CHAPTER V

Cultural Resource Inventory of The U.S. Fuel Mohrland Mine Expansion

UNITED STATES FUEL CO.
Hiawatha, Utah

July, 1983

BRIGHAM YOUNG UNIVERSITY
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FINAL REPORT
CULTURAL RESOURCE INVENTORY OF THE U.S. FUEL CEDAR CREEK MINE EXPANSION, EMERY COUNTY, UTAH

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Utah State Antiquities Permit Number 879 (Survey)
Emery County

Permit Application

for

United States Fuel Company
Cedar Creek Mine Expansion
Emery County, Utah

Chapter V

HISTORICAL AND CULTURAL RESOURCES

Chapter 5

HISTORICAL AND CULTURAL RESOURCES

5.1 Scope

5.1.1 Abstract

CRMS/BYU completed a Class I and Class III intensive survey for U.S. Fuel near Mohrland, Emery County, Utah. One prehistoric rock shelter (42EM 1641) and the historic town of Mohrland (42EM 1642) were recorded. Site 42EM 1641 may be within the proposed mine impact area and should be tested for significance prior to any disturbance. Site 42EM 1642 (Mohrland) is significant. CRMS recommends that a complete historic mitigation program be developed and carried out by U.S. Fuel prior to full-scale mine expansion.

5.1.2 Introduction

During June 1983 the Cultural Resource Management Services (CRMS), Brigham Young University, conducted a literature review and field inventory of historic and cultural resources for United States Fuel Company (USF) of Hiawatha, Utah. This report is in partial fulfillment of Contract No. H-17421 between CRMS and USF. It is part of the Cedar Creek Mine Expansion Environmental Baseline Studies required for a Utah Mine Permit Application. The format basically

follows the Permit Application General Guidelines for Organizational Format and Content, revised November 1980, published by the Utah Division of Oil, Gas and Mining (D.O.G.M.). Minor modifications are necessary in order to address the requirements of the Office of Surface Mining (O.S.M.) and the Utah State Historica Preservation Office (S.H.P.O.). This document is organized under Chapter V of the Permit Application.

USF proposes to develop additional mining facilities, including mine portals, sediment ponds, water and power lines, access roads, rail lines, loading silos and staging yards. The potential impact area covers between 50 and 60 acres along a portion of Cedar Creek. (Figure V-1). The contract called for a 100% intensive inventory of all disturbed or proposed-disturbance areas (50-60 acres).

This study assists USF in fulfilling a number of pertinent State and Federal mandates. First, the study fulfills requirements of the Utah Coal Mining and Reclamation Act of 1979. In addition, it helps USF to comply with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" (Federal Register, Vol. 36, No. 95, May 15, 1971), amended in 1976; "The Archaeological and Historical Data Preservation Act of 1974", which is an amendment to the

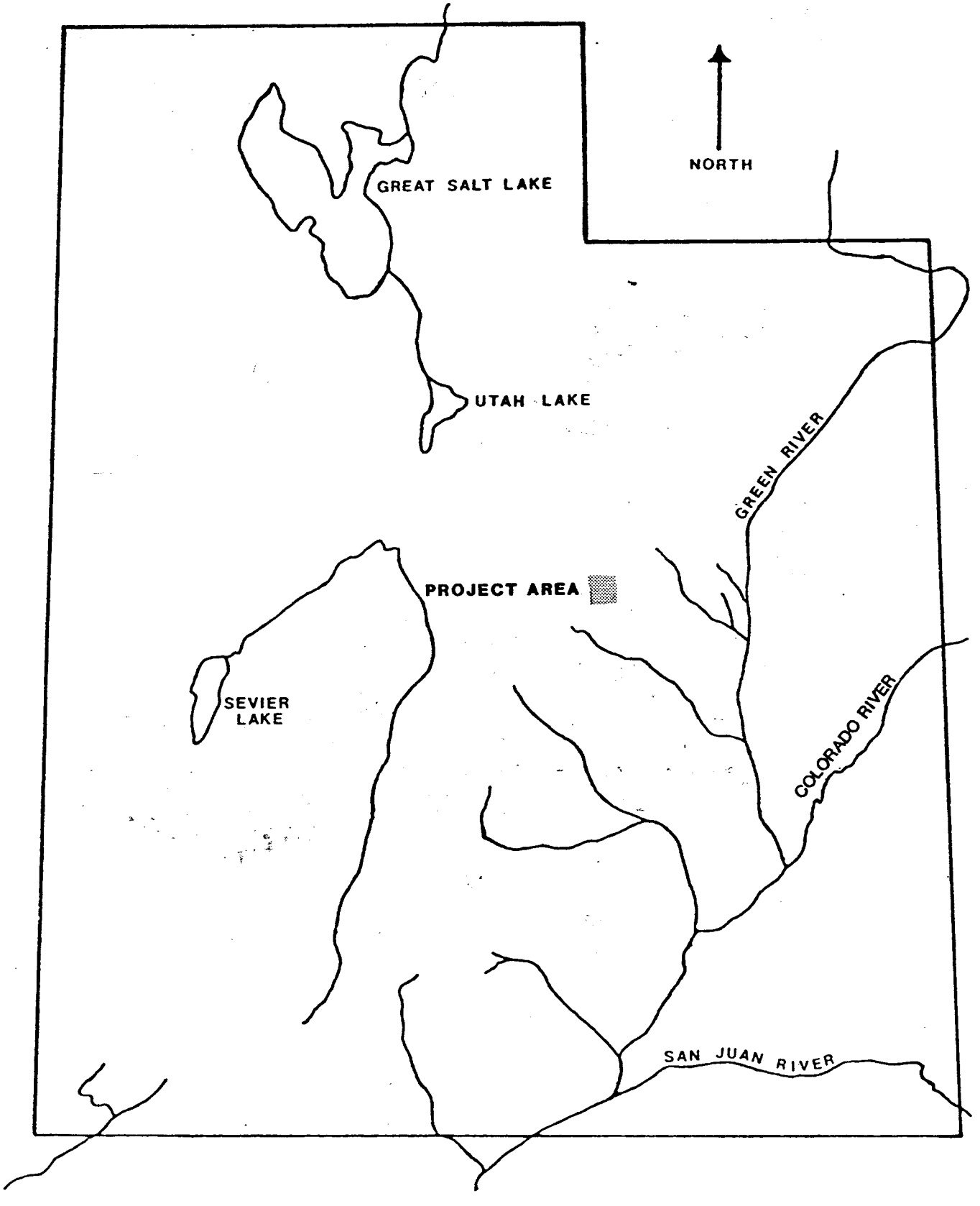


FIGURE V-1
General Survey Location

"Reservoir Salvage Act of 1960 (74 Stat. 220); and, finally, "The Archaeological Resources Protection Act of 1979." All of these laws recognize the fragile, non-renewable nature of prehistoric and historic cultural resources. The legislation was enacted to identify, report and evaluate cultural resources prior to any proposed impact.

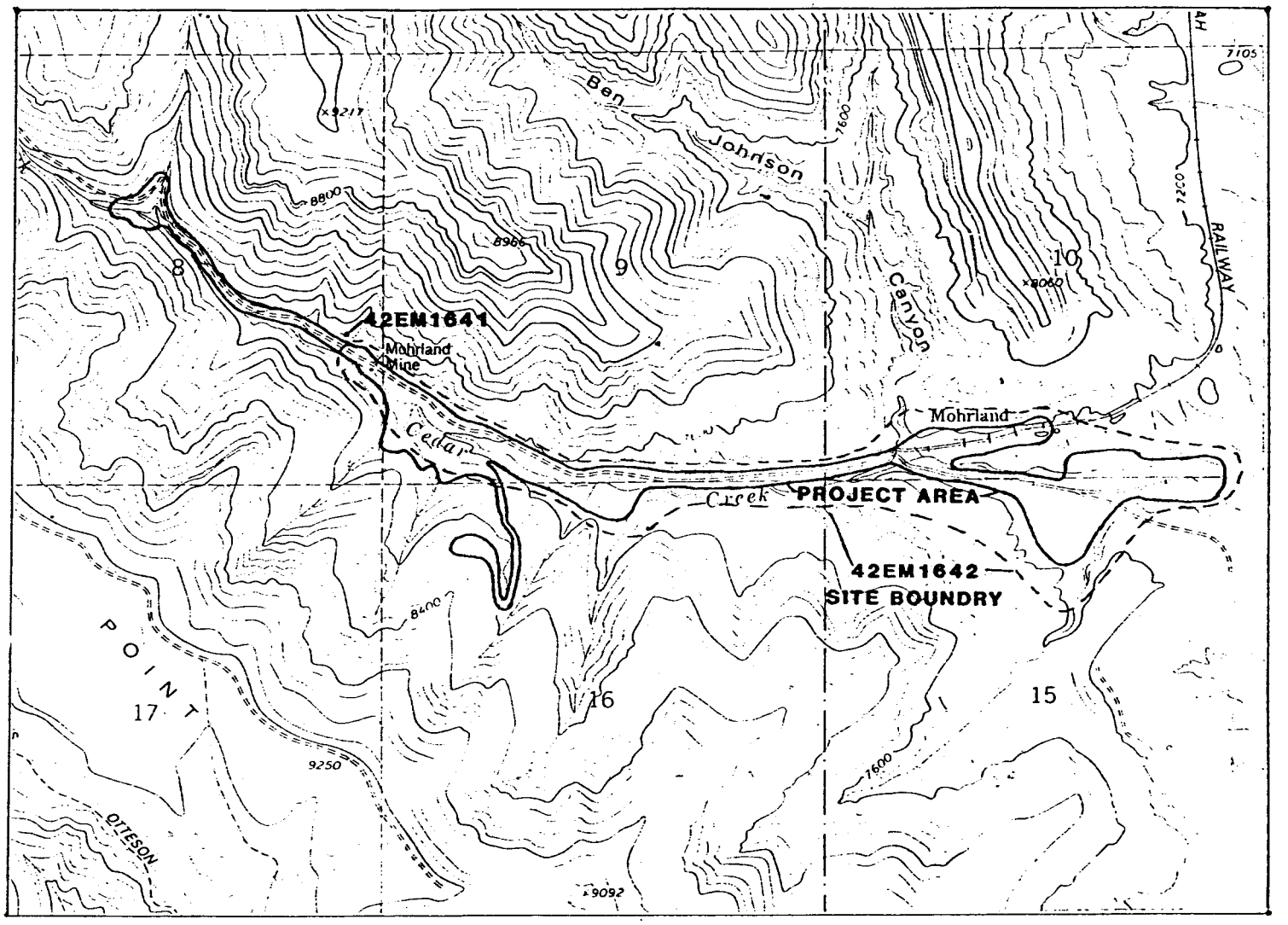
CRMS was contacted on 6 June 1983 by Mr. Bob Eccli, Senior Mining Engineer of USF, to begin work on 9 June. The final contract was signed on 7 June 1983. The work was authorized under Utah State Antiquities Permit Number 879 (Survey-Emery County), issued on 20 June 1983 and expiring on 20 July 1983. No additional permits (Federal or otherwise) were required.

The field work was completed between 17-18 June 1983. All field work and report production were directed by Asa S. Nielson, assisted by Richard K. Talbot. David B. Merrill, sub-contractor, served as historical research consultant and surveyor. Mr. Merrill completed all of the historic file research and Mr. Nielson completed the prehistoric file research. Technical drafting was completed by Richard Talbot, and the manuscript was typed and edited by Ted Duffin. The actual field survey required 6 person-days, including travel, and the final report required 8 person-days. The

file search reviews were carried out at the Utah Division of State History in Salt Lake City, at the Price Area Office of the Bureau of Land Management, at the Monticello Office of the Manti-La Sal National Forest, and at the Emery County Courthouse.

5.1.2.1 Location

The proposed mine expansion encompasses approximately 50-60 acres adjacent to and west of Mohrland, Emery County, Utah (Figure V-1). It covers a small section of open flood plain and a restricted portion of the entrenched canyon of Cedar Creek. The proposed development includes the north and east portions of Section 8, the southern 1/5 of Section 9, the northern 1/5 of Section 16, the southern 1/5 of Section 10 and the northern 1/5 of Section 15, all in T16S R8E, Hiawatha Quadrangle, Utah, 7.5-Minute Series (Topographic). Elevations range from ca. 2170 m (7120 feet) above sea level near Mohrland to about 2491 m (8175 feet) above sea level near the confluence of the Left and Right Forks of Cedar Creek. Figure V-2 shows the proposed mine upgrade area, and Table V-1 more precisely lists the surveyed areas.



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PROJECT: U.S. Fuels - Cedar Creek Mine Application

T. 16 S

COUNTY: Emery

R. 8 E

LEGEND: Project Area and Site Location

QUAD: Hiawatha, Utah 7.5 min., 1978

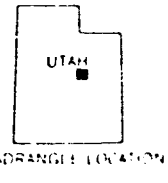

FIGURE V-2

TABLE V-1

Survey Location
(Figure V-2)

Section 8	Section 9	Section 10
NE-SE-NW	SW-NW-SW	SW-SW-SW
SE-SE-NW	NW-SW-SW	SE-SW-SW
NW-SW-NE	NE-SW-SW	SW-SE-SW
SW-SW-NE	SW-SW-SW	SE-SE-SW
NW-NW-SE	SE-SW-SW	NE-SE-SW
NE-NW-SE	SW-SE-SW	NW-SW-SE
NW-NE-SE	SE-SE-SW	SW-SW-SE
SW-NE-SE	SW-SW-SE	SE-SW-SE
SE-NE-SE	SE-SW-SE	SW-SE-SE
NE-SE-SE	SW-SE-SE	SE-SE-SE
SE-SE-SE	SE-SE-SE	

Section 15	Section 16
NW-NE-NW	NE-NW-NW
NE-NE-NW	SE-NW-NW
SE-NE-NW	NW-NE-NW
NW-NW-NE	NE-NE-NW
SW-NW-NE	SW-NE-NW
NE-NW-NE	NW-SE-NW
NW-NE-NE	NW-NW-NE
NE-NE-NE	NE-NW-NE
	NW-NE-NE
	NE-NE-NE

5.1.3 Environment

5.1.3.1 Physical Features

The proposed mine expansion is just inside the eastern boundary of the Wasatch Plateau Subsection of the Basin and Range-Colorado Plateau Transition (Stokes 1977). To the

east of Mohrland extends the highly eroded Mancos Shale Lowlands Subsection of the Colorado Plateau. The mine area is dominated by the deeply entrenched northwest-to-southeast canyon of Cedar Creek. Cedar Creek is formed by the confluence of the perennial Left Fork and the intermittent Right Fork. Cedar Creek is joined near Mohrland by intermittent Ben Johnson Creek. Cedar Creek is flanked to the south by Long Point Ridge, 2852 m (9260 feet) above sea level, and to the north by a south-oriented appendage of Bald Ridge, 2899 m (9514 feet) above sea level.

5.1.3.2. Geology

Stokes (1977) has placed the mine area within the Wasatch Plateau Subsection of the Basin and Range–Colorado Plateau Transition. The subsection is described by Stokes as follows:

> The Wasatch Plateau differs from other members of the High Plateaus in being capped entirely by sedimentary rock. The plateau forms a natural physiographic entity, the Wasatch Plateau Section. The eastern front is an imposing erosional scarp; the western edge is the upper bend of the Wasatch monocline. Salina Canyon and Ivie Creek form a natural southern boundary and Price River-Spanish Fork, a northern one. The remarkably long, straight and narrow Joes Valley graben that splits the plateau diagonally suggests an early stage in the operation of the same mechanisms that created the basins and ranges to the west (Stokes 1977: 15).

The massive block faulting of the Wasatch Plateau has resulted in the development of relatively young steep-sloped narrow canyons, many probably the result of smaller lateral faulting. As a result, nearly 730 m (2400 feet) of Cretaceous and Tertiary deposits are exposed along the canyon walls. The lower reaches of Cedar Creek are dominated by the Cretaceous Masuk Shale Member of the Mancos Shale, capped by Cretaceous Star Point Sandstone. Above the Star Point Sandstone is the coal-bearing Blackhawk Formation. This area is part of the greater Hiawatha Coal Field (Speiker 1931), and is the object of the USF expansion. Capping the Blackhawk Formation is the Late Cretaceous Castle Gate Sandstone. Above the Castle Gate is the Late Cretaceous/Paleocene North Horn Formation, a fluvial sandstone and mudstone deposit (Cross and Maxfield 1975; Hintze and Stokes 1964; Speiker 1931). The high ridge surfaces are covered with clay/sandy loams, many showing recent gully formations. Slopes have mixed exposures of alluvial/colluvial talus materials. Canyon bottoms are covered by eroded alluvial deposits with immature soils, most of which likely fall within the Castle Valley-Kenilworth Series (USDA 1970).

5.1.3.3 Vegetation

Vegetation in the mine lease area falls within three

major plant communities as defined by Hull (1979). Hull compiled the communities from earlier works of Tidestrom (1925) and Conquist et al. (1972). The major communities include the Plains or Prairie Community, the Yellow Pine or Oakbrush Community and the Aspen-Fir Community. The areal extent of a given community is a factor or combination of factors including soils, slope, exposure and moisture. A basic list of observed fauna includes Utah juniper (Juniperus osteosperma), Rocky Mountain juniper (J. scopulorum), pinyon (Pinus edulis), ponderosa (P. ponderosa), bristlecone pine (P. aristata), aspen (Populus tremuloides), white fir (Abies concolor), Gambel oak (Quercus gambelii), serviceberry (Amelanchier utahensis), bitterbrush (Purshia tridentata), cliffrose (Cowania mexicana), squawbush (Rhus trilobata), Indian ricegrass (Oryzopsis hymenoides), cheat grass (Bromus tectorum), Russian thistle (Salsola kali), snakeweed (Gutierrezia sarothrae) and Mormon tea (Ephedra spp.).

5.1.3.4 Fauna

Fauna observed during the survey included mule deer (Odocoileus hemionus), mountain cottontail (Sylvilagus nuttalli), black-tailed jackrabbit (Lepus californicus), rock squirrel (Citellus variegatus), white-tailed prairie dog (Cynomys gunnisoni), coyote (Canis latrans), striped

skunk (Mephitis mephitis) and least chipmunk (Eutamias minimus). In addition, droppings of elk (Cervus canadensis) and porcupine (Erethizon dorsatum) were noted. The area is also home or former range for mountain lion (Felis concolor), bobcat (Lynx rufus), yellow-bellied marmot (Marmota flaviventris), beaver (Castor canadensis) and bear (Ursus americana).

5.1.3.5 Climate - Present/Past

Most of Emery County is in the middle latitude dry climate, and is arid to semi-arid. The mountains on the west and northwest form a rain shadow for Castle Valley and receive considerably more moisture. The average annual precipitation at Castle Dale and Huntington is about eight inches. Mountain areas to the west receive up to 30 inches per year. Average mean temperatures range from 20 degrees F. in January to 80 degrees F. in July. Extremes can drop well below 0 degrees F. or climb above 90 degrees F. The average growth season lasts a little more than 100 days. Temperatures and growing seasons are also affected by topography and altitude (Burnham 1950; Roylance 1967; Sargent 1977).

Past climatic conditions have been addressed in the area in very general terms. The end of the Pleistocene (ca.

10,000 B.P. - Before Present) brought about a gradual shift toward warmer, dryer conditions. This trend has continued for nearly 10,000 years. During this time oscillations would vary toward wet or dry, usually not more than three or four inches of effective moisture, and about the same in mean temperature. The net effect on flora and fauna is a subject of debate, and much research needs to be carried out before definitive answers are available (Elston 1976; Jennings 1978; Schroedl 1976).

5.1.3.6 Historic Land Use - Mine Area

The first known use in historic times of the Cedar Creek area was hunting. The actual coal vein later exploited by Castle Valley Coal was supposedly found by two men hunting bear. In 1906 the coal seams were filed (Sec. 5.1.5) and homestead patents filed. In 1909 Castle Valley Coal bought out the homesteads and claims. Since that time, mining has been the principal activity at Cedar Creek. Grazing and hunting also continued.

5.1.3.7 Present Land Use

At the present time, mining continues to be the major activity. Occasional hunting and recreation (motorbike and 4-wheel drive) continue. Cattle and sheep graze the canyon bottom and hillsides. The proposed mine expansion will

curtail some of these activities.

5.1.4 Prehistoric Overview

The prehistory of the USF mine expansion area can be sub-divided into four phases: Paleo-Indian (Big Game Hunters), Archaic Cultures, Formative (Fremont) and Post-Formative (Numic, or Ute-Paiute).

Paleo Indian

The Paleo-Indian period is the first well-established occupation on record in North America. Paleo-Indian groups are most often associated with the exploitation of now-extinct Pleistocene megafauna such as mammoth, mastodon, ground sloth and bison. In the western United States the Paleo-Indian spans from about 14,000-7,000 B.P. (Jennings 1974; Sargent 1977; Willey and Phillips 1958). The Paleo-Indian period has been subdivided into three phases: Llano, Folsom and Plano.

The Llano is the earliest of the three phases and dates from roughly 14,000-10,000 B.P. The main diagnostic artifact is the Clovis point, a fluted lanceolate projectile point averaging between 7.5 cm and 15 cm in length. Clovis points have been found scattered throughout the American West. Points are usually found in uncertain surface con-

text, and only occasionally in controlled excavation (Frison 1974). Llano groups exploited such fauna as the mammoth. In the project region, Clovis points have been recovered from a variety of uncontrolled (unexcavated) contexts such as the Tripp Site (Tripp 1966) in Salina Canyon to the south.

The Folsom sub-phase dates between 11,000-9,000 B.P. The Folsom point is the hallmark of this phase. Folsom points are similar to Clovis points, with the exception of a smaller flute or hafting trough along each side. The Folsom groups are often associated with the exploitation of the extinct bison (Bison antiguus). The shift away from mammoth to bison may be a result of the rapid environmental dessication which took place at the end of the Pleistocene. The warmer, dryer environment and human pressures may have combined to drive the mammoth into extinction. Folsom sites in general are more numerous than Clovis finds. Several have been reported in Utah. One, the Silverhorn Site (42EM 8), is southeast of the mine area. One Folsom point was recovered from the site by a local collector. Other artifacts were later recovered through excavation, but there were no additional Folsom points (Gunnerson 1969).

The Plano sub-phase is characterized by a diversity of

projectile styles and dates between 9,000-7,000 B.P. The projectile points are generally lanceolate, unfluted and pressure-flaked. The total number of Plano sites is greatly reduced relative to the Llano and the Folsom. Plano points are associated with modern bison (Bison bison) and other Recent Era fauna. Again, no controlled (excavated) collections of Plano points have occurred in Utah.

In general, the Paleo-Indian occupation of Utah is, at best, spotty and poorly understood. These groups appear to have been small migratory bands, somewhat dependent on the megafauna (Frison 1974; Wendorf and Hester 1962). It is also likely that other resources were exploited, including smaller game and various flora. One aspect of the Paleo-Indian record in Utah stands in contrast to surrounding states. Utah has recorded numerous Pleistocene fauna sites and various Paleo-Indian points, but never the two in unquestioned association (Madsen, Currey and Madsen 1976). Until this association is demonstrated, the Paleo-Indian period will remain a great void in the culture history of the state.

Archaic

The end of the Pleistocene, with its resultant changing environment, also witnessed a substantial cultural adaptation. This new phenomenon is referred to as the Desert

Archaic (Jennings 1957, 1978), and dates from about 8,000-1,500 B.P. A great deal more is known of the Archaic, principally because of the careful excavation of numerous Archaic rock shelters and caves throughout Utah. Prominent among the excavations are Danger Cave (Jennings 1957), Hogup Cave (Aikens 1970), Cowboy Cave (Jennings, Schroedl and Holmer 1980), Thorne Cave (Day 1964) and Deluge Shelter (Leach 1967), to mention but a few. In closer proximity to the mine area are the excavations of Sudden Shelter (Jennings, Schroedl and Holmer 1980), Pint-Size Shelter (Lindsay and Lund 1976) and Joes Valley Alcove (Schroedl 1976). In general, the Archaic are now viewed as nomadic or semi-nomadic bands which exploited specific resources in specific regions. Large mammals (Jennings 1978), as well as smaller game such as rabbits or other rodents (Janetski 1979), were exploited.

The results of several years of excavation at Archaic sites has produced a statistical analysis of projectile points (Holmer 1978) and a synthesis of Archaic occupation of the Colorado Plateau (Schroedl 1976). Schroedl has divided the Archaic in to four sub-phases: the Black Knoll (8300-6200 B.P.), the Castle Valley (6200-4500 B.P.), the Green River (4500-3300 B.P.) and the Dirty Devil (3300-1500 B.P.).

The Black Knoll sub-phase is characterized by the presence of Pinto and Northern Side-notched points (Holmer 1978; Schroedl 1976). These points were used as atlatl (spear thrower) tips. Fauna exploited included deer, elk and mountain sheep in the higher locations, antelope and bison in the valleys. A variety of plants and insects supplemented the diet. The population appears to have been relatively low. Near the end of this phase the Elko Series projectile points were introduced. The Elko points apparently had some technological advantage, and remained in the archaeological record until historic times, which is somewhat unusual for any artifact class.

The Castle Valley sub-phase population may have increased slightly. The subsistence system remained the same. Pinto and Northern Side-notched points fade out, while the Rocker Base, Sudden Side-notch and Hawken Side-notch appear. The popularity of slab-lined firepits seems to peak during this time. Near the end of this period the Humboldt point is introduced, and overall population seems to drop.

The Green River phase begins with a low population and the introduction of the Gypsum point. Near the end of this period the San Rafael point is introduced. Peculiar to the

period is what appears to be some cultural influence from the Plains region. The Duncan-Hannah points have some antecedents in the Plains. Again, subsistence remains little altered from earlier systems.

The final Archaic sub-phase is the Dirty Devil. Gypsum points continue, but the Elko Series becomes more prominent. Unnotched triangular points are introduced. Near the end of this sub-phase evidence from Cowboy Cave suggests that corn (Zea) first makes its appearance in the archaeological record. Also introduced is the major technological advance - the bow and arrow. The demise of the Archaic during the latter part of the Dirty Devil sub-phase has provided fertile grounds for literary debate. Jennings (1957, 1978) and Schroedl (1976) suggest that the Archaic evolved into the Formative (Fremont) Culture, while Madsen and Berry (1975) and Lindsay and Sargent (1979) argue for a hiatus between the Archaic and the Fremont. Be that as it may, the introduction of horticulture and sedentary village life heralds the end of the Archaic period.

Formative (Fremont)

The Formative Stage (Willey and Phillips 1958) is characterized in North America by sedentary village sites, horticulture and the widespread use of ceramics. Formative

groups in Utah include the Anasazi, restricted to the south and southeast portions of the state, and the Fremont culture of central and northern Utah. The Fremont Culture was finally defined by Morss (1931) as a separate cultural society, although it was still viewed as "peripheral", or a sort of "country cousin" to the better-known Anasazi Culture to the south and east. Since 1931 a tremendous amount of excavation has demonstrated the unique cultural identity of the Fremont. The Fremont have been divided into specific units, based on artifact distribution and subsistence systems. For example, Aikens (1970) synthesized a five-part division based on artifacts (Figure V-3). Current syntheses by Madsen and Lindsay (1977) suggest a three-part division (Figure V-4). This division has been somewhat supported by statistical examination (Lohse 1980).

The research area falls within Madsen and Lindsay's Fremont Culture area. Fremont sites are characterized by the presence of Emery Gray, Sevier Gray, Ivie Creek Black-on-white and Uinta Gray ceramics (Madsen 1977). Predominant projectile points include the Rose Spring, Desert Side-notch and Bull Creek styles. Elko Series and Gypsum points continue, reminiscent of the Archaic period. Adavasio (1980) suggests that the Fremont also had a distinctive

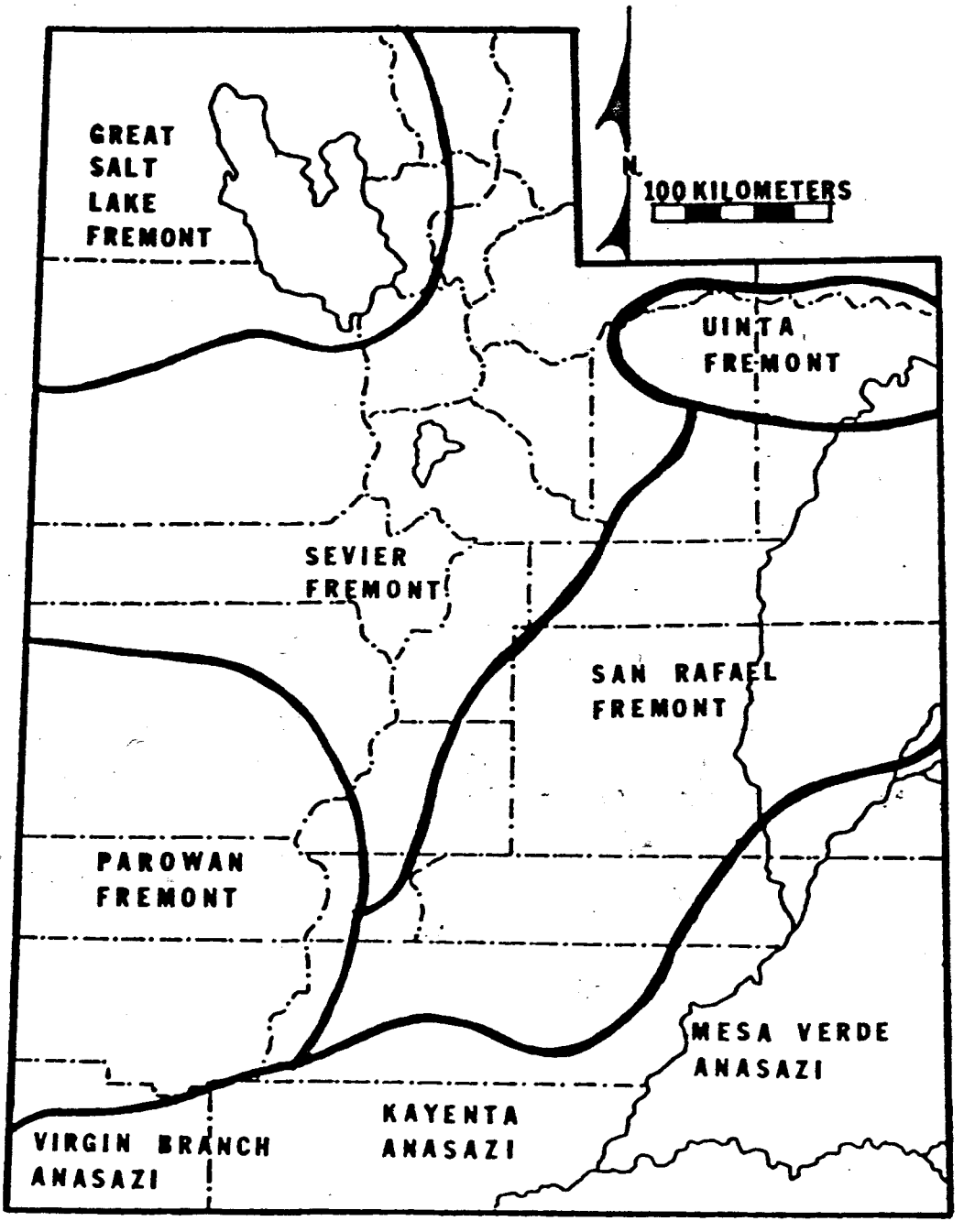

FIGURE V-3
Fremont Regional Variants (after Aikens 1970)

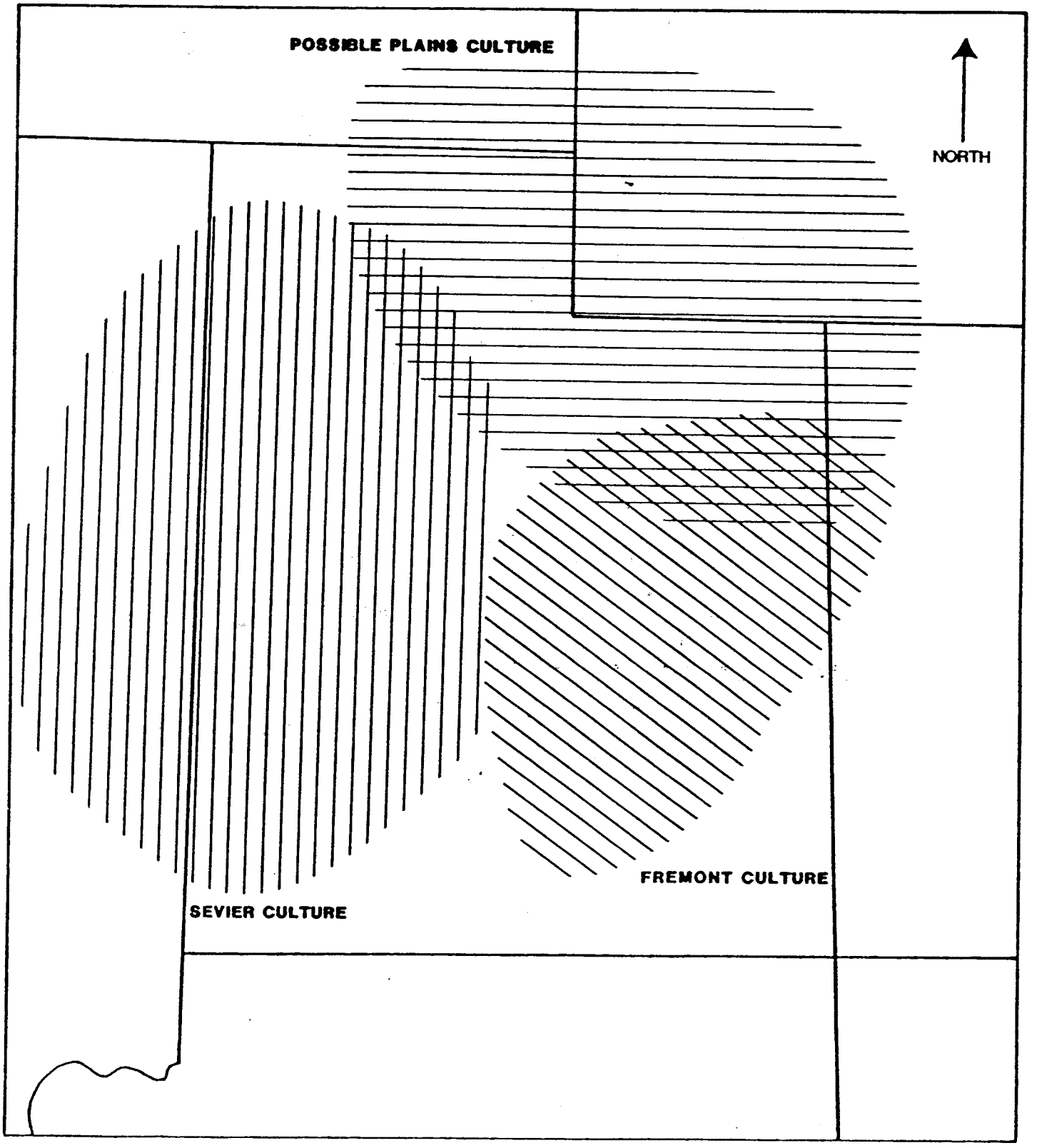

FIGURE V-4
Regional Variants of the Sevier, Fremont
and Plains-derived Cultures
(after Madsen and Lindsay 1977)

basketry style. Site architecture is characterized by small semi-subterranean pit houses and surface dwellings built of both stone and adobe.

Fremont sites are often characterized as being small villages or single units on ridge lines near permanent water (Cook 1980; Madsen 1975a). However, this notion may be nothing more than the results of biased data. It is possible that larger sites are in now-cultivated areas or on other private land, rarely studied by researchers. This probability has been supported by the recording of several large village sites on private land (Blaine Miller 1982, personal communication).

Fremont subsistence has also been the basis of published debate. Several opposing subsistence models have been proposed (Berry 1974; Madsen 1980; Nielson 1978). All have some merit and some weaknesses, and all need substantial testing with further data. In general, the Fremont are viewed as being slightly more dependent on horticulture, relative to collection of wild species of flora and fauna. The Sevier Culture, located to the west, may have been more dependent on the latter (Madsen and Lindsay 1977; Nielson 1978). Berry (1974) suggests a greater dependence on horticulture. All of this is based on data from a particular

site (i.e., Berry at Evans Mound near Parowan, Madsen and Lindsay at Backhoe Village near Richfield). We suggest here that each village or geographical group may have had its own unique system of subsistence, the relative balance between horticulture and the collection of native resources the product of the particular area's environment, resource availability and social organization. Much more specific data are needed to fully understand the Fremont subsistence systems in Utah.

Post-Formative

Some time around 650 B.P. the Fremont area and Utah in general was abandoned by the Formative horticulturalists. Post-Formative groups are generally lumped into the Numic language family (Lamb 1958) and, in this region, include the Ute, Paiute, Southern Paiute and Shoshoni. The Numic people apparently expanded out of the southeastern Great Basin beginning around 650 B.P. (Madsen 1975b) and, by about 450 B.P., had expanded all over Utah, Nevada and portions of the other neighboring states, replacing the Formative groups.

The Numic groups reverted to a subsistence system similar to the earlier Archaic - nomadic seasonal rounds exploiting native flora and fauna. This subsistence style poses several problems with material culture research. The

sites are more difficult to identify, ceramics are less important, and the sites often lack structural components or depth. The result is that identified Numic sites in the region are limited to a small handful (Sargent 1977).

Material culture is limited to a crude buff/brown paddle and anvil constructed ceramic style and Desert Side-notch and Cottonwood Triangular points (Hester and Heizer 1973). Village sites occasionally exhibit crude stone "tipi" rings. Basketry, clothing and other perishable items are very rare.

The Numic groups formed loose extended-family bands (Euler 1964; Steward 1938). This, coupled with a low, scattered population, made the rapid replacement by historic settlers relatively easy. Contact between the Native Americans and the expanding Euro-Americans was often hostile, resulting in bloodshed (Warner 1976). Local histories (e.g., McElprang 1949) contain little valuable information about the lifestyle or history of the Numic people as a whole. By the late 1800s Native Americans were confined to reservations, their lifestyle completely disrupted by Anglo settlement.

5.1.5 Historic Overview

The first known visit by white men to Castle Valley

occurred with the Dominguez-Escalante exploration into the area in 1776. In an attempt to establish a convenient route between the New Mexico Spanish settlements and Monterey, California, the expedition ventured north to the Gunnison and Colorado Rivers, then westward to the Green River. From there they continued west to the Price River, which eventually led them just north of the Castle Valley area and across the mountains into Utah Valley.

Following this initial expedition, various Spanish trading and exploration groups, along with American fur trappers, established what is now known as the Old Spanish Trail (Figure V-5). This trail extended up through present-day Moab, across the Colorado and up to the Green River. It then turned westward across the San Rafael Desert and into Castle Valley, turning southward once more toward Salina Canyon, where it crossed the Wasatch Plateau and continued southward into Nevada and California. Numerous divergent trails served to continue interaction with local Ute populations, often dealing in trade from furs to Indian slaves and horses (Miller 1976). The trail received almost continuous usage, first in these trading expeditions, later as a convenient route for travelers, mail carriers and the military (Stokes and Cohenour 1956).

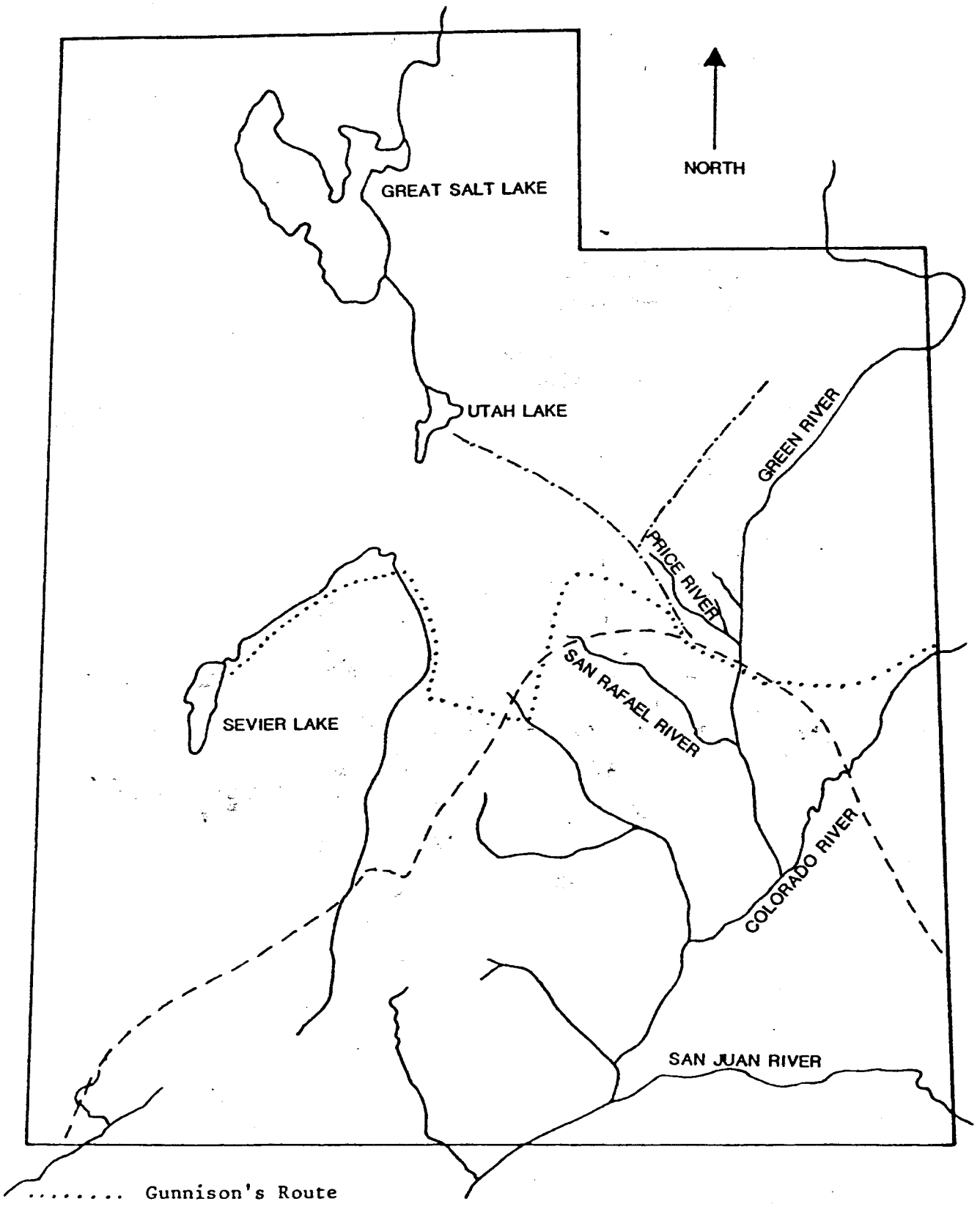

FIGURE V-5
Old Spanish Trail and Gunnison's
Route Through Utah (after Rauch 1981)

Several historical figures are known to have used the trail during this time. The earliest speculated use of the trail was in 1812, by Spaniards Mauricio Arze and Lagos Garcia, two known Indian slave traders. Although definitive proof of their passage through the area is lacking, a local resident claims to have found Arze's name, along with the date 1812, in Dry Wash along the San Rafael swell. In addition, he claims to have found the names of John C. Fremont and John W. Gunnison near by, with a date of 1846 (Finken 1977). These findings have yet to be verified.

Additional travelers along the route include early American trappers William Wolfskill and George C. Young in 1830-1831, and Antonio Santi-Estevan, a Spanish pack train operator carrying woolen goods, horses, mules, silk and other goods to and from California in 1831. In the following years the trail was used for illegal trading in livestock, horses and Indian slaves. Kit Carson may have traveled through Castle Valley in 1848 carrying news of gold found in California (Finken 1977).

One of the earliest well-documented visits to the area was the 1853 survey party under the direction of Captain John W. Gunnison, Corps of Topographical Engineers. With appropriations from Congress, Gunnison set out to survey a

possible route for a trans-continental railway. His group, entitled the "Central Pacific Railroad Surveying Expedition," roughly followed the Old Spanish Trail in eastern Utah (Figure V-5), leaving it briefly to survey around the northern end of the San Rafael Swell, then returning to the trail in Castle Valley (Crampton 1979). On October 11, 1853, while camped approximately three miles east of present-eday Emery, the party discovered coal, the first mention of coal being found in the area. Several days later Gunnison and several of his men were massacred by Indians near the Sevier River (Stokes and Cohenour 1956).

During the winter of 1853-1854 John C. Fremont, under private funding, followed closely the path of the Gunnison expedition on a similar mission. Due to severe food shortages, however, Fremont crossed the San Rafael Swell and followed the Fremont River (named after himself), eventually arriving in Parowan. In 1855 a group of Mormon missionaries under the direction of Elder Alfred N. Billings left Manti and passed through Salina and up Castle Valley before turning toward Green River and down toward Moab. Additional penetrations to the area included the 1869 and 1871 expeditions of Major John Wesley Powell down the Colorado and Green Rivers, and of Lieutenant R. L. Hoxie, leader of a

Corps of Engineers party which documented the geology and topography of much of the area, including Castle Valley (Cook 1980). In 1870 Wilsonville was established as a mail stop and the first permanent settlement in Castle Valley. It continued operating until 1883 (Finken 1977).

The next permanent settlement attempt in the area was by James McHadden and Leander Lemmon in 1875. At that time they diverted water from Huntington Creek onto a patch of ground near the mouth of Huntington Canyon (Stokes and Cohenour 1956). Along with Bill Gentry and Alfred Starr they used the area for cattle and sheep grazing. With a limited amount of water, however, mere existence was a struggle (Finken 1977). McHadden and Lemmon were followed shortly by additional settlers in the Castle Valley area from Sanpete County to the west and from Utah County to the northwest, both of which were among the original settlements in Utah. The purpose of this was to extablish Mormon control throughout the region and to take advantage of the area's natural resources. Reports from the early use for livestock grazing eventually reached Mormon Church officials and Jefferson Tidwell, a resident of Sanpete County, was sent in 1877 to investigate the area for possible settlement (Morgan 1941). The result of Tidwell's survey was several

attempts over the next five years to establish a community on the Price River south of present-day Wellington. Flooding and other disasters hampered these efforts, and a adequate flood control dam was not constructed until 1883, permitting a full growing season for crops (Reynolds 1948).

Shortly after Tidwell's exploratory visit several men from the Sanpete area were called by Mormon leaders to colonize Castle Valley (Smith 1979). This group apparently had success with the 1878 crop, and in the fall of 1878 a second group of settlers and the families of the original settlers moved into the area under the direction of Orange Seely. Several settlement were quickly organized, including Ferron, Castle Dale, Orangeville, Huntington, Lawrence and Molen. The 1880 census indicated that these settlers were almost exclusively farmers, with only 15 people listed as having other occupations. Among the exceptions listed were merchant, lawyer, postmaster, team driver, stock herder, blacksmith and stonemason. The majority of the settlers were Anglo-Americans, and they were dispersed as follows: 16 households east of Green River, 29 households around Huntington, 50 households in Castle Dale and 20 households in Ferron (Smith 1979). Additional groups were undoubtedly in nearby locations but were not listed in the census.

The earliest land use of the area, as mentioned before, was for sheep and cattle grazing during the 1870s. This was followed closely by the entrance of farmers led by Tidwell in 1877, Seely in 1878 and David Leonard in 1879 (Morgan 1941; Smith 1979). Although land use was typically subsistence agriculture, it was not intensive. The settlers faced problems of alkali precipitation from the overuse of water and overgrazing of land leading to erosion. The latter problem was not adequately controlled until the U.S. Forest Service stepped in in the early 1900s and regulated grazing lands. Water development was slow in the region, mainly due to the use of scarce resources for agriculture and mining needs, rather than large-scale projects (Haymond 1979). The lucrative grazing activities by men such as George C. Whitman soon turned to other economic activities such as banking (Robinson 1973).

The coming of the railroad in the early 1800s brought hopes of further economic prosperity and provided an expended market for the local farm products and animal industries (Lever 1898). In addition, local residents used the local canyons for hunting deer and other game, an activity still popular today. Nearby timber resources were also used early-on, taking advantage of the loca logging mills and the

need for lumber in the fast-growing settlements (McElprang 1949).

With the successful land use discussed above, the culmination of high economic hopes came with the entrance of the railroad into the valley and the formal introduction of coal mining in the early early 1880s. Although these activities have continued to play an important role in the area's development, coal mining has by far been the influencing factor on the local economy and population rise and fall.

As the largest component of the Carbon and Emery County economy, coal mining plays a crucial role in the region's historical development and has left numerous National Register-quality buildings and structures behind. Commercial coal development began in 1875 with the opening of the Pleasant Valley Mine by the Utah Central Coal Company, a subsidiary of the Union Pacific Railroad. Utah Central built a narrow-gauge railroad down Spanish Fork Canyon to carry Pleasant Valley coal to its main line and markets in Salt Lake and Ogden.

During the late 1870s and 1800s, William Jackson Palmer was building the Denver and Rio Grande Western Railroad through Utah in an attempt to complete a second rail link to

the Pacific Ocean. On hearing of coal discoveries in Carbon County, Palmer rerouted the D&RGW from Salina Canyon, up through Price Canyon and over Soldier Summit to the Great Basin. Palmer's surveyors reported the existence of coal seams in the area, and the rerouted D&RGW would help him to gain title to the coal lands and a valuable resource for his railroad.

With the entry of the railroad into the Carbon/Emery County area, the first phase of coal mining began, a phase marked by the complete monopoly by the railroads over the production of coal. Five major coal camps emerged during this phase: Clear Creek (1882), Winter Quarters (1882), Scofield (1884), Castle Gate (1888) and Sunnyside (1900). While there was some small-scale mining conducted by individuals for local consumption in the towns of Carbon and Emery Counties, the majority of the mining was conducted by out-of-state business interests.

After 1900 two important factors combined to begin the second phase of coal mining in the area. Continuing shortages of coal in Salt Lake City encouraged mining entrepreneurs looking for business opportunities to open independent coal mines. At the same time, the railroads were sued for fraud in their acquisition of thousands of acres of coal

lands in central Utah. In 1906 the Independent Coal and Coke Company opened the Kenilworth Mine, and a number of other companies followed in the next decade: The Standard Coal Company, Spring Canyon Coal and Castle Valley Coal (Nielson and Merrill 1983).

5.1.5.1 Mohrland Mine and Townsite

Coal mining at Mohrland began in 1906, when two brothers from Huntington, Utah, located a huge coal seam on the slopes of Gentry Mountain just above Cedar Creek. William and Erin Howard lost the right to mine the coal, however, by failing to prove their claim. The mine then passed on to the Grange brothers, who dug a shaft into the 25-foot high seam large enough to drive a team of horses into. In 1909 the Granges sold their mine to the Castle Valley Coal Company, which was formed by Utah businessmen J. H. Mays, Moroni Heiner, W. C. Orem, W. V. Rice and W. W. Armstrong.

During the first year of operation Castle Valley Coal expanded the main heading built by the Granges and Howards toward the north and opened east and west headings as well. The first year production was 500 tons per day, which was carried by a mile-long tram operated by Stien wheels to a flat area across from the Mohrland townsite. The coal was then dumped by a second set of tram cars onto a conveyor

which fed it onto some shaking screens in the tipple. Three grades of coal were made the first year (State of Utah 1911). Castle Valley Coal also installed a power plant with three boilers to furnish electricity for the mining machines and lighting, and a Stevens fan for ventilation.

Across from the tipple the company began the construction of a community to house the miners. A large mercantile store and mine office, fourteen residences, two nationality boarding houses and numerous tents were erected the first year. Perhaps the major effort during the 1909-1910 period was the construction of an eight-mile extension to the Southern Utah Railroad terminus near Hiawatha. The first coal shipments began in September 1910 (Salt Lake Mining Review, June 30, 1911).

The Castle Valley Coal Company called its mine at Mohrland the King Mine, and its product was known throughout the West as King Coal. In 1911 the company expanded its operations with the construction of a second tipple and the improvement of the tram system. The Salt Lake Mining Review describes how Mohrland had grown by 1911:

> The town of Mohrland is located near the tipple at the southern terminal of the Castle Valley Railroad. This is a pretty little settlment containing from 75 to 100 modern four-room cottages and cabins for the use of company employees. There are also boarding and bunk houses. The store of

> the Mercantile company is built of the finest sandstone and presents a pleasing experience. The little city is electrically light and pure spring water is piped into every dwelling and business house (Salt Lake Mining Review, June 30, 1911).

In June 1912 the Castle Valley Coal Company was acquired by the Utah Company which was owned by eastern investors. The Utah Company further expanded the mining activities.

> Since acquiring this property, the new owners have built an additional fifty houses; are replacing an old tipple of 1,000 tons capacity by a new Jeffrey model of 2,500 tons capacity, and are remodeling the tram, to do away with the motor haul at each end. The new tram will be about 7,500 feet long and will take the coal from the mouth of the mine and deliver it to the tipple direct. It will have two tunnels one 600 feet, the other 300 feet, and two curves, and will be operated by motor-controlled sheaves (State of Utah 1913).

Coal was mined using the room and pillar method, with the typical room being 24 feet wide and 400 feet long. Rooms were separated by 40-foot pillars.

Mining continued at the King Mine until 1938, when a depressed coal market forced the closure of the mine and the abandonment of the town of Mohrland.

5.1.6 Previous Archaeological Research

Reports of archaeological finds in the Castle Valley area date to the middle 1800s. In 1853 a survey party under

Captain John Gunnison, although locating no archaeological sites, gave brief reference to historic Indian occupation around the Green River-Castle Valley area. The first actual archaeological sites found in the area were reported by the John W. Powell expeditions of 1869 and 1871, who recorded ruins somewhere in the Chandler Creek vicinity (Dellenbaugh 1926), and other sites within the San Rafael River area, from which collections were taken for the Smithsonian (Beaman 1874; Powell 1875). Fragments of pottery were also located near Bowknot Bend (Dellenbaugh 1926).

Following these initial discoveries, no record is made of further research or finds until the 1929-1930 Claflin-Emerson expedition, during which several sites were noted (Gunnerson 1969; Morss 1931). In the following 20 years surveys were carried out by Morss in the Upper Fremont River area, Black Dragon Canyon and Temple Wash (Morss 1931); by Henry Roberts in the Muddy River and Horseshoe (Barrier) Canyon areas (including some excavations) (Gunnerson 1969; Morss 1931); by both Scott and Leh in Range Creek Canyon (Leh 1936); by Gaumer in Desolation Canyon and on the West Tavaputs Plateau (Gaumer 1937, 1939); and by Reagan (location not known) (Reagan 1935).

During the 1950s the University of Utah carried out

extensive surveys in the Emery County area, locating sites in the Range, Last Chance, Quitchupah, Muddy, Ivie and Ferron Creek areas. In all, 49 sites were recorded. In addition, excavations were carried out at the Silverhorn Site (Gunnerson 1956), at Snake Rock Village and the Round Spring Site (Gunnerson 1957) and at the Poplar Knob and Old Woman Sites (Taylor 1957).

Recent work has been carried out in the area by several organizations. Besides numerous surveys (Rauch 1981), the University of Utah has conducted several significant excavations which have greatly expanded the archaeological data base for the region. These include Clyde's Cavern (Wylie 1971), Windy Ridge, Crescent Ridge and Power Pole Sites (Madsen 1975b), Innocents Ridge (Schroedl and Hogan 1975), Fallen Woman, Old Road and Ivie Ridge Sites (Wilson and Smith 1976) and Sudden Shelter (Jennings, Schroedl and Holmer 1980).

Brigham Young University has surveyed extensively in the Castle Valley area (Berge 1973; Berge and Benson 1977; Berge and Nielson 1977; Berge and Spencer 1977), as has the Museum of Northern Arizona (Keller 1975a-d, 1976), Southern Utah State College (Dykman and Thompson 1976) and various agencies, including the Bureau of Land Management, the U.S.

Forest Service and the Antiquities Section of the Utah Division of State History. The latter two agencies have also conducted important excavations at Joes Valley Alcove (DeBloois, unpublished) and Pint-Size Shelter (Lindsay and Lund 1976), respectively.

Hauck (1979) presents a synthesis of research and sample survey in Emery County up to 1977, as does Sargent (1977). Rauch (1981) and Cook (1980) cover much of the work which has occurred since that time. These sources may be consulted for further information on previous archaeological work in the area.

More specific to the mine area, Hauck (1979) reported surveys to the west, but recorded no sites that will be affected by the USF expansion. Nielson (1982) and Juell (1982) completed surveys for the Anaconda Minerals-Beaver Creek Coal Mine Permit about 5 km (3.5 miles) southwest of Mohrland. One site, the Bear Creek Rockshelter (42EM 1572), was tested for significance (Nielson and Schleisman 1982). This shelter demonstrated sporadic use of the rugged region near Mohrland by Archaic and Formative (Fremont) groups. Occasional finds of prehistoric and historic artifacts suggested light use of the area by prehistoric hunters and historic grazing and mining activity.

Several prehistoric sites have been recorded east of the mine expansion area. Most consist of small lithic scatters of camps, but one (42EM 965) is a very large significant Formative Fremont habitation (Blaine Miller 1983, personal communication). This particular site is on land controlled by USF, but will not be directly affected by the proposed expansion. Current files checked in all of the various State and Federal agencies failed to reveal any recorded or known cultural resources or cultural resource projects within the proposed mine expansion area.

5.2 Methods

5.2.1 Present Objectives

This research has two specific goals. The first is to record all observed cultural resources and to assess their significance; the second is to provide clearly defined management recommendations to USF, based on the significance of the cultural resources and the nature of the proposed impacts to the cultural resources. These goals should combine to satisfy the various mandates which deal with immediate or future impacts caused by State- or Federally-licensed activities (see 5.1.2).

5.2.2 Research Orientation

Past experience in the region suggests that a combination of factors (e.g., topography, soils, vegetation etc.) tend to influence human exploitation of a given area (Hauck 1979; Holmer 1982; Nielson 1982; Nielson, Merrill and Oviatt 1981; Rauch 1981). The variety of environmental factors combine to either increase or decrease the cost efficiency expended on obtaining given resources. This assumption was the principal guide for research carried out at the nearby Beaver Creek Coal Mine Lease (Nielson 1982) and, with minor modifications, is stated herein:

> The survey and analysis completed by CRMS at the Beaver Creek Coal Mine Lease assume that archaeological sites are the results of human activity directed to extraction of energy from the natural environment for human consumption. This also assumes that most human groups seek to extract energy in the most cost-efficient manner possible. This principal is extracted and/or derived from cultural materialism or cultural ecology (O'Connell, Jones and Simms 1980; Holmer 1981). Our basic assumption also includes the idea that sites reflect specific group behavior and, in general terms, the organization that a given culture uses to extract energy from the environment. Binford (1980) provides an example of such organization and the resulting site type. His ideas and those resulting from the research into cultural ecology by O'Connell, Jones and Simms has been tested with preliminary data in Utah's west desert with some success (Fowler et al. 1980; Holmer 1981; Janetski and Holmer 1982), and also applied to the region north and east of Price, Utah (Nielson, Merrill and Oviatt 1981; Rauch 1981). In general terms, Rauch has

succinctly summarized the Binford and O'Connell, Jones and Simms studies. The organizational level and resulting site types given by Rauch are listed here verbatim for reference.

"These organizational modes (or subsistence strategies) are perceived as a continuum from

1. foragers frequently moving residential bases among resource patches to
2. collectors occasionally moving residential bases but frequently sending task groups to known resource patches to,
3. harvesters permanently locating their residential bases near highly productive exozones and occasionally sending special task groups to known resource patches to,
4. agriculturalists permanently locating their residential bases near cultivated fields with task groups seldom, if ever, visiting natural resource patches (Holmer 1981:6).

"A complete examination of this model concerning the theoretical background and specific applications may be found in Fowler et al. (1980). The goal of the research as concerns the model outline here was to assess and place the sites recorded during this survey within a subsistence system according to the features and artifact assemblages identified at each site. Various site types and their relationships have been defined for this model by Holmer and Davenport (in press: 5-6). These definitions are given below:

1. Residential Base. Activities that take place at the residential base include most of the processing of subsistence resources. All residential bases should contain evidence of a wide variety of food preparation activities. This might include grinding stones, bifaces, scrapers, and fire pits-all of which reflect floral and faunal processing. Also present should be tool manufacturing evidence such as debitage, and bifaces and scraper used for fashioning bone, antler and wood tools.

2. Procurement Location. The resource processed

and consumed at the residential base are obtained from the surrounding area. At the points at which resources are procured (locations, there may remain some evidence of that activity, especially if some preliminary processing takes place there prior to removal of the resource to the residential base. If recognizable at all, locations should consist of a narrow range of artifacts and contain only those tools needed for procuring a single resource. Large scatters of chipped stone may also represent acquisition locations; however, many probably result from numerous repeated activities.

3. Field Camps. Collecting forays often require separation of the task group from the residential base for periods of more than a day. The resulting sites (field camps) should be recognizable by the presence of firebasins and artifacts representing the processing of one predominant type of resource. The limited processing that takes place at a field camp is done to assist in transporting the materials back to the residential base where the remainder of the processing occurs. In many instances, interpreting a site as a field camp or a residential base may be difficult. The difference should be that more types of processing activities are represented at the residential base; the intrasite variability in artifact functions should be greater at the residential base than at the field camp.

4. Stations. Another type of site that occasionally occurs is that at which task groups are engaged in information gathering but not resource acquisition (stations), such as game observation areas."

The single weakness of this system stems from a lack of testing on the excavation level. To date, only surface survey data have been applied to the various site categories. In fact, the principles of cultural ecology as applied to

The prehistoric context have yet to be adequately tested. Recent ethnographic data (see Binford 1980) and ethnographic research in Paraguay and Australia (Steve Simms 1982, personal communication) are seeking to examine the basic assumptions and the site types resulting from specific activities. As is, our data will be assumed to fit into the above categories until further research suggests otherwise.

5.2.3 Field Methods

A complete Class I and Class III inventory was conducted for USF. The Class I (literature and file search) inventory was completed on 15 June at the Price Area Office of the Bureau of Land Management and at the Monticello Office of the U.S. Forest Service. A similar search was conducted on 16 June at the Utah Division of State History in Salt Lake City. Land ownership and mine history records were also searched at the Emery County Courthouse in Castle Dale on 17 June. The file searches included a detailed inventory of the six section area that encompasses the mine expansion. Files were also examined for important sites and references in a 5-mile radius beyond the mine area. The State and National Registers of Historic Sites were consulted for known State/National Register Sites.

The Class III (100% intensive) inventory was conducted

by CRMS personnel on 17-18 June. This consisted of completing numerous compass-guided transects with surveyors spaced no more than 20 m apart. Steep slopes and cliff faces were walked using contour transects. All potential or suspected locations for cultural resources were examined.

All cultural resources were recorded on IMACS Site Forms, photographed and plotted on U.S.G.S. topographic maps. Non-scale site location maps were drawn. Collection of artifacts was limited to unique or specifically diagnostic materials. Isolated artifacts were noted in the field notebook, plotted on the U.S.G.S. map and, if significant, photographed and collected. Otherwise, isolated artifacts were left in situ. All original notes, forms, photo negatives and collected artifacts are permanently curated at the Museum of Peoples and Cultures, Brigham Young University.

5.3 Historic Resources Survey Results

5.3.1 Survey Results

CRMS recorded one historic site during the survey for USF.

5.3.2 Historic Sites

Site 42EM 1642 (Figure V-6) is the historic town of Mohrland, occupied between 1909 and 1938. In general, the

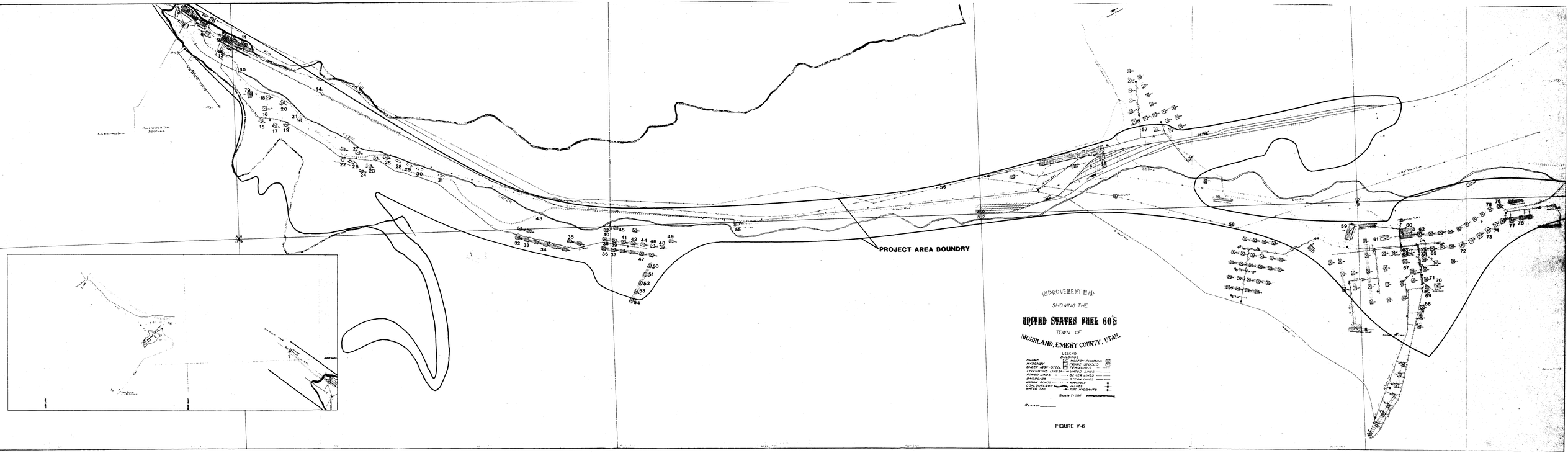
PROJECT AREA BOUNDRY
IMPROVEMENT MAP
SHOWING THE
UNITED STATES FUEL 60'S
TOWN OF
MORRLAND, EMERY COUNTY, UTAH.
LEGEND
BUILDINGS
FRAME
MASONRY
SHEET IRON - STEEL
TELEPHONE LINES
POWER LINES
RAILROAD
CONCRETE
CONCRETE CURB
WATER TAP
WITH PLUMBING
BRICK STUCCO
TARPAPER
WATER LINES
SEWER LINES
STEAM LINES
VALVES
MANHOLE
FIRE HYDRANTS
Scale 1"=100'
Revised

FIGURE V-6

boiler and some water pipes leading into a cement floor above.

4) Site of substation for electric system. A concrete foundation pad and footings mark the site of a substation for the mine electric system. Electricity for the mine was produced in a power house adjacent to the tipple in the bottom of the canyon.

5) Part of the water system. The historic map of Mohrland shows a terminus for the mine/town water system on the concrete foundation and footings at this site. This site is just east of the bathhouse.

6) Hoist house for the tramway. The hoist house is an expertly-crafted cut-stone building. All the windows, doors and roof are missing, though some of the pointing is still in perfect shape. Inside the hoist house the west and east walls have been reinforced with concrete supports, and the floor has a series of concrete footings marking the location of the original machinery.

7) Tunnel for Cedar Creek. The Castle Valley Coal Company built a mine yard over Cedar Creek and routed the creek through a tunnel. The tunnel is constructed of cut stone.

8) Mine portal. The main portal to the mine is a concrete structure with its date of construction (1908-1922)

set in the top. The portal is still in very good condition, although the entrance to the mine has been back-filled.

9-10) Machine shop. Although this structure must have been extensive at one time, all that remains is a concrete foundation with rails for moving the tram cars into the building. One set of rails runs over a mechanic's pit.

11) Portal for fan. This small concrete portal adjacent to the fan house was part of the mine's ventilation system. It has been almost completely back-filled.

12) Fan building. Of all the mine buildings, the fan building has the highest integrity. The motors which ran the fan have been removed, but the fan itself and its metal housing are still intact. The date of the building and the name of the mine have been set in the concrete over the front door.

13) Heating plant. All that remains of the heating plant is a concrete foundation.

14) Tram tunnel. This is the upper tunnel for the tram. The entrance and exit to the tunnel are cut stone, and it appears that the roof was timbered. A portion of this tunnel has collapsed.

15-42, 44-54) Residences. On the south side of the canyon, across Cedar Creek from the mine workings, are an

historic road and 40 residences. This portion of the town of Mohrland is distinct from that portion across from the tipple. In general, none of the residences remain, although rock foundations mark their locations. One or two of the structures show timbering. The foundations are surrounded by a dense scatter of historic artifacts and building materials. Most of the foundations have some sign of mortar, but there are a number that do not. Similar foundations discovered in a survey of the old Sunnyside townsite were built by stone masons without the use of mortar.

43) Bridge over Cedar Creek. There is a 40 by 15-foot cut post and plank bridge over Cedar Creek still in fair condition. it is held together by metal nails and bolts.

55) Cut-stone foundations for a portion of the mine/ town water system.

56) Cut-stone trestles for the original tram line between the mine portal and the tipple. These trestles are located just above the tipple, and were built during the second development phase in Mohrland. The first tram line did not deliver the coal directly to the tipple, but to a second set of tram cars at the bottom of the hill.

57) Retaining wall. This retaining wall is the only feature of a small grouping of houses from the town of

Mohrland which were inside the survey area. Other residences extended northward out of the survey area.

58) Concrete retaining wall. The function of this structure is unknown.

59) Amusement hall. All that remains of this structure are the concrete walls and some concrete walkways and porch foundations. The amusement hall was the center of Mohrland's social life. Despite the building's poor integrity (it lacks doors, windows, a roof and interior features) it is the only remaining structure from the lower portion of Mohrland, across from the tipple. The building is a rectangular structure, and it appears from historic photographs to have had a wood gabled roof with porches on the south and east.

60) Mine office. Most of the walls of this structure have collapsed, but a small portion of the cut-stone exterior remains. The foundation appears to have also been cut stone, with walls from several basement rooms still present.

61) Hospital. All that remains are a cut-stone foundation and about 2-3 feet of wall - no windows, roof or doors.

62) Rock foundation for a store. This structure lacks features.

63-64) Cut-stone foundation with concrete backing for the town hotel. There is not much left but a few stones and a depression. There are no features such as windows and doors.

65-78) Foundations for residences. Some of these houses had rock and some concrete foundations. Components 69-70 are the superintendent's residence and garage.

79) Barn. Concrete foundations for a barn with roof timbers collapsed on the floor.

80) Wooden bridge from the historic road from the lower town of Mohrland. The road ran along the south side of Cedar Creek. The bridge is in poor condition.

5.3.3 Isolated Historic Artifacts

All artifacts within the survey area can be directly associated with Site 42EM 1642. Therefore, no historic artifacts are considered as isolated.

5.3.4 Mining Impacts to Historic Sites

The proposed mine expansion will impact a large portion of the Mohrland townsite and the remaining mine facilities. The total extent of the impact will depend on the precise placement of facilities and the extent of clearing necessary for support yards, ponds and rail, water and power corridors.

Proceeding east to west (upstream), a proposed support area (Figure V-6) will impact Components 59 (amusement hall), 60 (mine office), 61 (hospital), 62 (store), 63-64 (residences), 65-66 (town hotel) and 67-78 (residences).

Component 58 (retaining walls) will possibly be impacted by general clearance procedures.

Component 57 (retaining wall) will be impacted by general clearance.

Component 56 (trestles) will be impacted by the construction of a rail line or general clearance procedures.

Component 55 (town water system) will be impacted by general clearance.

A cluster of residences (Components 36-42, 44-53) will possibly be impacted by a possible yard and general clearance. Component 54 belongs to this cluster, but appears to be beyond the proposed impact area.

Component 32 (residence) will be impacted by general clearing procedures. Nearby Components 33-35 appear to be beyond the proposed disturbance area.

Component 43 (bridge) will be replaced by a new structure to facilitate a new road crossing over Cedar Creek.

Components 15-31 (residences) will be impacted by general clearance, sediment ponds and seam portals. The historic map shows additional residences near the west side of

the Component 15-31 cluster that may have been overlooked during the survey. Component 79 (barn and foundation) is also associated with Components 15-31 and will be impacted by general clearing.

Component 14 (tram tunnel) is opposite the residence cluster (Components 15-31) and may be impacted by the power line and general clearing.

Component 80 (bridge) will be impacted by a new structure to facilitate a road crossing over Cedar Creek.

Components 1-13 are various mine structures associated with the historic Mohrland Mine. All will be impacted by a combination of general clearance, new portals, roads, culverts and power lines.

5.4 Prehistoric Resource Survey Results

5.4.1 Survey Results

CRMS recorded a single prehistoric site (42EM 1641). Additional sites are known to exist further east of the mine expansion property, but will not be directly affected by the expansion.

5.4.2 Prehistoric Sites

Site 42EM 1641 is a potential prehistoric rock shelter in the NE1/4 SE1/4 of Section 8, T16S R8E. It consists of a

10 m wide by 5 m deep alcove under a rock outcrop just north of Cedar Creek. The sandstone surface exhibits considerable fire blacking and spalling. Burnt and unmodified animal bone is visible on the surface. A small pothole has been cut into the east side of the alcove. The pit exhibits a line of charcoal and fire-reddened soil at a depth of 15 cm. A layer of possible bat guano underlies the ash lens.

Lithic and ceramic artifacts are notably absent. The down-slope wash is also devoid of artifacts. No cultural affiliation can be suggested, due to a lack of diagnostic artifacts. The significance and, hence, National Register status cannot be determined, and the site will require testing to determine its potential. A similar site (42EM 1572 - Nielson and Schleisman 1982) exhibited a similar lack of artifacts, but proved via testing to be a potential Fremont/Archaic shelter of considerable depth.

Placing this site within the Research Orientation (Sec. 5.2.2) will be difficult, with the scant data at hand. The site could possibly have functioned as a residential base for foragers or collectors or, possibly, as a field camp for more sedentary harvesters and agriculturalists. The differences between functions of one site type or another are dependent on explicit definitions (which do not exist in

this case) and detailed site remains from excavation (which is lacking from this site.

If the site is in any way similar to other known shelters in the area such as Bear Creek Shelter (Nielson and Schleisman 1982) and Joes Valley Alcove (Schroedl 1976), it was probably a short-term camp used to exploit a limited variety of resources. These sites showed a concentration of large montane fauna (deer and elk) and occasional smaller rodents. Architectural features are limited to occasional fire basins or small storage cists. Artifacts are dominated by lithics, occasional ground stone and bone. Difficult access and weather conditions would likely restrict the use of such shelters to late spring, summer and early fall. Resources were likely consumed on the spot or removed to other, more permanent living locations. Assessment of specific types of resources and season(s) of exploitation would require further testing or excavation of the site before any definitive answers could be given.

5.4.3 Isolated Prehistoric Artifacts

No isolated prehistoric artifacts were noted in the expansion area.

5.4.4 Mining Impacts to Prehistoric Sites

There is some question as to whether the general clearance process will impact the rock shelter. Some discolored soil and bone (midden ?) extend down the slope into the proposed clearance zone. Secondary impact from visitation may occur to the shelter.

5.5 Public Parks

There are no existing or proposed public parks within the mine expansion area, therefore this section is not applicable.

5.6 Evaluation of Resources

5.6.1 National Register Consideration

One site - historic Mohrland (42EM 1642) is eligible for the National Register of Historic Places. The status of Site 42EM 1641 is still questionable. The two sites are summarized in Table V-2. The criteria for assessing site significance and National Register Potential are included in the U.S. Government Code of Federal Regulations (36 CFR 60) as follows:

> National Register criteria for evaluation. The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and

TABLE V-2

Cultural Resource Site Summary

Site Number	Site Type	Cultural Affiliation/date	Significant	National Register Potential
42EM 1641	Rock shelter	Unknown	Unknown	Unknown
42EM 1642	Mine and town	Euro-American, 1909-1938	Yes	Yes

> objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) That are associated with the lives of persons significant in our past; or
>
> (c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) That have yielded, or may be likely to yield, information important in prehistory or history.

These criteria are, unfortunately, somewhat subjective and leave considerable room for interpretation by the individual archaeologist. There is, however, little doubt that Site 42EM 1642 (Mohrland) is eligible for the National Register.

Although all the residences of the town have been destroyed, there are a number of intact mining structures and some community buildings still standing. The original main portal is standing, and the two side portals are still visible. The 100 HP engine that turned the fan has been removed, but the fan blades and building are still extant. A cut-stone hoist house for the tram and the tunnels are still standing, although a portion of the tram tunnel has

collapsed. There are also foundations from various other mine buildings still visible. On the townsite of Mohrland across from the tipple only the walls of the amusement hall and the mine office still stand.

The integrity of many of the buildings is low by National Register standards. Most of the machinery and the building finish features (such as windows and doors) are gone. Around the mine portals, however, there are enough standing structures to give a good idea of how the mine operated and the buildings functioned.

In the context of Emery/Carbon County coal mining, the development of the town of Mohrland and the mine belongs to the second phase of independent coal companies, and represents, under criterion (a), an event which is significant to the local history of the area and to coal production in Utah. The site may also be eligible under criterion (c) because of the cut-stone architecture. Many of the stone mining buildings in this area were the work of Italian and Greek craftsmen, and often represent the last vestiges of their craftsmanship. Much of the pointing on the hoist house near the mine is still in perfect shape after a half-century of neglect. Research for this survey did not determine who the artisans were who built the hoist house.

This site is also eligible under criterion (d). A mitigative study of Mohrland would be breaking entirely new ground. Very little data are currently available on how the mine operated, on the social history of the town (as an example of the company town) and on the business history of the mine. One or two of the sites in Mohrland may have archaeological significance as well. The amusement hall, the mercantile store, the mine office and some residences may produce cultural material which could document life in this community.

The eligibility of Site 42EM 1641 is, as stated, questionable. Fire blacking and the exposed burnt bone and ash lens suggest use and possible depth. Exposure of bedrock near the surface, however, suggests limited depth. As is and until further testing, the status of the site remains in question.

5.7 Project Recommendations

There are several alternatives available to USF for dealing with the recorded cultural remains at Cedar Creek.

Site 42EM 1641 - The rock shelter's direct impact status is not known at this time. CRMS recommends that, if at all possible, the shelter and the midden below the shelter be left intact. This would call for a minor shift of

10-20 vertical feet downhill of the proposed clearance procedure. The possibility remains that erosion or visitation (vandalism) may occur at the site, despite avoiding direct impact.

If there is any question as to the impact status, a second alternative is available. USF may arrange for a minimal testing of the site. Such a program would require only a couple of days in the field and 6-8 days lab follow-up. If the site is determined to be non-significant, then USF would be legally free to develop the site area unencumbered. If the site is significant, USF may choose to excavate completely or take definite steps to avoid and protect the site.

Site 42EM 1642 is significant. It would be a difficult or questionable procedure to isolate any one component from another and still derive a complete picture of the history and operation of Mohrland. Proposed development plans call for direct impact on a large majority of the site's components. Such impact will result in the loss of a singificant portion of the historic data base in the region.

The obvious answer is to avoid, as much as possible, the extant historic remains. Given the limitations of space and topography, this seems unfeasible, but should be

considered wherever possible to reduce the overall impact.

Any number of possibilities exist to mitigate unavoidable impacts to the town and its associated mining features. One would be to compile all known maps, photographs, architectural drawings, mine records and written or oral histories. Such a compilation would help preserve the human history, social interaction and evidence of technology and unique architecture rarely, if ever, recorded.

A second approach may be to undertake the sample collection of artifacts or possibly unique pieces of equipment for preservation and additional study. Excavation/testing of structures may add valuable physical evidence of technology, style and material culture missing from mine records or drawings.

The town itself was occupied from 1909 to about 1938. Later impacts reduced several components to rubble but likely added little material culture. Mohrland thus presents a tight, chronologically-defined universe capable of addressing numerous scientific questions on the evolution of economy/material culture in turn-of-the-century Utah communities not available elsewhere. At a minimum, such a program should include thorough records reviews, accurate mapping and photographing of the various components,

stratified sampling of artifacts, and limited testing and excavation to fill in gaps in existing architectural/historical documents.

The above brief suggestions are all possibilities. Any programs would need to be clearly detailed and reviewed by USF and the appropriate State and Federal agencies involved in the permit process. USF should consult with the Utah State Historic Preservation Office and with the Utah Division of Oil, Gas and Mining as to further requirements (if any) that may be necessary to fulfill prior to proceeding with the proposed Cedar Creek Mine Expansion Program.

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IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
Form approved for use by
BLM - Utah, Idaho, Nevada
Division of State History - Utah
USFS - Intermountain Region

*1. State No. 42Em1641
*2. Agency No.
3. Temp No. RT-1

4. State Utah County Emery
5. Project U.S. Fuels Cedar Creek Mine Expansion
*6. Report No. BYU Technical Series 83-22
7. Site Name None
8. Class ☒ Prehistoric ☐ Historic ☐ Paleontologic ☐ Ethnographic
9. Site Type Rock Shelter-Alcove
*10. Elevation 7800 ft.
*11. UTM Grid Zone 12 496560 m E 4365840 m N
*12. SE of NE of SE of Section 8 T. 16 S R. 8 E
*13. Meridian Salt Lake
*14. Map Reference Hiawatha Quad., Utah 7.5 min Topographic
15. Aerial Photo None
16. Location and Access The site is located in Cedar Creek Canyon, a deep canyon running East from Gentry Mountain. Access is gained by following State Highway 10 approximately 1 3/4 miles northeast of Huntington to State Highway 236. Follow State Highway 236 approximately 8 miles northwest to the eastern edge of the historic town of Mohrland. The rock shelter is located approximately 2 miles further west, up Cedar Creek Canyon, 100 meters west of Mohrland King Mine #2, and 40 meters north of the road. A fence line crosses the road and passes just to the west of the rock shelter.

*17. Land Owner Private
*18. Federal Admin. Units Forest District
*19. Planning Units (USFS only)
20. Site Description The site is a large alcove in which heavy deposits of rodent material is located, especially toward the back. Also present are numerous burned bones, ranging from a large partial long bone of a large animal, to smaller fragments and even a burned rodent jaw. No lithics or ceramics were present. However, numerous rocks appeared burned, part of the roof appeared blackened, and a definate charcoal lens can be seen in an exposed profile, running under a layer of settled rocks. The ground under the layer is fire reddened - beneath this is apparent layer of bat droppings. Depth of the charcoal lens is 15 cm below surface. A heavy slope is present in the east side of the alcove. The site is probably shallow, as sections of bedrock can be seen in spots, expecially to the western end of the alcove.

*21. Site Condition ☐ Excellent (A) ☐ Good (B) ☒ Fair (C) ☐ Poor (D)
*22. Impact Agent(s) Modern disturbance from mining population, natural erosion

*23. Nat. Register Status ☐ Significant (C) ☐ Non-Significant (D) ☒ Unevaluated (USFS only) (Z)
Justify Unevaluated - Needs to be tested for significance

24. Photos 83-RT-11-2
25. Recorded by Richard Talbot
*26. Survey Organization CRMS-BYU *28. Survey Date 6/17/83
27. Assisting Crew Members Asa Nielson, David Merrill

*Encoded data items

BLM 8100-1
FS R-4 2300-2
5/82

Part A - Environmental Data

Site No.(s) 42Em1641

*29. Slope 15 % Slope 180 Aspect (Degrees)

*30. Direction/Distance to Permanent Water 180 Bearing (Degrees) 1 x 100 Meters

*Type of Water Source ☐ Spring/Seep (A) ☒ Stream/River (B) ☐ Lake (C) ☐ Other (D)

Name of Water Source Cedar Creek

Distance to Nearest Other Water Source/Type 4.5 miles - 210° - Huntington Creek

*31. Geographic Unit Wasatch Plateau Section of Basin and Range-Colorado Plateau Transition

*32. Topographic Location (check one under each heading)

PRIMARY LANDFORM	PRIMARY POSITION	SECONDARY LANDFORM		SECONDARY POSITION
☐ mountain spine(A)	☐ top/crest/peak(A)	☐ alluvial fan(A)	☐ playa(M)	☐ top/crest/peak(A)
☐ hill(B)	☐ edge(B)	☐ alcove/rock shelter(B)	☐ port.geo.feature(N)	☒ edge(B)
☐ tableland/mesa(C)	☒ slope(C)	☐ arroyo(C)	☐ plain(O)	☐ slope(C)
☐ ridge(D)	☐ toe/foot/bottom/mouth(D)	☐ basin(D)	☐ ridge/knoll(P)	☐ toe/foot/bottom/mouth(D)
☐ valley(E)	☐ saddle/pass(E)	☐ cave(E)	☐ slope(Q)	☐ interior(G)
☐ plain(F)	☐ bench/ledge(F)	☐ cliff(F)	☐ terrace/bench(R)	☐ step(H)
☒ canyon(G)	☐ rimrock(G)	☐ delta(G)	☐ talus slope(S)	☐ riser(I)
	☐ interior(H)	☐ detached monolith(H)	☐ island(T)	☐ patterned ground (N)
		☐ dune(I)	☒ outcrop(U)	☐ face(O)
		☐ floodplain(J)	☐ spring mound/bog(V)	☐ saddle/pass(P)
		☐ ledge(K)	☐ valley(W)	
		☐ mesa/butte(L)	☐ cutbank(X)	
			☐ riser(Y)	

Describe Site is an alcove under a large rock outcrop on the north side of Cedar Creek Canyon.

*33. On-site Depositional Context

☐ fan(A)	☐ outcrop(O)	☐ morraine(J)	☐ desert pavement(P)
☐ talus(B)	☐ extinct lake(F)	☐ flood plain(K)	☐ stream bed(R)
☐ dune(C)	☐ extant lake(G)	☐ marsh(L)	☐ aeolian(S)
☐ stream terrace(D)	☐ alluvial plain(H)	☐ landslide/slump(M)	☐ none(T)
☐ playa(E)	☒ colluvium(I)	☐ delta(N)	☐ residual(U)

34. Vegetation

*a. Life Zone ☐ Arctic-Alpine(A) ☐ Hudsonian(B) ☐ Canadian(C) ☒ Transitional(D) ☐ Upper Sonoran(E) ☐ Lower Sonoran(F)

*b. Habitat 1 - Primary On-Site 2 - Secondary On-Site 3 - Surrounding Site

☐ Aspen(A)	☐ Lodgepole Pine Forest(F)	☐ Shrub Woodland(K)	1 ☒ Big Sagebrush(P)
☐ Spruce-Fir Forest(B)	☐ Other/Mixed Conifer Forest(G)	☐ Riparian(L)	2 ☒ Little Sagebrush(Q)
☐ Douglas Fir Forest(C)	3 ☒ Pinyon-Juniper Woodland(H)	☐ Grassland/Steppe(M)	☐ Barren(R)
☐ Alpine Grassland(D)	☐ Wet Meadow(I)	☐ Desert Lake Shore(N)	☐ Marsh/Swamp(S)
☐ Ponderosa Forest(E)	☐ Dry Meadow(J)	☐ Salt Desert Shrub(O)	☐ Lake-Reservoir(T)
			☐ Agricultural(U)

Describe Primarily sage, rabbitbrush, yucca, small grasses; pinyon-juniper covering slopes of canyon.

*35. Miscellaneous Text

36. Comments/Continuations

Form must be accompanied by a site map; photocopy of U.S.G.S topo map with T., R., scale, and quad name; photographs of the site; and artifact sketches (if applicable).

Part B - Prehistoric Sites

Site No.(s) 42Em1641

RT-1

1. Site Type Rock Shelter

*2. Culture

AFFILIATION	DATING	AFFILIATION	DATING
Unknown			

3. Site Dimensions 10 m X 5 m *Area 50 sq m

*4. Surface Collection/Method
☒ None (A) ☐ Grab Sample (B) ☐ Designed Sample (C) ☐ Complete Collection (D)

Sampling Method None

*5. Estimated Depth of Fill
☐ Surface (A) ☐ 0-20 cm (B) ☐ 20-100 cm (C) ☐ 100 cm + (D) ☒ Fill noted but unknown (E)

How Estimated Profile eroding away in the fill

(If tested, show location on site map.)

*6. Excavation Status ☐ Excavated (A) ☐ Tested (B) ☒ Unexcavated (C)

*7. Summary of Artifacts and Debris
☐ Lithic Scatter (LS) ☐ Isolated Artifact (IA) ☒ Burned Stone (BS)
☐ Ceramic Scatter (CS) ☐ Organic Remains (VR) ☐ Ground Stone (GS)
☐ Basketry/Textiles (BT) ☐ Shell (SL) ☐ Lithic Source(s)

Describe Several fragments of burned bone from larger animals and small rodents. Small fragments of burned rocks were noted in the fill and in front of the rock shelter.

*8. Lithic Tools

QUANTITY	TYPE	QUANTITY	TYPE

Describe None

*9. Lithic Debitage - Estimated Total Quantity
☒ None (A) ☐ 1-9 (B) ☐ 10-25 (C) ☐ 25-100 (D) ☐ 100-500 (E) ☐ 500 + (F)

Material Type

Flaking Stages (0) Not Present (1) Rare (2) Common (3) Dominant

Decortication _____ Secondary _____ Primary _____ Final Shaping _____

10. Maximum Density-#/sq m (all lithics)

Part B - Prehistoric Sites

Site No.(s) 42Em1641

11. Ceramic Artifacts (VI/1-132)

QUANTITY	TYPE	QUANTITY	TYPE

Describe None

12. Maximum Density-#/sq m (ceramics)

*13. Non-Architectural Features (locate on site map)

- ☒ Hearth/Firepit (HE)
- ☐ Rubble Mound (RM)
- ☐ Earthen Mound (EM)
- ☐ Water Control (WC)
- ☒ Midden (MD)
- ☐ Stone Circle (SC)
- ☐ Burial (BU)
- ☐ Petroglyph (PE)
- ☐ Depression (DE)
- ☐ Rock Alignment (RA)
- ☐ Talus Pit (TP)
- ☐ Pictograph (PI)

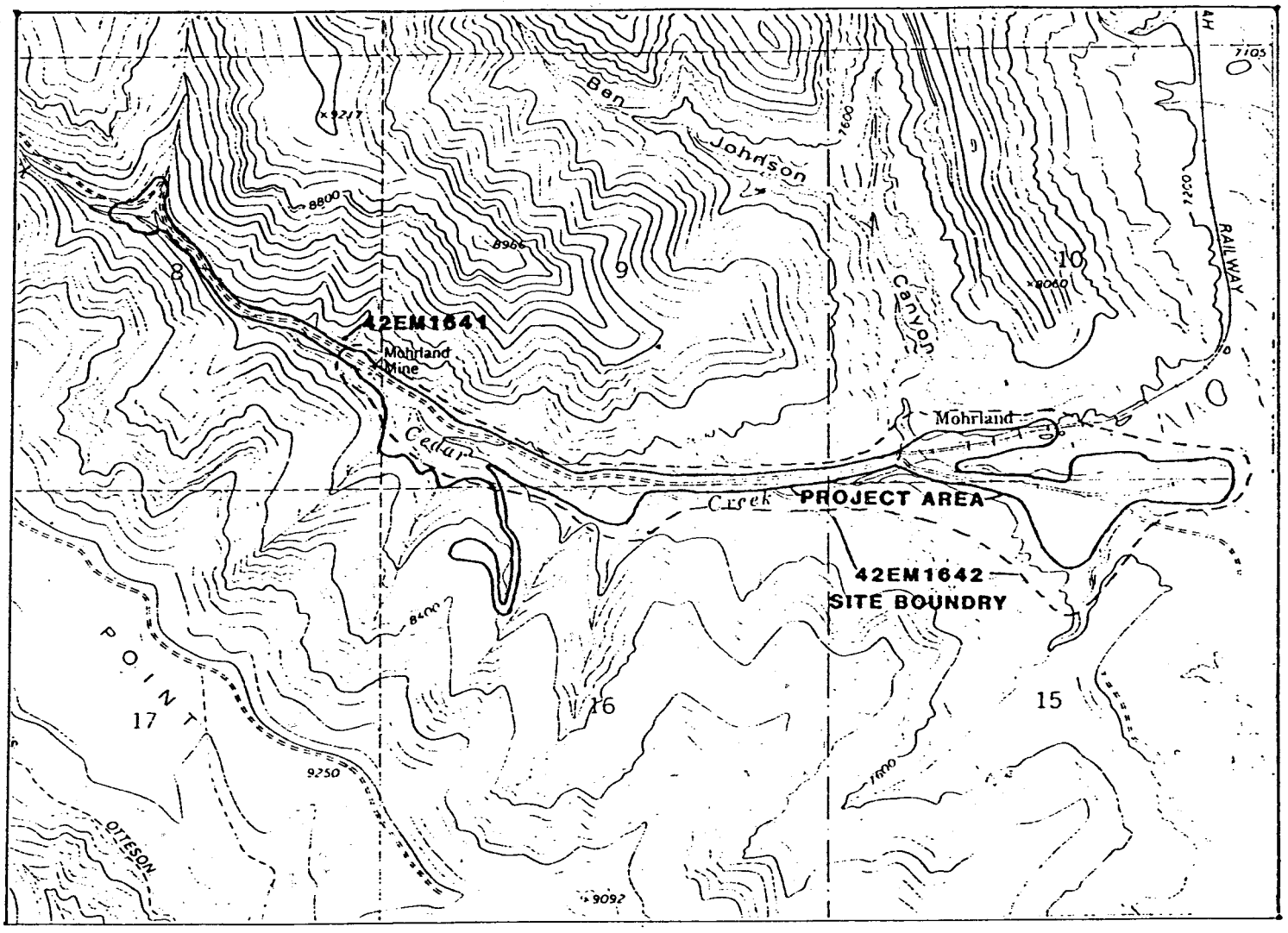
Describe A thin (2-5cm) lens of charcoal was noted in an eroding profile under the alcove. The lens was 10-15 cm below the surface and extended 30cm, disappearing under some rocks deposited in the fill. The area in front of the alcove was slightly more darkened than the natural surrounding soil, indicating possible midden area.

*14. Architectural Features (locate on site map)

QUANTITY	MATERIAL	TYPE	QUANTITY	MATERIAL	TYPE

Describe None

15. Comments/Continuations



N

PROJECT: U.S. Fuels - Cedar Creek Mine Application

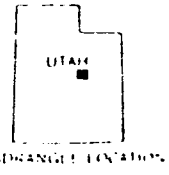
T. 16 S

COUNTY: Emery

R. 8 E

LEGEND: Project Area and Site Location

QUAD: Hiawatha, Utah 7.5 min., 1978



QUADRANGLE LOCATION

FIGURE V-2

UNIVERSAL DATA FORM

CONTINUATION SHEET

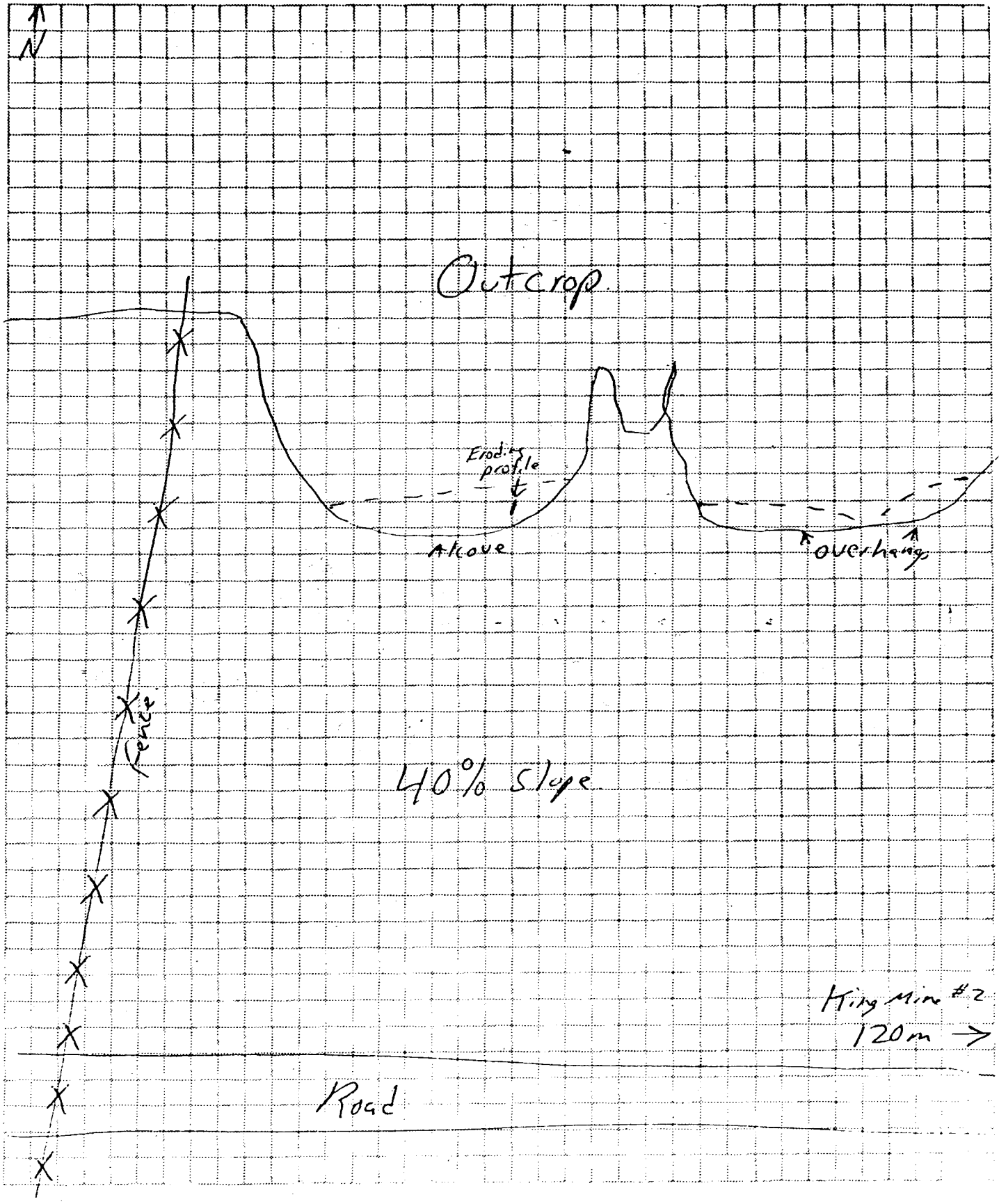
PAGE

DEPARTMENT OF ANTHROPOLOGY
BRIGHAM YOUNG UNIVERSITY

SITE NO. 42Em1641

DATE 6/17/83

FEATURE NO.



FINAL SHEET YES ☐ NO ☐

RECORDER

42Eml641 - Alcove with Talus Slope in Foreground
Looking North

IMACS ENCODING FORM

5/82

To be completed for each site form.
For instructions and codes, see IMACS Users Guide.

Richard Talbot
Encoder's Name

A

1 [42]-[EM]-[ØØ164.1] State Site Number | 2 [ ]-[ ] Agency Site Number | 6 [ ] Agency Report Number | 10 [ØØ78ØØ] Elevation | 11 [12] Zone | [496560] Easting | [4365840] Northing

12 [SE] ¼ [NE] ¼ [SE] ¼ [Ø8] Sec. [16S] T. [ØØ8E] R. | 13 [1] Merid. | 14 [HIAWATHA, UTAH 7.5] USGS Map | 17 [PR] Owner | 18 [ ] Forest [ ] District

19 [ ] Capab. [ ] Anlys. [ ] Mngmt. | 21 [C] Cond. | 22 [ER] [RC] Impacts [ ] | 23 [Z] N.R. | 26 [BC] Organ. | 28 [Ø6]-[17]-[83] Survey Date | 29 [15] % | [18Ø] Aspect

30 [18Ø] [ØØ1] [B] Water: degrees/dist./type | 31 [DA] Geog. | 32 [GC] [UB] 1st 2nd Location | 33 [I] Dep. | 34 [D] [PQH] Vegetation | 35 [ ] Misc. Text

B

2 [ ] Culture/Date | 3 [ØØØ5Ø] Area | 4 [ ] Coll. | 5 [E] Depth | 6 [C] Exca. Status | 7 [ZBS] [ZCB] Artifacts: #/type | 8 [ ] Lithic Tools: #/type

9 [ ] # [ ] [ ] [ ] [ ] Flaking Stages

11 [ ] Ceramics: #/type | 13 [1HE] [1MD] Features: #/type | 14 [ ] Architecture: #/material/type

C

2 [ ] [ ] [ ] [ ] Historic Themes | 3 [ ] [ ] [ ] [ ] [ ] Cultures/Dating | 4 [ ] [ ] Dates | 5 [ ] Area | 6 [ ] Coll. | 7 [ ] Depth | 8 [ ] Exca.

9 [ ] Artifacts: #/type | 10 [ ] Ceramics: #/type | 11 [ ] Glass: #/mnft./color/funct. | 13 [ ] Features: #/type

14 [ ] Architecture: #/material/type

Lettering Guide: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 Ø

IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
Form approved for use by
BLM - Utah, Idaho, Nevada
Division of State History - Utah
USFS - Intermountain Region

*1. State No. 42Em1642
*2. Agency No.
3. Temp No. H-1

4. State Utah County Emery
5. Project U.S. Fuels - Cedar Creek Mine Application
*6. Report No. BYU Technical Series No. 83-24
7. Site Name Mohrland, Utah
8. Class ☐ Prehistoric ☒ Historic ☐ Paleontologic ☐ Ethnographic
9. Site Type Historic Mining Town of Mohrland, Utah, and associated mine workings
*10. Elevation 7200 ft.
*11. UTM Grid Zone 12 499040 m E 4365220 m N
*12. NW of NW of NE of Section 15 T. 16 S R. 8 E
*13. Meridian Salt Lake
*14. Map Reference Hiawatha Quad., Utah 7.5 min, 1978
15. Aerial Photo None
16. Location and Access The site is located in Cedar Creek Canyon, a deep canyon running east from Gentry Mountain. Access is gained by following State Highway 10 approximately 1 3/4 miles northeast of Huntington to State Highway 236. Follow State Highway 236 approximately 8 miles northwest to the eastern edge of the historic town of Mohrland. A large single story foundation lies off the south side of the road. This is the former amusement hall. The main portion of Mohrland lies here in the large open flat on either side of the road. However, smaller house groups continue approximately 1½ miles further up the canyon.

*17. Land Owner Private
*18. Federal Admin. Units Forest District
*19. Planning Units (USFS only)
20. Site Description See Attached Site Description

*21. Site Condition ☐ Excellent (A) ☐ Good (B) ☐ Fair (C) ☒ Poor (D)
*22. Impact Agent(s) Natural Erosion, vandalism and tourism

*23. Nat. Register Status ☒ Significant (C) ☐ Non-Significant (D) ☐ Unevaluated (USFS only) (Z)
Justify Although mostly only foundations remain, these offer significant potential for research, Mohrland is one of the few remaining examples of the company-owned mining town of the late 1800's - early 1900's. Depth in and around all structures.
24. Photos 83-RT-7-1 to 21; 83-RT-8-1 to 15; 83-RT-11-3 to 8, 11; 83-RT-13,14,15,16 all
25. Recorded by David Merrill
*26. Survey Organization CRMS-BYU *28. Survey Date 6/17-18/83
27. Assisting Crew Members Richard Talbot, Asa Nielson

*Encoded data items

BLM 8100-1
FS R-4 2300-2
5/82

Part A - Environmental Data

Site No.(s) 42Em1642

*29. Slope 1 % Slope 0 Aspect (Degrees)

*30. Direction/Distance to Permanent Water 0 Bearing (Degrees) 1 x 100 Meters

*Type of Water Source ☐ Spring/Seep (A) ☒ Stream/River (B) ☐ Lake (C) ☐ Other (D)

Name of Water Source Cedar Creek

Distance to Nearest Other Water Source/Type 4.5 miles - 210° - Huntington Creek

*31. Geographic Unit Wasatch Plateau Section of Basin and Range - Colorado Plateau

*32. Topographic Location (check one under each heading)

PRIMARY LANDFORM
- ☐ mountain spine(A)
- ☐ hill(B)
- ☐ tableland/mesa(C)
- ☐ ridge(D)
- ☐ valley(E)
- ☐ plain(F)
- ☒ canyon(G)

PRIMARY POSITION
- ☐ top/crest/peak(A)
- ☐ edge(B)
- ☐ slope(C)
- ☒ toe/foot/bottom/mouth(D)
- ☐ saddle/pass(E)
- ☐ bench/ledge(F)
- ☐ rimrock(G)
- ☐ interior(H)

SECONDARY LANDFORM
- ☐ alluvial fan(A)
- ☐ alcove/rock shelter(B)
- ☐ arroyo(C)
- ☐ basin(D)
- ☐ cave(E)
- ☐ cliff(F)
- ☒ delta(G)
- ☐ detached monolith(H)
- ☐ dune(I)
- ☐ floodplain(J)
- ☐ ledge(K)
- ☐ mesa/butte(L)
- ☐ playa(M)
- ☐ port.geo.feature(N)
- ☐ plain(O)
- ☐ ridge/knoll(P)
- ☐ slope(Q)
- ☐ terrace/bench(R)
- ☐ talus slope(S)
- ☐ island(T)
- ☐ outcrop(U)
- ☐ spring mound/bog(V)
- ☐ valley(W)
- ☐ cutbank(X)
- ☐ riser(Y)

SECONDARY POSITION
- ☐ top/crest/peak(A)
- ☐ edge(B)
- ☒ slope(C)
- ☐ toe/foot/bottom/mouth(D)
- ☐ interior(G)
- ☐ step(H)
- ☐ riser(I)
- ☐ patterned ground (N)
- ☐ face(O)
- ☐ saddle/pass(P)

Describe Structures are located throughout the canyon, on steep slopes, near stream beds, etc. However, the majority of the structures sit on the flat delta bottoms and slopes of tributaries to Cedar Creek.

*33. On-site Depositional Context

- ☐ fan(A)
- ☐ talus(B)
- ☐ dune(C)
- ☐ stream terrace(D)
- ☐ playa(E)
- ☐ outcrop(Q)
- ☐ extinct lake(F)
- ☐ extant lake(G)
- ☐ alluvial plain(H)
- ☐ colluvium(I)
- ☐ morraine(J)
- ☐ flood plain(K)
- ☐ marsh(L)
- ☐ landslide/slump(M)
- ☒ delta(N)
- ☐ desert pavement(P)
- ☐ stream bed(R)
- ☐ aeolian(S)
- ☐ none(T)
- ☐ residual(U)

34. Vegetation

*a. Life Zone ☐ Arctic-Alpine(A) ☐ Hudsonian(B) ☐ Canadian(C) ☒ Transitional(D) ☐ Upper Sonoran(E) ☐ Lower Sonoran(F)

*b. Habitat

1 - Primary On-Site	2 - Secondary On-Site	3 - Surrounding Site	
☐ Aspen(A)	☐ Lodgepole Pine Forest(F)	☐ Shrub Woodland(K)	☐ Big Sagebrush(P)
☐ Spruce-Fir Forest(B)	☐ Other/Mixed Conifer Forest(G)	☐ Riparian(L)	☐ Little Sagebrush(Q)
☐ Douglas Fir Forest(C)	23 Pinyon-Juniper Woodland(H)	☐ Grassland/Steppe(M)	☐ Barren(R)
☐ Alpine Grassland(D)	☐ Wet Meadow(I)	☐ Desert Lake Shore(N)	☐ Marsh/Swamp(S)
☐ Ponderosa Forest(E)	☐ Dry Meadow(J)	☐ Salt Desert Shrub(O)	☐ Lake-Reservoir(T)
			☐ Agricultural(U)

Describe 3-4 ft. sage covers most habitation areas, choking out other vegetation. Pinyon - Juniper dominates surrounding hill sides, along with little sage, ephedra, and choke cherry and thistle type brambles.

*35. Miscellaneous Text

36. Comments/Continuations

10 Elevation given is lower town section, around office and amusement hall. Site stretches from 6960 to 7840 ft., going up Cedar Creek Canyon.

11 UTM given is lower town section, around office. Site stretches from 4364800 N: on the south of the main town section, to 4365800 N: on the North edge of Mine portal #2; and from 499840 E: on the east edge of town, to 496580 E: on the west of Mine portal #2.

12 Quarter section given is for approximate location of mine office in the main portion of town. The total site actually covers most of the NW¼ & NE¼ of Section 15, the SE¼ & SW¼ of Section 10, the norther edge of NW¼ & NE¼ of Section 16, the southern edge of SW¼ & SE¼ of Section 9, and much of the SE¼ of Section 8.

29 Actual slope varies between 0% & 5%; Aspect is mostly 0°, but also 180°

Form must be accompanied by a site map; photocopy of U.S.G.S. topo map with T., R., scale, and quad name; photographs of the site; and artifact sketches (if applicable).

Part C - Historic Sites

Site No.(s) 42Eml642

H-1

1. Site Type Historic Town of Mohrland, Utah

*2. Historic Theme(s) Mining, Architecture

*3. Culture

AFFILIATION	DATING	AFFILIATION	DATING
Euro-Am	1909-1938		

*4. Oldest Date 1909 Recent Date 1938

How Determined? Historical Records

5. Site Dimensions 3220 m X 600 m *Area 1,932,000 sq m

*6. Surface Collection/Method
- [x] None (A)
- [ ] Grab Sample (B)
- [ ] Designed Sample (C)
- [ ] Complete Collection (D)

Sampling Method None

*7. Estimated depth of fill
- [ ] Surface (A)
- [ ] 0-20 cm (B)
- [ ] 20-100 cm (C)
- [ ] 100 cm + (D)
- [x] Fill noted but unknown (E)

How Estimated Observable fill in and around most structures

(If tested, show location on site map.)

*8. Excavation Status
- [ ] Excavated (A)
- [ ] Tested (B)
- [x] Unexcavated (C)

*9. Summary of Artifacts and Debris
- [x] Glass (GL)
- [x] Metal (ME)
- [x] Nails (NC, NW)
- [x] Bone (BO)
- [x] Ceramics (CS)
- [ ] Fabric (FA)
- [x] Leather (LE)
- [x] Wire (WI)
- [x] Tin Cans
- [x] Ammunition (AM)
- [x] Wood (WD)
- [x] Rubber (RB)

Describe Scatter of all forms of artifacts throughout the site. Glass of all colors from various types of bottles; Numerous small scraps of unidentifiable metal; Large metal objects associated with mining (ventilation fans, grates, steel doors, rail road tracks, household bedsprings, etc); Numerous cut nails; Small bone fragments, both historic and modern; Ceramic sherds of various uses; Leather boots, straps, and miscellaneous pieces; bailing and barbed wire pieces; Innumberable crimped tin cans; Spent 30-30 and 8mm ammunition shells; Countless wood debris, including hand cut and notched logs, square beams, and cut lumber; Rubber hoses and miscellaneous small fragments.

*10. Ceramic Artifacts

QUANTITY	TYPE	QUANTITY	TYPE
1000+	Misc. Varieties		

Describe Ceramic artifacts heavily scattered throughout the entire canyon, but especially within the residence-house groups. Included are stoneware, porcelain, earthenware, and others of unknown variety.

Part C - Historic Sites

Site No.(s) 42Em1642

*11. Glass

QUANTITY	MANUFACTURE	COLOR	FUNCTION
5000+	Unknown	various	Beverage/Medical/Household

Describe Total site is heavily littered with glass fragments of various kinds, including wine, soda, and sheltzer bottles, pharmaceutical, and cosmetic bottles, various household-type bottles and miscellaneous bottles of unknown use. Colors vary widely, but the majority are blue, green, brown or clear. Manufacturing codes were not noted.

12. Maximum Density-#/sq m (glass and ceramics) 25

*13. Non-Architectural Features (locate on site map)

- [x] Trail/Road (TR)
- [ ] Dump (DU)
- [ ] Dam, Earthen (DA)
- [ ] Hearth/Campfire (HE)
- [x] Tailings (MT, ML)
- [x] Depression (DE)
- [ ] Ditch (DI)
- [ ] Quarry (QU)
- [ ] Rock Alignment (RA)
- [ ] Cemetery/Burial (CB)
- [ ] Inscriptions (IN)
- [ ] Other (OT)

Describe A historic road connects the house groups, staying near the canyon bottom and crossing the stream twice. Tailings are scattered throughout the canyon, although concentrating in the Mine Portal #2 and Lower Processing Plant areas. Innummerable depressions pocket the town site, indicating locations of outdoor lavatories, corrals, and other features.

*14. Architectural Features (locate on site map)

QUANTITY	MATERIAL	TYPE	QUANTITY	MATERIAL	TYPE

Describe See attached continuation sheet

15. Comments/Continuations

14 See attached continuation sheet

Historic Resources Survey Results

Survey Results

CRMS recorded one historic site during the survey for USF.

Historic Sites

Site 42EM 1642 (Figure xx) is the historic town of Mohrland, occupied between 1909 and 1938. In general, the site contains both the mine workings of the Castle Valley Coal Company and the company-owned town adjacent to the mine features in Cedar Creek Canyon. The survey uncovered approximately 18 structures related to the actual mining operation and 60 structures from the town, the majority of which were residences. On the hillside outside and west of the survey area were other foundations for residences which were not recorded by this survey. The various components are briefly listed below.

1) Powder magazine. This structure is listed on the historic map of Mohrland (Figure xx) as a powder magazine. All that remains of the powder magazine is the cement foundation slab and a small cement structure within the building interior. The small structure has a metal door.

2) Portal/manway. This structure was the west portal of the mine, used primarily for ventilation. It has been almost completely backfilled, and all that remains is a small opening and some wire-mesh screen.

3) Bathhouse. The bathhouse has been almost completely obliterated. There remains a cement floor with a basement entrance on the east side. There is a stone stove piping in the basement which at one time was probably connected to a boiler and some water pipes leading into the cement floor above.

4) Site of substation for electric system. A concrete foundation pad and footings mark the site of a substation for the mine electric system. Electricity for the mine was produced in a power house adjacent to the tipple in the bottom of the canyon.

5) Part of the water system. The historic map of Mohrland shows a terminus for the mine/town water system on the concrete foundation and footings at this site. This site is just east of the bathhouse.

6) Hoist house for the tramway. The hoist house is an expertly-crafted cut-stone building. All the windows, doors and roof are missing, though some of the pointing is still in perfect shape. Inside the hoist house the west and east walls have been reinforced with concrete supports, and the floor has a series of concrete footings marking the location of the original machinery.

7) Tunnel for Cedar Creek. The Castle Valley Coal Company built a mine yard over Cedar Creek and routed the creek through a tunnel. The tunnel is constructed of cut stone.

8) Mine portal. The main portal to the mine is a con-

crete structure with its date of construction (1908-1922) set in the top. The portal is still in very good condition, although the entrance to the mine has been back-filled.

9-10) Machine shop. Although this structure must have been extensive at one time, all that remains is a concrete foundation with rails for moving the tram cars into the building. One set of rails runs over a mechanic's pit.

11) Portal for fan. This small concrete portal adjacent to the fan house was part of the mine's ventilation system. It has been almost completely back-filled.

12) Fan building. Of all the mine buildings, the fan building has the highest integrity. The motors which ran the fan have been removed, but the fan itself and its metal housing are still intact. The date of the building and the name of the mine have been set in the concrete over the front door.

13) Heating plant. All that remains of the heating plant is a concrete foundation.

14) Tram tunnel. This is the upper tunnel for the tram. The entrance and exit to the tunnel are cut stone, and it appears that the roof was timbered. A portion of this tunnel has collapsed.

15-42, 44-54) Residences. On the south side of the canyon, across Cedar Creek from the mine workings, are an historic road and 40 residences. This portion of the town of Mohrland is distinct from that portion across from the tipple. In general, none of the residences remain, although rock foundations mark their locations. One or two of the

structures show timbering. The foundations are surrounded by a dense scatter of historic artifacts and building materials. Most of the foundations have some sign of mortar, but there are a number that do not. Similar foundations discovered in a survey of the old Sunnyside townsite were built by stone masons without the use of mortar.

43) Bridge over Cedar Creek. There is a 40 by 15-foot cut post and plank bridge over Cedar Creek still in fair condition. it is held together by metal nails and bolts.

55) Cut-stone foundations for a portion of the mine/ town water system.

56) Cut-stone trestles for the original tram line between the mine portal and the tipple. These trestles are located just above the tipple, and were built during the second development phase in Mohrland. The first tram line did not deliver the coal directly to the tipple, but to a second set of tram cars at the bottom of the hill.

57) Retaining wall. This retaining wall is the only feature of a small grouping of houses from the town of Mohrland which were inside the survey area. Other residences extended northward out of the survey area.

58) Concrete retaining wall. The function of this structure is unknown.

59) Amusement hall. All that remains of this structure are the concrete walls and some concrete walkways and porch foundations. The amusement hall was the center of Mohrland's social life. Despite the building's poor integ-

rity (it lacks doors, windows, a roof and interior features) it is the only remaining structure from the lower portion of Mohrland, across from the tipple. The building is a rectangular structure, and it appears from historic photographs to have had a wood gabled roof with porches on the south and east.

60) Mine office. Most of the walls of this structure have collapsed, but a small portion of the cut-stone exterior remains. The foundation appears to have also been cut stone, with walls from several basement rooms still present.

61) Hospital. All that remains are a cut-stone foundation and about 2-3 feet of wall - no windows, roof or doors.

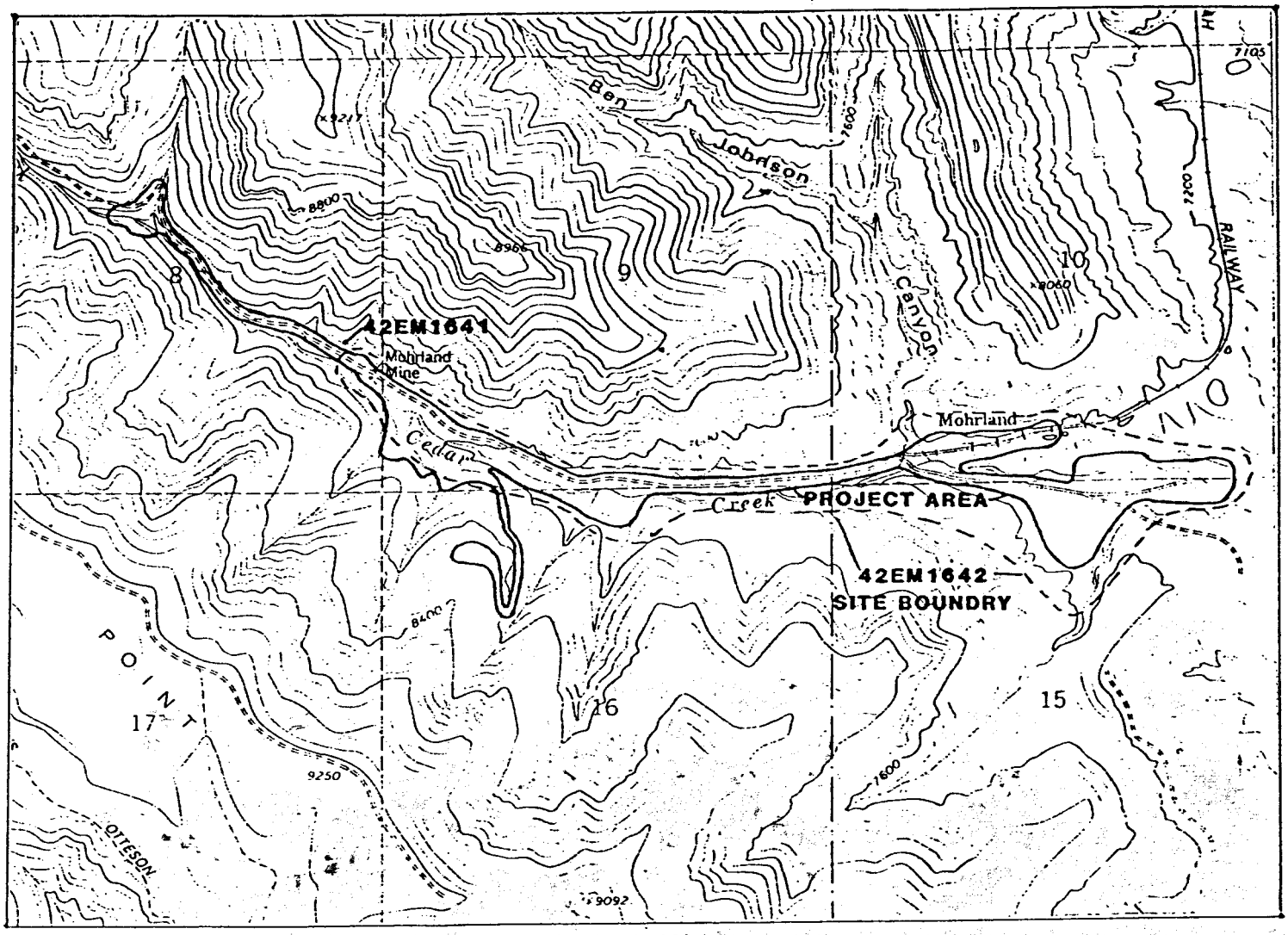
62) Rock foundation for a store. This structure lacks features.

63-64) Cut-stone foundation with concrete backing for the town hotel. There is not much left but a few stories and a depression. There are no features such as windows and doors.

65-78). Foundations for residences. Some of these houses had rock and some concrete foundations. Components 69-70 are the superintendent's residence and garage.

79) Barn. Concrete foundations for a barn with roof timbers collapsed on the floor.

80) Wooden bridge from the historic road from the lower town of Mohrland. The road ran along the south side of Cedar Creek. The bridge is in poor condition.



N

PROJECT: U.S. Fuels - Cedar Creek Mine Application

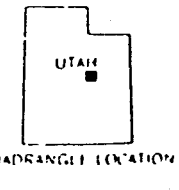
T. 16 S

COUNTY: Emery

R. 8 E

LEGEND: Project Area and Site Location

QUAD: Hiawatha, Utah 7.5 min., 1978



QUADRANGLE LOCATION

FIGURE V-2

IMACS ENCODING FORM

5/82

To be completed for each site form.
For instructions and codes, see IMACS Users Guide.

Richard Talbot
Encoder's Name

A

1 42 - EM - 00164 2 - 6 10 0720 11 12 499040 4365220
State Site Number | Agency Site Number | Agency Report Number | Elevation | Zone | Easting | Northing

12 NW NW NE 15 16 S 08 E 13 1 14 HIAWATHA, UTAH 7.5 17 PR 18 Forest District
¼ ¼ ¼ Sec. T. R. Merid. USGS Map Owner

19 Capab. Anlys. Mngmt. 21 0 Cond. 22 ER VA RC Impacts 23 C N.R. 26 BC Organ. 28 06 - 17 - 83 Survey Date 29 01 ¼ 000 Aspect

30 000 001 B Water: degrees/dist./type 31 DA Geog. 32 CD 1st GC 2nd Location 33 W Dep. 34 D PHH Vegetation 35 SEE FORMS FOR SPECIFICS Misc. Text

B

2 Culture/Date 3 Area 4 Coll. 5 Depth 6 Exca. Status 7 Artifacts: #/type 8 Lithic Tools: #/type

9 # Flaking Stages

11 Ceramics: #/type 13 Features: #/type 14 Architecture: #/material/type

C

2 AR MM Historic Themes 3 EAI Cultures/Dating 4 1909 1938 Dates 5 99998 Area 6 A Coll. 7 E Depth 8 C Exca.

9 ZGL ZME ZNC ZBO ZCS ZLE ZWI ZTC ZAM ZWD ZRB ZHT Artifacts: #/type

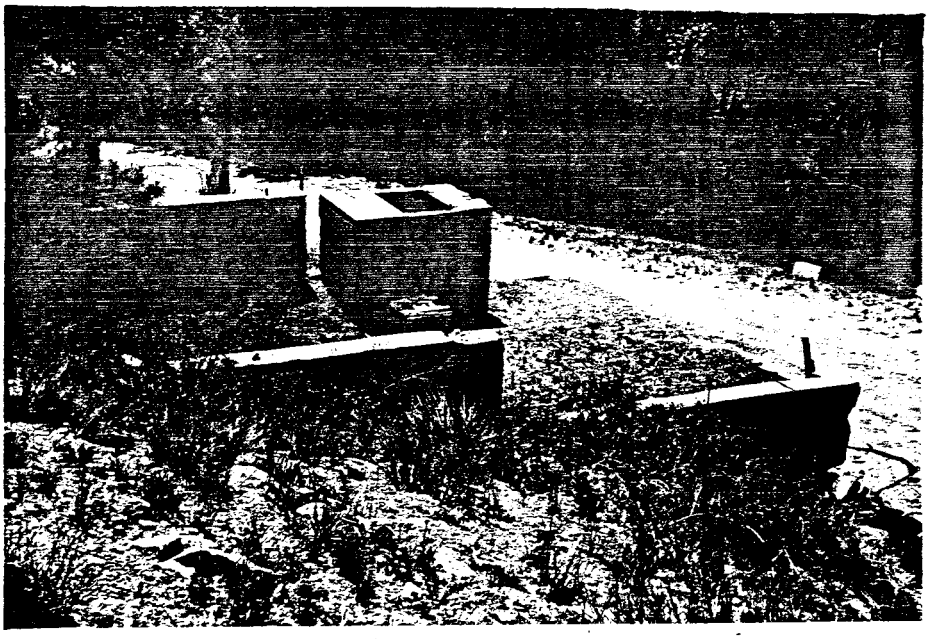
10 ZHA ZHB ZHO ZHZ Ceramics: #/type

11 FJO FGE FHK FDD FHI FU Glass: #/mnft./color/funct.

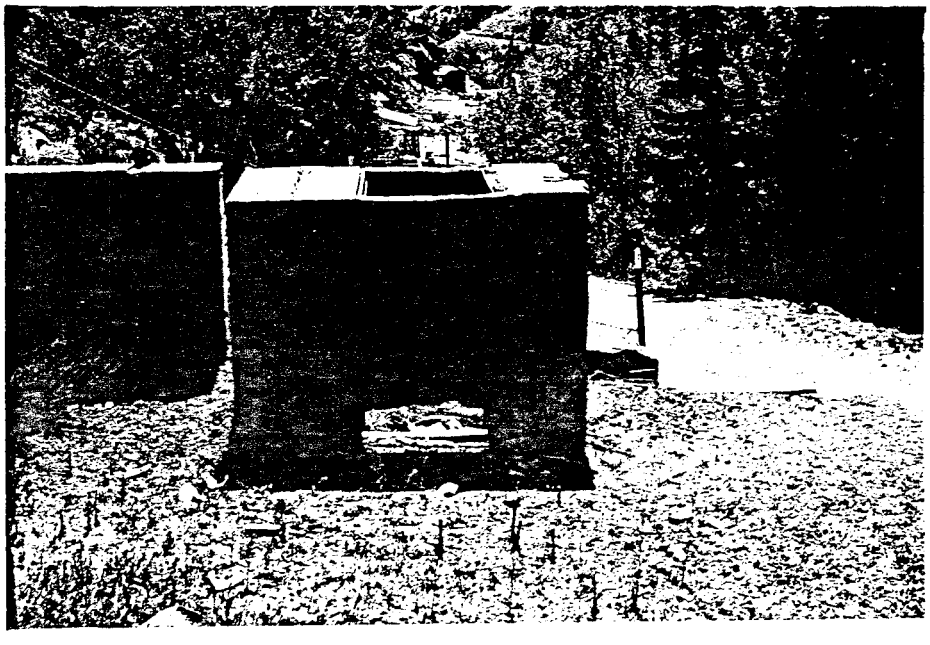
13 ITR ZMT ZDE Features: #/type

14 ZBAR ZBAS ZCCO ZFAN ZCAO 2FBI 1BBJ ZFBY ZBBG ZCAX ZBAK ZCAJ Architecture: #/material/type

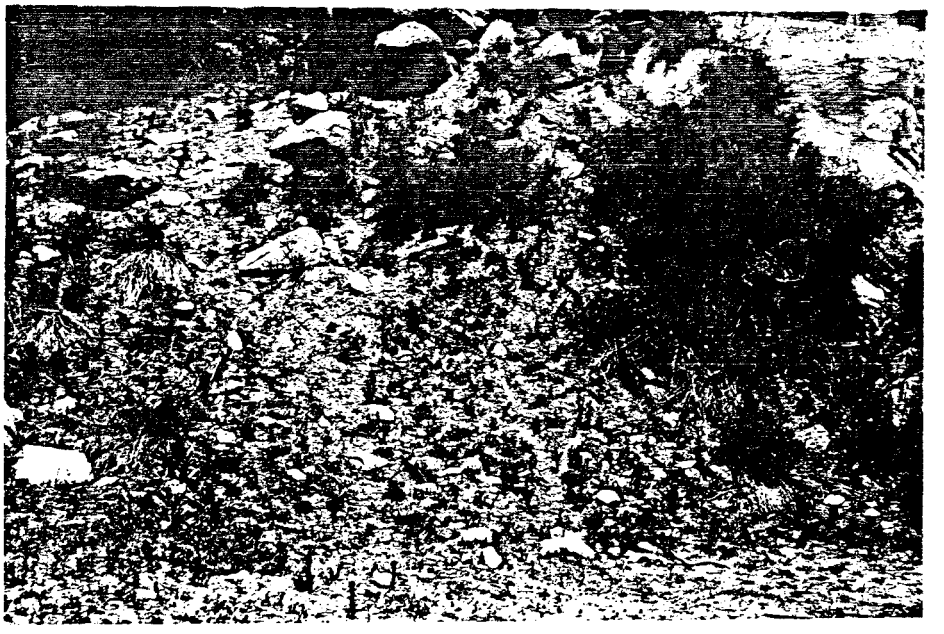
Lettering Guide: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 Ø



1. Powder House
Looking Southeast

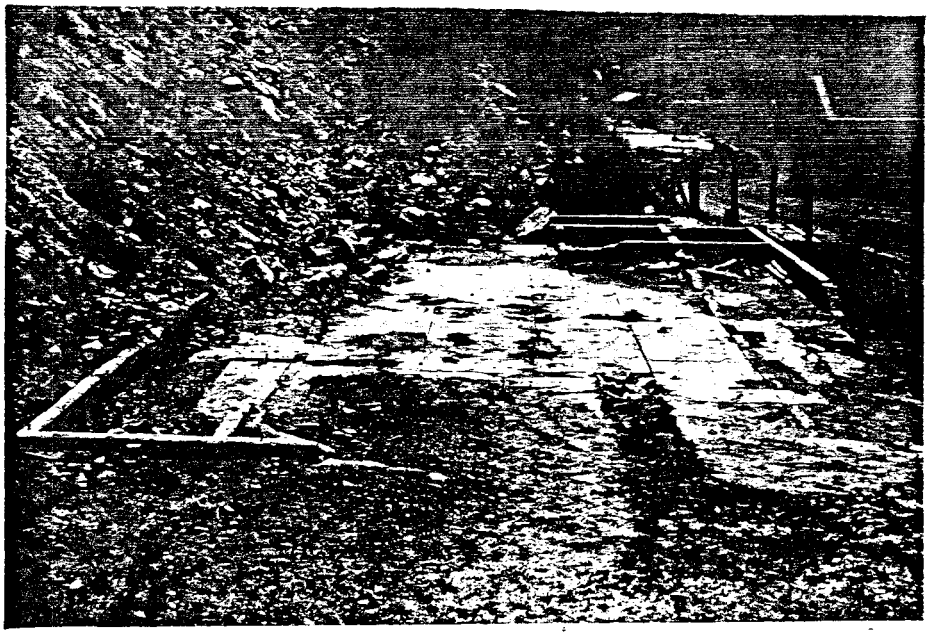


1. Powder House - Detail
Looking East

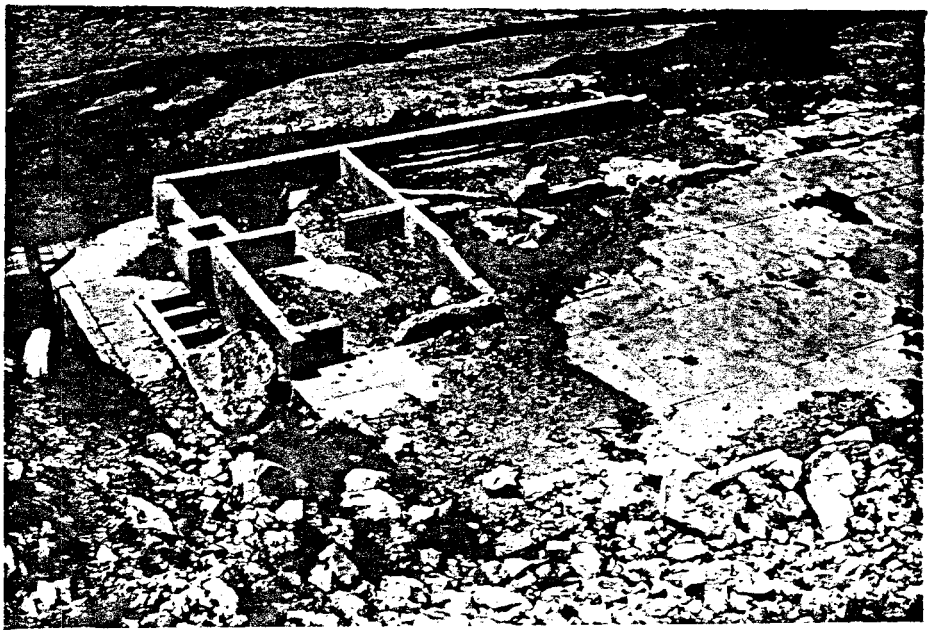


2. Portal/Manway
Looking Northwest

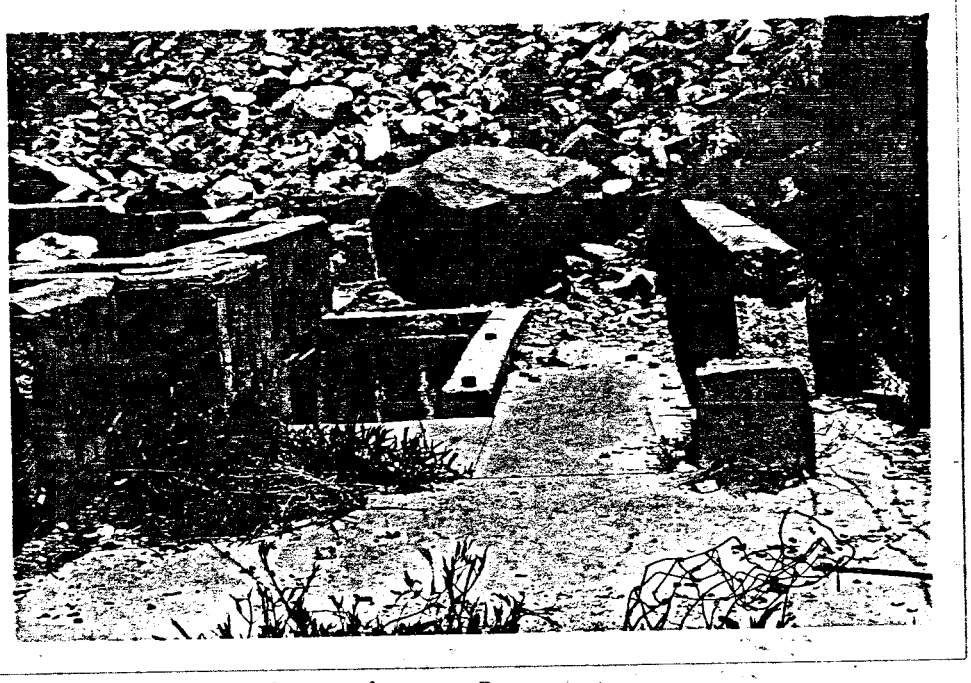
2. Portal/Manway - Detail
Looking North



3. Bathhouse
Looking East

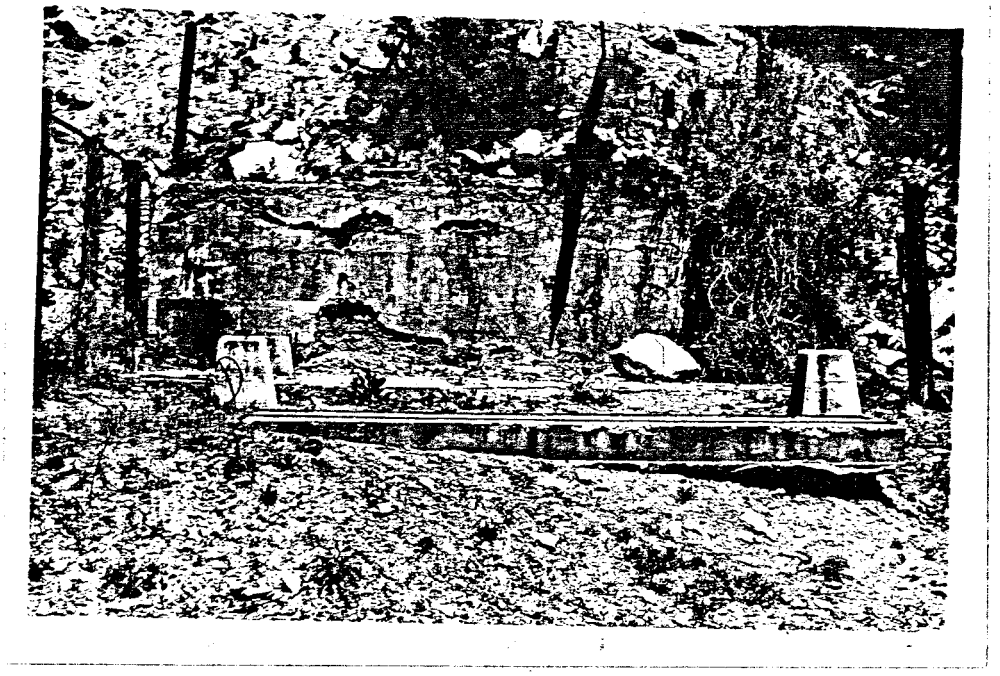


3. Bathhouse - Detail
Looking South

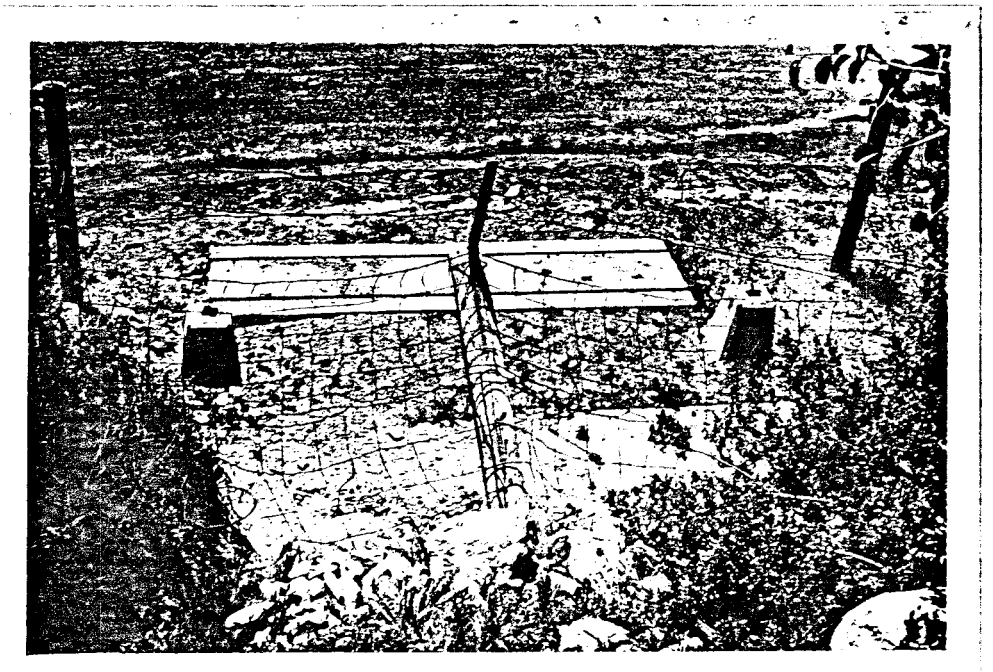


3. Stairs to Basement
Looking North

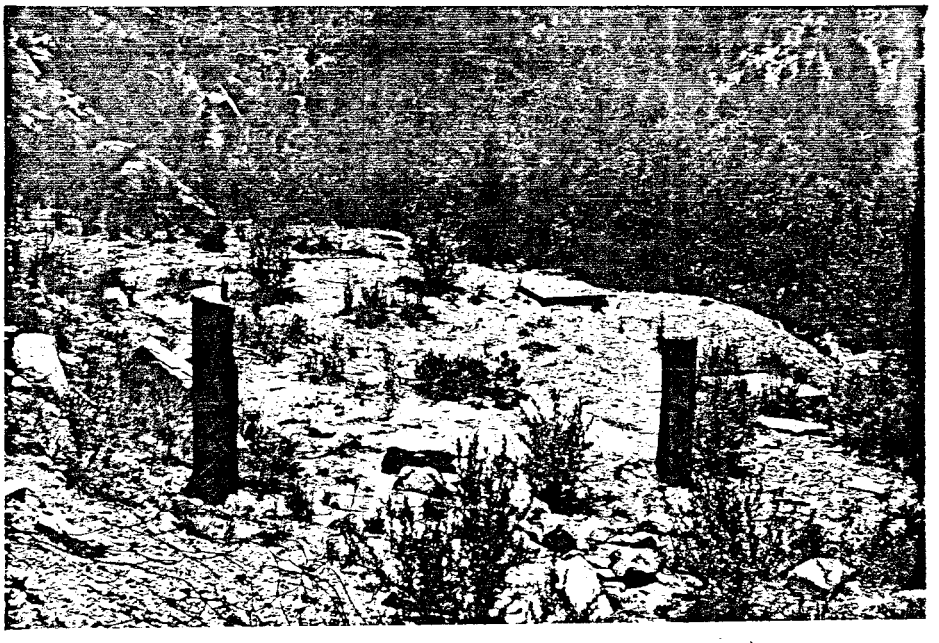
3. Boiler Room



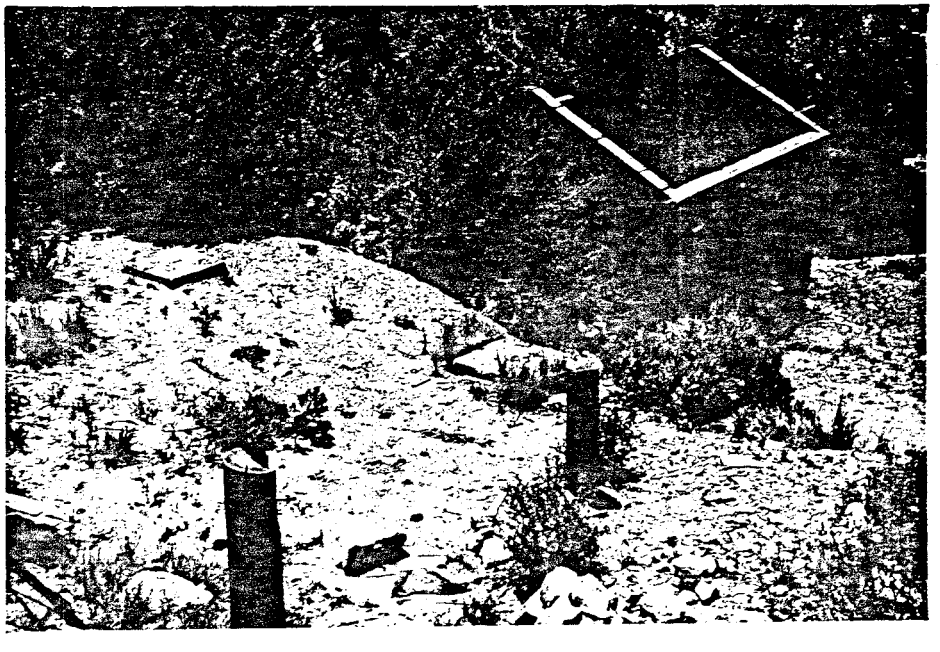
4. Electric Substation
Looking North



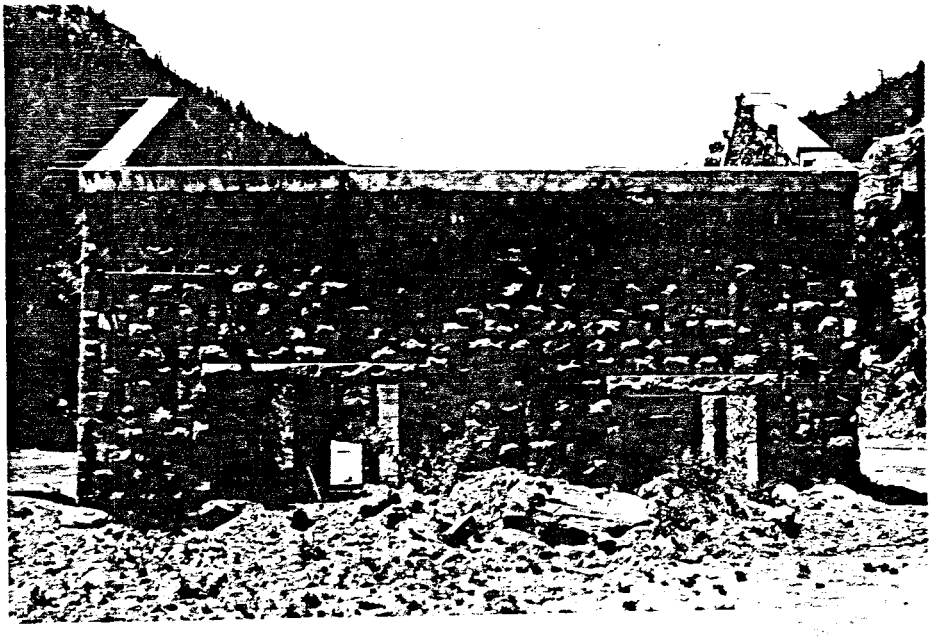
4. Electric Substation
Looking South



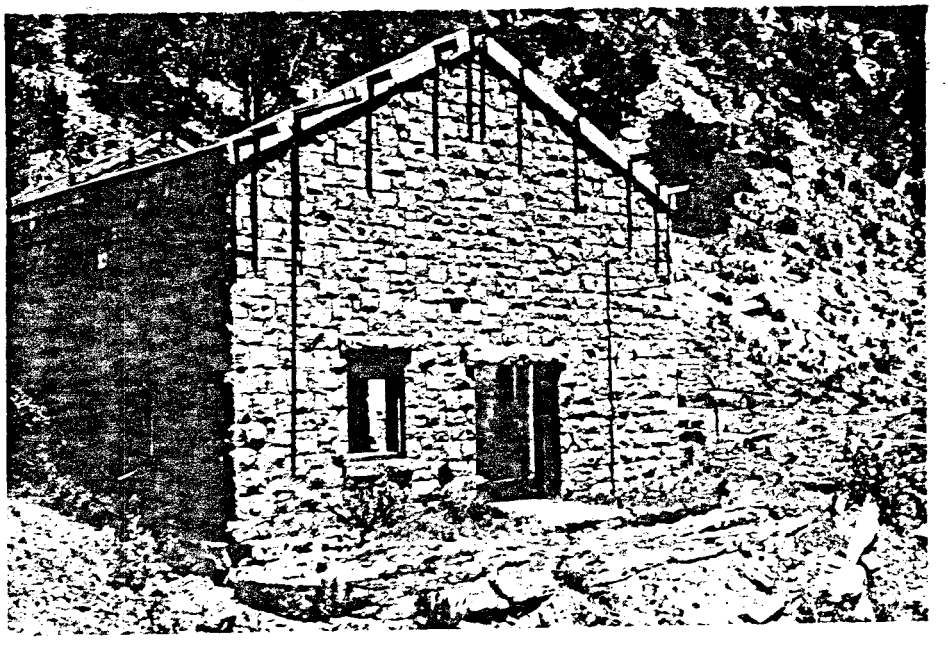
5. Water System Foundation
Looking Southeast



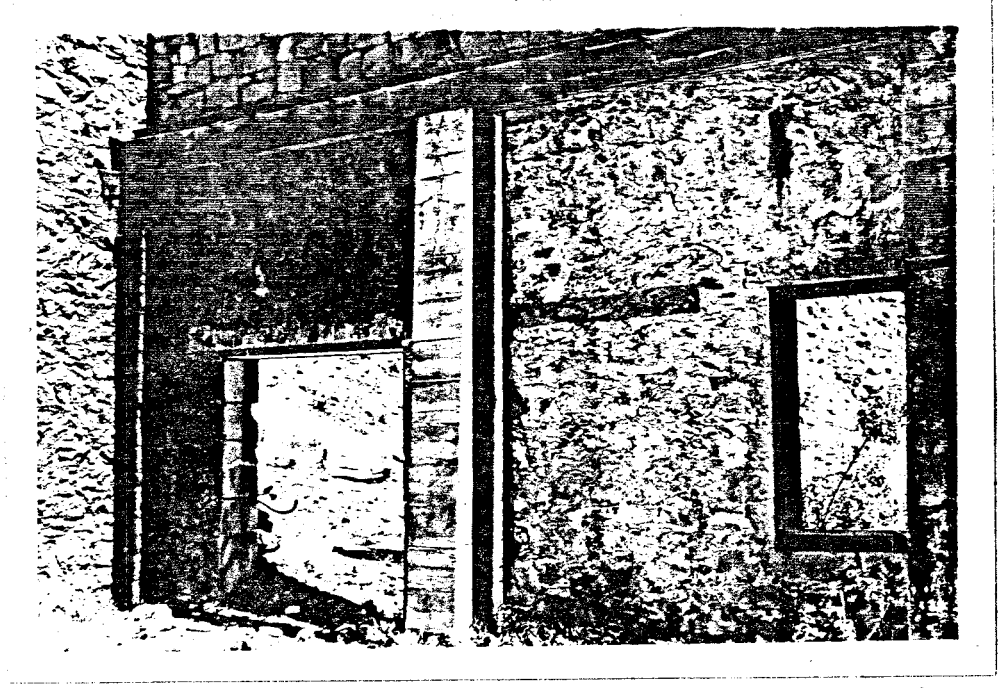
5. Water System Foundation
Looking South



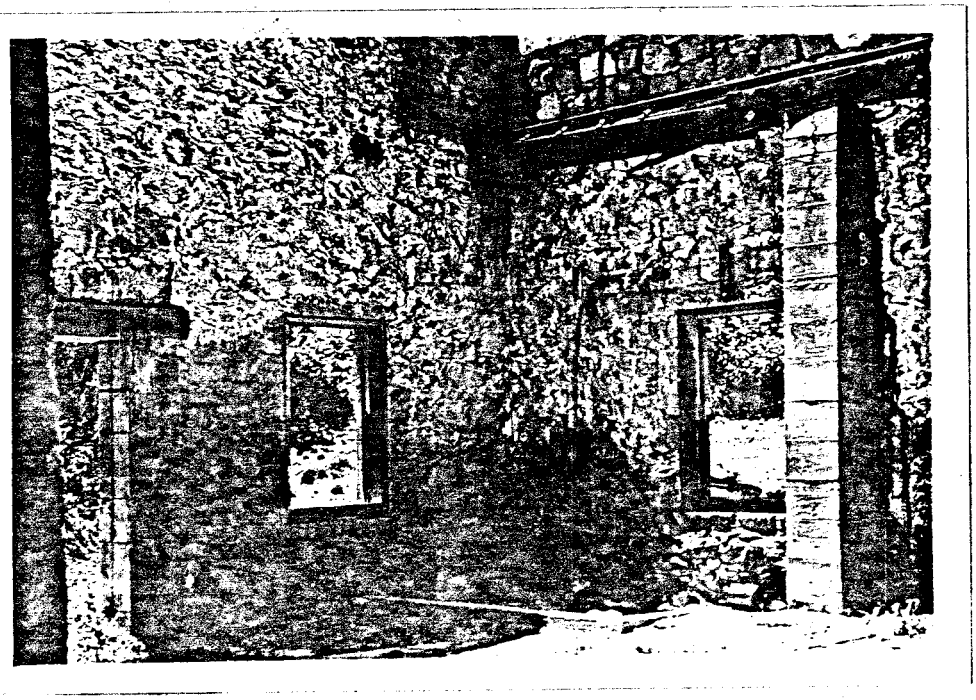
6. Hoist House for Tramway
Looking West



6. Hoist House
Looking Northeast

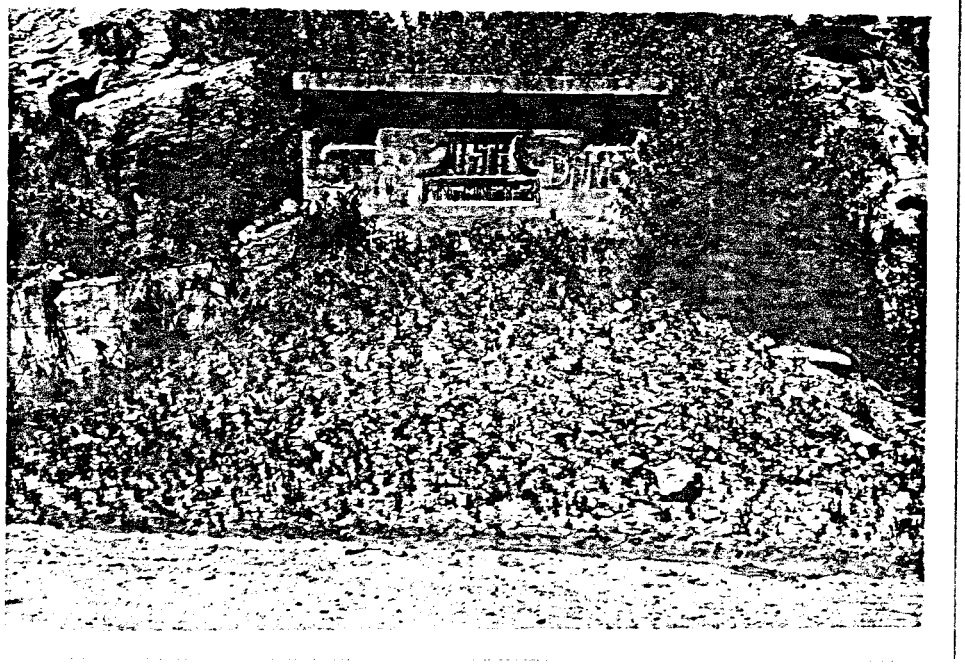


6. Hoist House - Interior Detail



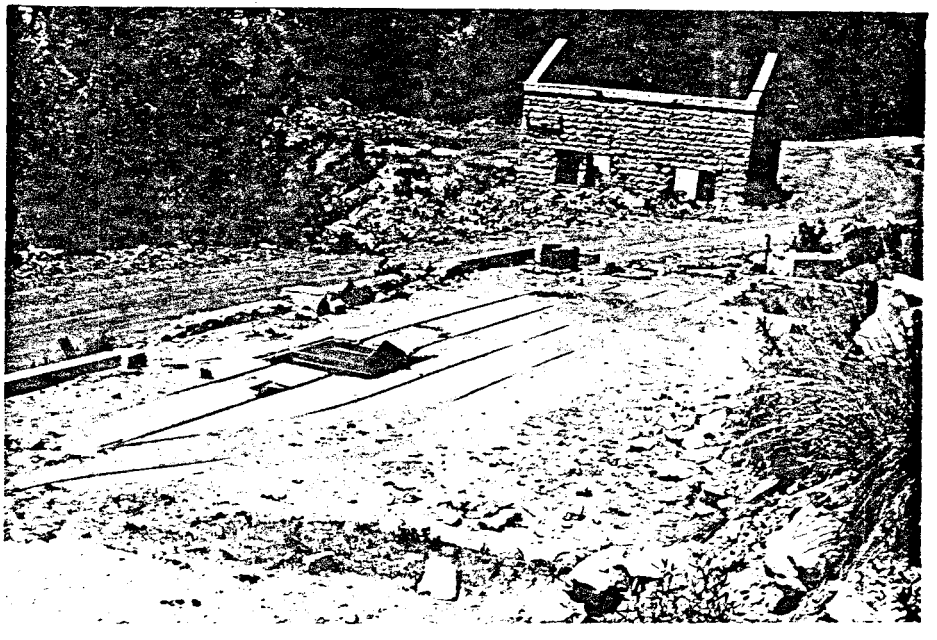
6. Hoist House - Interior Detail

7. Tunnel for Cedar Creek
Looking East

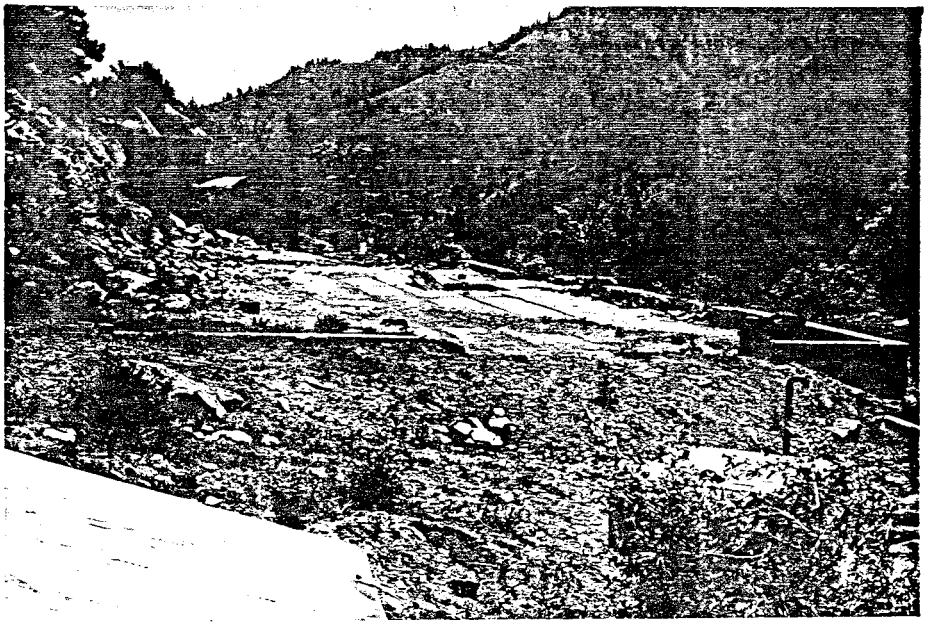


8. Main Portal
Looking North

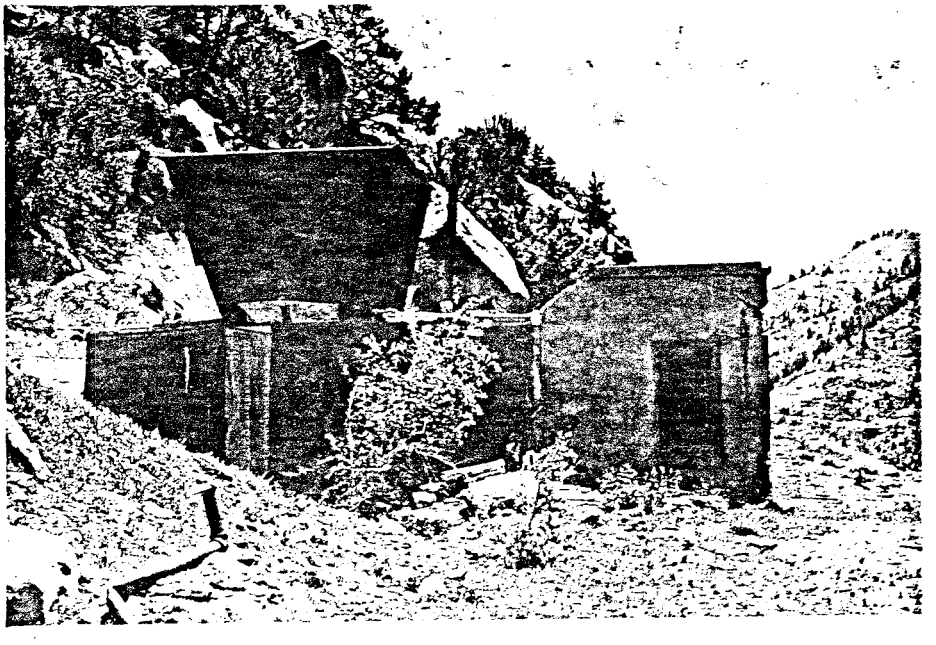
8. Main Portal
Looking Northeast



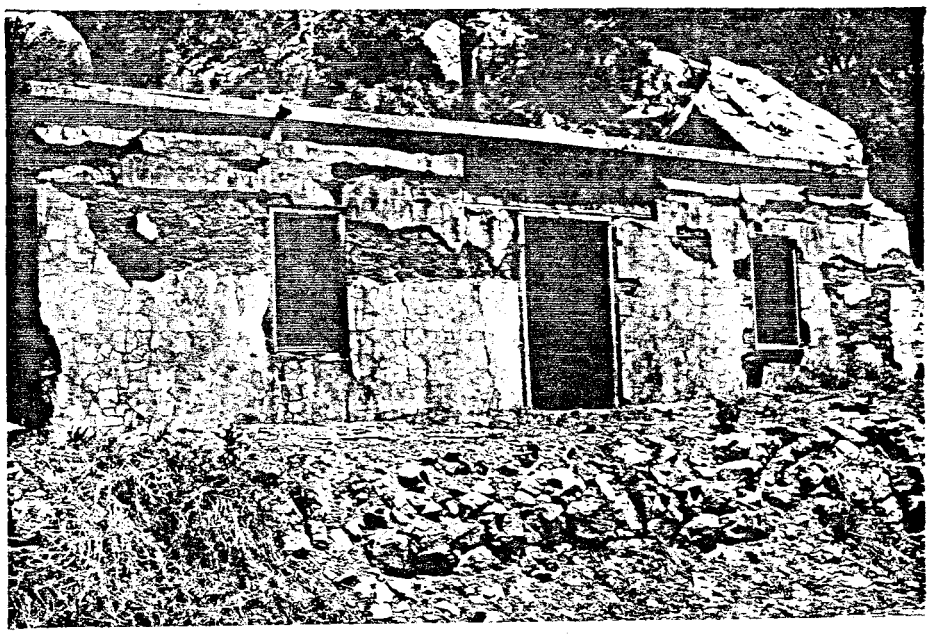
9 & 10. Machine Shop
Looking Southwest



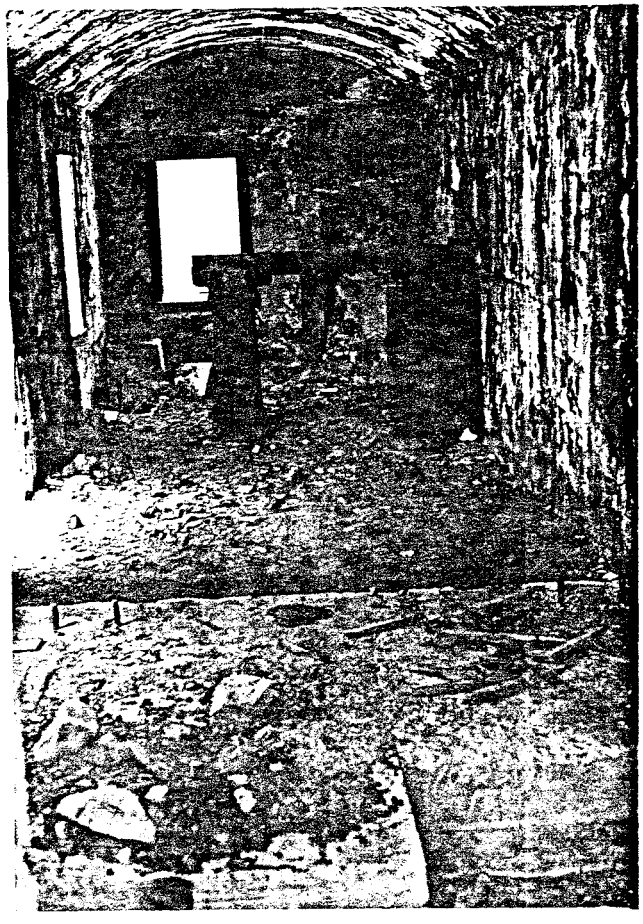
9 & 10. Machine Shop
Looking East



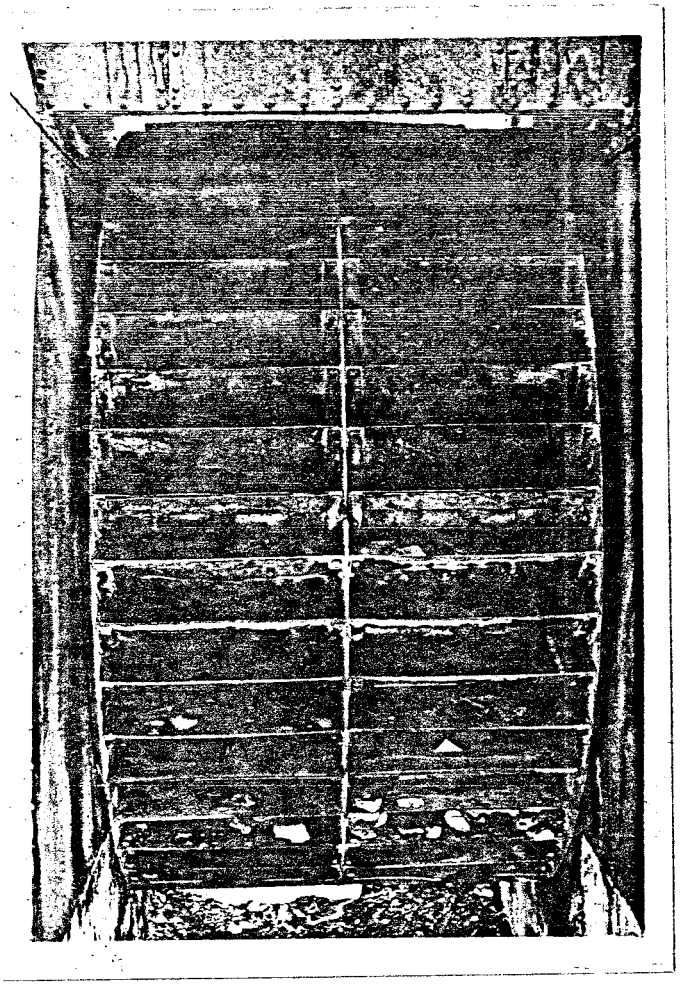
11. Portal for Fan
Looking East



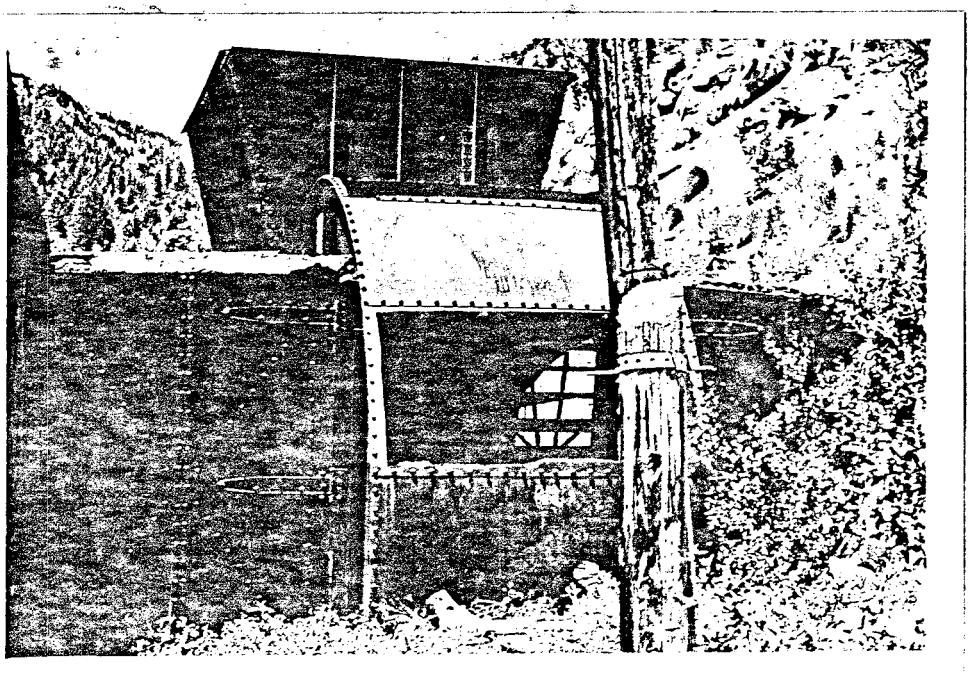
12. Fan Housing
Looking North



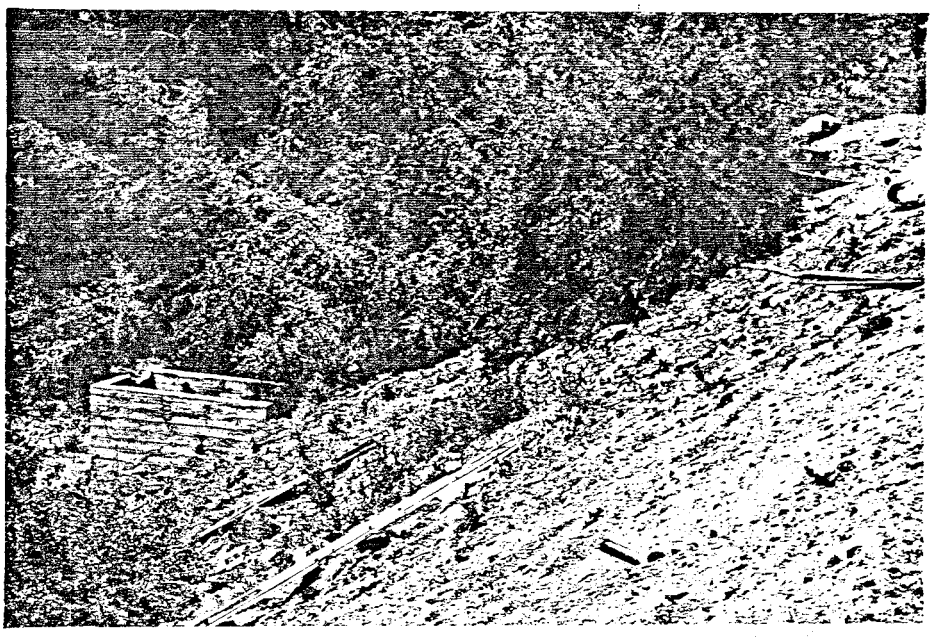
12. Fan Housing - Interior
Looking West



12. Fan Housing Interior - Fan Blade

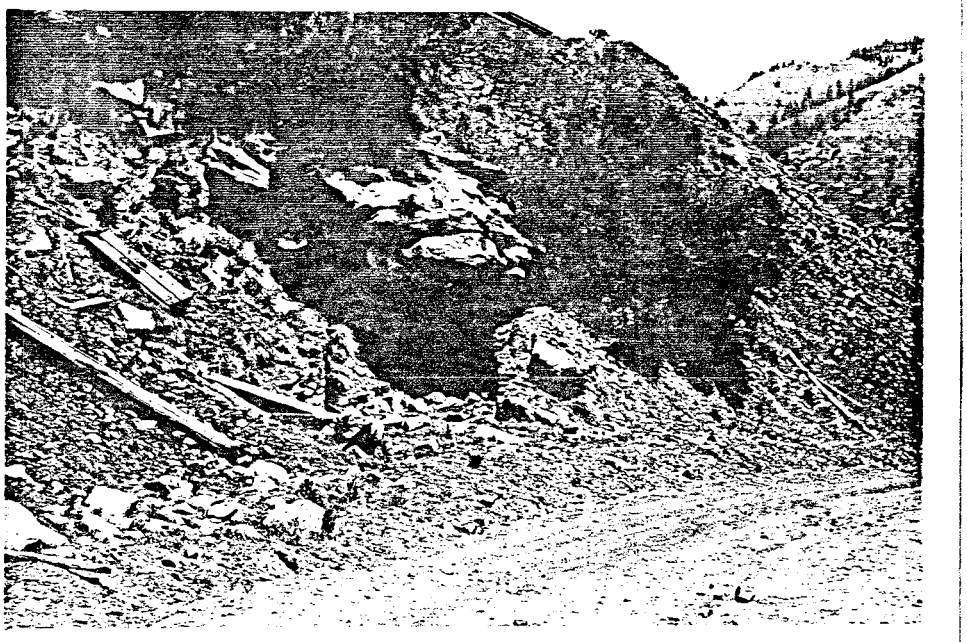


12. Rear of Fan Housing
Looking West

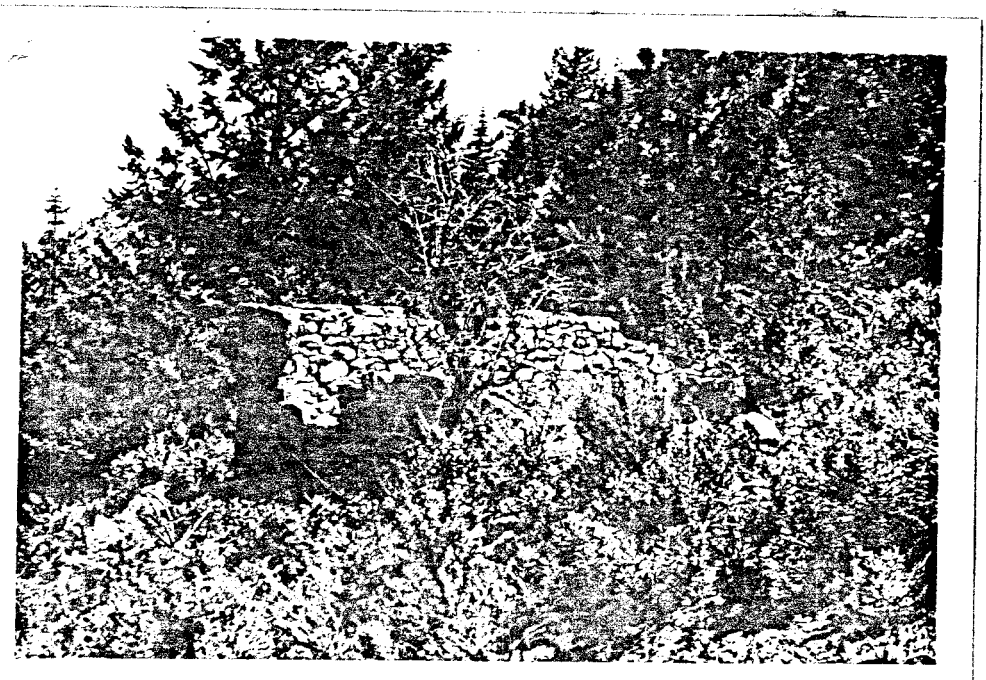


13. Heating Plant
Looking Northwest

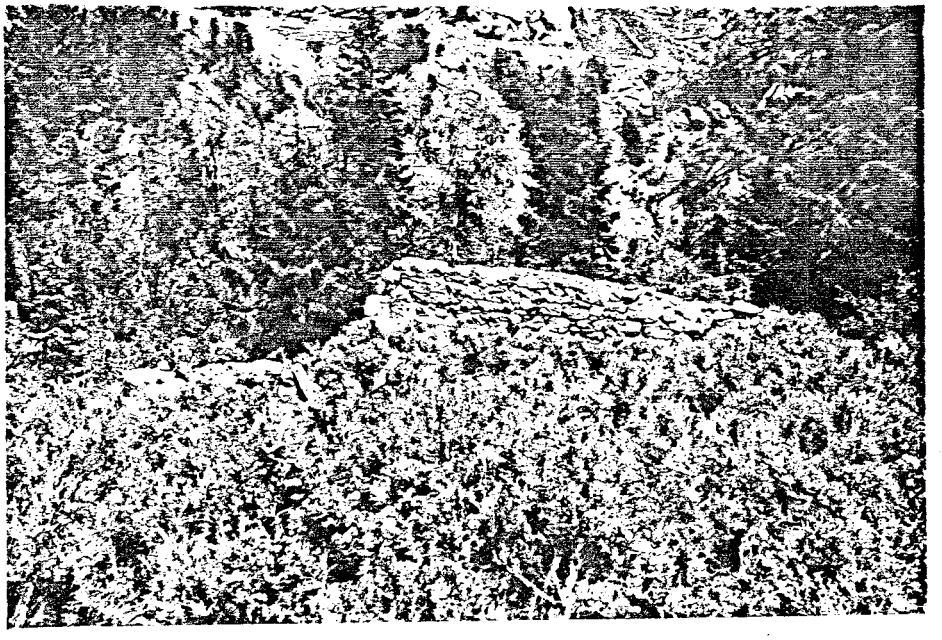
13. Heating Plant - Detail



14. Tram Tunnel - NW Portal
Looking East

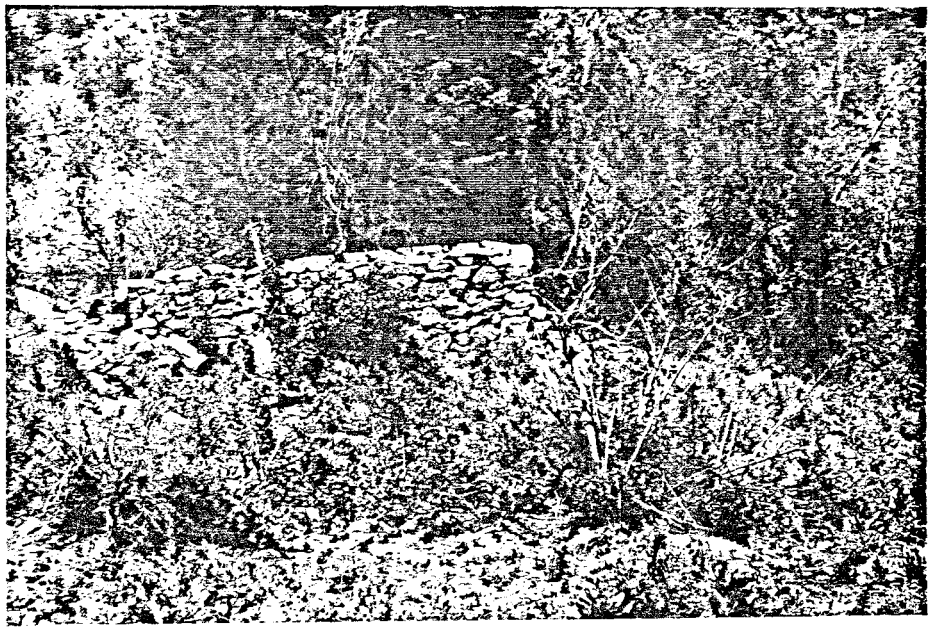


15. Residence
Looking East

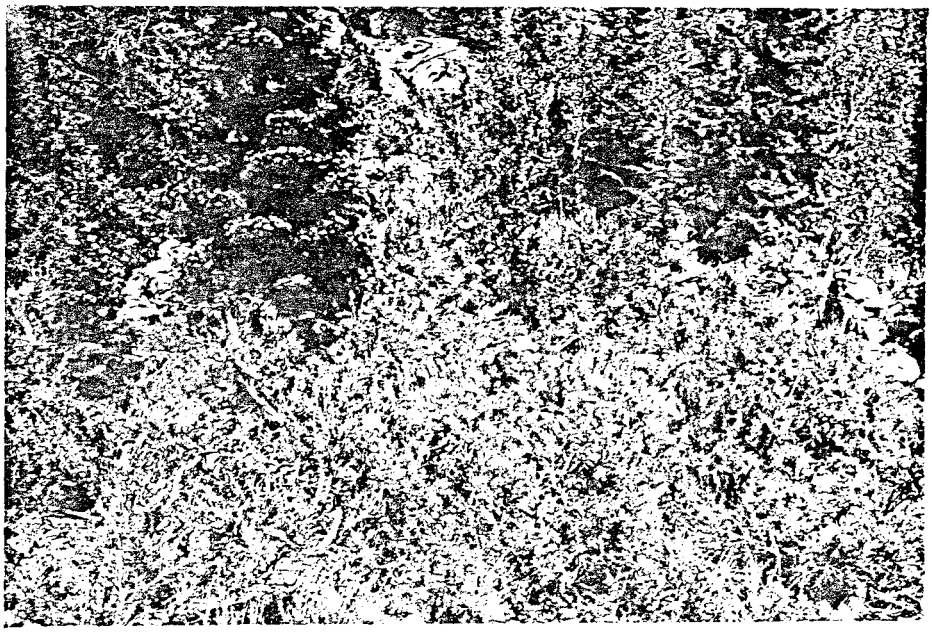


16. Residence
Looking Northeast

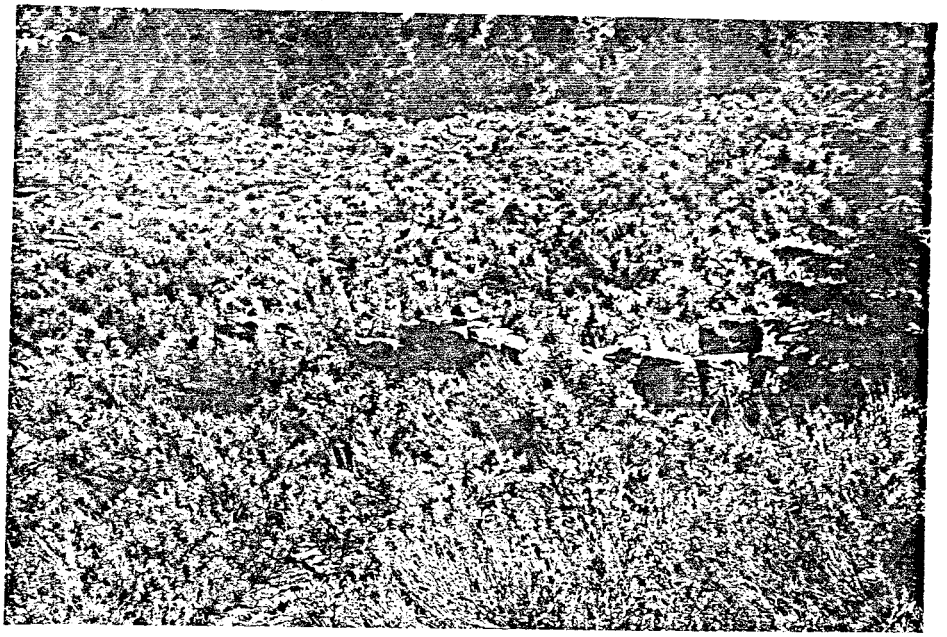
17. Residence
Looking Southeast



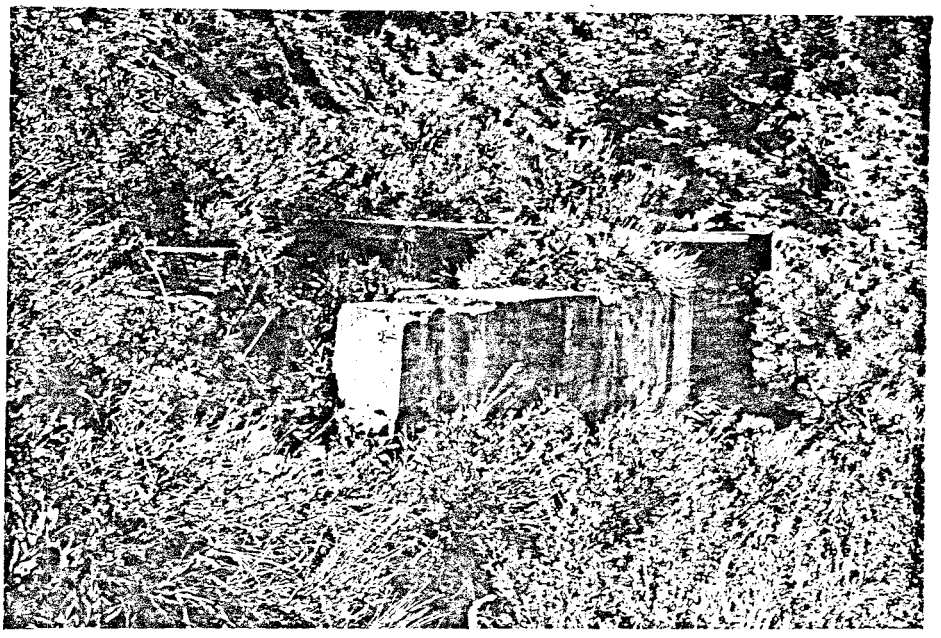
18. Residence
Looking North



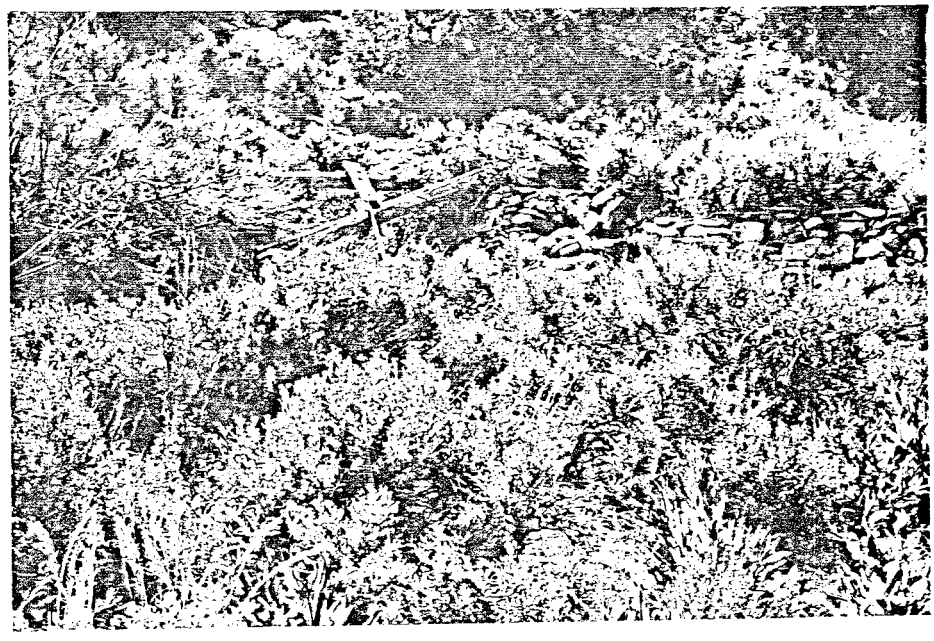
19. Residence
Looking North



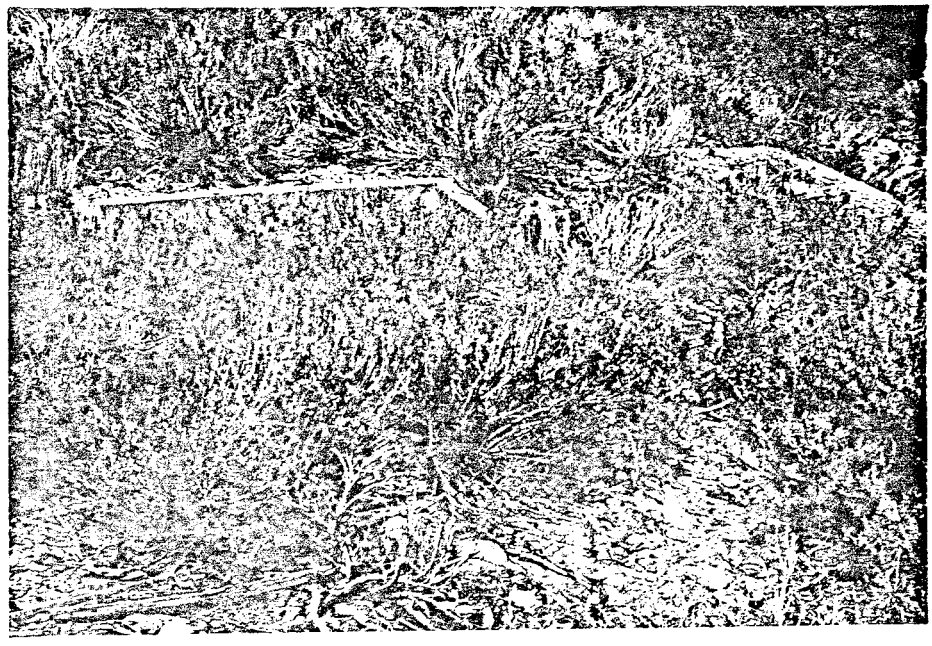
20. Residence
Looking East



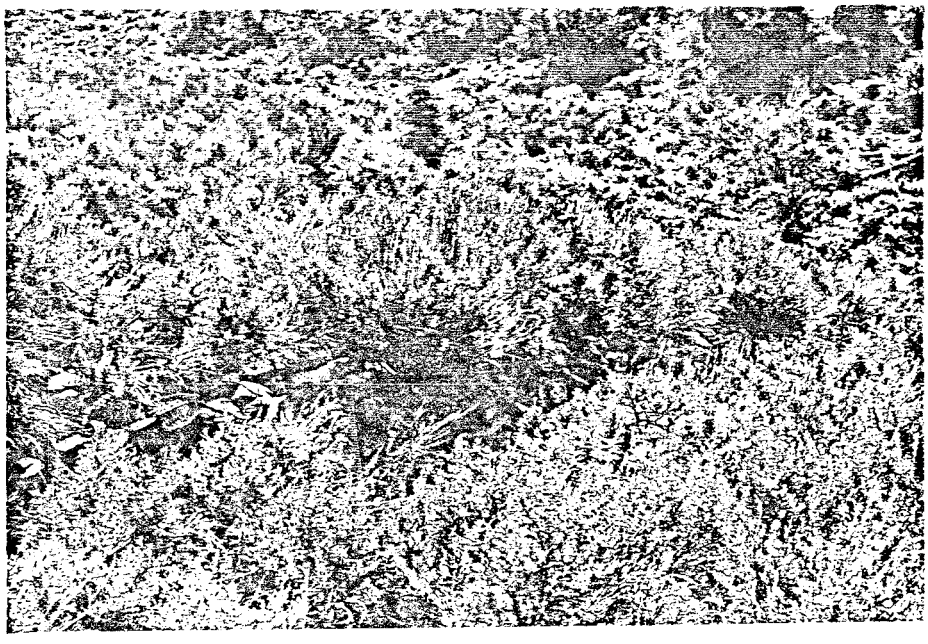
21. Residence
Looking West



22. Residence
Looking Northwest

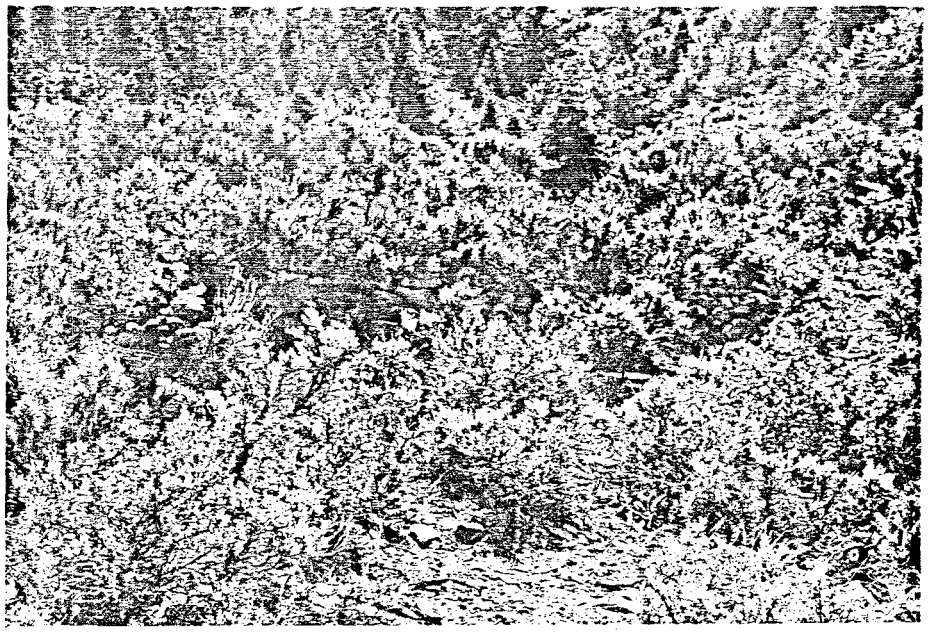


23. Residence
Looking East

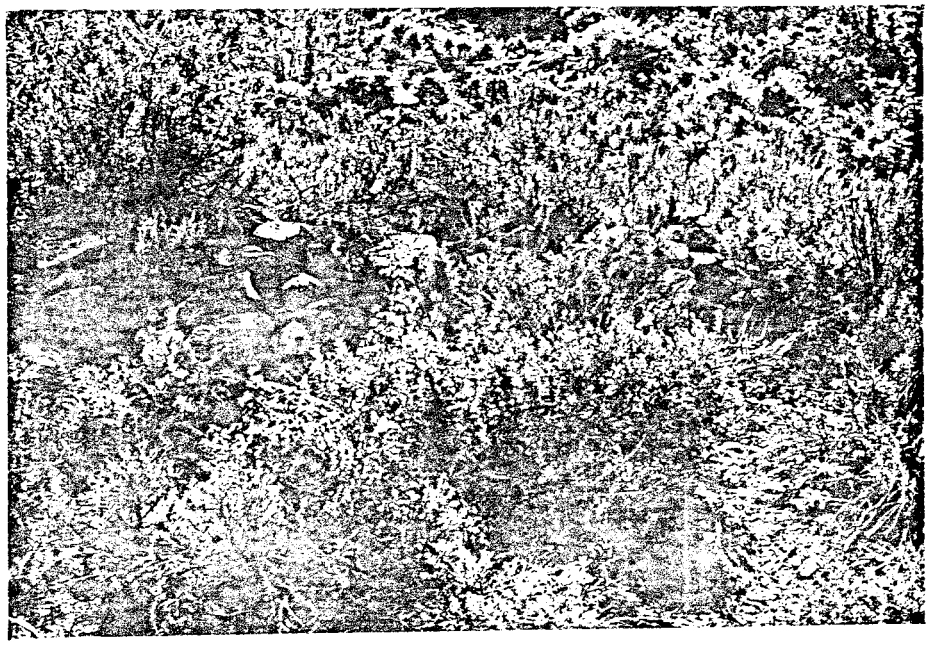


24. Residence
Looking Northwest

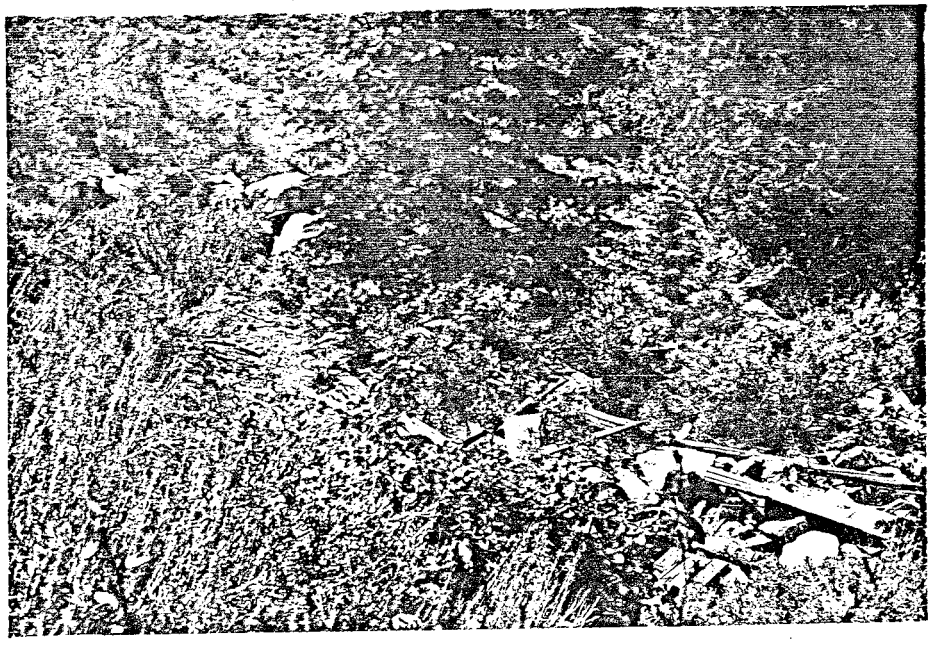
25. Residence
Looking South



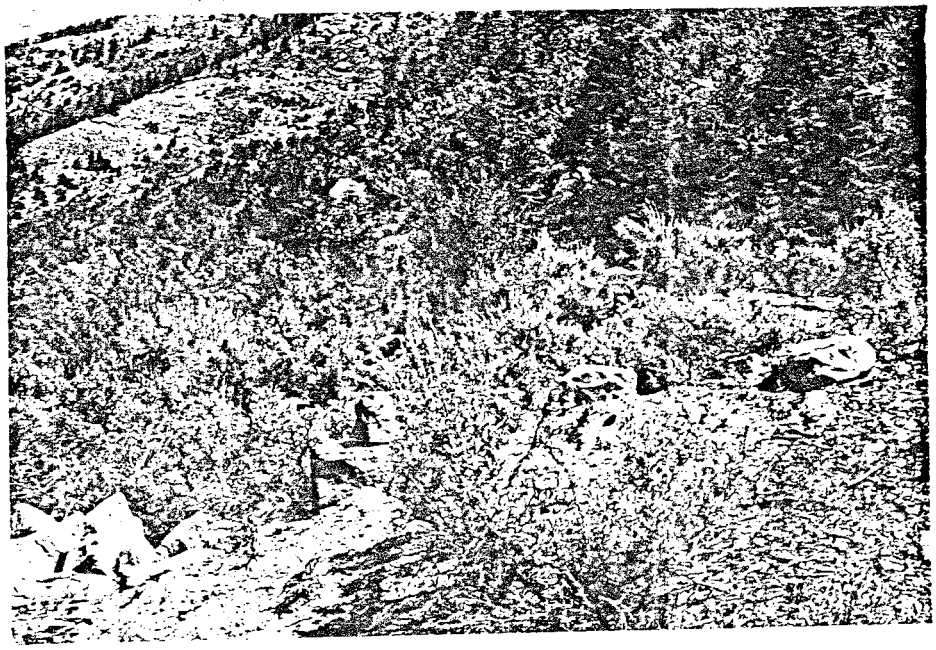
26. Residence
Looking West



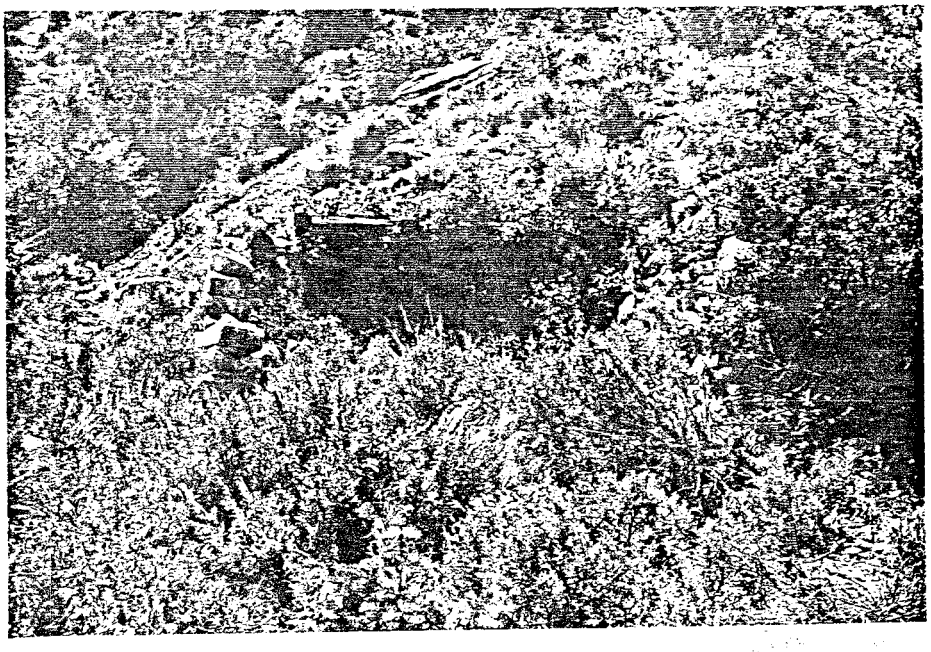
27. Residence
Looking West



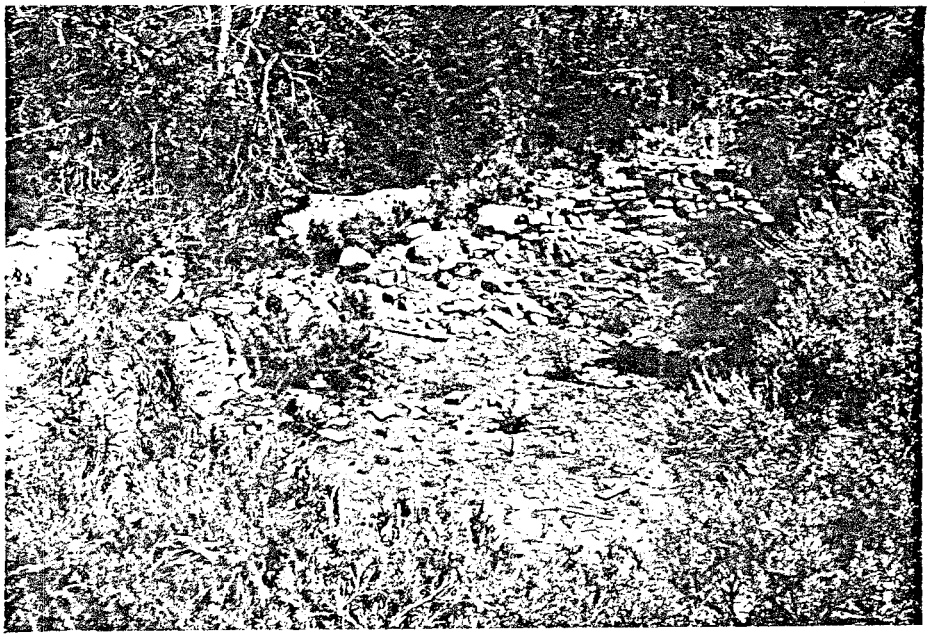
28. Residence
Looking North



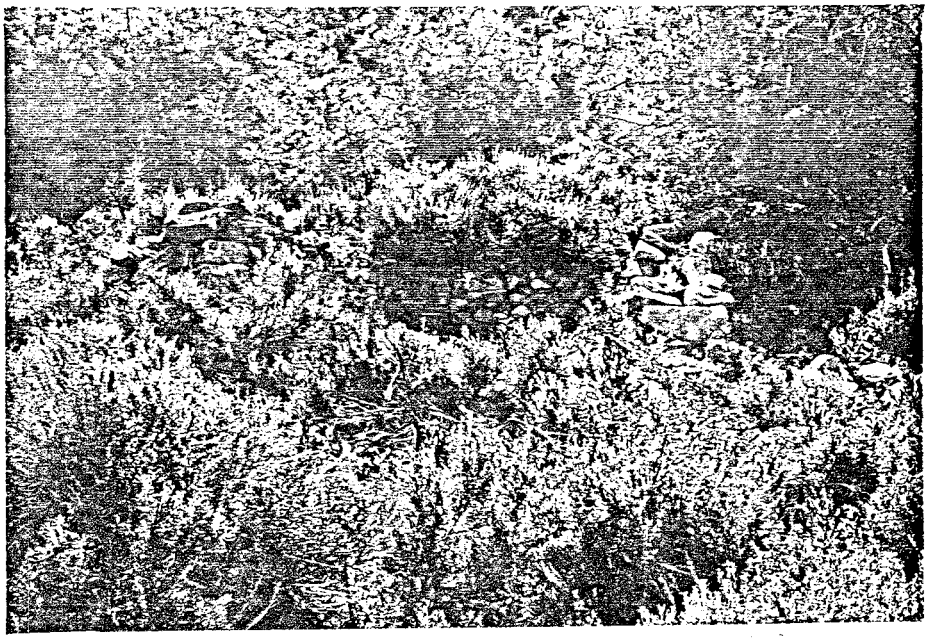
29. Residence
Looking Southwest



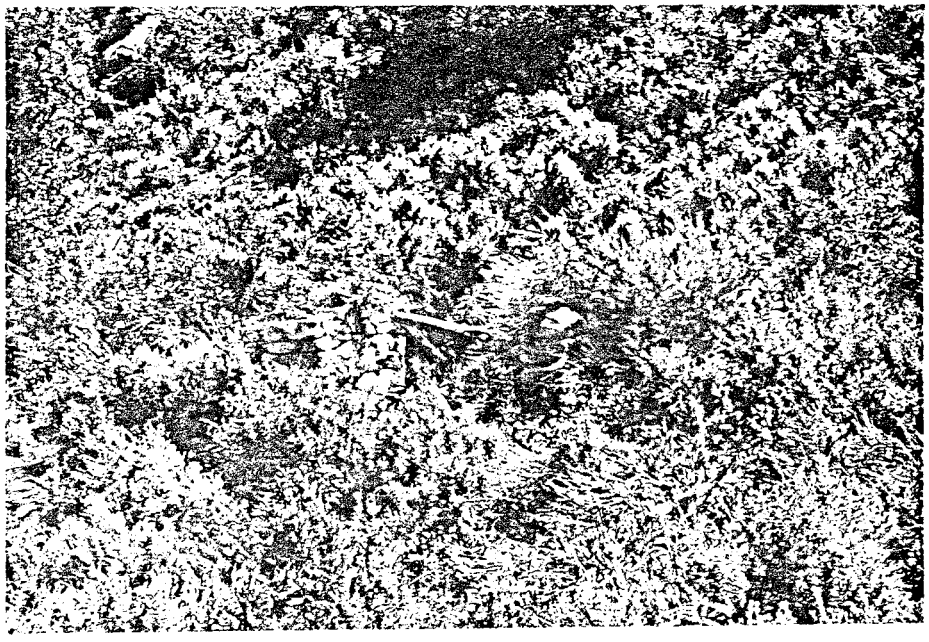
30. Residence
Looking Northwest



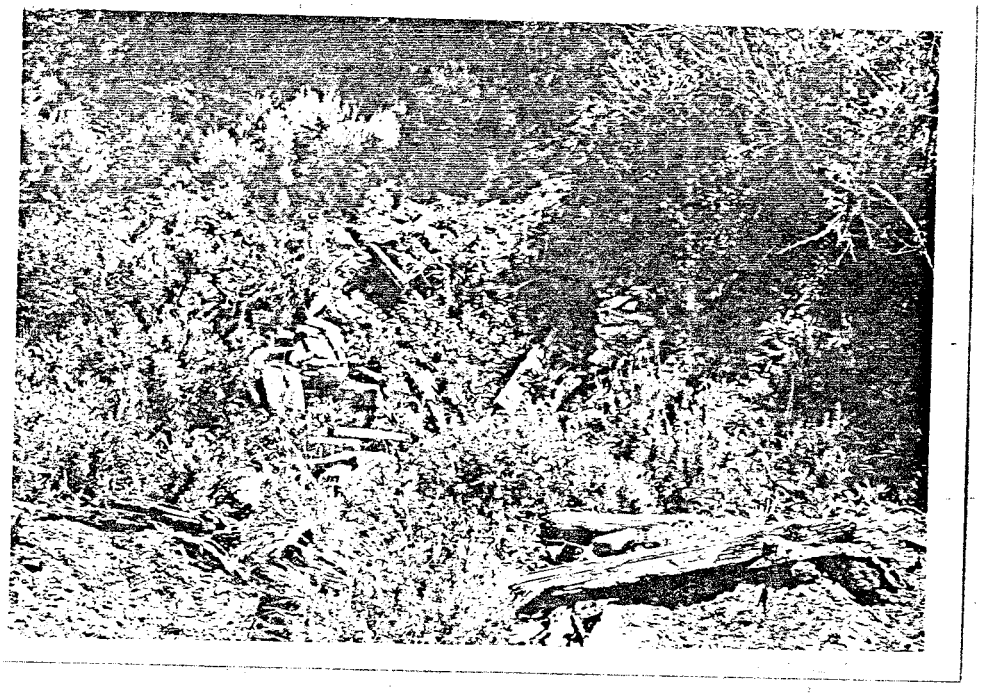
31. Residence
Looking Southeast



32. Residence
Looking Northwest

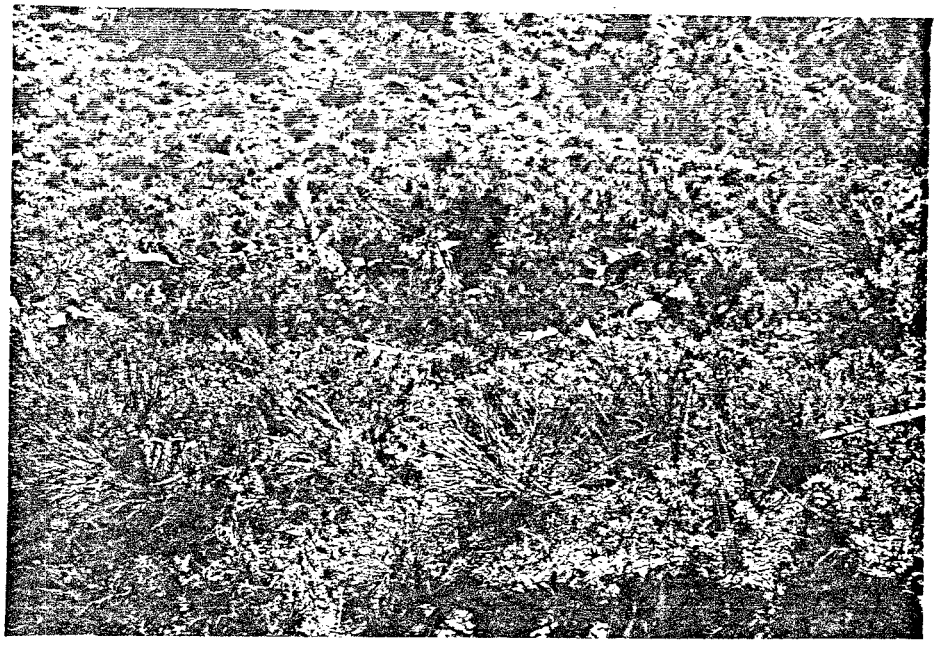


33. Residence
Looking Southwest

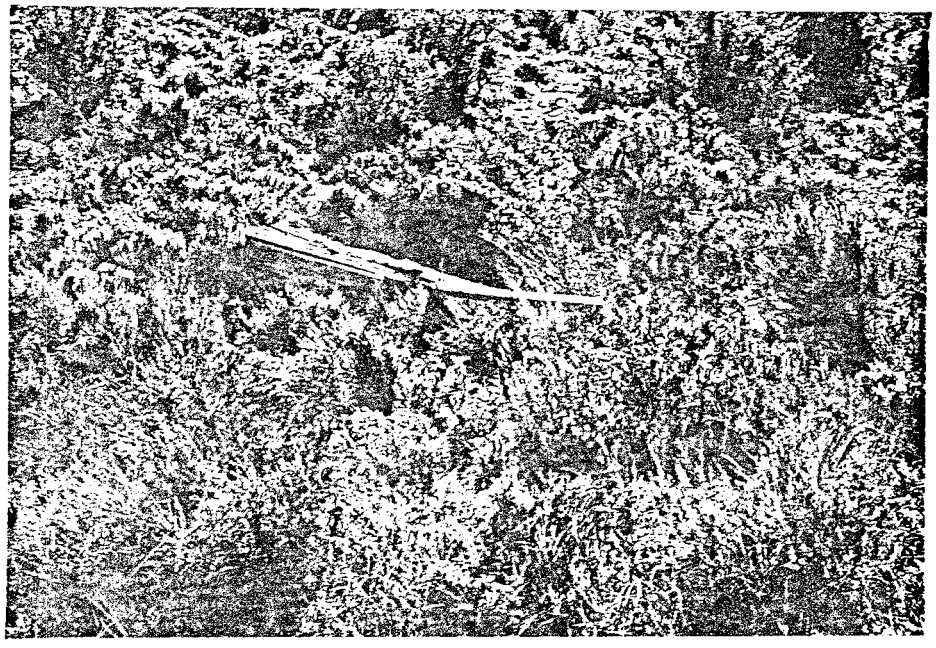


34. Residence
Looking West

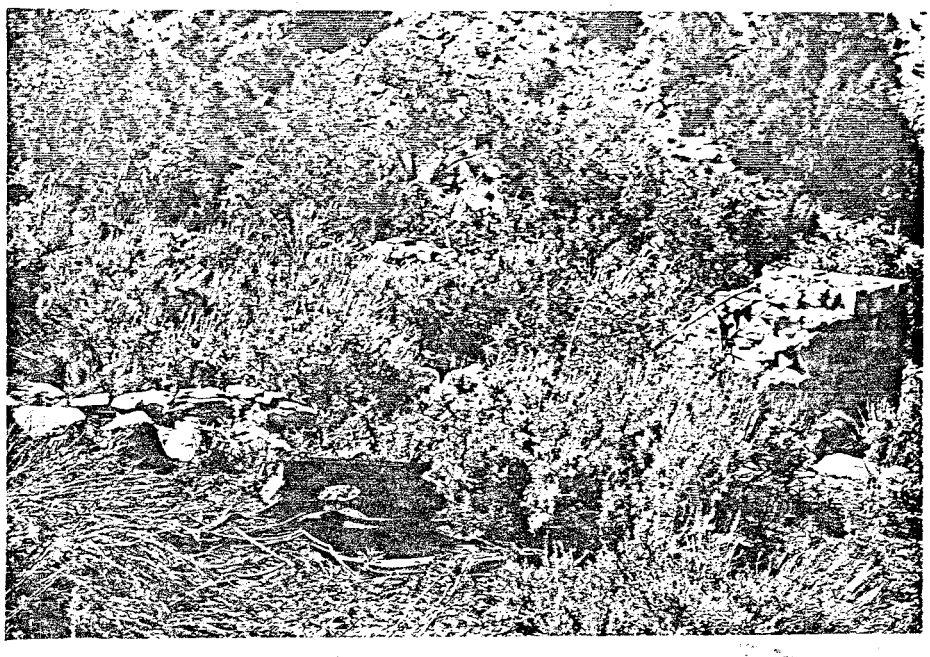
35. Residence
Looking Southwest



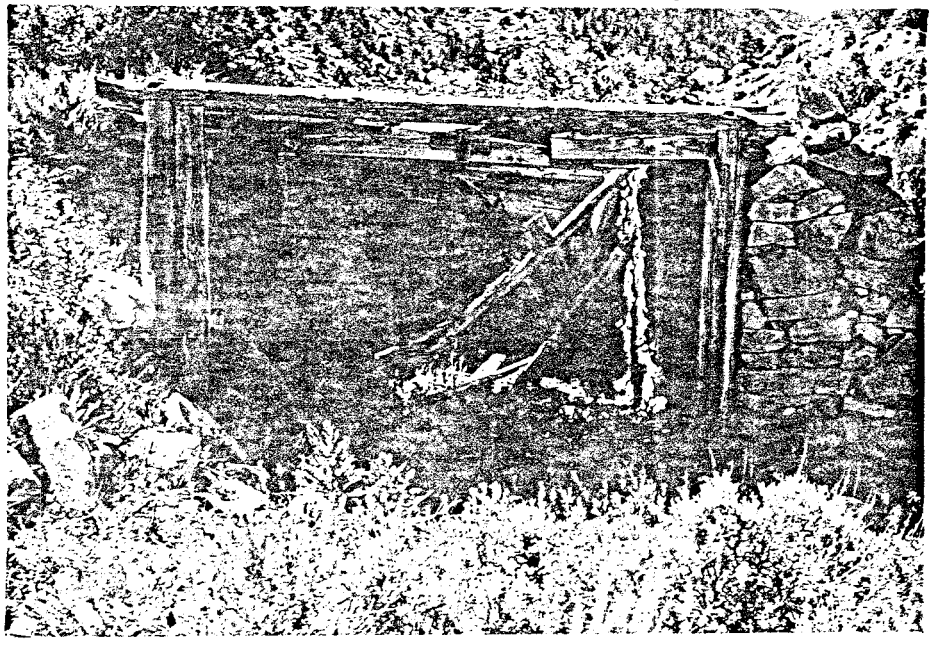
36. Residence
Looking West



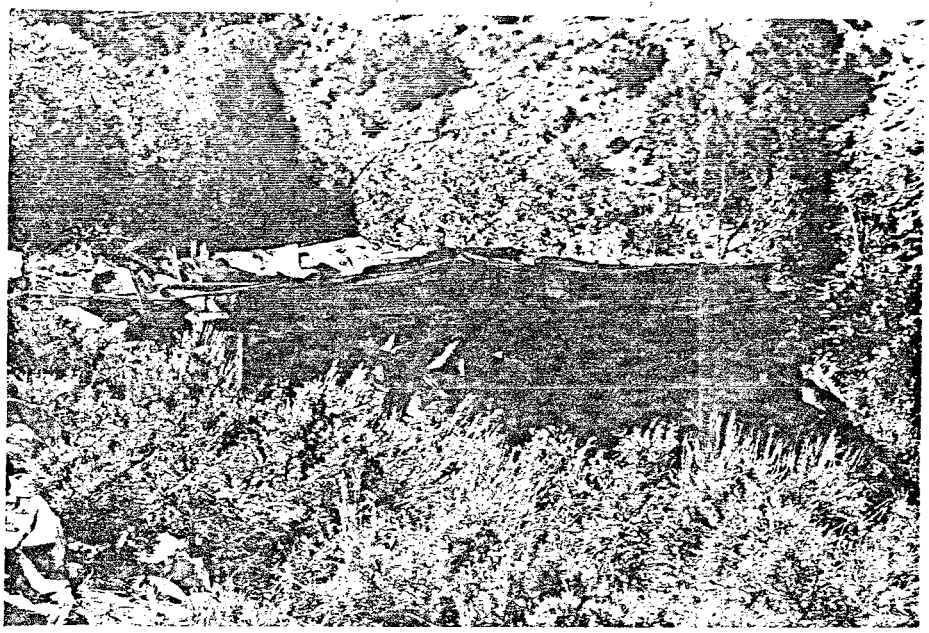
37. Residence
Looking Northwest



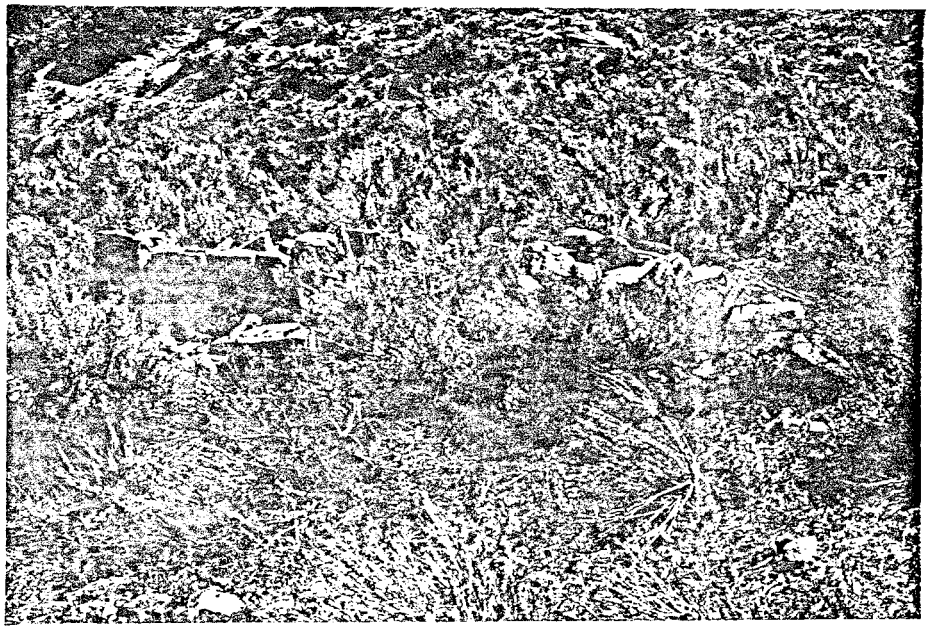
38. Residence
Looking Northeast



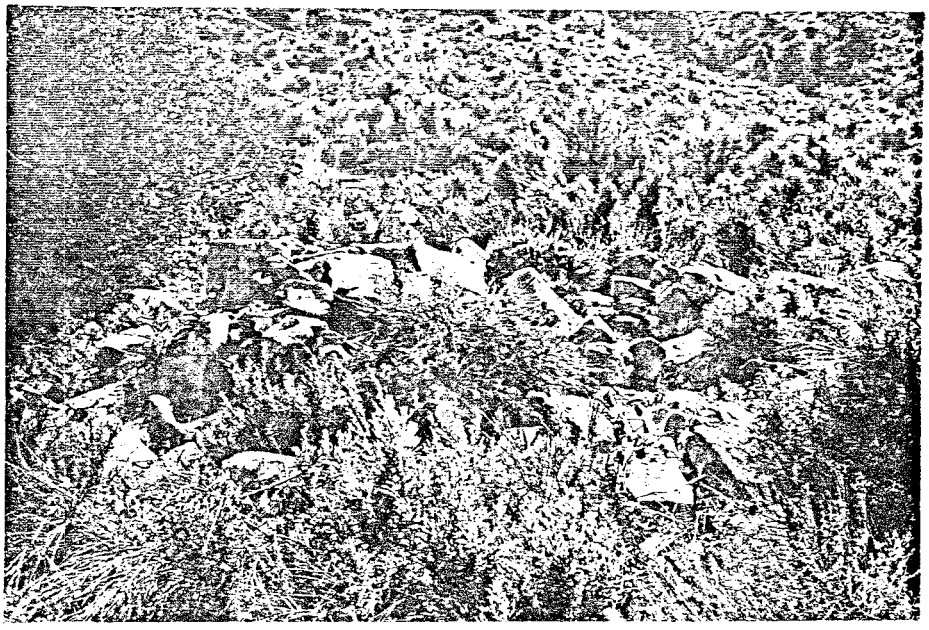
39. Residence
Looking North



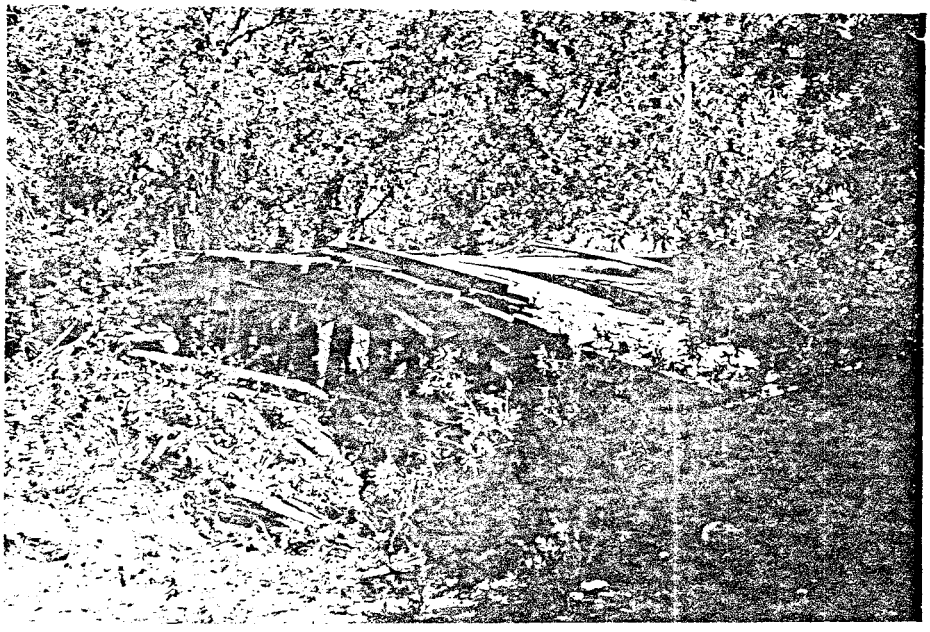
40. Residence
Looking North



41. Residence
Looking Southwest



42. Residence
Looking West



43. Historic Bridge
Looking Southwest