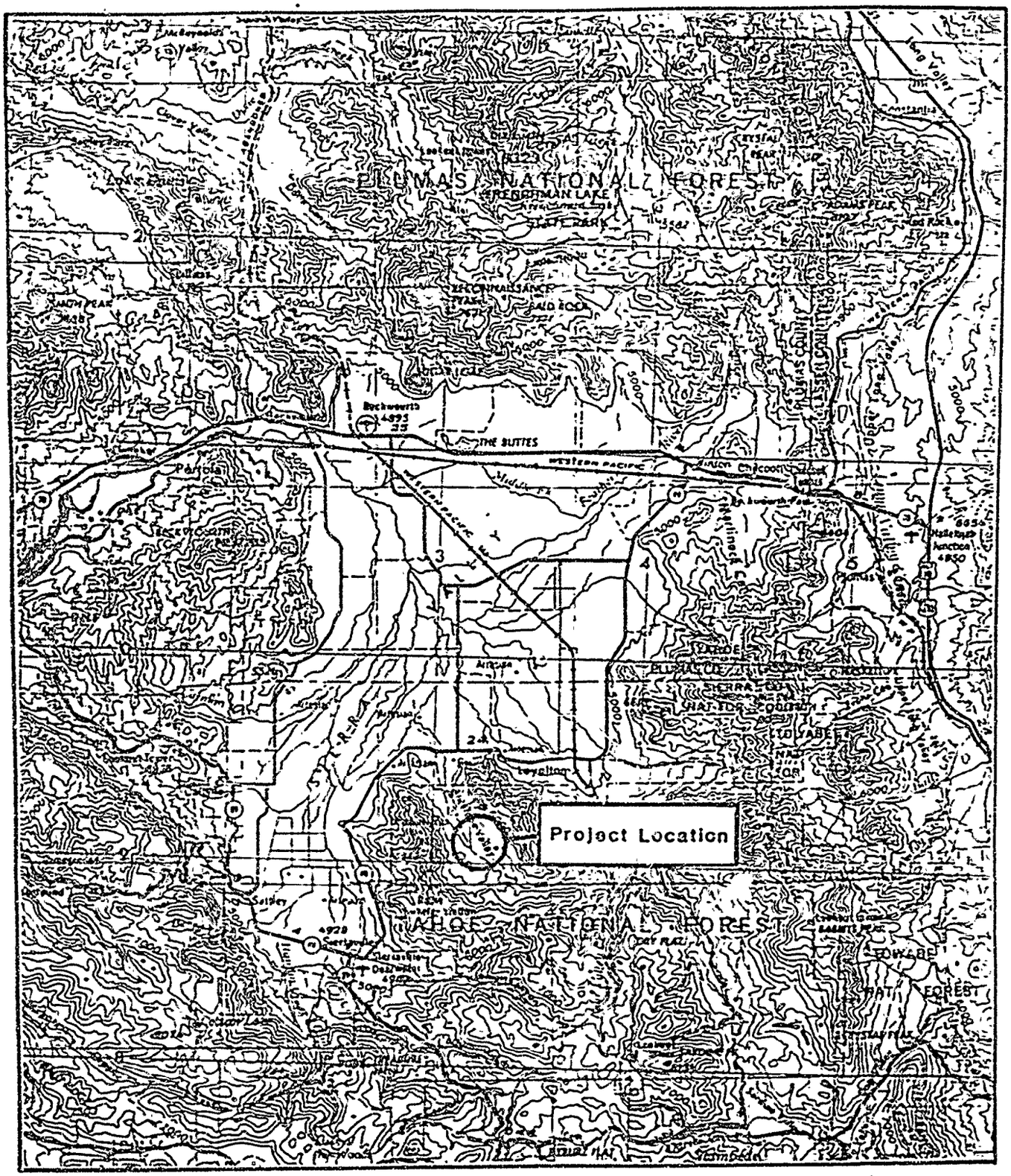

Map 1 Tenneco Minerals Golden Dome Project Vicinity

Sierra County, California

Project Location

0 miles 5

True North Magnetic North 22°

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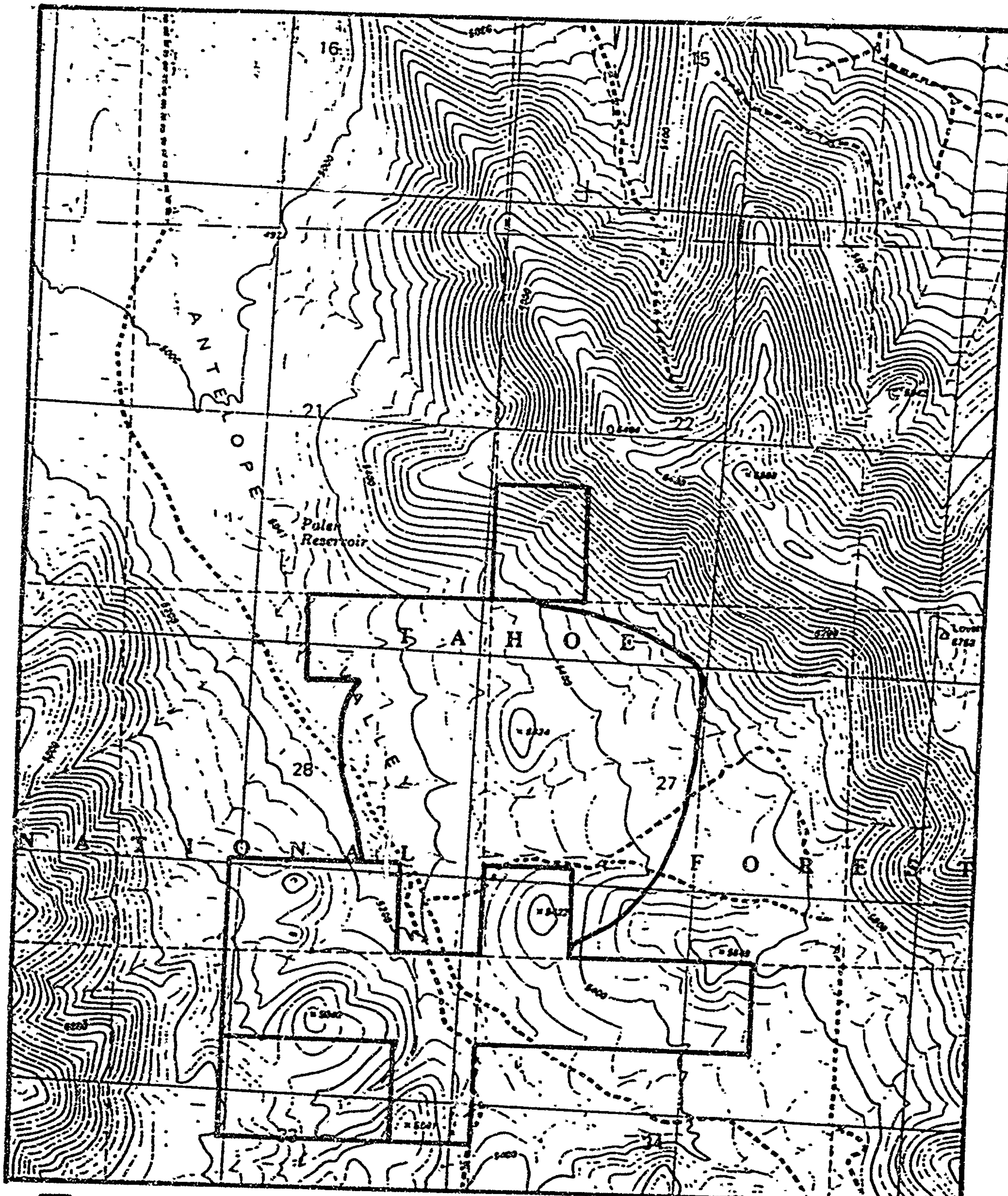
Base Map: USGS Chico, California Nevada 1:250,000 Contour Interval 200' 1959 Revised 1970



Project Location

MAP 2 TENNECO MINERALS GOLDEN DOME PROJECT AREA

SIERRA COUNTY, CALIFORNIA

0 mile 1

True North Magnetic North

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Base Map: USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1981

Antelope Valley area ranges from 18 to 25 inches, mostly occurring in the winter as snow. A variety of soils are present; most are gravelly to rocky silty clay loams. The geologic base consists of Tertiary volcanics, dominated by basalt, andesite, and latite (Gunderson 1990:3). Large rhyolitic tuff outcrops, some containing apparently noncultural rock shelters, are present at the summits of the project area's domes.

The project area contains numerous intermittent tributaries of Antelope Valley Creek, a perennial watercourse. Most of these drainages were dry at the time of survey despite recent and on-going rains and snowfall. Watercourses in the valley are highly eroded, apparently the result of logging and overgrazing; comparison of the 1939 and 1986 aerial photographs of Antelope Valley indicate that most erosion has occurred since the earlier date. The area containing Palen Reservoir, within private lands adjacent to the northernmost portion of the project area, was a large undeveloped freshwater marsh in 1939.

Around the margins of the valley, a sagebrush vegetation community is present, consisting of Big Sagebrush, scattered juniper trees, and sparse grasses and forbs. On the slopes and upper elevations, yellow pine occurs in dense stands, and some cedar and thick patches of Wyethia are present at the dome summits. The project area lies within key winter range for the Truckee-Loyalton mule deer herd, while antelope were once common in the valley.

Historic activities that have altered the project area include intensive early 20th-century residential use of at least three locations (recorded as archaeological sites, see below); logging and milling; sheep and cattle grazing; and sporadic mining since the 1860s. Current use includes cattle grazing, camping and hunting, and preliminary mining activities.

Prefield Research

Prefield research included a records search conducted by the California Archaeological Inventory, a review of Forest Service records at the Sierraville Ranger District, and a general literature and environmental review by the author. The purposes of this prefield research were to identify: (1) all reported field or archival studies of the project area and immediate vicinity; (2) the nature of any recorded or otherwise known prehistoric or historic-period cultural resources within or adjacent to the project-area boundaries; and (3) the potential for the presence of unrecorded archaeological sites based on the project area's history and environmental setting.

Research Methods

The records search was conducted by the staff of the Northeast Information Center of the California Archaeological Inventory, California State University, Chico (IC# D91-19). The records search included review of pertinent archaeological base maps, site records, and reports on file at the Information Center. Also consulted were the National Register of Historic Places (1988) showing Listed Properties and Determined Eligible Properties; historic resource inventories (Department of Parks and Recreation 1976, 1982); Clark (1970); and Hoover,

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EXHIBIT PAGE 250

Rensch, and Rensch (1966). The Information Center's letter documenting their records search, dated 10 May 1991, is included in Appendix A.

Additional archaeological, ethnographic, and historic sources were consulted by the author to place the project area in cultural context. Among the works consulted were various cultural resources overviews and reports prepared by the Tahoe National Forest (Carlson 1986: Jackson, Herbert, and Wee 1982; Markley and Henton 1985; Payen 1976), as well as more general references (e.g., D'Azevedo 1986; Kowta 1988; Kroeber 1925; Moratto 1984; and Riddell 1978). Environmental information was found in these reports as well as in Durrell (1987). Pertinent sections of the history of Sierra Valley by Sinnot (1976) were also perused, and the 1877 General Land Office survey plat of T21 North/R15 East was examined.

In order to identify any Native American concerns regarding the project, the Native American Heritage Commission was contacted regarding their Sacred Lands File, and the Washoe Tribe of California and Nevada was contacted to learn of their concerns regarding the project area (see Appendix A).

On 15 May 1991, prior to commencement of field work, the files of the Sierraville Ranger District were reviewed with the aid of Michael Baldrica, District Archaeologist, who provided copies of pertinent archaeological reports and site records.

Results of this prefield research are summarized below.

Prehistoric/Ethnographic Context

Although no Paleoindian finds have been encountered in the region, a major attraction for early human use of the area would have been the presence of a Pleistocene lake covering Sierra Valley, called Lake Sierra by Payen (1976) and Lake Beckwourth by Durrell (1987:253-257). The maximum ancient shoreline, which appears at an elevation of approximately 5100 feet, can be clearly seen as a horizontal line on the prominent hill at the head of Antelope Valley, with shorelines representing the lowering of the lake below that elevation (Durrell 1987:Fig. 143). Thus the lake would have extended well into Antelope Valley past Palen Reservoir, making even the most southerly portions of the project area within 1 mile of this resource.

Payen (1976) located finds suggestive of early use of Sierra Valley in the form of crude, possibly culturally flaked tools. The earliest confirmed human use of the northeastern Sierra dates to approximately 6000-7000 B.C. according to studies along the Truckee River (Elston et al. 1977 and Rondeau 1982, cited in Markley and Henton 1985). Evidence for the Martis Complex, an archaeological culture dating from 2000 B.C. to A.D. 500, is apparent throughout the eastern Sierra. The Martis peoples favored the edges of montane stringer meadows and valleys, such as Antelope Valley, for temporary camp sites (Gunderson 1990:3).

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At the time of historic contact, the project area and nearby Sierra Valley were within territory controlled by the Washoe, whose lands extended well south of Lake Tahoe and covered much of the eastern slopes of the Sierra. Some researchers contend that the valley and surroundings were held jointly by the Washoe and the Northeastern Maidu, with the former group exploiting the drier eastern and southern portions of the area and the latter group focusing on the well-watered land in the north and northwest (Payen 1976:4). For the Maidu, Sierra Valley was occupied only in warmer months (Riddell 1978:370), while Washoe maintained year-round settlements in the eastern valley (D'Azevedo 1986:467). No ethnographic villages are shown in or near the project area on Kroeber's (1925:plate 37) map; several 19th-century Native American settlements are shown in the vicinity of the project area on D'Azevedo's (1986:468) map, all apparently near the southern and eastern margins of Sierra Valley. Attractions in and near Antelope Valley would have been the abundant deer and antelope of the valley itself, and the many hot springs in and adjacent to Sierra Valley, which would have promoted year-round living (Baldrica, personal communication 1991).

No locations designated Sacred Lands are listed within the project area according to the Native American Heritage Commission (see Appendix A). Linda Shoshone of the Washoe Tribal Council commented that Washoe people lived and travelled throughout Sierra Valley and environs; she expressed concern that Native American archaeological sites identified in the project area be protected wherever possible. At her request, a copy of this report will be sent to the Tribal Council.

Historic Context

According to Gunderson (1990:3), historic use of Antelope Valley was primarily for intensive seasonal grazing by sheep and cattle from the late 1800s to the 1940s. Mining, logging, and lumber milling, however, have left more tangible archaeological evidence in the project area.

The description below of mining in Antelope Valley is summarized from the more detailed information in Sinnot (1976:129-130, 232). Mining, primarily for copper, was first undertaken in the Antelope Valley area in 1862-63, when a mining district was formed. A settlement named Antelope City was established, and limited mining continued until 1866. In 1870 further examination of the claims indicated that the ledges had been improperly developed, and the Sierra Valley Mining District was formed. Ledges on each side of the valley, about 1/2 mile apart, were worked, while the site for a town called Alten (an amalgamation of the names of the prospectors) was surveyed. Although assays in 1871 encouraged further development, these did not prove out and operations ceased. Another unsuccessful attempt to develop the mines was made in 1882. In 1906 the Antelope Gold Mining and Milling Company of Loyalton prospected "another ledge across the hill from the original locations," a venture that also was abandoned. No other mining activities are noted by Sinnot until 1971, when some exploratory work was done. A deed for the mineral rights to the Antelope Mine, however, was recorded in 1921 (Sierra County Deeds Book 2:203-204), but no information has been acquired about this early 20th-century operation. More recently, Hecla Mining Company conducted exploratory work in 1987.

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The historic Winnie Smith Mill apparently operated in the early 1900s and ceased production in the 1920s or early 1930s (Gunderson 1990:3). Further information on the mill is presented below under the description of identified archaeological sites.

The 1877 General Land Office plat map indicates "Wilson's House" in the center of Section 28, just outside the project boundaries. The lack of other cultural indicators mapped within the project area suggests that any residential use associated with the early 1870s mining activity had ceased along with the abandonment of mining operations.

Previous Cultural Resources Studies

While numerous cultural resource studies have been completed in the project area and vicinity, the Northeast Information Center has no record of them. Most of these studies, beginning in 1983, were conducted by Forest Service personnel on both Federal and State lands in conjunction with mineral exploration (ARR #05-17-385, -772, -899) and California Department of Forestry controlled burns (ARR #05-17-786, -786A). For ease of mapping, these areas are shown on Map 3 without differentiation as to ARR or level of coverage; ARR maps are included as Appendix B. (Some of these project areas received only general coverage and required reinspection for this project.)

In 1987, Roger Werner of Archaeological Services surveyed 180 acres of land to be explored for the Hecla Mining Company's Golden Dome project. Note that the project map included with Werner's report inadvertently shows additional lands as intensively surveyed (for a total of approximately 340 acres).

As a result of the above studies, one historical archaeological site was recorded within the current project area (FS #05-17-56-19, "Shotgun Village"), in the southwest quarter of Section 27. One additional historical archaeological site (FS #05-17-56-287, "Winnie's Annex") and one prehistoric site (FS #05-17-56-289, "Aldeberon Hill") are plotted just outside the current project area in Section 34; a prehistoric quarry (FS #05-17-56-772, "Hecla Quarry") is shown just outside the northern boundary of the project area in Section 21. Numerous isolated finds, both historic and prehistoric, have been reported within and adjacent to the project area.

A recent Forest Service survey approximately 2 miles northwest of the project area (Gunderson 1989, ARR #05-17-786A) recorded six prehistoric sites--some of which represent intensive, long-term occupation--near the interface of Antelope Valley and Sierra Valley.

Few subsurface investigations have been undertaken in eastern Sierra County. The nearest such investigation was conducted by Archaeological Services in 1989, at CA-SIE-692, a prehistoric site situated on a finger of land extending into Sierra Valley at the mouth of Antelope Valley. The site was found to be primarily a disturbed surface phenomenon that did not meet CEQA criteria for importance (Werner 1989).

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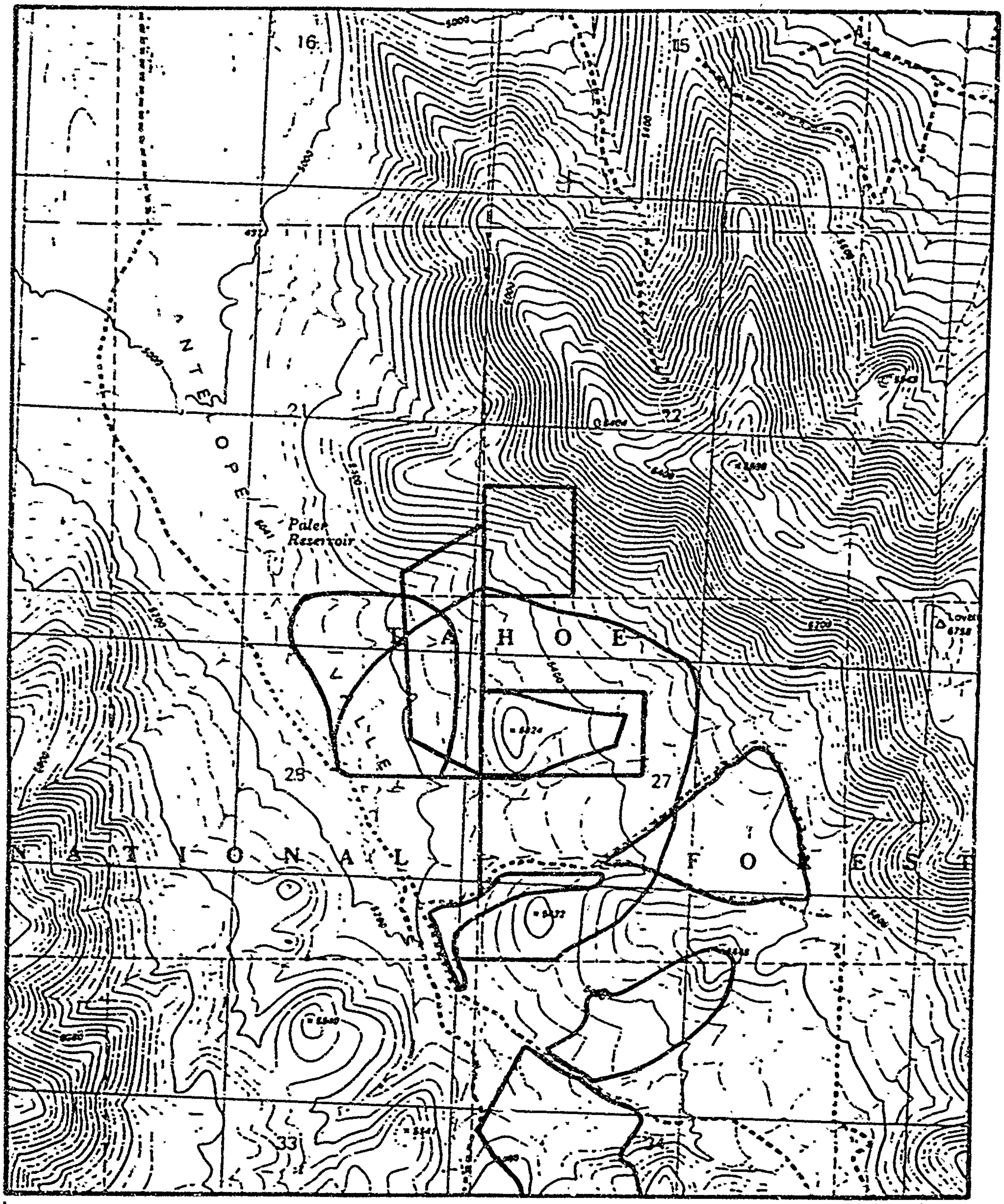

MAP 3 TENNECO MINERALS GOLDEN DOME

PREVIOUS SURVEYS

SIERRA COUNTY, CALIFORNIA

Base Map: USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1981

0 mile 1

True North Magnetic North

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See Appendix B

Survey Expectations

Based on the information gathered in prefield research, several unrecorded cultural resources were anticipated on the Golden Dome survey. Forest Service personnel and Tom Young of Tenneco confirmed that archaeological remains were present at the mapped location of the Winnie Smith Mill. Additional evidence of logging and milling was also anticipated. Other evidence of industrial and/or residential remains relating to the mining history of the project area was also expected, as were possible remains of small-scale residential activity or isolated features related to ranching or independent mining and logging. Very large, long-term prehistoric occupation sites were not predicted for the project area due to the relatively limited water resources in the area and the presence of more advantageous settings nearby at the edge of Sierra Valley. Light to moderately dense lithic scatters were anticipated near watercourses, on saddles or ridges, particularly toward the north end of the valley where access to the Palen Reservoir marsh and ancient Lake Sierra would have been most direct. Bedrock mortars, petroglyphs, and rock shelters have all been recorded in the vicinity, suggesting that large rock outcrops in the project area might exhibit these features.

FIELD INVESTIGATION METHODS

Survey Strategy

Field survey of the Tenneco Minerals Golden Dome Project area and site recording were conducted during two field sessions from 15 through 17 May 1991 and 29 May through 1 June 1991. The survey was conducted by Suzanne Stewart, Senior Staff Archaeologist, and Michael Stoyka, Archaeological Technician, of Archaeological Services, Inc., Stockton. Ms. Stewart has a B.A. in Anthropology and is currently an advanced graduate student in Cultural Resources Management at Sonoma State University; she has more than 12 years of archaeological field experience in central and northern California. Mr. Stoyka has 9 years of archaeological experience in several areas of the United States, including more than 2 years experience in California.

Field strategy varied according to archaeological sensitivity, surface visibility, and level of previous archaeological coverage. In areas of relatively gentle terrain and locations near streams or other distinctive natural features such as rock outcrops, the land was surveyed intensively in approximately 8- to 20-meter-wide transects. In less archaeologically sensitive areas (e.g., steep terrain, dense forests, or sloping land covered with rock cobbles), where cultural resources were considered unlikely, the land was surveyed intuitively; here maps were examined to assure that any sensitive-appearing mapped locations within such areas were visited, while the rest of the location was cursorily surveyed in transects of 40 to 100 meters or more to check for unmapped archaeologically sensitive areas. Areas falling between these two extremes of archaeological sensitivity (e.g., featureless gently sloping terrain) were surveyed in a general fashion, in transects up to approximately 20 to 40 meters in width. Visibility was fair to excellent in all

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non-forested land, but wooded areas were often covered with dense duff. In potentially sensitive forested areas, duff was periodically cleared with a hand trowel to observe surface soils.

Access routes and drill sites were well flagged and mapped, and most were easily identified in the field (see Appendix C for Tenneco's Drill Site and Access Route Location Maps). With the exception of a few locations noted below, each mapped drill site was found on the ground, and the surrounding area was examined. In sensitive areas, the drill sites were surveyed intensively within an area of up to 1/4 acre; smaller areas were surveyed at drill sites on hillsides or in other less sensitive areas. The following drill sites could not be located: BLM DS # 1; F&G DS # 3, 4; and FS III DS #10, 11, 12, 13, and 17. In each case, the mapped locations of these drill sites were given broad coverage in an attempt to locate the stakes, and the areas can be considered adequately surveyed. Because the level of previous survey coverage is often uncertain, most drill sites on previously surveyed lands were re-examined.

The areas surveyed on the current project are indicated on Map 4.

Areas Not Surveyed

The following locations within the project area were omitted from survey:

Drill sites #6 through 9 in the NW 1/4 of Section 27 were not examined since they are situated in an area that has been subject to three previous intensive archaeological studies.

In the SE 1/4 of Section 21, DS #15 and 16 were examined but the surrounding land marked off on Tenneco's Drill Site and Access Route Location Map was not. This area was omitted because it was not listed in any correspondence concerning project-area location, on the project area map initially presented by Tenneco, or in Tenneco's Notice of Intent.

In the interests of time and costs, Fish & Game lands in the center of the valley, which will not be subject to exploration by Tenneco, were not surveyed. This excluded area is bounded by Antelope Valley on the east and an unnamed dirt road at the base of the hills on the west. (An exception is the location of the Winnie Smith Mill, which extends onto both sides of the western access road; this area was intensively surveyed to determine site boundaries.)

Survey Conditions

Several hindrances to the survey were encountered. Unexpected snowfall did not allow field work scheduled for the morning of 18 May, and snow, sleet, and/or rain interrupted work on 29 and 30 May 1991. (Light snow flurries throughout the day on 17 May did not impede survey.) During the first field session, only Fish & Game lands were surveyed due to a then-

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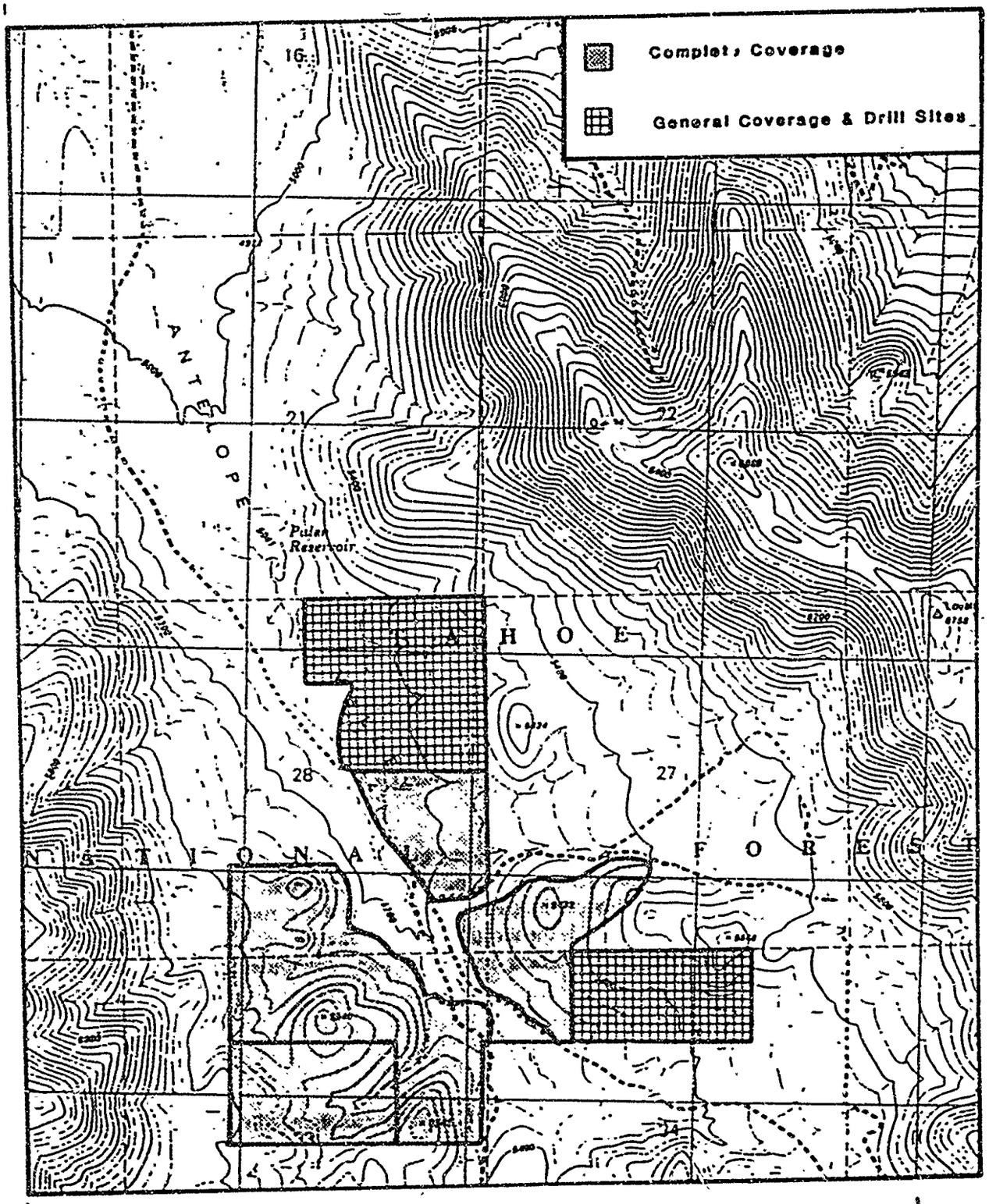

MAP 4 TENNECO MINERALS GOLDEN DOME

ASI SURVEY COVERAGE 1991

SIERRA COUNTY, CALIFORNIA

Project Location

Base Map: USGS Antelope Valley, Calif.

1:24,000 Contour Interval 40' 1951

0 mile 1

251'

251'

eminent deadline for a report to the State Lands Commission. Return trips to adjacent Federal land were necessary during the second session--after the report deadline had been relaxed--resulting in complex logistics. Time was also spent working out discrepancies between various project maps (USGS, USFS, and Tenneco adaptations); orientation in the field was made difficult by the presence of unmapped streams and roads, mapped roads not readily apparent in the field, and the USGS use of 40-foot contours in relatively gentle terrain.

INVESTIGATION RESULTS

Coverage

As a result of the above-described survey, approximately 280 acres of previously unsurveyed State land and 80 acres of previously unsurveyed Federal land were surveyed; approximately 400 acres of State and Federal land that had received previous coverage were resurveyed using general coverage methods. A total of 64 drill sites and associated flagged access routes were examined.

Five archaeological sites were identified within the Tenneco Minerals Golden Dome project area: two newly recorded prehistoric lithic scatters; two historical archaeological sites previously recorded by Forest Service personnel (Shotgun Village and Winnie's Annex); and one known historical archaeological site (The Winnie Smith Mill), which was recorded as a part of this study. A total of 15 isolated finds were identified and their locations mapped.

Identified Cultural Resources

The five archaeological sites and 15 isolated finds identified in the project area are described below; a site location map (Map 5) and site records are included as Appendix E. In addition, three cultural resources were noted on land outside the current project area; they are briefly mentioned below.

Prehistoric Site FS #05-17-56-317 (ASI 1) - U.S. Forest Service

This newly recorded prehistoric site consists of a light scatter of lithic debitage in the SE 1/4 of the SE 1/4 of Section 28. The site is located on the north bank of a small intermittent stream, a short distance northeast from the intersection of Antelope Valley Road and an unnamed road leading to Shotgun Village (see below). Site vegetation is dominated by sagebrush and scattered junipers. A variety of basalt and chert flakes were found in two concentrations approximately 70 meters apart. Three formed artifacts were noted: the basal end of a thin, crudely flaked basalt biface; an exhausted chert core with use wear evident on one pointed end; and a small, obsidian, corner-notched projectile point (probable Rose Spring series). On the advice of the Sierraville District Archaeologist, the latter was collected; the point has been accessioned with

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the Forest under accession #17-3526. The formed artifacts were found at some distance (15 to 30 meters) from the westernmost concentration of flakes, suggesting broad--perhaps sporadic--use of the area. Additional cultural materials are undoubtedly present, obscured by relatively dense stands of sagebrush. A large rock outcrop adjacent to the streambed contains numerous holes and depressions in its vertical face; two of these--a basinlike depression and a cupule--may be cultural.

Prehistoric Site FS #05-17-56-318 (ASI 2) - U.S. Forest Service

This newly recorded prehistoric site consists of a moderate scatter of lithic debitage and formed/utilized tools in the NE 1/4 of the SE 1/4 of Section 28, approximately 150 meters north of Site 1. The site is on the south bank of a small intermittent stream, extending south over a slight rise towards a broader, gentler drainage. Site vegetation consists of sagebrush, small junipers, and a single large yellow pine. At least 50 cultural items were identified. Debitage consists of a variety of basalt and chert flakes, from large reduction pieces to minute retouch items. A single obsidian blade flake was noted. Tools include a chert plano-convex scraper; a thin, finely flaked basalt biface midsection; some possibly utilized flakes; and a small finely flaked quartz midsection with a roundish cross-section suggestive of a drill.

Historical Site ASI 3 ("The Winnie Smith Mill") - Department of Fish & Game

This newly recorded historical archaeological site has long been known to local residents. It appears on the Sierraville NE 7.5-minute topographic quadrangle (1955) as "Winnie Smith Mill (Ruins)." The site is located in the southwest portion of Antelope Valley adjacent to the confluence of two intermittent creeks at the base of gentle to steep slopes. The site extends out onto the valley floor in the east and up the lower slopes of the hill to the west, covering an area of more than 20 acres. The site includes both residential and industrial features. The former include an isolated three-tiered building pad in the south; several dense trash deposits dominated by hole-in-top and sanitary cans but including ceramic and glass; and an intensive scatter of wooden structural remains with associated domestic and personal artifacts on the first and second terraces in the wooded area above the valley floor. Industrial features include an extensive area of deep sawdust; the partially intact wooden and brick/stone foundations of large industrial buildings (presumably the main mill buildings); a series of wooden posts with elevated cables suggesting transport of logs across the valley floor; some partially buried pipes representing a water transport system; and various debris throughout this portion of the valley and surrounding slopes (dominated by broken wooden barrel staves and metal hoops). Two basalt flakes, indicating a possible prehistoric component, were found within the mill site.

Relatively little information was obtained regarding the Winnie Smith Mill. According to Gunderson (1990:3), who cites personal communications with Doc Payen and Julio Genasci, the mill was the first of four separate mills owned and operated by Winnie Smith. It was established in the early 1900s and probably operated in support of the Antelope Valley mining efforts. The mill ceased operation in the 1920s or early 1930s. There was no railroad logging in Antelope

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Valley; according to Gunderson's sources, the mill was serviced entirely by steam tractor. Gunderson states that the mill was one of many small (15-20 man) steam-powered mills operating in the Sierra Valley area from the late 19th century to the early 1930s.

Historical Site FS #05-17-56-19: "Shotgun Village" - Department of Fish and Game

This historical archaeological site, located on State lands, was recorded by Forest Service personnel as a part of the Antelope Burn project in 1988-89 (ARR #05-17-56-786 and -786A). It is located in the NW 1/4 of the SW 1/4 of Section 27 on an unnamed dirt road approximately 1/3 mile east of Antelope Valley Road. The site consists of extensive remains of an early 20th-century occupation site. At least six framed residences are represented in the debris; at the east end of the site, the foundations and lower walls of a log cabin (visible on the 1939 aerial photograph) are present. Gunderson (1989) states that "the site may be related in some fashion to the Winnie Smith Mill or the historic mining town of Antelope City or the historic Antelope Mine." Tom Young of Tenneco Minerals states that long-time Sierra Valley residents have referred to this locale as Antelope City, an early 20th-century "town" associated with the mine.

A prehistoric component is indicated for this site on the basis of a metate and mano/pestle found on the site by Forest Service personnel.

Historical Site FS #05-17-56-287, "Winnie's Annex" - U.S. Forest Service/Department of Fish & Game

This historical archaeological site is plotted outside the current project area on Forest Service base maps and on the site record location map. Field examination, however, showed the northwest-southeast dimension of the site to be about 2.5 times greater than mapped, for a total linear distance of nearly 1/2 mile; thus the site extends into the current project area, in the NW 1/4 of Section 34, and includes both State and Federal lands. "Winnie's Annex" consists of a broad scatter of historic debris and milled lumber, probably representing extensive early 20th-century residential use. The association with the Winnie Smith Mill was made by Forest Service personnel on the basis of the co-occurrence of white earthenware at both sites and the presence of the left front fender of a Ford Model "T" at the "Annex" and the right front fender at the mill site. More compelling evidence of a connection between the two sites is suggested by the hypothesized log-transport system across this portion of the valley noted at the mill site. No documentation of an association was noted in our brief historical research.

<u>Isolated Finds/Features</u>

Numerous isolated finds have been noted within project-area lands in the course of the several surveys of this acreage; see the various ARRs for their locations. Isolated finds noted on this survey, plotted on Map 5, are as follows:

1 - Basalt flake and possible rhyolite core on north bank of creek
2 - Basalt flake on south bank of creek

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3 - Pile of unmarked bricks, approximately 1.5 by 3.0 meters in diameter, approximately 4 meters east of Drill Site #5.
4 - Mining waste-rock dump
5 - Prospect pit with tree growing out of it adjacent to F&G DS #2
6 - "J"-shaped (facing south), straight-sided feature (3 x 3 meters by 5 meters east/west) consisting of small, well-sorted rhyolitic tuff cobbles
7 - Stone-supported fenceline extending between prehistoric sites FS #05-17-56-317 and -318, with hole-in-top can and other fencing debris at the latter site
8 - Collapsed corral, with 12' long boards, some nailed to tree with cut and wire nails; two-strand barbed wire; and adjacent sanitary can and bucket lid adjacent to FS III DS #3)
9 - Prospect pit near FS III DS #2, south of creek from prehistoric site FS #05-17-56-317
10- Old fence line, apparently following section line (at 354 degrees), consisting of old wood posts (10 to 18 inches high) reinforced by more recent, 4-foot high posts; begins 45 meters north of road and continues for approximately 70 meters.
11- Prospect pit near F&G DS #46, with sanitary can and tobacco can, approximately 6 x 6.5 meters.
12- Group of four prospect pits, roughly 25 meters apart, located about 12.5 meters east of F&G DS #45; pits measure 5 x 7 x 3 meters; 4 x 3 x 1 meter, and 3.5 x 2.5 x 1.5 meters, with a small, shallow pit not measured.
13- Small prospect pit located about 29 meters northwest of F&G DS #43; adjacent is a small crushed metal pail with an enamel cup inside.
14- Prospect pit, 5 meters in diameter and 1.5 meters deep, approximately 45 meters northeast of F&G DS #30
15- Prospect pit on steeply sloping hill between BLM DS #4 and 5.

In addition to the mapped isolated finds, numerous high-cut (more than 30") tree stumps--indicative of historic logging--were noted in several locations, particularly on the east-facing slopes of the domes in Fish & Game land. Barrel staves and metal barrel hoops were found for some distance up drainages adjacent to the Winnie Smith Mill. Individual tin cans, fence posts, and modern debris, found primarily adjacent to Antelope Valley Road, were not mapped or described.

Cultural Resources Outside Project Boundaries

Three cultural resources were noted during our field work that are outside the limits of the present study. They were encountered while gaining access to lands to be surveyed or when attempting to find the recorded site "Aldeberon Hill" at the beginning of survey for comparative purposes. The resources are briefly described here and are plotted by letter on Map 5.

A: Prehistoric Lithic Scatter. Downslope from and northwest of the plotted location of Aldeberon Hill (FS #05-17-56-289) is a light scatter of basalt and chert flakes and the base

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of a thin, finely flaked, basalt projectile point--a possible Martis stemmed point. The point's location was flagged and the Sierraville District Archaeologist notified of the site and the presence of the point.

B: Historical Structural Debris. Near the center of Section 28, in the approximate location of "Wilson's House" shown on the 1877 GLO plat map, is a light scatter of structural remains and a few personal and domestic artifacts.

C: Historical Bridge Remains. At the confluence of Valley Antelope Creek and an intermittent tributary are the remains of a large concrete/conglomerate bridge with metal fittings and a concrete spillway, partially hidden by dense riparian plants. the bridge leads from Antelope Valley Road toward the general direction of Antelope Mine.

MANAGEMENT CONSIDERATIONS

Some of the cultural resources identified in the project area could be directly affected by Tenneco Minerals' current drilling site and access route plans. Tenneco has agreed to redesign the exploratory drilling project in order to avoid direct impacts to identified archaeological sites. Preliminary site evaluations are therefore not appropriate at this time. Our recommendations below assume that all identified sites are potentially significant or important and therefore warrant protection. Should avoidance of these cultural resources be unfeasible, evaluations would be required for both State and Federal properties to assure appropriate mitigation of any impacts to important/significant resources.

Given the low intensity of the proposed activity during exploration, indirect impacts to archaeological sites are unlikely during this phase of the Tenneco project: no more than two drilling rigs will be used, for a total of four to six workers. Rig drivers must be instructed to stay on access roads and not drill in unauthorized locations. They should also be advised of the presence of archaeological sites and the need to preserve the remains; they should be explicitly informed that removal of artifacts or other disturbance to the remains would be in violation of the permit and cannot be allowed. It is recommended that the potential for indirect impacts to archaeological sites be reassessed if the project continues into a development stage.

Potential Project Impacts and Recommendations

Impacts to cultural resources that could occur under Tenneco's currently proposed exploration plans are discussed below. Drill site and access route locations referred to below are those found staked/flagged in the field; mapped locations cannot be relied on due to the imprecision of the 40-foot contour interval of the USGS topographic quadrangle. Recommendations for avoidance of impacts are given here and are summarized in Table 1 and in the conclusions below.

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Prehistoric Site FS #05-17-56-317 (ASI 1). Tenneco's proposed access route to drill sites in this USFS area (Tenneco's FS III) utilizes an existing road through the site. Prehistoric cultural materials found at DS #5 have been included in the recorded site boundaries. Use of an existing road through an archaeological site is in keeping with Forest Service policy and will not likely create new impacts to the cultural resource. Exploration of DS #5, however, could compromise the integrity of the archaeological site. **Recommendation:** Access through the site on existing roadbed only is acceptable to ASI and to the USFS (Baldrica, personal communication); DS #5 should be deleted from the proposed exploration or moved at least 30 meters (ca. 100 feet) north of the site boundaries.

Prehistoric Site FS #05-17-56-318 (ASI 2). No exploration is currently planned for this area, and the access route (existing road) is well outside the site boundaries. **Recommendation:** No recommendations are necessary under current project plans. Future exploration/development should not take place within 30 meters (ca. 100 feet) of the boundaries of the site.

Historical Site ASI 3 - The Winnie Smith Mill. Tenneco currently proposes two drill sites immediately adjacent to Winnie Smith Mill site boundaries: F&G DS #33 in the north and DS #34 in the south. An access route leading to #34 and additional drill sites further southwest (FS I) is currently flagged through the densest area of residential structural debris. Use of this portion of the access route would result in severe damage to these fragile remains, while exploration of DS #33 could compromise the historical setting of this site. **Recommendation:** Drill Site #33 should be deleted from the proposed exploration or moved at least 30 meters (ca. 100 feet) northwest of its current location. Access to DS #34 should be re-routed to follow the existing historical road, northwest of and downslope from the current flagged route. Exploration of DS #34, which is approximately 30 meters (approx. 100 feet) southwest of the site's southern boundary, should not result in impacts to the site.

Historical Site FS #05-56-17-19 - Shotgun Village. Tenneco currently proposes two access routes through the Shotgun Village site: one leading to F&G DS #46 through an area with few visible cultural remains; and one utilizing an existing road that leads to proposed drill sites on the dome in the site. Use of the currently flagged access route to DS #46 could lead to damage to undetected cultural remains in this portion of the site; the drill site itself is close to or within current site boundaries, and exploration might compromise site integrity. **Recommendation:** Drill Site #46 should be moved at least 30 meters (100 feet) south of its current location to avoid impacts to the site. The currently proposed access route to this drill site should be deleted from plans, and the drill site accessed from the east, via the existing north/south road and a new east/west access road outside site boundaries.

Historical Site FS #05-56-17-287 - Winnie's Annex. Tenneco does not propose exploration within or adjacent to this site. **Recommendation:** No recommendations are necessary under current project plans. Future exploration/development should not take place within 30 meters (ca. 100 feet) of the boundaries of the site.

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Boundary Staking and Project Follow-up

To assure that archaeological sites are not inadvertently damaged during the proposed undertaking, we recommend that the boundaries of all sites within exploration areas be clearly marked in the field by an archaeologist. Well-flagged wooden stakes should be left in place until the Tenneco exploratory drilling project has been completed. To assure that these cultural resource management recommendations have been adhered to, it is further recommended that an archaeologist visit each archaeological site recorded in the project area after the conclusion of the drilling program.

Table 1: Potential Project Impact Summary
Tenneco Minerals Golden Dome Project

Site No./Name	Land Status	Project Impacts	Recommendations
FS #05-17-56-317 (ASI 1)	U.S.F.S.	Access route through arch. site. DS #5 on site.	Use existing road only. Move DS #5 north at least 30 meters. Stake.
FS #05-17-56-318 (ASI 2)	U.S.F.S.	No impacts proposed. Access route nearby.	Stake. No other recommendations now necessary.
FS #05-17-56-319 (ASI 3) The Winnie Smith Mill	State Fish & Game	DS #33 & 34 adjacent. Access route through arch. site.	Delete DS #33. Change access route to follow existing road. Stake.
FS #05-56-17-19 Shotgun Village	State Fish & Game	DS #46 on site. Access route through site.	Move DS #46 south at least 30 meters. Access DS via existing road. Stake.
FS #05-56-17-289 Winnie's Annex	State and U.S.	No impacts proposed.	None necessary.

Cultural Resources Not Warranting Protection

Isolated Finds/Features. The information potential of isolated finds on this survey has been realized through their description and the plotting of their locations (see Map 5). No protection measures are necessary.

Previously Reported Mining Remains. Mining remains identified in the S 1/2 of the NW 1/4 of Section 27 consisting of two trenches and two exploratory holes, were not considered significant by Sprowl (1983, ARR #05-17-56-385, Addendum) or by Werner (1987); this area was considered to have had sufficient coverage and was not visited on this survey. The mining remains noted by Werner (1987) at the location of the former Antelope Mine on current Tenneco property (NW 1/4 of the SW 1/4 of Section 27) were visited during this investigation. They were found to consist of a number of pits and trenches of varying age, with modern exploration

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often cutting into older features; a few cans and pieces of milled lumber were the only artifacts noted. These remains have very low integrity and are therefore of limited information potential. **Recommendation:** The information potential of the mining remains in this location has been realized by mapping their location. Description of the remains was considered unwarranted due to their temporal ambiguity.

General Recommendations

No exploration or other development should take place in unsurveyed areas. Note especially that areas adjoining Antelope Valley Creek were not surveyed, and that the northwest half of that portion of the project area in Section 21 has not received coverage by previous Forest Service surveys or by the current study (see Areas not Surveyed under Field Investigation Methods above). The environmental setting of the latter area (adjacent to the large historic marsh and containing Pleistocene lake shorelines) suggests a relatively high likelihood that potentially significant prehistoric archaeological sites are present. Any future exploration in this area should be preceded by an intensive archaeological survey.

The archaeological study for the Tenneco Minerals Golden Dome exploration project involved surface examination only. Additional cultural resources may be present, buried by soil or obscured by vegetation or duff. It is therefore possible that excavation during this or future ground-disturbing activities will unearth archaeological deposits. If concentrations of prehistoric or historic-period materials are encountered, it is recommended that all work in the vicinity halt until an archaeologist can evaluate the finds and make recommendations for further action. Prehistoric materials might include flaked-stone tools (projectile points, knives, scraping tools) or obsidian or chert toolmaking debris, culturally darkened soil ("midden") containing heat-altered rock and cultural materials, and stone milling equipment (mortars, pestles, handstones, and milling slabs). Historic materials might include stone footings or walls, or deposits of metal, glass, and/or ceramic refuse.

If human remains are encountered, all work should halt in the vicinity and the County Coroner notified immediately. At the same time, a qualified archaeologist should be contacted to evaluate the finds. Appendix K of the California Environmental Quality Act Guidelines details steps to be taken if human burials are found to be of Native American origin.

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CALENDAR PAGE 26[illegible]
MINUTE PAGE 25[illegible]

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CALENDAR PAGE 25[illegible]
MINUTE PAGE 25[illegible]

APPENDIX A

PREFIELD CONTACTS

CALENDAR PAGE 280
MINUTE PAGE 2543

California
Archaeological
Inventory

Information Center

BUTTE SIERRA
GLENN SISKIYOU
LASSEN SUTTER
MODOC TEHAMA
PLUMAS TRINITY
SHASTA

Department of Anthropology
California State University, Chico
Chico, CA 95929
(916) 895-6256

May 10, 1991

Archaeological Services, Inc.
8110 Lorraine Ave., Suite 408
Stockton, CA 95210
ATTN: Suzanne B. Stewart

RECEIVED MAY 14 1991

RE: ANTELOPE VALLEY MINING PROJECT; IC# D91-19
T21N, R15E, Sec. 21,22,27,28,33,34;
USGS Sierraville 15'quad
600 acres

Dear Ms. Stewart,

In response to your request received April 26, 1991, a record search for the above cited project was conducted by examining the official maps and records for archaeological sites in Sierra County.

RESULTS:

PREHISTORIC RESOURCES: There are no recorded sites of this type known to be located within the project boundaries. However, one site of this type has been recorded within a one-mile radius of the project area. This site, CA-SIE-397, is recorded as a prehistoric campsite. A copy of the site record has been enclosed, and the site has been plotted on the enclosed map in red ink. Numerous sites of this type have been recorded in similar environmental zones to the north, south, and west of the project area.

HISTORIC RESOURCES: There are no previously recorded sites of this type known to be located within the boundaries of the project area or within a one-mile radius of the project area. However, the USGS quad map notes the presence of two sites which are probably unrecorded historic cultural resources. Antelope Mine, located in Section 27, is located within project boundaries. Our records indicate that this mine was first discovered in 1863, and that gold, silver, and copper were extracted from this mine. The ruins of the Winnie Smith Mill are located in Section 33, also within the boundaries of the project area. We were not able to located any information on Winnie Smith or the mill. The nearby historic town of Sierraville is a California Inventory of Historic Resources property, and was a supply center for area mines, camps, and

CALENDAR PAGE 246
MINUTE PAGE 2550

towns.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS: According to our records, the project area has not been previously surveyed for cultural resources.

LITERATURE SEARCH: Reviewed were the official records and maps for archaeological sites and surveys in Sierra County. Also reviewed were the National Register of Historic Places-Listed Properties and Determined Eligible Properties (1988, Computer Listing 1966 through 3-10-88 by National Park Service), the California Inventory of Historic Resources (1976), California Points of Historical Interest, California Historical Landmarks (1982), History of Plumas, Lassen, and Sierra Counties, California (1882), Gold Districts of California (1970), and Historic Spots in California (1966).

RECOMMENDATIONS: Based upon the above information obtained as a result of this search and the local topography, this project is located in an area considered to be extremely sensitive for both prehistoric and historic cultural resources. Therefore, we recommend that the entire project area be surveyed for cultural resources by a professional archaeologist prior to any project operations. The project archaeologist should evaluate both Antelope Mine, and the Winnie Smith Mill to determine if these are unrecorded historic cultural resources. All cultural resources encountered should be formally recorded and appropriate mitigation measures should be prepared for any sites which may be affected by project operations. Thank you for your concern in preserving California's cultural heritage. The cost of this record search is $90.00, and an invoice will follow for billing purposes.

Sincerely,

Makoto Kowta

Dr. Makoto Kowta
Coordinator, Northeast Information Center

CALENDAR PAGE 24
MINUTE PAGE 25

STATE OF CALIFORNIA

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 288
SACRAMENTO, CALIFORNIA 95814
(916) 322-7791

PETE WILSON, Governor

RECEIVED MAY 14 1991

May 10, 1991

Suzanne B. Stewart, Senior Staff Archaeologist
Archaeological Services, Inc.
8110 Lorraine Avenue, Suite 408
Stockton, California 95210

RE: Sierra Valley Site

Dear Ms. Stewart:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

CEQA, Appendix K gives directions to follow in the event any previously undetected archaeological sites are inadvertently discovered during any phase of construction. Use of the language in Appendix K, or reference to the standardized procedures therein, helps to eliminate costly delays and assures more adequate protection of such cultural resources. I would also recommend that you contact and work closely with the appropriate Native American groups in the area during the initial planning stages. They may be able to offer input regarding sites in the area.

The Native American Heritage Commission has prepared a pamphlet for use by lead agencies, planners, developers, and property owners. It provides an easy-to-read breakdown of the California Codes pertaining to Native American human remains and their disposition. I have included a copy of this brochure for your information.

If you have any questions or need any additional information, please contact this office.

Sincerely,

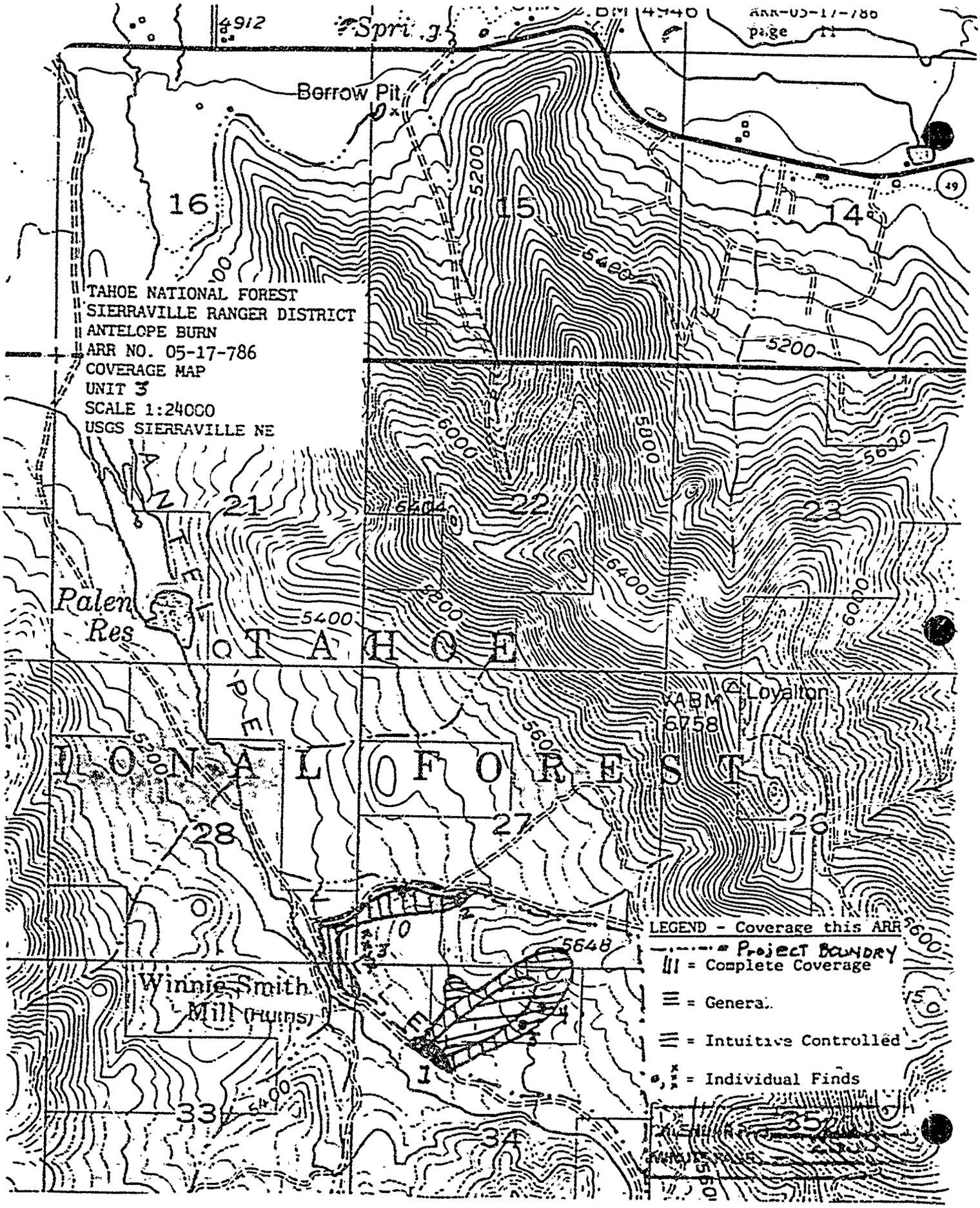
Debbie Pilas-Treadway
Staff Analyst

CALENDAR PAGE 240
MINUTE PAGE 2525

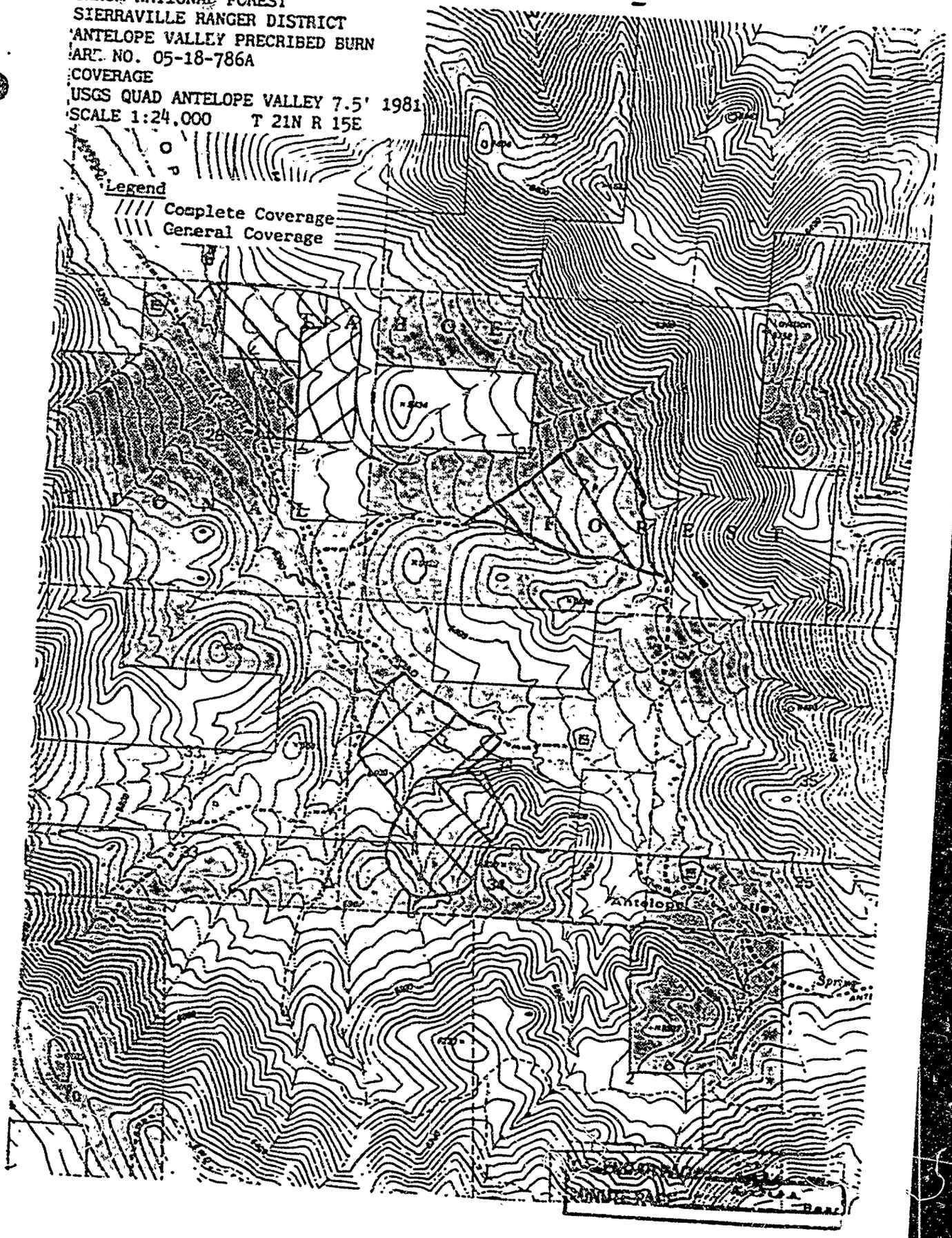
APPENDIX B

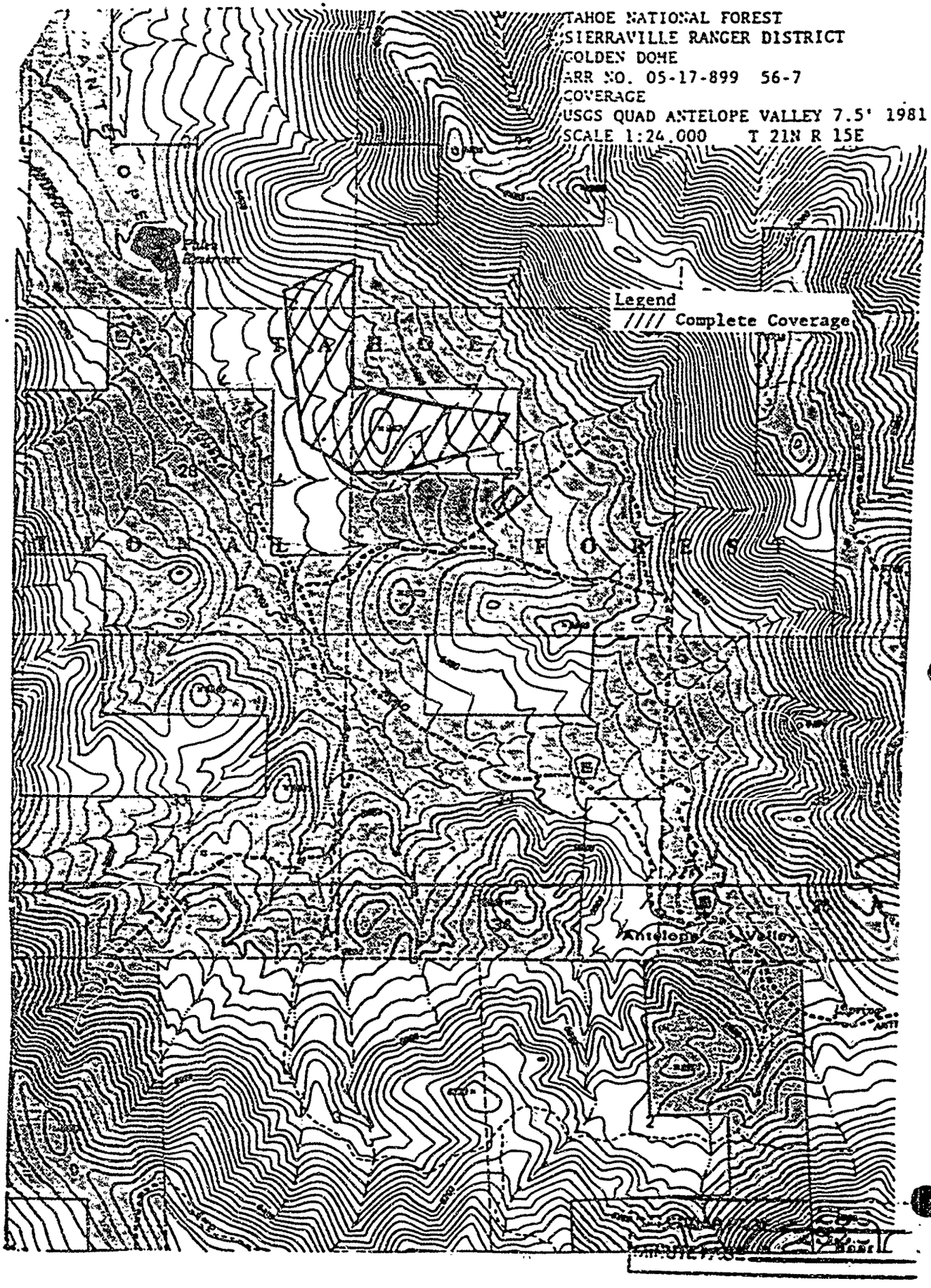
PREVIOUS SURVEY COVERAGE

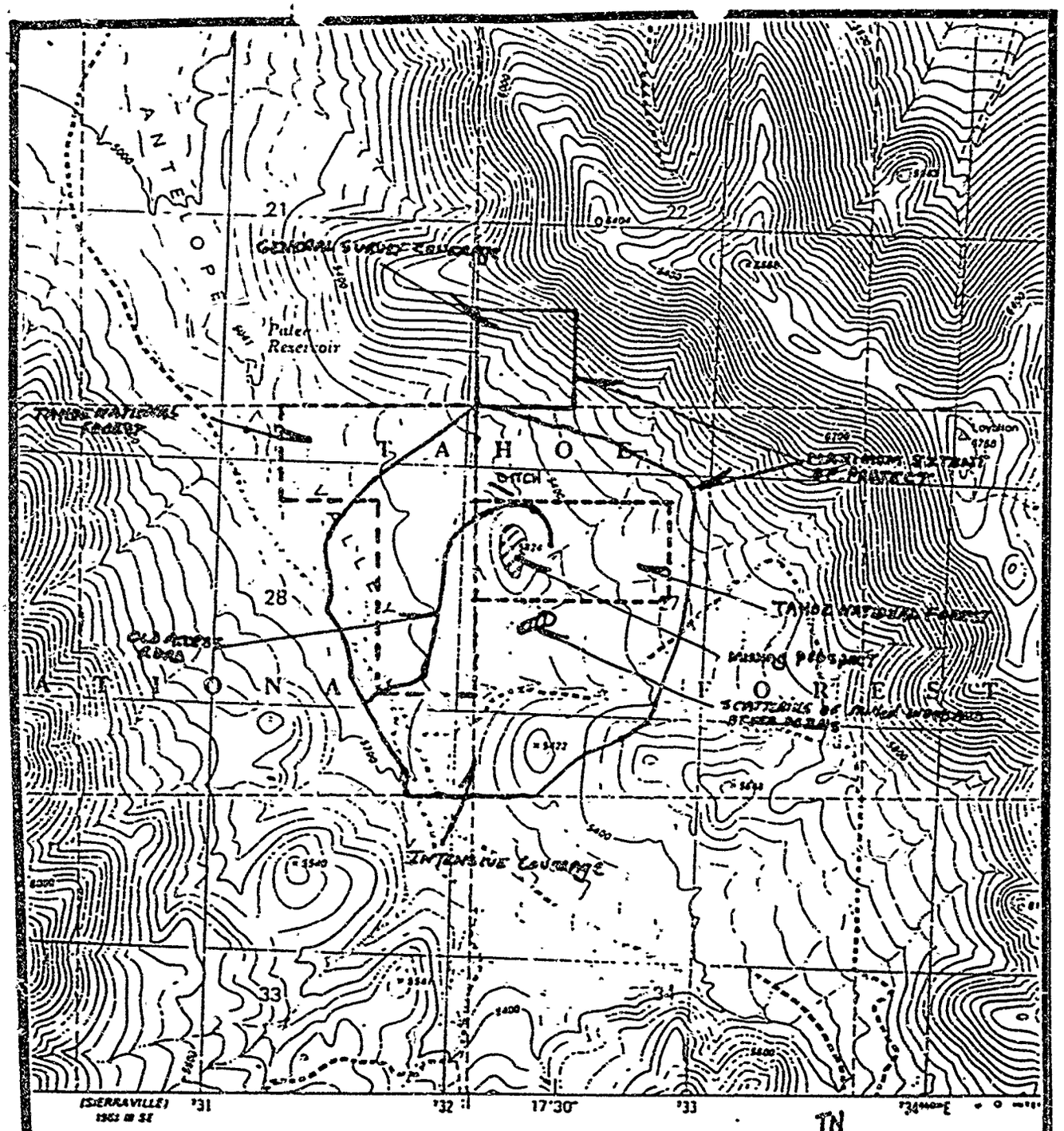
CALENDAR PAGE 243
MINUTE PAGE 2553


TAHOE NATIONAL FOREST
SIERRAVILLE RANGER DISTRICT
ANTELOPE BURN
ARR NO. 05-17-786
COVERAGE MAP
UNIT 3
SCALE 1:24000
USGS SIERRAVILLE NE
Borrow Pit
Palen Res
Loyalton
Winnie Smith Mill (Ruins)
TAHOE NATIONAL FOREST
LEGEND - Coverage this ARR
Project Boundry
= Complete Coverage
= General
= Intuitive Controlled
= Individual Finds

TAHOE NATIONAL FOREST
SIERRAVILLE RANGER DISTRICT
ANTELOPE VALLEY PRECRIBED BURN
ARC NO. 05-18-786A
COVERAGE
USGS QUAD ANTELOPE VALLEY 7.5' 1981
SCALE 1:24,000 T 21N R 15E



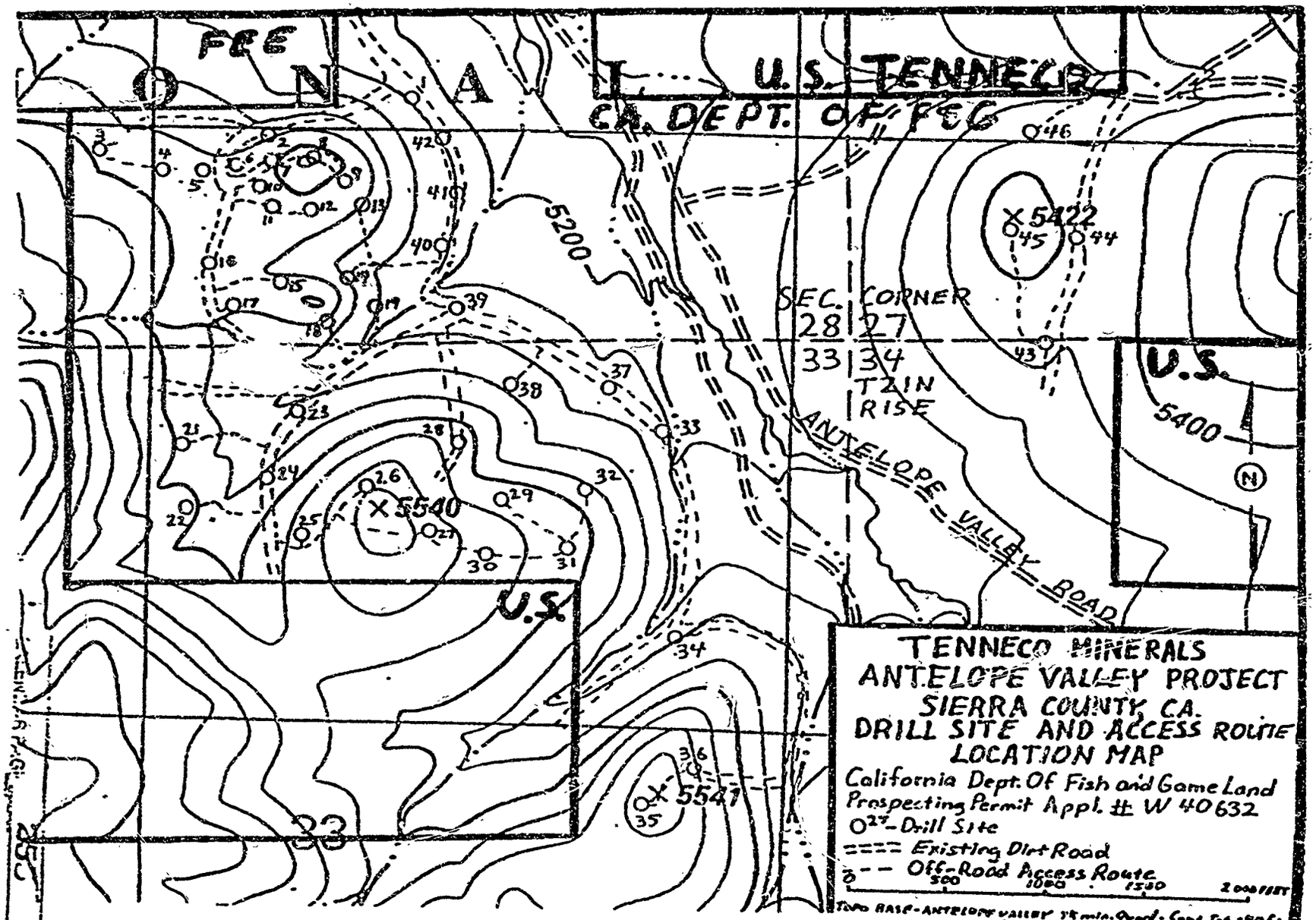

TAHOE NATIONAL FOREST
SIERRAVILLE RANGER DISTRICT
GOLDEN DOME
ARR NO. 05-17-899 56-7
COVERAGE
USGS QUAD ANTELOPE VALLEY 7.5' 1981
SCALE 1:24,000 T 21N R 15E
Legend
//// Complete Coverage
Antelope Valley

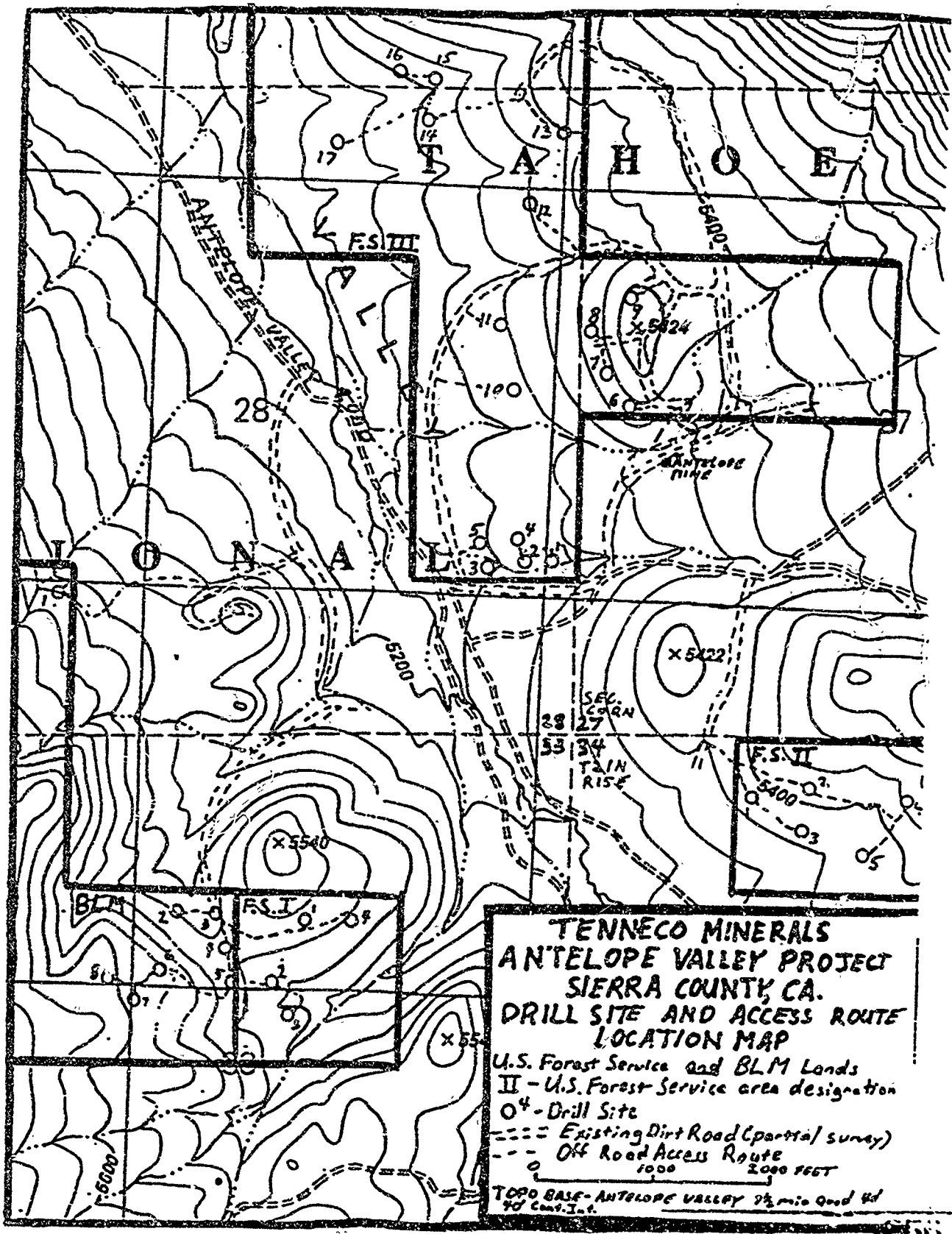

21
22
28
33
34
T A H O E
N A T I O N A L F O R E S T
Paiute Reservoir
TAHOE NATIONAL FOREST
DITCH
OLD MINERS ROAD
INTENSIVE COVERAGE
(SIERRAVILLE)
31
32
17'30"
33
34
SCALE 1:24 000
1 MILE
5000 5500 6000 6500 7000 FEET
1 KILOMETER
TN
Primary highway hard surface
Secondary highway hard surface
Interstate
CONTOUR INTERVAL 40 FEET
ANTELOPE VALLEY 7.5' 1981
ITARY CONTOUR INTERVAL 5 FEET
EODETIC VERTICAL DATUM OF 1929
CALIF
QUADRANGLE LOCATION
WITH NATIONAL MAP ACCURACY STANDARDS
Y, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
PHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
MAP 1
PROJECT LOCATION
+
SURVEY COVERAGE
CALENDAR PAGE 250
MINUTE PAGE 2550

APPENDIX C

DRILL SITE & ACCESS LOCATION MAPS

CALENDAR PAGE 25
MINUTE PAGE 25


FEE
U.S. TENNECO
CA. DEPT. OF FEG
5200
5422
SEC. CORNER
28 27
33 34
T2IN
RISE
ANTELOPE VALLEY ROAD
U.S.
5400
N
X5540
U.S.
X5541
TENNECO MINERALS
ANTELOPE VALLEY PROJECT
SIERRA COUNTY, CA.
DRILL SITE AND ACCESS ROUTE
LOCATION MAP
California Dept. Of Fish and Game Land
Prospecting Permit Appl. # W 40632
Drill Site
Existing Dirt Road
Off-Road Access Route
500 1000 1500 2000 FEET
MINUTE PAGE



TENNECO MINERALS
ANTELOPE VALLEY PROJECT
SIERRA COUNTY, CA.
DRILL SITE AND ACCESS ROUTE
LOCATION MAP

U.S. Forest Service and BLM Lands
II - U.S. Forest Service area designation
O^4 - Drill Site
==== Existing Dirt Road (partial survey)
--- Off Road Access Route
0 1000 2000 FEET
TOPO BASE - ANTELOPE VALLEY 7½ min Quad 4d Cont. Int.

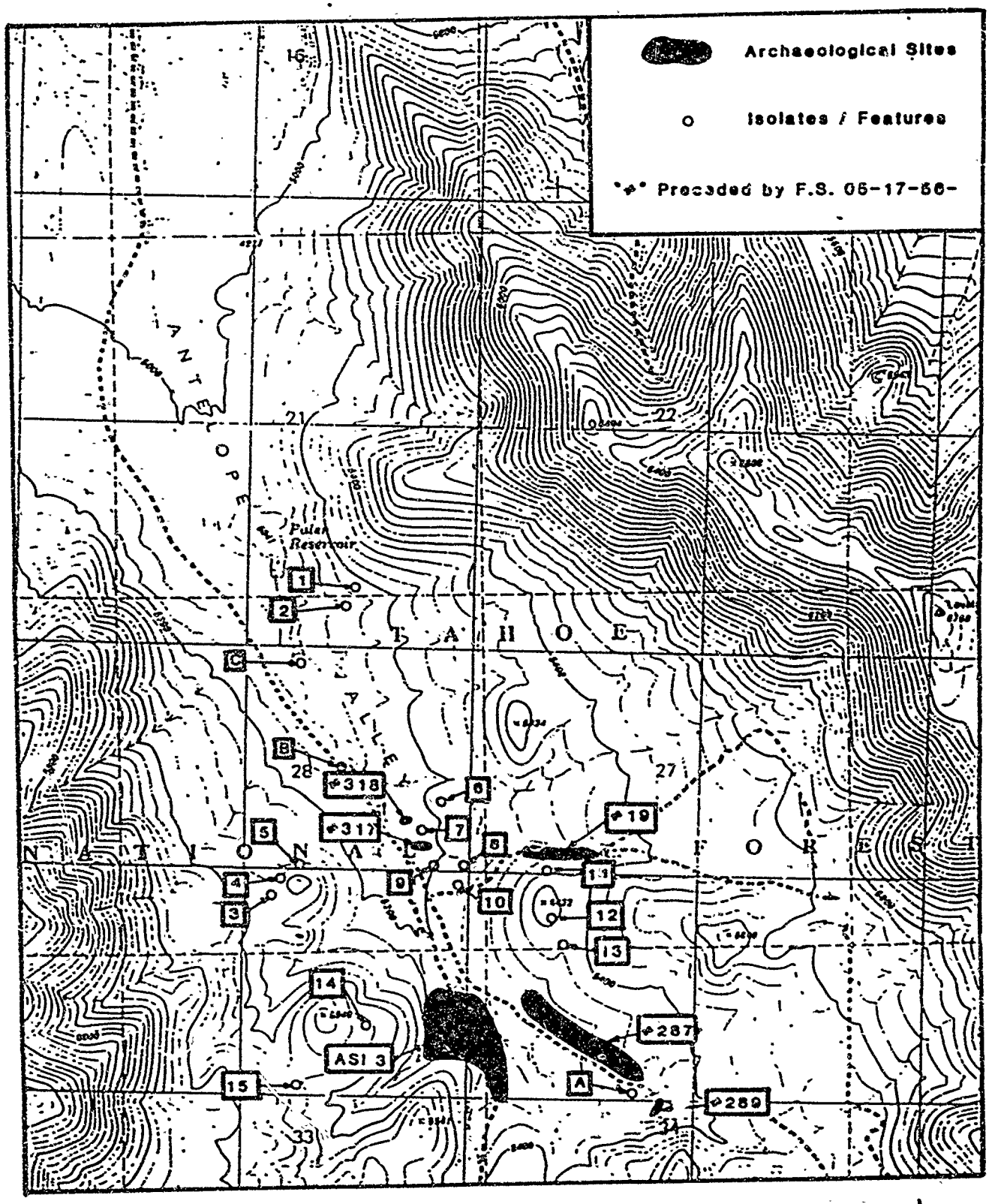
ORIGINAL PAGE 256
MINUTE PAGE 2556

APPENDIX D

SITE LOCATION MAP (MAP 5) AND SITE RECORDS

Note. Cultural resources are nonrenewable and easily damaged--their scientific, cultural, and aesthetic values can be significantly impaired by disturbance. In order to prevent vandalism and artifact hunting, the locations of cultural resources are confidential.

CALENDAR PAGE 25.
MINUTE PAGE 2553



MAP 5 TENNECO MINERALS GOLDEN DOME SITE LOCATIONS

SIERRA COUNTY, CALIFORNIA

Project Location

0 mile 1

True North Magnetic North

Base Map: USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1981

CALENDAR PAGE 2555

MINUTE PAGE 2555

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial:
Other Designations: FS #05-17-56-317
ASI 1

1. County: Sierra

2. USGS Quad: Antelope Valley 7.5-minute (1981)

3. UTM Coordinates: Zone 10, 731760 m Easting, 4391120 m Northing

4. Township 21N Range 15E ; SE 1/4 of NE 1/4 of SE 1/4 of Sec. 28; Base Mer. MDBM

5. Map Coordinates: 504 mmS 273 mmE 6. Elevation: 5200' amsl

7. Location: The site is situated in the center of Antelope Valley, approximately 6 miles NE of Sierraville Ranger Station. From the Highway 49/Antelope Valley Road (Road 855) intersection, take Road 855 south for approximately 3 miles to the road's intersection with an unnamed, unnumbered road. The site is just northeast of the intersection, on the north bank of an intermittent creek, beginning in the west adjacent to a large juniper tree (site datum).

8. Prehistoric X Historic Protohistoric

9. Site Description: A sparse lithic scatter with two areas of concentration.

10. Area: 95m (SW/NE) x 50m (SE/NW) = 3731 sq.m Method of Determination: Rangefinder and pacing.

11. Depth: Unknown Method of Determination: N/A

12. Features: Two areas of debitage concentration, apparently focusing on less rocky ground surface. (Some debitage can be expected between the concentrations, obscured by sagebrush.) A large boulder sits between the site and the intermittent creek near the point at which the access road enters the site. Several natural holes occur on the vertical face of the boulder; two appear possibly cultural: a shallow symmetrical cup (ca. 65 x 75 mm) and a basin-like indentation (ca. 120 x 140 by 7-10 mm deep).

13. Artifacts: An obsidian corner-notched projectile point, collected and accessioned under USFS # 17-3526 (see illustration). A tan/brown/red chert core with possible use wear on one pointed end; a roughly flaked basalt biface end, broken transversely. Most flakes are small interior items of basalt, but two large pieces of chert shatter were noted. Chert colors include salmon, dark red, and mutli-colored red, tan, and salmon.

14. Non-Artifactual Constituents and Faunal Remains: None noted

15. Date Recorded: 30 May 1991 16. Recorded by: S. Stewart, M. Stoyka

17. Affiliation and Address: Archaeological Services, Inc., 8110 Lorraine Avenue, Suite 408, Stockton, CA 95210

18. Human Remains: None noted

19. Site Disturbances: Unimproved dirt access road through west end of site. Row of rock-supported fenceline in east. Surface has been disturbed by cattle grazing.

CALENDAR PAGE 250
MINUTE PAGE 2550

ARCHAEOLOGICAL SITE RECORD

Date: 5/91

Permanent Trinomial:
Other Designations: FS #05-17-56-317
ASI 1

20. Nearest Water: Unnamed intermittent tributary to Antelope Valley Creek immediately south of site; dry at time of survey.

21. Vegetation Community (site vicinity): Yellow-pine/Juniper/Sagebrush community.

22. Vegetation (on site): Sagebrush with Wyethia and rice grass; two junipers on site, the larger being the primary site datum.

23. Site Soil: Medium brown sandy clay with large cobbles.

24. Surrounding Soil: Same

25. Geology: Tertiary Volcanics

26. Landform: Gently sloping terrace above valley floor.

27. Slope: 1-2% 28. Exposure: Open

29. Landowner(s) (and/or tenants) and Address: Tahoe National Forest, Route 49 & Coyote Street, Nevada City, California.

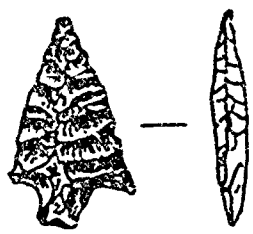
30. Remarks:

31. References:

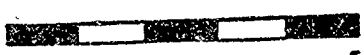
32. Name of Project: Tenneco Minerals Golden Dome Project 33. Type of Investigation: Mixed-strategy cultural resources survey.

34. Site Accession Number: 17-3256 Curated at: U.S. Forest Service

35. Photos: 35-mm prints accessioned with job file (ASI-91-0422-V-TGD).



#17-3526 Obsidian Biface



CALENDAR PAGE 269
MINUTE PAGE 2540

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

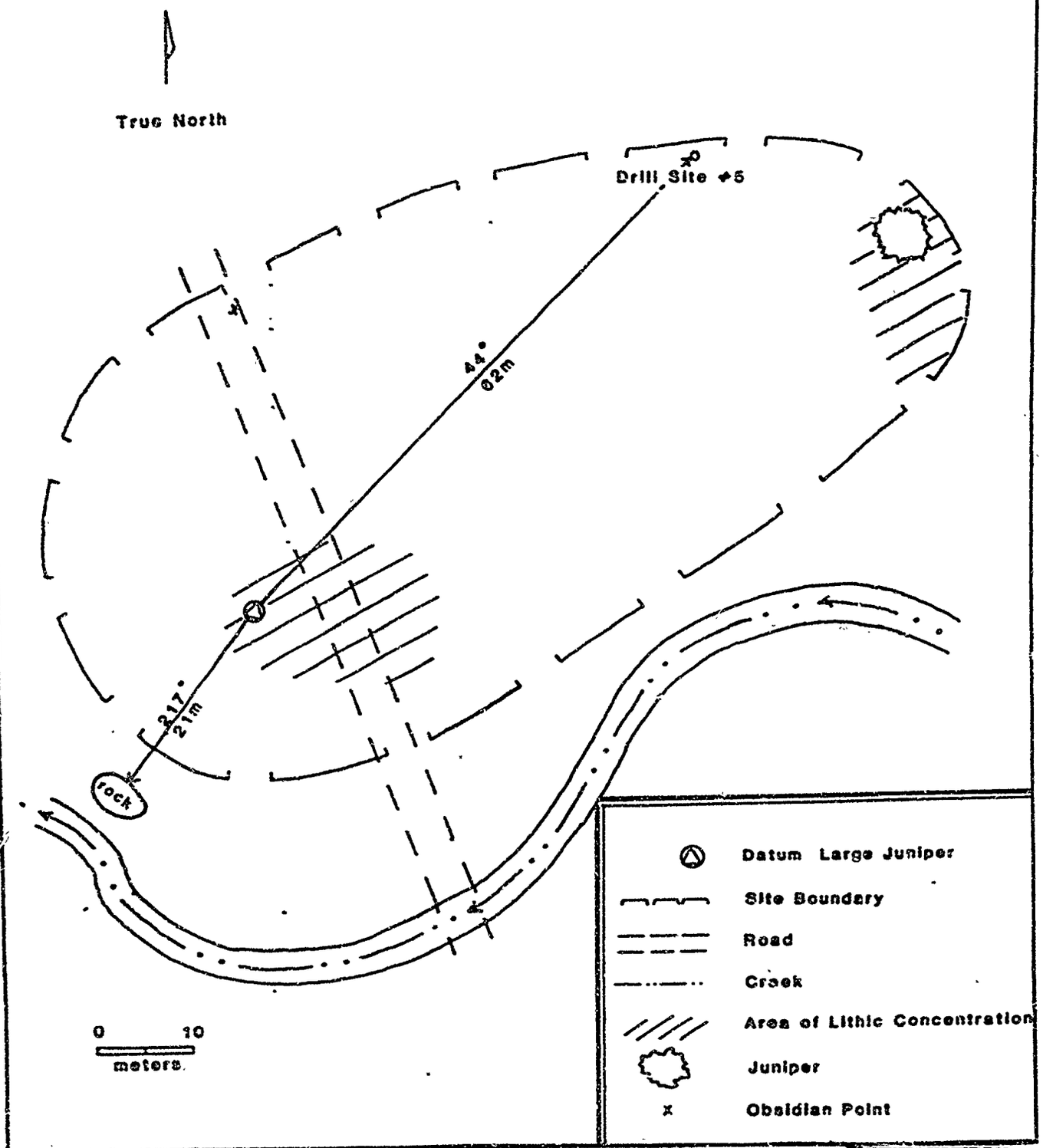
ARCHEOLOGICAL SITE MAP

Page 3 of 4.

Permanent Trinomial: _____ / 6/91 (mo. / yr.)

Temporary Number: (ASI 1)

Agency Designation: F.S. #05-17-56-317



DPR 422F (Rev. 8/82)

CALENDAR PAGE 261
MINUTE PAGE 2541

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE LOCATION MAP

Page 1 of 1

Permanent Trinomial: _____ / 6/01
mo. yr.

Temporary Number: ASI 1

Agency Designation: ES-05-17-56-317

MAP 5 TENNECO MINERALS GOLDEN DOME SITE LOCATIONS
SIERRA COUNTY, CALIFORNIA

True North Magnetic North

Project Location

0 mile 1

Base Map: USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1951

CALENDAR PAGE 26
MINUTE PAGE 25

DPR 422G (Rev. 3/82)

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial:
Other Designations: FS #05-17-56-318
ASI 2

1. County: Sierra

2. USGS Quad: Antelope Valley 7.5 minute (1981)

3. UTM Coordinates: Zone 10, 731720 m Easting, 4391250 m Northing

4. Township 21N Range 15E ; NW 1/4 of NE 1/4 of SE 1/4 of Sec. ; Base Mer. MDBM

5. Map Coordinates: 498 mmS 268 mmE 6. Elevation: 5170 amsl

7. Location: The site is situated in the center of Antelope Valley, approximately 6 miles NE of Sierraville Ranger Station. From the Highway 49/Antelope Valley Road (Road 855) intersection, take Road 855 south for approximately 3 miles to the road's intersection with an unnamed, unnumbered road. Take access road leading north from this point, just east of a large Juniper tree. Follow road for approximately 130 meters to next drainage north; site is west of the road/creek intersection, on the south bank of the drainage at and to the south, west, and east of a large yellow pine (site datum).

8. Prehistoric X Historic Protohistoric

9. Site Description: An extensive lithic scatter of sparse to moderate density.

10. Area: 62.5m N/S x 87.5m E/W = 4295 sq. m Method of Determination: Rangefinder and pacing

11. Depth: Unknown Method of Determination: N/A

12. Features: None noted.

13. Artifacts: One plano-convex chert scraper (ca. 25 mm maximum width, salmon color); a thin chert biface margin fragment; 1 possible rhyolite biface fragment; 1 biface midsection fragment (nearly round cross-section suggests possible drill?) of fine-quality quartz. Debitage is highly variable, including large and small interior flakes of basalt, some chert flakes of a variety of colors, and 1 obsidian blade flake. A basalt biface midsection was found just north of the creek.

14. Non-Artifactual Constituents and Faunal Remains: None noted.

15. Date Recorded: 31 May 1991 16. Recorded by: S. Stewart, M. Stoyka

17. Affiliation and Address: Archaeological Services, Inc., 8110 Lorraine Avenue, Suite 408, Stockton, CA 95210

18. Human Remains: None noted.

19. Site Disturbances: Sheet erosion, which has resulted in deep redeposited soil adjacent to creek bed.

20. Nearest Water: Unnamed intermittent tributary of Antelope Creek; dry at time of survey.

21. Vegetation Community (site vicinity): Yellow pine/juniper/sage/rush community

CALENDAR PAGE 265
MINUTE PAGE 2544

Permanent Trinomial:
Other Designations: FS #05-17-56-318
ASI 2

22. Vegetation (on site): Sagebrush and young juniper trees, with Wyethia; one large yellow pine (datum tree).

23. Site Soil: Light-brown sandy clay with numerous gravels and cobbles. Several large outcrops near creek.

24. Surrounding Soil: Same

25. Geology: Tertiary volcanics

26. Landform: Midslope

27. Slope: 1-3% 28. Exposure: Open

29. Landowner(s) (and/or tenants) and Address: Tahoe National Forest, Route 49 & Coyote Street, Nevada City, California.

30. Remarks: Very good visibility in areas recorded as site. Materials likely extend north toward creek under deep pine duff and slopewash deposits. Collapsed stone-supported fence post in middle of site and several pieces of fencing in area.

31. References:

32. Name of Project: Tenneco Minerals Golden Dome Project 33. Type of Investigation: Mixed-strategy cultural resources survey

34. Site Accession Number: Nothing collected Curated at: N/A

35. Photos: 35-mm prints under job number (ASI-91-0422-V-TGD)

CALENDAR PAGE 26+
MINUTE PAGE 254

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

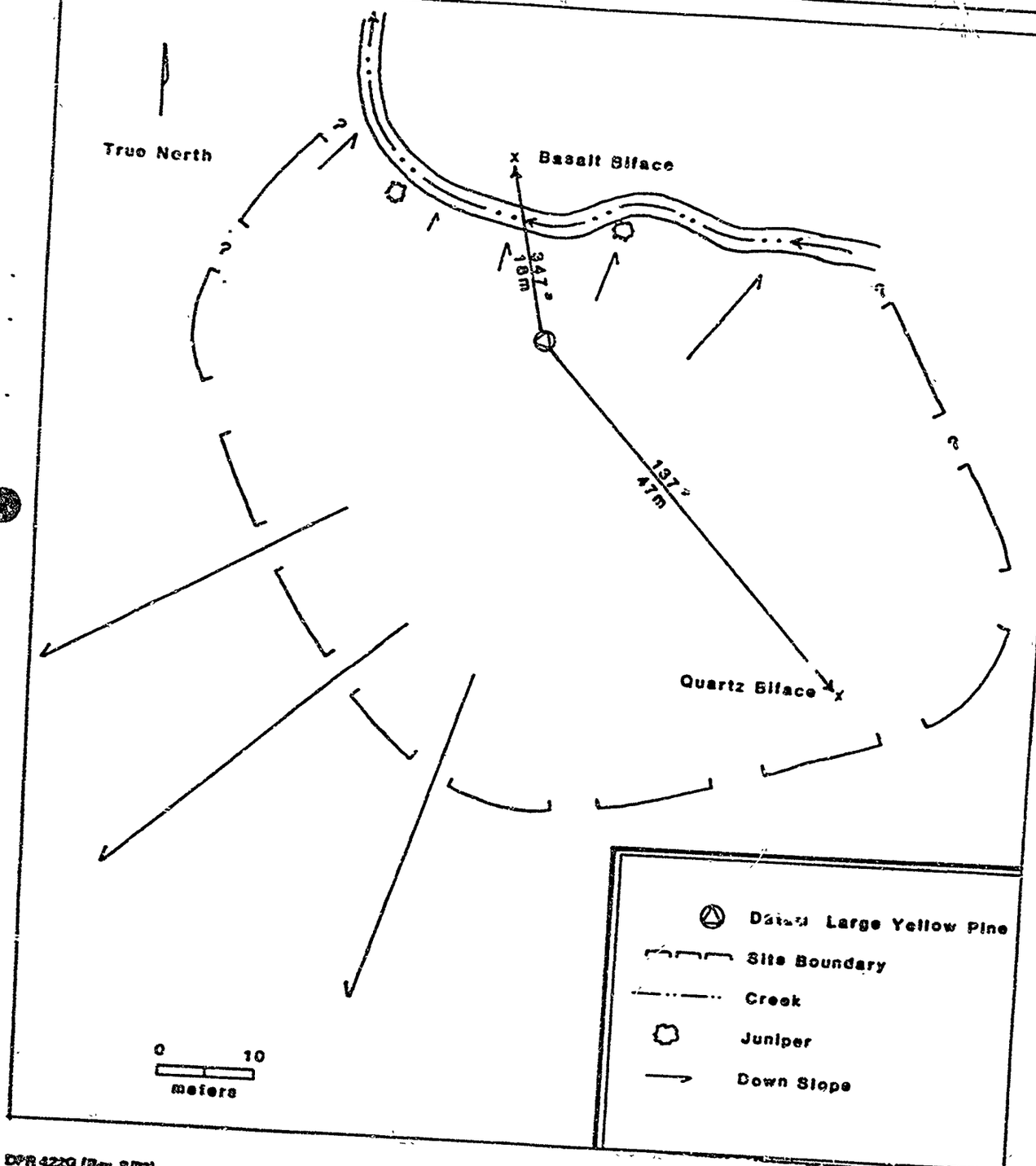
ARCHEOLOGICAL SITE LOCATION MAP

Page 3 of 4.

Permanent Trinomial: / 6/91 (mo. yr.)

Temporary Number: ASI 2

Agency Designation: F.S. #05-17-56-318



DPR 422G (Rev. 8/82)

CALENDAR PAGE 26[illegible]
MINUTE PAGE 254[illegible]

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

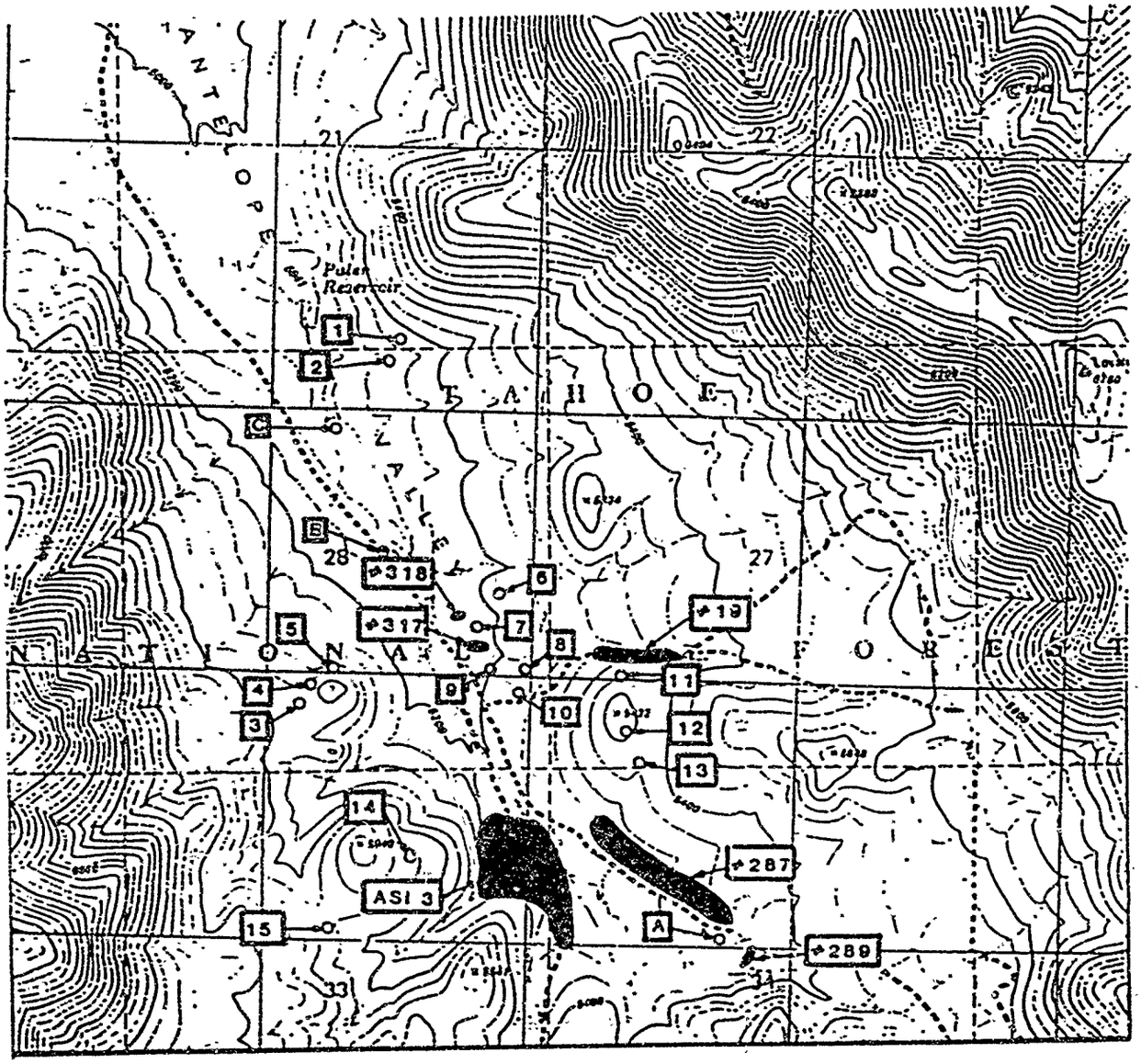
ARCHEOLOGICAL SITE LOCATION MAP

Page 4 of 6.

Permanent Trinomial: _____ / 6/91 (mo. / yr.)

Temporary Number: ASI 2

Agency Designation: FS #05-17-56-318



MAP 5 TENNECO MINERALS GOLDEN DOME SITE LOCATIONS

SIERRA COUNTY, CALIFORNIA

Project Location

0 mile 1

True North Magnetic North

Base Map: USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1991

DPR 422G (Rev. 8/82)

CALENDAR PAGE 266

MINUTE PAGE 2548

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial:
Other Designations: ASI 3
The Winnie Smith Mill

1. County: Sierra

2. USGS Quad: Antelope Valley 7.5-minute (1981)

3. UTM Coordinates: Zone 10, 731840 m Easting, 4390520 m Northing - NW corner
732170 4390440 - NE corner
732820 4390220 - SW
732180 4390020 - SE

4. Township 21 N Range 15 E; 1/4 of S 1/2 of SE 1/4 of Sec. 28; Base Mer. MDBM

5. Map Coordinates: 540 mmS 278 mmE 6. Elevation: approx. 5240' amsl

7. Location: The site is situated in west-central Antelope Valley, approximately 6 miles NE of Sierraville Ranger Station. From the Highway 49/Antelope Valley Road (Road 855) intersection, take Road 855 south for approximately 2.5 miles to intersection with unnamed dirt road. Turn right (southwest) and continue for approximately .5 mile to a point where a small road branches off to the east and the main (4-Wheel drive) road dips sharply to ford a stream at the mouth of a canyon. Northern extent of site is on the flat to the east and in the canyon mouth to the west; it continues south on both sides of the two dirt roads for approximately 1500 feet, where the road is currently washed out. Some additional features are present about 500 feet south of this point.

8. Prehistoric Historic X Protohistoric

9. Site Description: The remains of an early 20th-century lumber mill (reported to be the Winnie Smith Mill) and associated settlement. Some of the site features (see item 12) may predate mill operations.

10. Area: approx. 606 m x approx. 150 m = 71,395 sq. m.
Method of Determination: Distribution of features as plotted on USGS topographic map.

11. Depth: Unknown Method of Determination: N/A

12. Features: A light scatter of cultural materials (miscellaneous milled wood; individual tin cans; a few pieces of enamelware; and wooden barrel staves and metal hoops) is found throughout the site boundaries. Within this scatter, the following features were identified; they are mapped by letter on the archaeological site map.

A. Structural remains in shallow meandering drainage. Includes large aligned timbers approx. 12' long in NE (possible bridge?); some metal items (including a partially buried pipe) and variety of sizes and lengths of lumber further SW.

B. Structural remains of industrial buildings, as follows:
1. The remains of an approx. 15 x 15' structure with interior joists in place and 8" x 8" timbers with bolts and large wire nails; remains of wood siding are adjacent.
2. To south of (1) above: larger foundation timbers (up to approx. 18" x 18") and some large posts intact; wood flooring still partially intact; structure originally approx. 50 x 30'. Plate metal with rivets in area; discarded boiler a few yards to the west.

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3. To south of (2) above: Large cut-stone foundation with smaller dry-laid walls still intact; adjacent brick footing remains suggests two episodes of construction. 8" x 8" and 12" x 8" timbers. Remaining structure is L-shaped, approx. 20' x 20'. Much of the brick portion of the structure is represented by a brick rubble; maker's marks include "CARNEGIE" and "SNOW..." To west of structure (3) is excavated U-shaped feature, approx. 20 x 30'; some structural remains, as well as some unprocessed logs (some with cables attached) within excavated area; the ground surface of the unexcavated interior of "U" is covered with approximately 3" of sawdust over dark soil.

C. Set of aligned posts, approx. 12' high, that begin just south of B and extend east/west across Antelope Valley; cable is still attached to at least one post.

D. Fitted pipe sections, approx. 5" diameter, buried underground but exposed for approx. 6' in unmapped drainage, approx. 100 yards south of C. A smaller diameter pipe found exposed in drainage approx. 50' to south.

E. Small area of structural remains, barrel hoops, and a few large cans. No purely domestic items noted.

F. A series of three aligned building pads (10' x 20'; 12' x 20'; and 8' x 20') excavated into a moderately sloping hillside; informal rock alignments (probable foundation stones) present at each level. Artifacts include a few pieces of milled lumber; a few sanitary cans; a lever can opener; a tobacco can; and a clear glass container.

G. A tin-can scatter occurring in two loci along drainage, for a total distance of approx. 150' long and 10-15' wide, dominated by hole-in-top cans opened with knife. Additional debris includes White Improved Earthenware (WIE) plate sherds, bedsprings, cans, and milled lumber fragments, plus two mounds of trash covered by soil and vegetation.

H. Remains of industrial structure (or possible bridge) built over drainage, consisting of very large timbers, and large bolts and spikes.

I. Trash dump (extending over an area approx. 50' x 200') with tin cans, but containing higher proportion of ceramics and glass than other dumps noted on site; many of the latter items are fire-affected. Ceramics include a small sherd of Willowware, a porcelain sherd with "K.T.&K." over "S---V" over "CHINA"; a sherd of grey glazed earthenware with "... BROS." over "...NGLAND"; and a sherd of WIE with "J. & G. Mea..." over "Manley" over "England" beneath lion and crown. Some structural remains with wire nails are just north of dump. Among remains is what appears to be a cellar door with wooden casement opening.

J. Large area (approx. 180 feet N/S x approx. 100 feet E/W) of sawdust adjacent to creek at canyon mouth.

K. Several acres containing domestic features, including abundant milled lumber with wire nails, glass and tin cans, leather items, enamelware, Model T fender, a dense tin can dump; some structural framing using trees for support. Materials occur sparsely adjacent to creek; they are found primarily on level land at the canyon mouth and on a midslope bench to the south adjacent to a logging road.

Wooden barrel staves and metal hoops are found within the site boundaries and as occasional isolated items for several hundred feet on up (southwest) the drainage.

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Permanent Trinomial:
Other Designations: ASI 3
The Winnie Smith Mill

13. Artifacts: A variety of historic-period domestic and industrial artifacts, described under features above. Two basalt flakes were also identified; see site map for their locations.

14. Non-Artifactual Constituents and Faunal Remains: None noted.

15. Date Recorded: 3 June 1991 16. Recorded by: S. Stewart, M. Stoyka

17. Affiliation and Address: Archaeological Services, Inc., 8110 Lorraine Avenue, Suite 408, Stockton, CA 95210

18. Human Remains: None noted.

19. Site Disturbances: Stream erosion; probable bottle collecting, probable wood and metal salvaging. No clearly post-World War II items were noted.

20. Nearest Water: Unnamed tributaries of Antelope Creek; confluence at north end of the site.

21. Vegetation Community (site vicinity): Ecotone of yellow pine community with juniper/sagebrush scrubland.

22. Vegetation (on site): Yellow pine woods in west and open scrubland with some riparian species along creek.

23. Site Soil: Medium brown silty sandy clay.

24. Surrounding Soil: Same.

25. Geology: Tertiary volcanics

26. Landform: Canyon mouth, lower terraces of mountain, and open stream terrace.

27. Slope: 0-5% 28. Exposure: Moderately dense to dense canopy in west; open in east.

29. Landowner(s) (and/or tenants) and Address: State of California Dept. of Fish & Game.

30. Remarks: This site record and accompanying map were produced expediently in accordance with the scope of this project. Locations of features, including locations of streams and roads not shown on the topographic map, are approximate; no datum was established. Dimensions are visual estimates (not based on taping or pacing). Feature K is more complex than appears in this record; this area could have been broken down into several features if time had allowed.

"Winnie Smith Mill (Ruins)" appears at this location on the 1955 USGS Sierraville NE 7.5-minute topographic quadrangle.

31. References:

32. Name of Project: Tenneco Minerals Golden Dome Project 33. Type of Investigation: Mixed-strategy cultural resources survey.

34. Site Accession Number: Nothing collected Curated at: N/A

35. Photos: 35-mm prints with job file (ASI 91-0422-V-TGD)

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

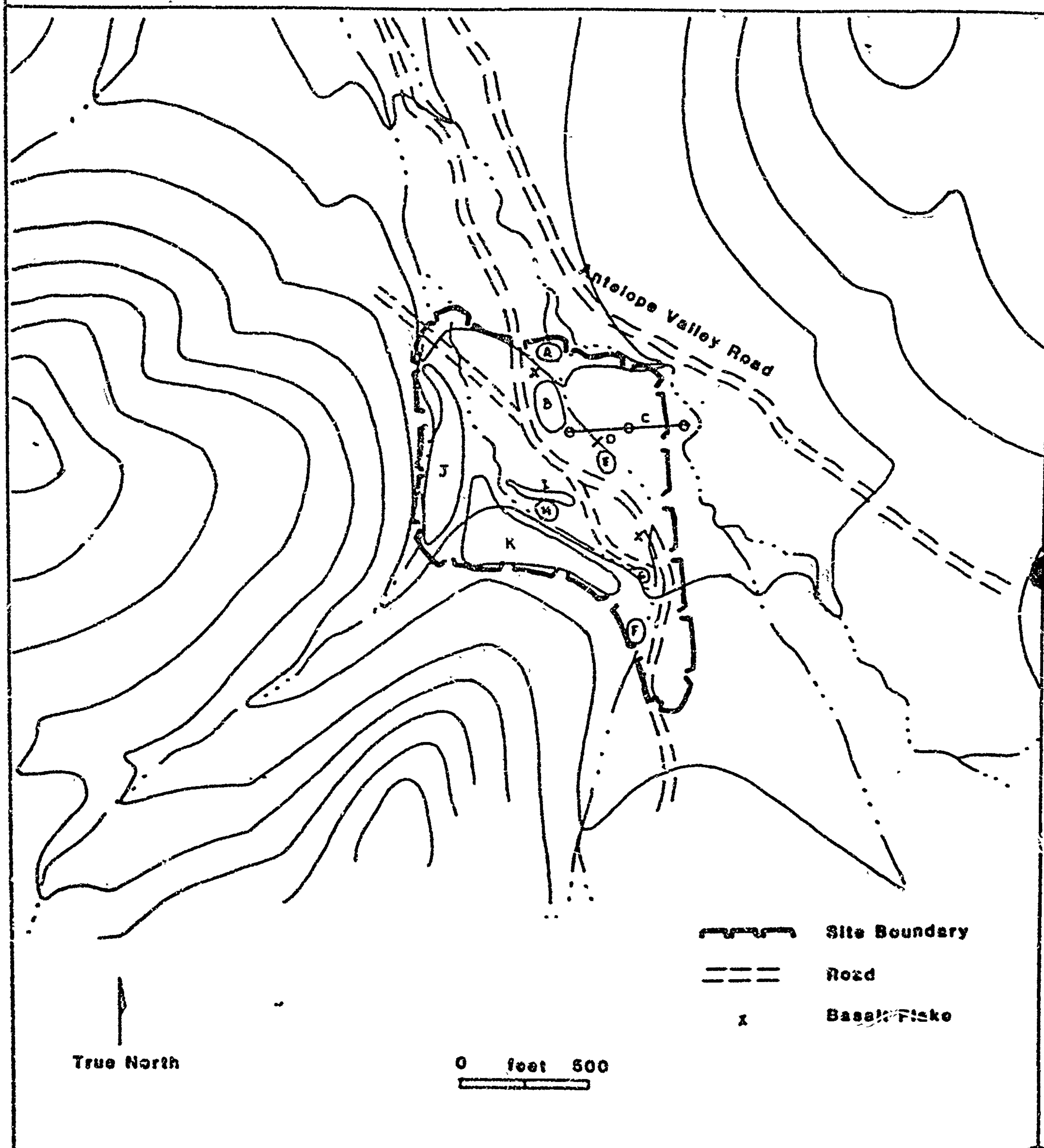
ARCHEOLOGICAL SITE LOCATION MAP

Page 4 of 5

Permanent Trinomial: ____ / 6/91 (mo. / yr.)

Temporary Number: ASI 3 – Winnie Smith Mill

Agency Designation:



See item 12 for feature description

Scale and locations approximate. See item 30

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

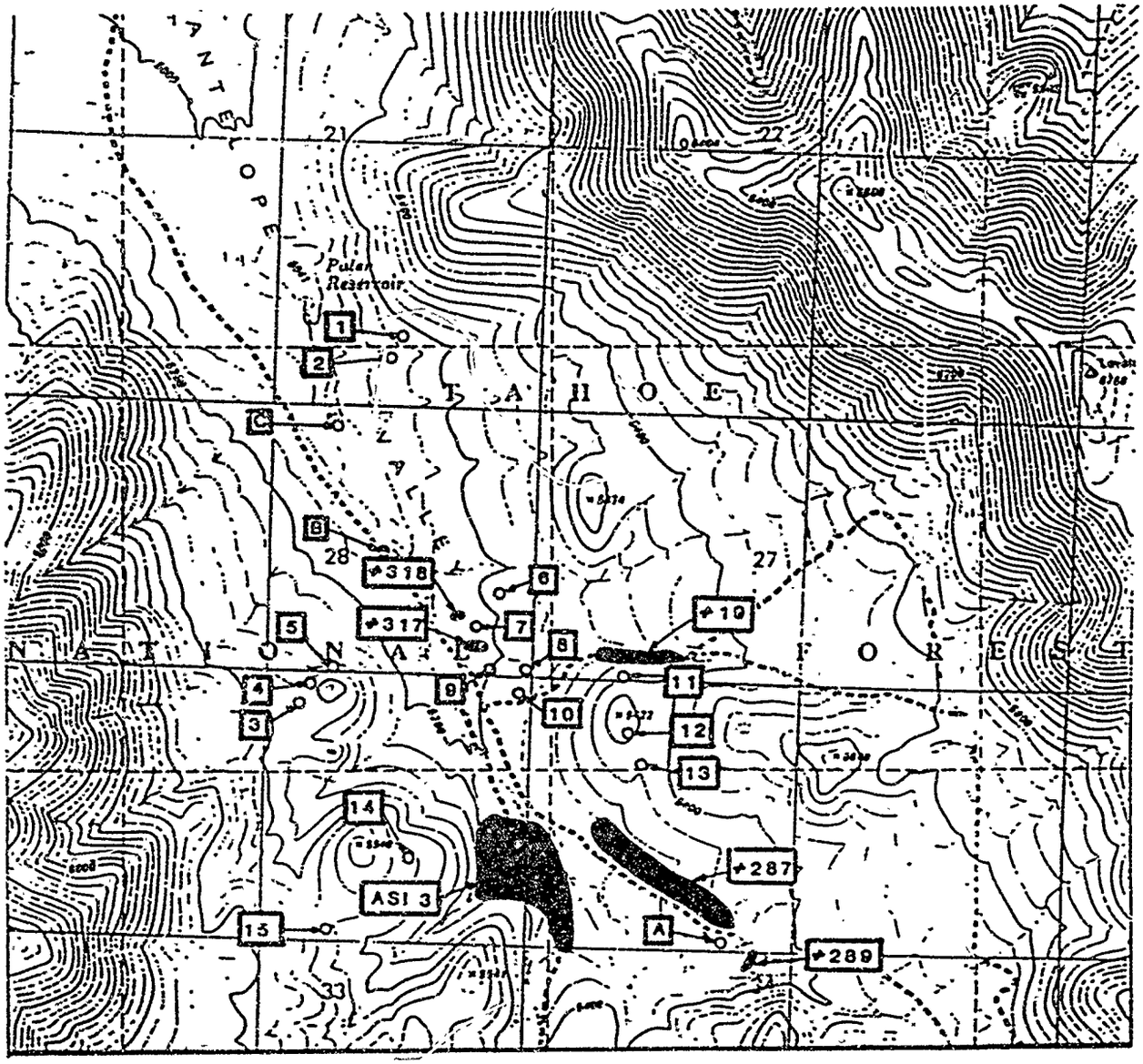
ARCHEOLOGICAL SITE LOCATION MAP

Page 5 of 5.

Permanent Trinomial: _____ / 6/91 (mo. / yr.)

Temporary Number: ASI 3 - The Winnie Smith Mill

Agency Designation: _____



MAP 5 TENNECO MINERALS GOLDEN DOME SITE LOCATIONS

SIERRA COUNTY, CALIFORNIA

Project Location

0 mile 1

True North Magnetic North

Base Map USGS Antelope Valley, Calif. 1:24,000 Contour Interval 40' 1951

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