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July 15 2007

**VIA OVERNIGHT DELIVERY**

Mr. Dane L. Finerfrock  
Director  
Division of Radiation Control  
Department of Environmental Quality  
168 North 1950 West  
P.O Box 144850  
Salt Lake City, UT 84114-4850

Re: Cell 4B Cultural Resource Inventory Report

Dear Mr. Finerfrock:

Enclosed you will find one (1) CD containing the White Mesa Mill Cell 4B Cultural Resource Inventory Report, and the IMACS site forms for each of the identified sites. The Report was prepared for Denison Mines (USA) Corp. ("DUSA") by Abajo Archaeology, in support of the Cell 4B Tailings Cell license amendment request.

If you have any immediate questions please feel free to contact me at 303 389-4160.

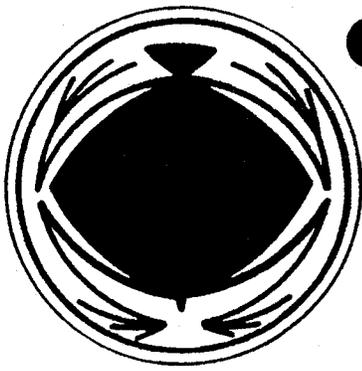
Yours very truly,

**DENISON MINES (USA) CORP.**

A handwritten signature in black ink, appearing to read "Harold R. Roberts". The signature is written in a cursive style with a large, sweeping initial "H".

Harold R. Roberts  
Executive Vice President, US Operations

Cc: Ron F. Hochstein  
Dave C. Frydenlund  
Steven D. Landau



# ABAJO ARCHÆOLOGY

WILLIAM E. DAVIS, Director

Mr. Dane Finerfrock  
Director  
Utah Department of Environmental Quality  
Division of Radiation Control  
P.O. Box 144850  
Salt Lake City, Utah  
84114-4850



Dear Mr. Finerfrock:

Please find enclosed the report entitled "Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah".

A total of approximately 55.7 acres (22.5 hectares) of land was inspected during the course of the archaeological survey. At the time of this writing, at least 13 sites are known to exist within the bounds of the project area. Of these sites, six have been previously documented (42Sa6391 - 42Sa6393, 42Sa6397, 42Sa6757, and 42Sa8014) and seven sites are newly defined (42Sa28128 - 42Sa28134). An additional previously recorded site, 42Sa6431, was determined to be very near the area of effect, if not within the project area itself, and is included herein for reasons of its proximity. Furthermore, 16 isolated finds of cultural materials were documented during the course of the project.

Of the seven previously recorded sites, six have been tested for significance by the Antiquities Section of the Division of State History (Dykman 1978; Nielson 1979). These sites include 42Sa6391, 42Sa6393, 42Sa6397, 42Sa6431, 42Sa6757, and 42Sa8014. All of these sites are situated in locations of considerable soil depth; testing by Antiquities Section personnel at the six sites bear out this assessment. Therefore, all seven previously documented sites were determined as eligible for nomination to the National Register of Historic Places (NRHP) (36 CFR 60.4). Two of these sites, 42Sa6757 and 42Sa8014, were subsequently investigated during a data recovery project. While it is likely that most of the major features at these two sites were excavated, we suggest that additional cultural materials may still be present and would require further mitigation.

All of the seven newly defined sites are similarly situated in areas with considerable soil depth. Based on the testing results at the previously recorded sites, the likelihood is very high that significant

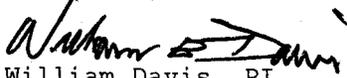
Mr. Finerfrock

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subsurface deposits and/or features exist. Therefore, we recommend that all seven of the newly recorded sites be considered eligible for nomination to the NRHP.

Thirteen of the 14 sites have one or more components that date to the prehistoric period; a single site, 42Sa28131, contains an historic period component of unknown cultural affiliation. Of the other 13 sites, ten appear to have single components with associations as follows: two sites (42Sa28133 and 42Sa28134) have an unknown aboriginal affiliation; one site (42Sa6757) represents a Basketmaker III habitation; one site (42Sa28132) may represent a Basketmaker III limited activity locus; one site represents a Pueblo I seasonal habitation (42Sa8014); one site (42Sa28128) is a Pueblo II or Pueblo III period locus of limited activity; two sites (42Sa6391 and 42Sa6393) appear to represent Pueblo II period habitations; one site (42Sa6392) may represent a Pueblo II period seasonal habitation; and one site (42Sa28130) might be a Pueblo II period locus of limited activity. Three other sites may have two or more components, including: 42Sa6397, which may have Basketmaker III and Pueblo II period components of unknown function; 42Sa6431, which has Basketmaker III and Pueblo II period components, both of which may be associated with habitations; and 42Sa28129, which may have Basketmaker III and/or Pueblo I and Pueblo II period components that are associated with limited activity loci.

Sincerely,

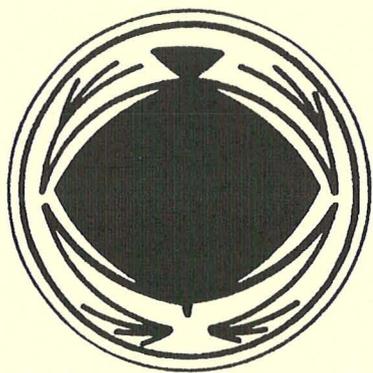
  
William Davis, PI

cc: Harold Roberts, Denison Mines (USA) Corp.  
Kelly Beck, Utah Public Lands Policy Coordination Office  
Lori Hunsaker, Utah State Historic Preservation Office

**CULTURAL RESOURCE INVENTORY OF THE PROPOSED DENISON MINES (USA)  
CORPORATION WHITE MESA MILL CELL 4B, SAN JUAN COUNTY, UTAH**

**Jonathan D. Till**

**July 2009**



**ABAJO ARCHÆOLOGY**

CULTURAL RESOURCE INVENTORY OF THE PROPOSED DENISON MINES (USA)  
CORPORATION WHITE MESA MILL CELL 4B, SAN JUAN COUNTY, UTAH

Prepared For:

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and

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Prepared Under Contract With:

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Prepared By:

Jonathan D. Till

Submitted By:

William E. Davis, Director  
Abajo Archaeology  
Bluff, Utah

May 2009

State of Utah Antiquities Project (Survey)  
No. U-09-AS-0334p

## ABSTRACT

At the request of Mr. Harold Roberts, Executive Vice President, and Mr. David Turk, Radiation Safety Officer, both of Denison Mines (USA) Corp., Abajo Archaeology conducted an archaeological survey for the proposed development of Cell 4B at the Denison Mines (USA) Corporation White Mesa Mill. The project area is located on private land, owned and administered by Denison Mines.

A total of approximately 55.7 acres (22.5 hectares) of land was inspected during the course of the archaeological survey. At the time of this writing, at least 13 sites are known to exist within the bounds of the project area. Of these sites, six have been previously documented (42Sa6391 - 42Sa6393, 42Sa6397, 42Sa6757, and 42Sa8014) and seven sites are newly defined (42Sa28128 - 42Sa28134). An additional previously recorded site, 42Sa6431, was determined to be very near the area of effect, if not within the project area itself, and is included herein for reasons of its proximity. Furthermore, 16 isolated finds of cultural materials were documented during the course of the project.

Of the seven previously recorded sites, six have been tested for significance by the Antiquities Section of the Division of State History (Dykman 1978; Nielson 1979). These sites include 42Sa6391, 42Sa6393, 42Sa6397, 42Sa6431, 42Sa6757, and 42Sa8014. All of these sites are situated in locations of considerable soil depth; testing by Antiquities Section personnel at the six sites bear out this assessment. Therefore, all seven previously documented sites were determined as eligible for nomination to the National Register of Historic Places (NRHP) (36 CFR 60.4). Two of these sites, 42Sa6757 and 42Sa8014, were subsequently investigated during a data recovery project. While it is likely that most of the major features at these two sites were excavated, we suggest that additional cultural materials may still be present and would require further mitigation.

All of the seven newly defined sites are similarly situated in areas with considerable soil depth. Based on the testing results at the previously recorded sites, the likelihood is very high that significant subsurface deposits and/or features exist. Therefore, we recommend that all seven of the newly recorded sites be considered eligible for nomination to the NRHP.

Thirteen of the 14 sites have one or more components that date to the prehistoric period; a single site, 42Sa28131, contains an historic period component of unknown cultural affiliation. Of the other 13 sites, ten appear to have single components with associations as follows: two sites (42Sa28133 and 42Sa28134) have an unknown aboriginal affiliation; one site (42Sa6757) represents a Basketmaker III habitation; one site (42Sa28132) may represent a Basketmaker III limited activity locus; one site represents a Pueblo I seasonal habitation (42Sa8014); one site (42Sa28128) is a Pueblo II or Pueblo III period locus of limited activity; two sites (42Sa6391 and 42Sa6393) appear to represent Pueblo II period habitations; one site (42Sa6392) may represent a Pueblo II period seasonal habitation; and one site (42Sa28130) might be a Pueblo II period locus of limited activity. Three other sites may have two or more components, including: 42Sa6397, which may have Basketmaker III and Pueblo II period components of unknown function; 42Sa6431, which has Basketmaker III and Pueblo II period components, both of which may be associated with habitations; and 42Sa28129, which may have Basketmaker III and/or Pueblo I and Pueblo II period components that are associated with limited activity loci.

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## CHAPTER 1: INTRODUCTION

In July, 2008, Abajo Archaeology conducted a cultural resource inventory (archaeological survey) of the area proposed for the construction and development of Cell 4B at the Denison Mines (USA) White Mesa Mill. Archaeologist Mark Bond conducted the inventory, with assistance by Jonathan Till, who conducted follow-up work in the project area in the spring of 2009. This work was executed at the request of Mr. Harold Roberts, Executive Vice President, and Mr. David Turk, Radiation Safety Officer, both of Denison Mines (USA) Corp. The report for this project is being prepared for the client, Denison Mines (USA), and the Division of Radiation Control, Department of Environmental Quality, State of Utah. The work was conducted under State of Utah Antiquities Permit No. U-09-AS-0334p.

The project area has an approximate rhomboid shape that covers an area of approximately 55.7 acres (22.5 hectares) in Sections 32 and 33 of Township 37 South, Range 22 East. The mill is named for the landform that it occupies: White Mesa. The proposed Cell 4B project area is situated on the crest and gently sloped flanks of a two finger ridges on the north end of White Mesa. The mesa's western and eastern margins drop precipitously into Cottonwood and Recapture canyons, respectively. The proposed cell would be excavated, lined, and used in the storage and processing of waste by-products from the mill facility. It is understood that these construction activities could pose adverse effects to any historic properties in the project area.

The purpose of the archaeological survey was to identify and document any cultural resources occurring within the project area in order to make recommendations pursuant to obtaining a determination of "no effect" to historic properties in accord with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Additionally, the inventory addresses the concerns of a body of other federal and state antiquities laws, including: the National Environmental Policy Act of 1969, the Archaeological and Historical Preservation Act of 1974, the Federal Land Policy and Management Act of 1976, the Archaeological Resources Projection Act of 1979, and the Utah State Antiquities Act of 1973 (as amended).

On July 17, 2008, Mark Bond and David Turk had an on-site meeting to discuss the project area location and the project's general development. Turk informed Bond of the project boundaries at that time, which were flagged. However, it was soon apparent to Bond that the potential area of impact from the construction of the proposed cell would be significantly larger than the area that had been flagged. Essentially, the area that had been flagged was the bottom or base of the cell—the berm encircling the cell had not been taken into account. Using a blue-line map (dated 6/21/88) that illustrated the cells' construction, Bond pointed out this discrepancy to David Turk on July 21, 2008. Turk agreed with Bond's observation, and decided to correct the survey area to the area described on the blue-line map (a portion of which is included here as Appendix B). During the course of their discussion, Turk also noted that the sediments removed from the proposed Cell 4B would be trucked and pushed to the west for deposit in storage areas adjacent to the west side of the Cell 4B area (see Appendix B; note the apparent stockpiles of material west of "Existing Cell 3"). Given this information, Bond suggested that the sediment storage area would also need to be inventoried. Mr. Turk advised that the survey area be extended west to the north-to-south oriented overhead powerline. Bond noted that these areas needed to be formalized; Mr. Turk agreed. At the time of this writing, the project area in its entirety has not been formally staked, nor the bounds provided to Abajo Archaeology except in the conversation between Messrs. Bond and Turk. However, Bond did visually extend the survey area based on the previously constructed southern boundary of Cell 4A (see Appendix B for Bond's justification of the proposed project boundary extension).

A relatively recent and thorough Class 1 cultural resource inventory was conducted by Abajo Archaeology for the lands surrounding and including the project area in 2003 (Davis and others 2003). This endeavor was an extensive and intensive site file and literature search conducted at the Division of State History (Salt Lake City, Utah), Edge of the Cedars State Park Museum (Blanding, Utah), and the office of Alpine Archaeological Consultants (Montrose, Colorado). Additionally, at the request of Jonathan Till, on May 11, 2009, Ms. Marty Thomas further searched the Division of State History archival files for information specific to earlier archaeological survey, testing and mitigation efforts performed by the Antiquities Section of the Division of State History during the late 1970s and early 1980s.

As a result of these file searches, several previously recorded sites were noted for the proposed Cell 4B project area. These sites are: 42Sa6391, 42Sa6392, 42Sa6393, 42Sa6397, 42Sa6757, and 42Sa8014. Additionally, we noted that 42Sa6431 was very near the south boundary of the project area. For this reason, and given that the true project boundary has yet to be formalized, the site is included for consideration here. Comparisons of original site survey data, as given in Thompson (1977), with data from subsequent testing and mitigation efforts conducted by Antiquities Section archaeologists, indicate that some sites were confused with other sites. These discrepancies are explicated in Chapter 4.

In addition to the seven previously documented sites, Mark Bond and Jonathan Till located and recorded seven previously undocumented sites (42Sa28128 through 42Sa28134). A summary of the all the sites, their components, and their possible functions are provided in Table 1.

In addition to the archaeological sites, Bond discovered and documented 16 isolated finds (IFs) of cultural materials. These items, and the 14 archaeological sites, are described in detail in Chapter 4 of this report.

This report is organized in five chapters and two appendices. This chapter, Chapter 1, serves as the introduction. Chapter 2 describes the project area in terms of its location and environmental setting. The chapter also provides an overview of the cultural history for White Mesa's surrounding landscape. Chapter 3 delves into the previous research conducted in the immediate vicinity of the Cell 4B project area. Chapter 4 presents the archaeological survey conducted for this project, and is organized into several sections. The chapter first reviews the survey's methodology; it then describes both the previously documented sites as well as the newly documented sites; Chapter 4 concludes with a description of the IFs of cultural materials. The report's final chapter, Chapter 5, provides an evaluation of significance for each site and concludes with a set of management recommendations for the sites.

Two appendices, Appendix A and Appendix B, are also presented in the site. Appendix A consists of the Intermountain Antiquities Computer System (IMACS) site forms that were generated for each site. Appendix B is a portion of the blue-line map that Mark Bond used to determine the best project area boundary, particularly on the south side of the proposed project area.

Table 1 . Sites by Component and Function, White Mesa Mill Cell 4B Survey			
Site Number	Components	Suggested Function	Comments
42Sa6391	Pueblo II	habitation	
42Sa6392	Pueblo II	seasonal habitation	
42Sa6393	Pueblo II	habitation	
42Sa6397	Basketmaker III	unknown	
	possible Pueblo II	unknown	
42Sa6431	Basketmaker III	unknown	Known features include a burial, a hearth, and a lens of burned adobe.
	Pueblo II	habitation	A midden with a diverse assemblage of materials is present that suggests the presence of a habitation.
42Sa6757	Basketmaker III	habitation	
42Sa8014	Pueblo I	seasonal habitation	
42Sa28128	Pueblo II and/or Pueblo III	limited activity	
42Sa28129	Basketmaker III and/or Pueblo I	limited activity	
	Pueblo II	limited activity	
42Sa28130	Pueblo II	limited activity	
42Sa28131	Unknown historic	camp	
42Sa28132	possible Basketmaker III	limited activity	
42Sa28133	Unknown Aboriginal	limited activity	
42Sa28134	Unknown Aboriginal	limited activity	

## CHAPTER 2: DESCRIPTION OF THE PROJECT AREA

This chapter provides spatial and temporal contexts for the project area. What follows are brief descriptions of the proposed project's location, its environmental setting, and an overview of the area's cultural history.

### Project Location

The Denison Mines (USA) Corp. White Mesa Mill is located six miles south of the town of Blanding, San Juan County, Utah (Figures 1 and 2). The majority of the proposed Cell 4B is found within the northeast quarter of Section 32, T37s, R22E (USGS Black Mesa Butte, 7.5', 1985), although a small portion of this rhombus-shaped project area is also found within the northwest quarter of Section 33 (Figure 2). The project area is located west of the mill complex, approaching the rim of Cottonwood Wash Canyon.

### Environmental Setting

The White Mesa Mill occupies the top, and gently sloped eastern face, of a low but prominent ridge near the divide of White Mesa (Figures 3 and 4). Situated in the Blanding Basin Section of southeastern Utah, the surrounding landscape is characterized by a multitude of mesas and buttes flanked by canyon drainages (Stokes 1986:235-6). The area's primary water courses flow from north to south, draining the Abajo Mountains to the north and run to the San Juan River to the south. White Mesa is flanked by two of these north-to-south drainages: Cottonwood Wash to the west and Recapture Wash to the east.

The caprock of White Mesa is mostly composed of Cretaceous Period rock, including interbedded sandstones and shales associated with the Dakota and the underlying Burro Canyon formations. In places, remnants of the later Cretaceous Mancos Shale may be found overlying the harder caprock. The slopes of White Mesa consist of relatively soft, vari-colored shales associated with the Morrison Formation.

The landscape of the White Mesa Mill property has been radically altered in historic times. These alterations have come about as the result of historic ranching and farming practices as well as the development of the White Mesa Mill. The surface of the project area has been chained and railed, plowed, and seeded. Davis (1985:9) notes that much of this disturbance took place in the 1920s and 1930s. As a consequence of these activities, the project area's vegetation probably does not reflect the plant life that would occur there naturally. Currently, the local ecology is characterized by grasslands with mostly immature sagebrush, snakeweed, and prickly pear. Annual plants common to the project area's terrain include cheatgrass, mustard, and heron's bill. Occasional instances of juniper and Mormon tea hint at the area's original ecology. At the west rim of the mesa, juniper and big sage are common. It seems likely that the mesa's interior represented an ecotone between the sagebrush and pinyon-juniper ecozones.

Mesa top sediments in and around the mill property are dominated by a reddish-brown, very fine aeolian sand and silt. Davis and others (2003:6) note that this loam ranges considerably in depth from a few centimeters to several meters; the mantle of sediment in the project area is generally represented by the deeper end of that scale. Poorly developed B horizons, and moderately developed caliche-rich soil horizons, have formed in the White Mesa sediments wherever depth and stability have allowed. Agenbroad (1985:175-183) argues for a correlation between "caliche highs" and the location of pithouses, suggesting that the caliche substrate provided desirable construction characteristics for pit structures.

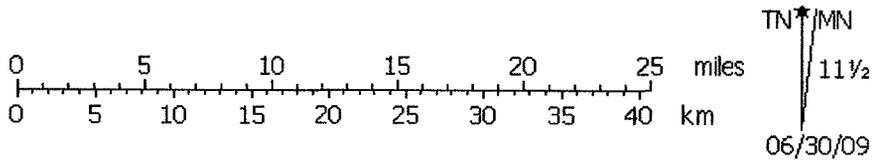
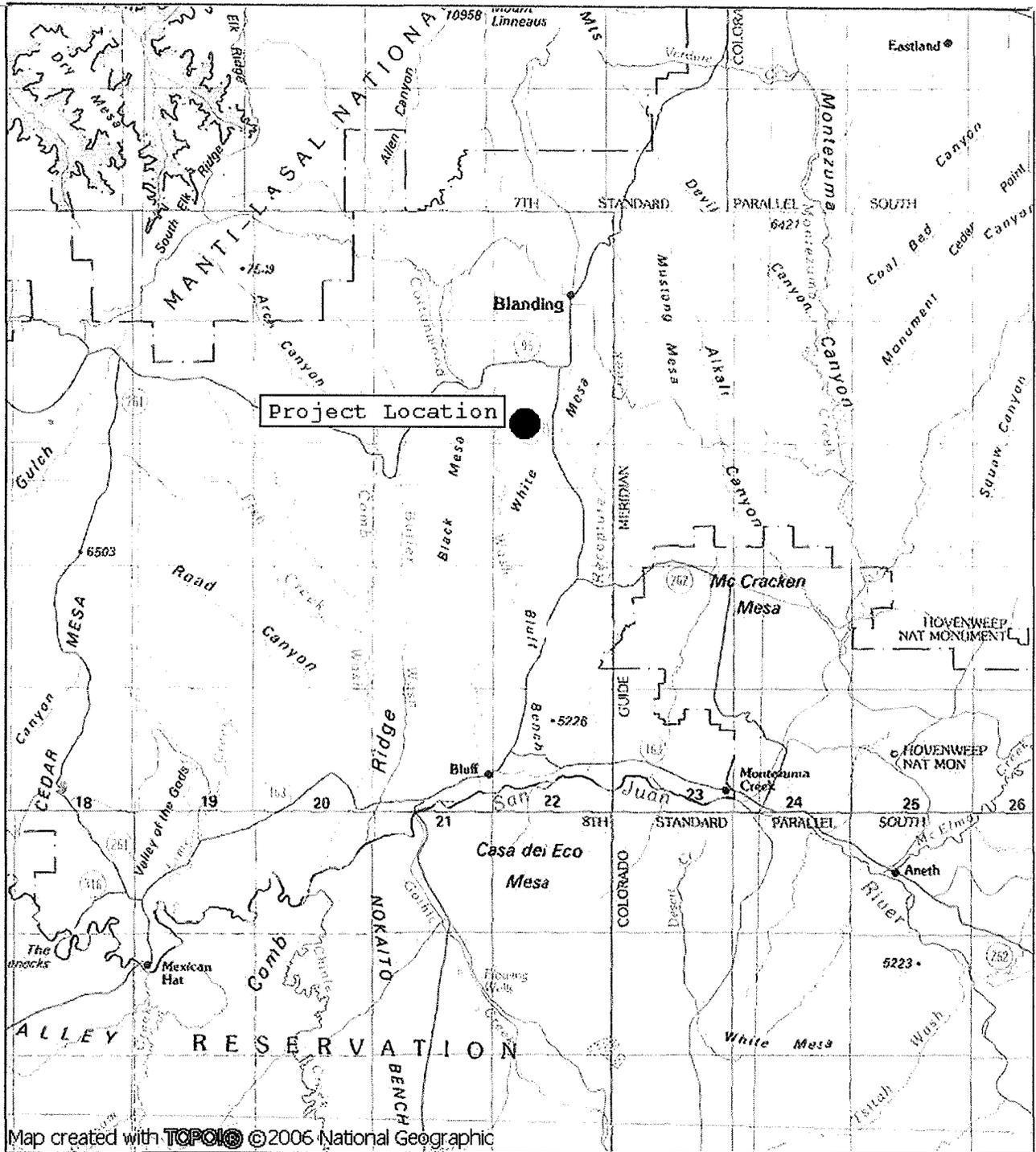


Figure 1. Project Location Map, Denison Mines White Mesa Mill, San Juan County, Utah.

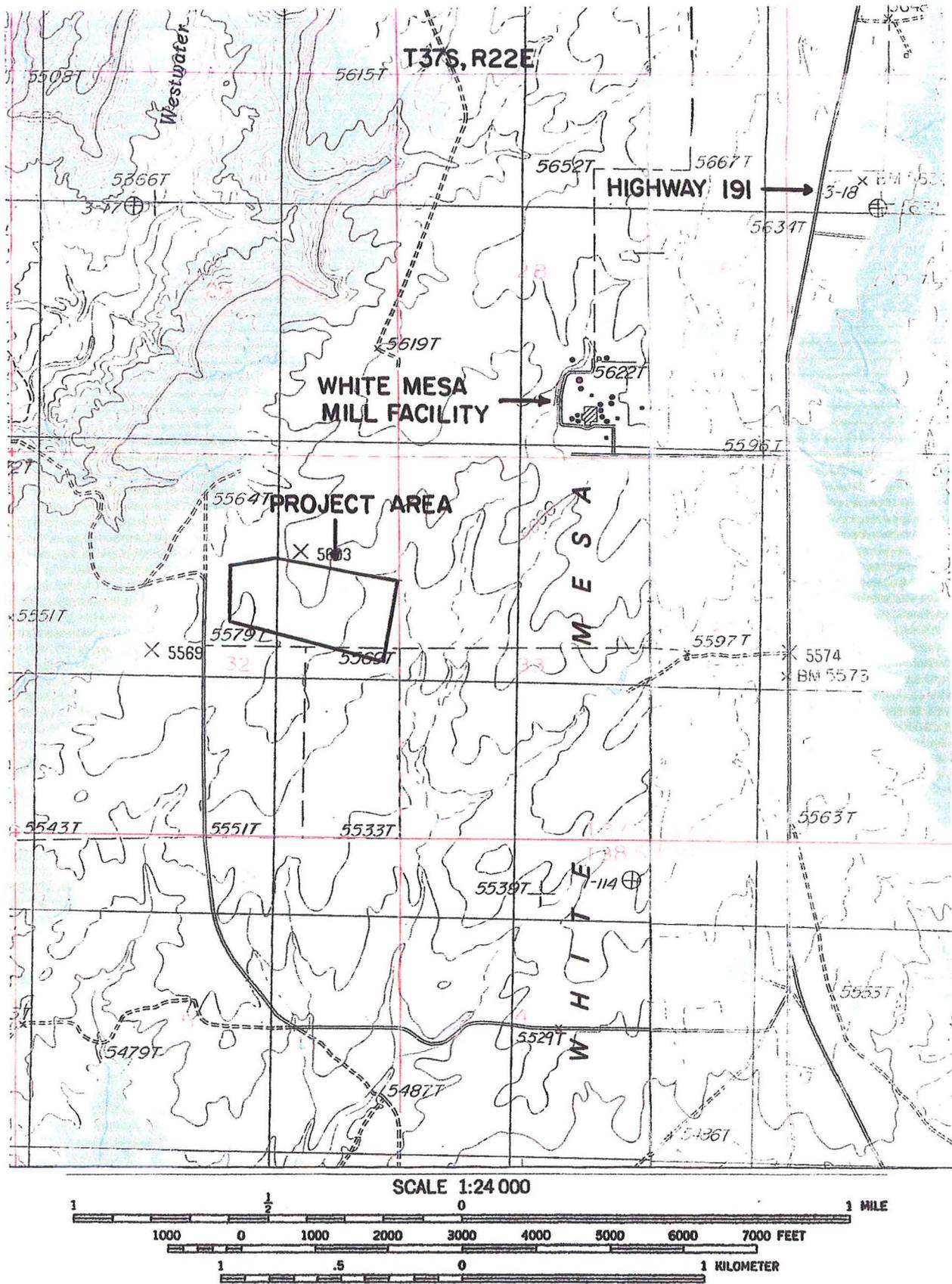


Figure 2. Denison Mines White Mesa Mill Cell 4B, Section 32 and 33, Township 37 South, Range 22 East. (USGS Black Mesa Butte, 7.5', 1985).



Figure 3. Overview of project area from Site 42Sa6757, facing north, with mill facility in background.



Figure 4. Overview of project area from Site 42Sa8014, facing south. South berm of Cell 4A on left in background.

## Cultural-Historical Background

Several current, textbook syntheses of prehistory in the North American Southwest are widely available, and serve to put the proposed project into a temporally deep and spatially broad context (e.g. Cordell 1997; Kantner 2004). Perhaps of more immediate interest are several overviews that consider southeastern Utah and the encompassing Mesa Verde region (Hurst 1992; Lipe and others 1999; Rohn 1989). All of these documents should be consulted for information regarding the broad patterns of cultural development in the region surrounding the project area.

The following, very brief overview summarizes the cultural history of the project area in terms of established "periods" that very generally based upon the changing subsistence economies and material culture of ancestral Pueblo society. Pre-agricultural societies are summarized by the PaleoIndian and Archaic periods. Ancient agricultural Puebloan societies are described in terms of the Pecos Classification (Kidder 1927; Lipe and others 1999).

### PaleoIndian Period

The PaleoIndian period, as it is expressed in the North American Southwest, is generally summarized in terms of the Llano, Folsom, and Plano complexes which seem to vary in date according to region (Schroedl 1991). In this particular case, Black and Metcalf (1986) are referenced to provide dates for the PaleoIndian Period in the project area. The Llano complex (ca. 12000 - 11000 Before Present or "B.P.") is characterized by the presence of Clovis points, presumably used to dispatch megafauna such as the mammoth. The Folsom complex (ca. 11000 - 10000 B.P.) describes a culture that utilized the Folsom point and is particularly associated with *Bison antiquus*, an ancient form of bison. The Plano complex (ca. 10500 - 7500 B.P.) does not generally occur on the Colorado Plateau with any great frequency although points from this complex have been reported (Black and Metcalf 1986; Tipps 1988).

The generally accepted dates for the onset of the PaleoIndian period in western North America begin around 9500 B.C. The earliest date for PaleoIndian occupation in Utah, yielded by the lowest cultural levels of Danger Cave in northwest Utah, bottoms out around 9450 B.C. (Schroedl 1991). At the Lehner Mammoth site in southern Arizona, hearths in a PaleoIndian mammoth kill site context have likewise been carbon-dated to somewhere between 9000 and 10,000 B.C. (Haury and others 1959).

The PaleoIndian lifeway has been generally described as being centered around the hunting of Pleistocene megafauna (Jennings 1973; Martin 1990), hence the occurrence of large-sized points. However, it is important to keep in mind that subsistence data for these sites is lacking with the exception of kill sites distant to the project area and the inferred functions of paleo-tool assemblages. Kill sites certainly indicate that large game animals played a role in paleo-subsistence economies. As Schroedl (1991:6) noted, the question is probably not whether they were big-game hunters that excluded gathering activities, but the degree to which game hunting played a role in the paleo-subsistence economy.

Several interesting PaleoIndian components occur relatively near the project area. These include the Lime Ridge Clovis site (Davis 1986, 1989), a rock art site along the banks of the San Juan River, and a multicomponent lithic scatter located only several miles south of the project area (Westfall and others 2003). Of final note is a Folsom projectile point fragment that was discovered while recording a multicomponent site on the southern edge of White Mesa just several miles south of the project area (Westfall 1995:64). This point is quite likely a prehistorically curated artifact.

## Archaic Period

Typically, the term "Archaic" refers to a human population organized in small groups with a high degree of residential mobility to best employ this hunter-gatherer subsistence strategy. In the case of this report, "Archaic" is used to describe the time period in which this lifestyle was the prevalent *modus operandi* of the prehistoric populations that occupied the Four Corners region from roughly 6000 B.C. - A.D.1. Several reviews of the long-lasting Archaic period have been generated for the Mesa Verde region and adjacent landscapes (Berry and Berry 1986; Geib 1996; Jennings 1978; Lipe and Pitblado 1999; Matson 1991).

Archaic tool assemblages begin to appear even as Plano point technology is still being utilized, especially on the High Plains. However, generally speaking, the Archaic period is differentiated from the PaleoIndian in its tool assemblage and presumed subsistence strategies. Instead of the lanceolate points of the PaleoIndian period, Archaic peoples possessed smaller, notched points that were hafted to darts and propelled by an atl-atl. That plants play an important dietary role in the Archaic lifeway is evident through the introduction of ground stone implements.

The change in subsistence strategy is grounded in a basic environmental change from a cooler and moister climatic regime to the modern xeric landscapes of the North American Southwest. This arid environment required a subsistence strategy that emphasized a knowledge of the spatial and seasonal availability of food resources.

Several classification schemes for the Archaic period have been developed, focusing mainly on particular broad areas in the region of the North American Southwest. Of particular use for the project area are those classifications proposed by Schroedl (1976) for the northern Colorado Plateau and by Irwin-Williams (1979) for the Four Corners area. Irwin-Williams (1979) believes that the Archaic populations of the Four Corners could be subsumed under the "Oshara Tradition." The Oshara Tradition is sequentially organized into five phases:

Jay Phase	5500 - 4800 B.C.
Bajada Phase	4800 - 3300 B.C.
San Jose Phase	3300 - 1800 B.C.
Armijo Phase	1800 - 800 B.C.
En Medio Phase	800 B.C. - 400 A.D.

Hurst (1992:37) succinctly summarizes the characteristics of each of these phases.

Irwin-Williams suggested that the Jay Phase represents the occupation of the Four Corners area by Archaic peoples from the San Dieguito complex to the west, following the eastward retreat of the big game hunting PaleoIndian cultures in the face of Holocene climatic changes. Jay and Bajada phase sites were thought to reflect occupation by nomadic hunting and gathering microbands who repeatedly reoccupied certain favorable localities in a "relatively unstructured continuing annual round." The San Jose phase saw significant population increase during an interval of increased effective precipitation and ameliorated restrictions on local resource bases (Irwin-Williams 1979:38). The Armijo phase witnessed the introduction of Mexican cultigens including maize into the economy, resulting in the production of seasonal food surpluses and population aggregations into macroband encampments. The En Medio phase is equivalent to the Basketmaker II culture as defined in the San Juan drainage, and marks the emergence of a fully horticultural Anasazi culture, probably in response to population pressure and

resultant shrinkage of foraging territories.

It is probably no wonder that little extensive work has been done with Archaic sites in the general vicinity of the project area. The nondiagnostic remains of Archaic period camps, often manifested as lithic debris scatters or hearth remains, are probably frequently documented as "unknown aboriginal" (IMACS 1990). Historically, archaeologists may have overlooked the lackluster Archaic sites, passing them by for the more interesting Puebloan sites. In addition, Archaic sites are susceptible to burial, erosion, or reuse by subsequent populations. However, recent survey data have contributed more to our knowledge of the Archaic population in the project area's vicinity (e.g. Honeycutt and Fetterman 1985; Whitten and others 1986; Bond and others 1992; Montgomery 1994). One general pattern that emerges is the tendency for Archaic period sites to occur on canyon rim or canyonhead locations (Whitten and others 1986; Montgomery 1994). Davis and others (2003: Table 2) report that only four Archaic components have been documented on the mill property.

Recent data recovery or excavation phase work has also considerably contributed to our knowledge of this time period. Greater detail is available regarding lithic procurement sites and their possible Archaic affiliations (Montgomery 1994; Westfall and others 2003). A rock shelter/cave located just west of Comb Wash, Old Man Cave, with an Early Archaic component (equivalent to the Jay phase) has been partially excavated (Davidson and others 1994). One habitation site of interest, perhaps bridging the gap between the Archaic and the preceding Basketmaker period, has been excavated near the project area and is discussed further below (Westfall and others 2004).

#### The Basketmaker Period

The end dates for the Archaic period, and the beginning date for the early Basketmaker period, are often blurred in spite of the seemingly concrete numbers assigned to them. Until recently, this number has been the firm A.D.1. The earliest Basketmaker manifestation, labeled Basketmaker II, is generally defined as a preceramic agricultural population that preceded the Puebloan tradition. Cultigens, and maize in particular, were passed from prehistoric Mexican populations into the North American Southwest. Currently the earliest evidence for maize on the Colorado Plateau comes from Three Fir Shelter on Arizona's Black Mesa and dates to 3900 B.P. (Smiley 1993). Agriculture as a subsistence strategy does not seem firmly established on the Plateau until 1500 - 1000 B.C. (Matson 1991; Lipe 1993).

Excellent overviews and discussions exist for the Basketmaker II period (Matson 1991; Hurst 1992, 2004; Lipe 1999). Basketmaker II rock shelter sites, perhaps the early Basketmaker Period site type that most frequently captures our imaginations for this period, are well described by Kidder and Gurnsey (in Hurst 1992:42) and others (Lindsay et al. 1968; Hurst 1993). Rock art that appears to date to this period is also extensively discussed (Schaafsma 1980; Manning 1992; Cole 1993; Pachak 1994).

Like the ephemeral nature of the Archaic period habitation sites, Basketmaker II habitation sites are often prone to natural obscuration, obliteration, or reoccupation. In spite of this, data recovery via excavation has occurred at nearby sites with Basketmaker II components (Davis 1984; Richins and Talbot 1989; Westfall 2003). As with the Archaic period, documented Basketmaker II components are rare on the mill property (n=3) (Davis and others 2003: Table 2).

The termination of the Basketmaker II and the commencement of Basketmaker III occurs in approximately A.D. 500. Reed (2000) has recently produced an edited volume that examines the Basketmaker III period in the Four Corners region, and Hurst (2004) has produced the most exhaustive summary of Basketmaker III data in

southeastern Utah.

Hurst (1992:47) defines the Basketmaker III as

that interval of Anasazi culture history during which the Anasazi of the Four Corners area were (1) producing a pottery assemblage dominated by Lino style gray ware and lacking both San Juan Red Ware and banded or corrugated gray ware; and 2) inhabiting substantial, semi-subterranean pithouses with associated noncontiguous, circular/ovoid storage cists.

Associated with the Basketmaker III household is the establishment of the "Prudden unit" settlement pattern (Prudden 1914, 1918; Roberts 1939). This long-lasting architectural footprint consists of the pithouse or kiva bracketed to the south by a formal midden area, and to the north by above-ground storage features (which consist of cists in the Basketmaker III period and pueblo structures in the following Pueblo periods). Elsewhere Lipe has referred to this persistent architectural pattern as the "San Juan pattern" (Lipe 2006:293).

In addition, the Basketmaker III acquired the bow and arrow and the cultigen, beans. In contrast to the Basketmaker II, this later manifestation of the Basketmaker Anasazi is abundant in the Four Corners region and is discussed in many sources that describe work near the project area (e.g. Neily 1982; Davis 1985; Hurst 1992, 2004).

The Basketmaker III settlements seem to range in size from single pit houses to larger communities of 10+ pithouses with satellite storage structures. These larger communities also have a large pithouse/community room per settlement that could have been incipient great kivas. Such sites occur near the project area in Recapture Wash at Villa Gavilan (Jacklin 1985) and near Bluff, Utah (Neily 1982).

### Pueblo Period

The Pueblo period has been extensively covered in many overviews for the American Southwest and the smaller Mesa Verde region (Cordell 1997; Kantner 2004; Lipe and others 1999; Hurst 1992; Nickens 1982; Rohn 1989). Only some general characteristics will be mentioned here in conjunction with specific site examples and past archaeological projects that occur in the immediate vicinity of White Mesa.

The Pueblo I Period approximately spans the years from A.D. 750 to A.D. 900 in the Four Corners area. Like the Basketmaker III settlements, Pueblo I communities often consisted of one to a dozen pithouse structures with associated satellite rooms. The storage cists of the Prudden unit are replaced by above-ground jacal structures, and pithouse architecture changes rather dramatically as well. Although farther afield, the Duckfoot Site, excavated by Crow Canyon just five miles west of nearby Cortez, Colorado, offers some good insight into the structure of a Pueblo I settlement (Lightfoot 1994; Lightfoot and Etzkorn 1993).

During the Pueblo I period there may have been a movement of populations from lower elevations to upland areas above 6000 feet as well as to locations beside large, major drainages. These migrations tended to result in larger, aggregated settlements, perhaps the most well-known of which is "Site 13" on Alkali Ridge (Brew 1946). Excavations have taken place at several sites with Pueblo I period components in the near area (Davis 1985; Talbot and others 1982; Bussey n.d. in Hurst 1992:55).

The Pueblo II period, which runs approximately from A.D. 900 to A.D. 1150, is characterized by the so-called "Chaco phenomenon" (Irwin-Williams 1972). This

social phenomenon had its apparent center in Chaco Canyon of northwestern New Mexico, but became manifest across much of the northern Southwest. Community centers associated with the Chaco phenomenon exhibited great variability in detail, but also regularity in architectural footprint. These centers, often referred to as "great house" sites, generally include a great house, a great kiva, one or more "roads" that approach the site, and large site-encircling earthen berms. Hurst and Till (in press) describe how this "great house pattern" manifests itself in the project area. Most pueblo communities associated with these centers, particularly those in southeastern Utah, appear to consist of dispersed households or clusters of households (Cameron, in press; Jalbert and Cameron 2000; Mahoney 2000).

While still abiding by the Prudden unit pattern, household architecture was prone to change during the Pueblo II period. For example, jacal structures of the preceding period are replaced by above-ground masonry buildings and the pithouse structures assume the architectural elements that define "kivas." The attributes that appear to be generally unique to kivas are pilasters, which are indicative of a different roofing technique, a southern recess, and a ventilator system that usually articulates with the southern recess.

During the earlier years of the Pueblo II period, there appears to be high climatic variability but a general increase in precipitation. The climate then appears to stabilize in the latter part of the period and the relatively high amount of effective moisture is maintained. Although these climatic variables seem to encourage a Pueblo II expansion into the higher elevations up to just below 7000 feet, those areas around the Dolores and La Plata rivers are abandoned (Hurst 1992; Rohn 1989). Indeed, there seems to be an overall increase in population across much of the Four Corners region, the area of the project not excluded. In the later portion of the Pueblo II period, the Cedar Mesa area west of Comb Ridge begins to be repopulated. There is some debate with regard to the population density and settlement patterns of this period. Some argue that, in spite of an overall population increase, there is a "dispersal" of the population away from their aggregated villages of the Pueblo I period (Hurst 1992:59). However, Rohn (1989:157) believes that there could be an overall increase in the average Pueblo II community size for the Four Corners area.

Pueblo II period sites have been excavated near the project area (e.g. Baker 1990; Davis 1985; Firor and others 1998; Nielson and others 1985). The substantial Pueblo II ruin at the Edge of the Cedars Museum in Blanding, Utah has been partially excavated. These efforts, however, were only poorly documented (Hurst and others 1995:15). Firor and others (1998) report on a middle Pueblo II period site with a Mesa Verde-style kiva as well as a pitstructure that is executed in a style typical of the Pueblo I period. Casjens (1980a) reports similar variability for pitstructures excavated earlier on the White Mesa Mill property at two sites: 42Sa7754 (Three Meter Isle) and 42Sa6437 (Proton Point).

The Pueblo III period dates from approximately A.D. 1150 to A.D. 1300. This period could be characterized as the greatest source of current interest and controversy for many archaeologists. It certainly appears to have been a time of upheaval and/or change for at least some of the populations with Puebloan affiliations. Hurst (1992:67) summarizes these changes, observing that

...the Pueblo III period is characterized by localized abandonments and population shifts; a concomitant decrease in the number and increase in the average size of habitation sites (due in large part to the shift in large-community settlement pattern from the great house community pattern to more intensive aggregation into tightly-clustered complexes of contiguous households); widespread intensification of the water and soil conservation technologies that appeared during the previous period; the full flowering of the classic architectural-ceramic complexes by which the Mesa Verde and Kayenta expression of the Anasazi culture are best known (Kidder 1965); the extensive territorial expansion of the Mesa Verdean architectural/ceramic complex; and the widespread occupation of defensible locations and locations with dependable water sources during the decades immediately preceding the general abandonment.

Pueblo III community structures are typically above-ground masonry rooms, often contiguous with other rooms. These are truly "pueblo" structures, which are aggregations of single rooms into room blocks, some of which are multistory. The pithouses (or kivas) are still maintained as an important element of Anasazi architecture. An important and interesting architectural element of the time is the "tower," which is usually one or two stories in height and generally circular.

The earlier half of this period is characterized by the apparent maintenance of the Chaco phenomenon, albeit with differences. Often termed the "post-Chaco" period, it appears that at least some of the region's great house sites are re-inhabited or at least reconfigured (Cameron 2009). However, by the mid-1200s, the great house phenomenon appears to be replaced by the "Great Pueblo" way of life (sensu Kantner 2004:159-181).

Scholars note an overall decrease in the number of habitation sites in the Four Corners region during the Pueblo III period as populations aggregated into larger communities. Of particular note is the florescence of large pueblo communities in the Montezuma Valley area east of the project area (e.g. Hurst 1992; Rohn 1989; Lipe and Ortman 2000). These Montezuma Valley communities are often located on or near canyon rims (Lipe and Varien 1999).

Hurst and others (1995:16) note that although a number of large Pueblo III sites occur around the edges of White Mesa, none of these has been the subject of extensive scientific scrutiny. Abajo Archaeology did a thorough surface documentation of a Pueblo III site, known as "Moki Island," just north of Blanding (Montgomery and Montgomery 1988). Two Pueblo III cliff dwellings on White Mesa's northwestern margin have been somewhat studied through excavation techniques. Excavations have taken place at Westwater 5-Kiva Ruin but remain largely unreported. This project documented a 25-room pueblo that dated to the mid-1200s (Lindsay and Dykman 1978). Less extensive, but better documented test excavations were undertaken at Big Westwater Ruin, a site half the size of 5-Kiva Ruin (Lindsay 1981). Big Westwater Ruin is located just a few kilometers northwest of the White Mesa Mill.

More immediately, Neilson (1980) reports on an excavated site with apparent Pueblo III period domestic features on the mill property. This site, 42Sa6437 (Proton Point), yielded evidence for pitstructures that were not typical of the Mesa Verde type kiva. One of these features was recently excavated on the mill property at the late Pueblo III site, 42Sa27732 (Till, in progress). A late Pueblo III period site with a similar Mesa Verde type kiva was excavated by Alpine Archaeology at 42Sa7660 (Happy Salamander Site), which is very near to the White Mesa Mill (Greubel 1998).

### Late Prehistoric and Proto-Historic American Indian

By the early 1300s the Puebloan depopulation of the Four Corners region was complete. It seems likely that the local Anasazi population moved southward to join other pueblo groups in the Rio Grande and Little Colorado River drainages. Hurst (1992:72) notes evidence of occasional prehistoric Hopi, Zuni, and Jemez Pueblo ceremonial visits to the area. This evidence manifests itself through pottery artifacts and apparent shrines, and is underscored with verbal accounts of these travels.

The dates for the entry of Athapaskan peoples into the Four Corners region are rather uncertain. However, Spanish accounts from the early 1700s indicate that Ute and Navajo ("Dine") populations were inhabiting the area around the Sleeping Ute Mountain.

### Historic Period

Little detail will be given here concerning the historic period of the project area, which has been documented in other places (Davis and others 2003; Hurst and others 1993; McPherson 1995). Only eight previously documented sites on the mill property have been designated as historic; of these, six sites lack diagnostic attributes to assign cultural affiliation.

Features associated with the Navajo and Ute peoples are steadily receiving more recognition and understanding as archaeologists become more aware of their presence. A number of Native American historic sites have been recorded in the near vicinity of the project area (e.g. Hurst 1981; Montgomery 1994; Westfall 1995). Only two sites have been assigned specific cultural affiliations, one of which is Navajo and the other is Ute.

Although it is apparent that the Spanish had some minimal knowledge of the area, it was not until the 1850s that Anglo-Americans recorded their first visits to the area (McPherson 1995). The LC Ranch began its cattle operations in Recapture Wash below White Mesa in the 1870s. Settlement of the area began in earnest, however, in 1880 when Mormon settlers first arrived at the present location of Bluff. Dissatisfied with their environment, in 1904 a group of Bluff Mormons headed north to the flats of White Mesa below the Abajo Mountains and founded the community of Grayson (renamed Blanding). Soon after this date, the town of Monticello was founded. The economy of these early towns, like many frontier communities, initially revolved around land-based extractionist industries such as livestock, mining, and timber. In addition to these industries, recreation is now rapidly becoming an economic mainstay for the region, due in part to the public's fascination with the prehistoric occupants of the North American Southwest.

### CHAPTER 3: PREVIOUS RESEARCH IN THE PROJECT AREA

The White Mesa Mill property (Figure 5; also see Davis and others 2003: Figure 1) has been the subject of varying degrees of scrutiny by archaeologists in the recent past. Several archaeological surveys on the property have documented scores of sites on the mill property (Berge 1975; Casjens and Seward 1980; Fike and Lindsay 1976; Thompson 1977). Many of these sites have subsequently been tested and excavated (Agenbroad and others 1981; Berge 1983; Casjens 1980a; Davis 1985; Lindsay 1978; Nielson 1979; Sargent 1979; Till, in prep.).

A relatively recent Class I inventory of this material by Davis and others (2003) summarizes some of the gross survey data generated by these earlier efforts. Their summary indicates that the highest proportion of components documented on White Mesa date to the Pueblo II period (32%), followed by Pueblo I period components (24%), Pueblo III period components (15%), and Basketmaker III period components (14%) (Davis and others 2003: Table 2).

Davis and others (2003) also note the frequencies of site types organized by general function. Working with a sample size of 231 sites (in contrast to component), their query into this matter indicates a relatively high proportion of sites that have a "habitation" function, meaning sites with domestic features (sensu Davis and others 2003:34). Approximately 62% of the sample functioned as domiciles in some capacity, with "limited activity" sites composing 26% of the sample. Summary of the site data indicate that 85% of the sites documented on the mill property are eligible for nomination to the NRHP (Davis and others 2003: Table 1).

In the preparation of this report, I used data provided in Tables A-1 through A-7 to compile a database of temporal assessments that had been assigned to the sites during survey. Whereas Davis and others (2003) would assign separate component values for each of the periods in a span of periods assigned for each site, I used the whole span of periods as the unit of examination. In other words, if a site had been assessed to belong to a time at some point within a span of periods ranging from the Basketmaker III through Pueblo III periods, the original Class I survey tallied four components for that site (one each for the Basketmaker III, Pueblo I, Pueblo II, and Pueblo III periods). In contrast, I simply included that one site as one of others that had been assigned the general span of "Basketmaker III to Pueblo III." I also used excavation data from Casjens (1980a), Davis (1985), Lindsay (1978), Nielson (1979), and Sargent (1979) to better assess the temporal component data and site function.

Table 2 shows the number of site components by count and percent from the new database generated for this project. It illustrates the same basic trend observed by Davis and others (2003: Table 2) in the Class I survey results: Pueblo II period sites are the most prevalent, followed in frequency by Pueblo I, Basketmaker III, and Pueblo III periods sites.

Previous research on White Mesa has focused on variations in settlement structure through time (e.g. Casjens and Seward 1980; Davis 1885), particularly with regard to the changing ratio of habitation sites to limited activity sites. "Habitation" sites will be expected to exhibit greater variability in artifact assemblages, in addition to greater numbers of artifacts, and is expected to have relatively substantial and formal architecture. "Limited activity" sites might include a range of functions such as those associated with agricultural field maintenance, the gathering of wild plant resources, and food storage and preparation. These sites are manifest by low variability in artifact assemblage profiles, ephemeral architecture, and isolated features that include storage facilities, hearths, and food preparation features.

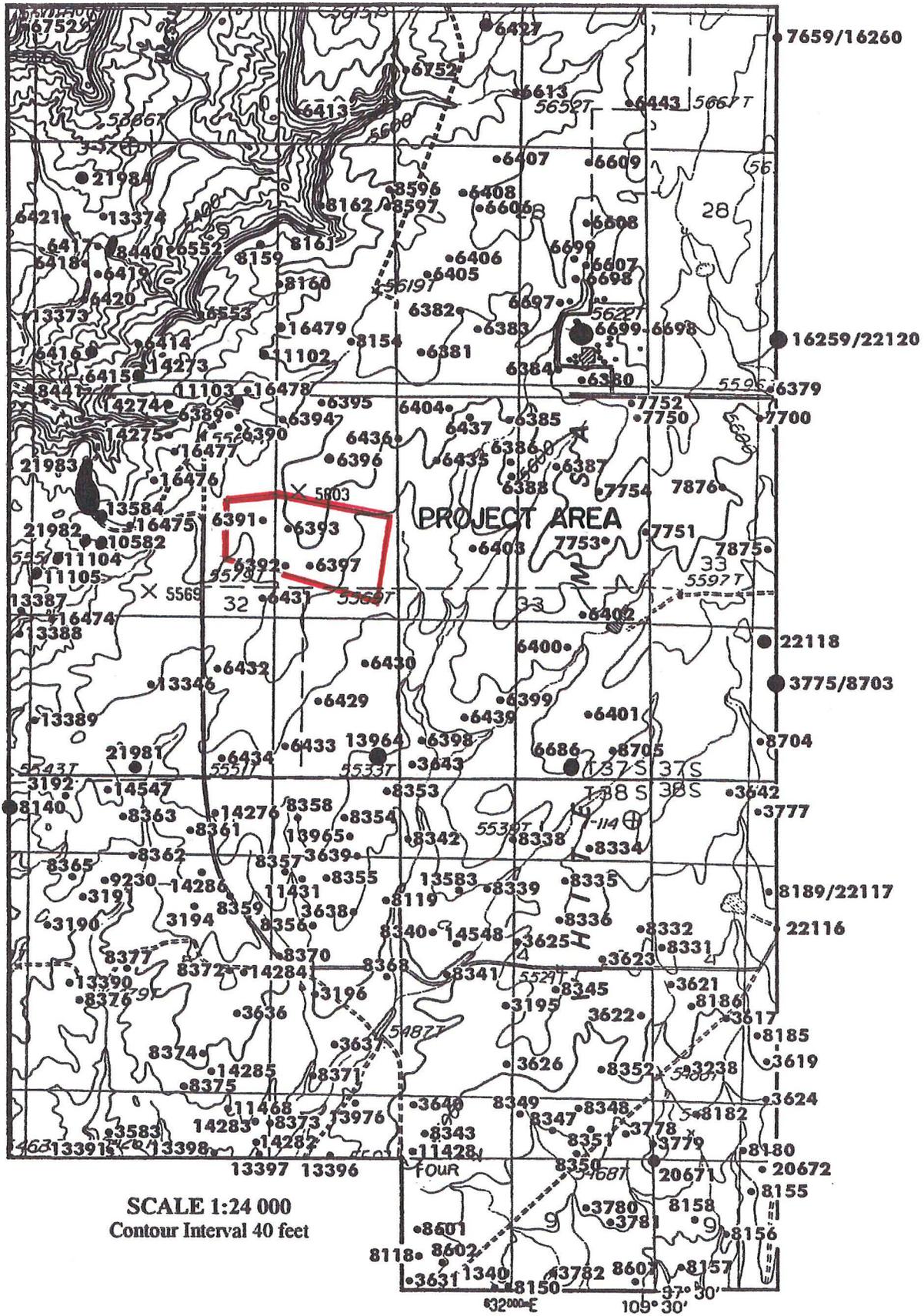


Figure 5. White Mesa Mill Site Map showing location of archaeological sites (After Davis and Others 2003).

Period	N	%
Archaic	2	0.8
Late Archaic to BMII	2	0.8
BMIII	14	5.8
BMIII to PI	24	10.0
PI	17	7.1
PI to PII	30	12.4
PII	35	14.5
PII to PIII	33	13.7
PIII	11	4.6
BMIII to PII	8	3.3
PI to PIII	8	3.3
BMIII to PIII	5	2.1
Pueblo, NFS	2	0.8
Unknown Aboriginal	42	17.4
Historic, NFS	5	2.1
Historic Navajo	1	0.4
Historic Ute	1	0.4
Historic Anglo	1	0.4
<b>TOTAL</b>	241	100.0

Davis (1985:464) has suggested and described variability in functionally different sites through time for the mesa's interior. His research on White Mesa suggests that there is an overall increase in the proportion of limited activity sites as a consequence of "population expansion into new habitats to procure needed resources."

Table 3 cross-tabulates temporal components with functional assessments. The table may indicate an important trend in settlement strategy as it is correlated with time. Very tentatively, it appears as though there is a 2:1 ratio of habitation sites to limited activity sites for the Basketmaker III, Pueblo II, and Pueblo III periods. In contrast, there is a 1:1 ratio of these site types in the Pueblo I period. However, the sample size of pure Pueblo I period sites is fairly small relative to the less-defined "PI to PII" range of sites (See Table 3). A greater understanding of the chronology of these sites may have significant bearing on understanding changing settlement patterns through time. These changes may indicate significantly different strategies for inhabiting and using the mesa's interior, which in turn, may have significant implications for social structure and strategy as they are correlated with larger historical trends in Puebloan history.

Table 3 . Site Components by Possible Function, White Mesa Mill

Period	Habitation		Seasonal Habitation		Camp		Limited Activity		Granary		Quarry		Unknown		Not Described		TOTAL		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
	Archaic							2	100.0										2
Late Archaic to BMII							2	100.0										2	100.0
BMIII	9	64.3			1	7.1	4	28.6										14	100.0
BMIII to PI	20	83.3					4	16.7										24	100.0
PI	8	47.1	1	5.9			8	47.1										17	100.0
PI to PII	27	90.0	1	3.3			2	6.7										30	100.0
PII	23	65.7	1	2.9			9	25.7	1	2.9	1	2.9						35	100.0
PII to PIII	28	84.8					4	12.1	1	3.0								33	100.0
PIII	7	63.6					4	36.4										11	100.0
BMIII to PII	6	75.0					2	25.0										8	100.0
PI to PIII	7	87.5					1	12.5										8	100.0
BMIII to PIII	4	80.0					1	20.0										5	100.0
Pueblo, NFS							2	100.0										2	100.0
Unknown Aboriginal	4	9.5			3	7.1	20	47.6	4	9.5	1	2.4	10	23.8				42	100.0
Historic, NFS					2	40.0							1	20.0	2	40.0		5	100.0
Historic Navajo					1	100.0												1	100.0
Historic Ute					1	100.0												1	100.0
Historic Anglo					1	100.0												1	100.0
TOTAL	143	59.3	3	1.2	9	3.7	65	27.0	6	2.5	2	0.8	11	4.6	2	0.8		241	100.0

## CHAPTER 4: CULTURAL RESOURCE INVENTORY

This chapter documents the results of the cultural resource inventory (archaeological survey) performed for the White Mesa Mill Cell 4B project area. A total of 14 sites were documented or redocumented as a part of this project (Figure 6 and Table 4). The following sections detail the procedures followed for the survey, the archaeological sites documented during the course of the project (which are discussed in terms of previously documented sites and newly documented sites), and the isolated finds of cultural materials encountered in the project area.

### Archaeological Survey Methods

The archaeological survey was conducted by walking a series of parallel transects across the area maintaining a transect interval of 50 ft (15 m) or to maintain visual contact with the ground surface. Transect integrity was maintained by continuous monitoring the surveyor's location with a Global Positioning Satellite (GPS) receiver. Cultural resources located during the course of the survey were recorded as either archaeological sites or isolated finds (IFs) of cultural materials (i.e. artifacts, imported rock, etc.). Archaeological sites are concentrations of artifacts that indicate the locus of significant and interpretable human activity. All sites are recorded and evaluated for significance in terms of their potential for nomination to the National Register of Historic Places (NRHP). Isolated finds of cultural materials are single artifacts, a cluster of a small number of similar items in a limited space, or other small scale cultural phenomena that do not possess the required counts, interpretability, or integrity to be recognized as a site. Isolated finds of cultural materials are by definition limited in their potential as a significant source of data and are generally not considered significant in terms of potential nomination to the NRHP. Modern out-of-period cultural phenomena are not recorded as either archaeological sites or IFs. Such phenomena might include isolated glass or plastic beverage bottles and aluminum cans, recent hearths with plastic forks and/or aluminum foil, or recent camping sites.

Archaeological sites are recorded by summary description of the artifacts, structural and non-structural features, and various natural associations. In addition, sites are mapped, culturally diagnostic artifacts are illustrated, and the area is photographed. The site area is located on the appropriate USGS 7.5' quadrangle by means of GPS-generated UTM coordinates using the NAD 83 datum. Finally, a site identification stake is hammered into the ground within the site area at the mapped location of the site datum. This stake consists of a ½-inch diameter steel rod with a 2 inch diameter aluminum cap on which is stamped the site number. Old datum locations, when recognized, were maintained—our rebar datum was placed immediately adjacent to, or tangent to, the old stakes. Isolated occurrences of artifacts are described and their positions noted on the project map. They are only photographed and/or illustrated if they represent culturally diagnostic types such as would be the case with a complete projectile point or identifiable fragment. No test excavations of any kind were conducted during the course of this inventory project.

When possible, discussions of artifact analysis results use the terminology outlined in the Crow Canyon Archaeological Center on-line laboratory manual (Ortman and others 2005). This is particularly true of pottery types. These types are essentially common to the "Mesa Verde region," which spans southeastern Utah and southwestern Colorado. These types are also recognized and defined by Wilson and Blinman (1991), and the terminology used widely by archaeologists in the Mesa Verde region. However, departures from these terms may occur on previously excavated sites in the vicinity. When these earlier works are cited, the original terminology is preserved.

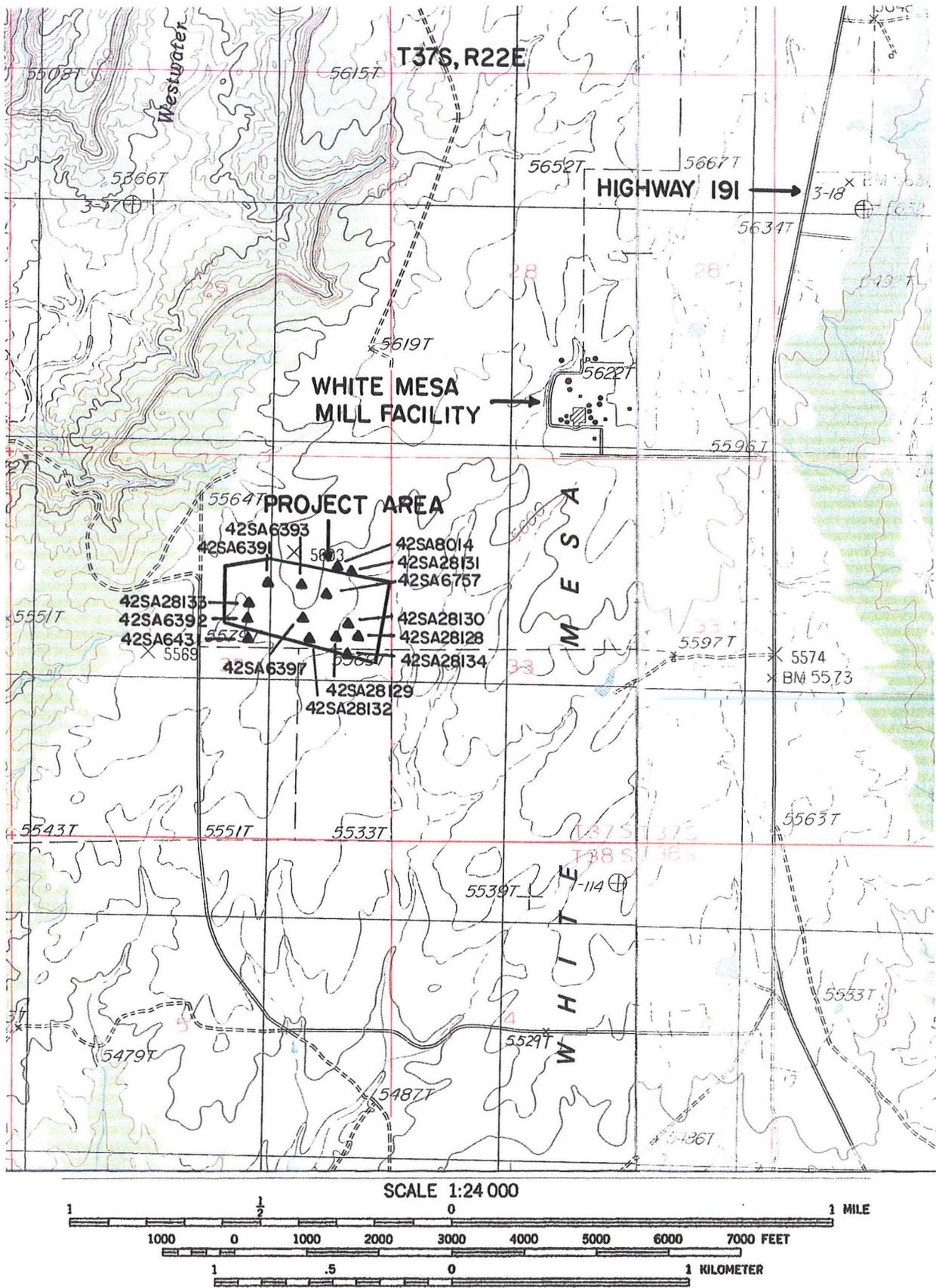


Figure 6. Denison Mines White Mesa Mill Cell 4B Project Map showing location of archaeological sites. (USGS Black Mesa Butte, 7.5', 1985).

Site No.	Survey No.	UTMs		Quarters				Elevation (ft.)
		Easting	Northing	1/4	1/4	1/4	1/4	
42Sa28128	1	631332	4154376	SW	SE	SE	NE	5574
42Sa28129	2	631232	4154393	SE	SW	SE	NE	5579
42Sa6392	3	630859	4151457	NW	SE	SW	NE	5587
42Sa6391	4	630940	4154617	C	NE	SW	NE	5600
42Sa6393	5	631078	4154612	SW	NW	SE	NE	5604
42Sa6431	6	630866	4154373	SW	SE	SW	NE	5582
42Sa6397	7	631083	4154473	NW	SW	SE	NE	5597
42Sa28130	8	631285	4154451	NW	SE	SE	NE	5578
42Sa28131	9	631293	4154650	W1/2	NE	SE	NE	5584
42Sa28132	10	631113	4154386	SW	SW	SE	NE	5587
42Sa28133	11	630855	4154516		C	SW	NE	5585
42Sa28134	12	631284	4154318	NW	NE	NE	SE	5571
42Sa6757		631191	4154564	SE	NW	SE	NE	5592
42Sa8014		631227	4154674	NE	NW	SE	NE	5589

### Previously Documented Sites

As noted in Chapter 3, several sites have been documented in the current project area. Indeed, some of these were subject to test excavations and two sites have been the subjects of data recovery (i.e. intensive excavation). The two intensively excavated sites, 42Sa6757 and 42Sa8014, were investigated by Plano Archaeology in 1981. The results of these excavations were published by Abajo Archaeology, which included many of the original Plano staff, in 1985 (Davis and others 1985).

In addition to the excavated sites, four additional sites were documented in the current project area (42Sa6391, 42Sa6392, 42Sa6393, and 42Sa6397) and a fifth site (42Sa6431) was recorded immediately south of the project's boundary. Given the proximity of this fifth site to the project area, it is prudent to consider the site in this report. Unfortunately, a great deal of confusion apparently surrounded these five sites during the test excavations that followed the sites' initial survey documentation. This confusion resulted in sites being tested under different site numbers than what had been assigned to them as a result of the initial survey work by Thompson. Figure 7 illustrates how site numbers and locations were conflated.

Figure 7. Survey Site #s vs. Testing Site

<u>Original Site #</u>		<u>Tested As</u>
42Sa6391	—————→	42Sa6391
42Sa6392	—————→	Not tested
42Sa6393	—————→	42Sa6391
42Sa6397	—————→	42Sa6393
42Sa6431	—————→	42Sa6392

In the testing phase, 42Sa6391 is tested as two loci, one of which is 130 m east of the other (Dykman 1978a). This eastern locus was apparently the original 42Sa6393, which was documented by Thompson as being due east of 42Sa6391 (Figure 8).

Dykman (1978b) tested a site to the south of the location of the original 42Sa6393 (Lindsay 1978: Figure 2), but used the designation 42Sa6393 (Figure 9). This site may have been what Thompson recorded as 42Sa6392 or, more likely, 42Sa6397. Thompson's original description of 42Sa6392 states that the site is "40 meters in diameter and is found in a very shallow, natural crescentic depression with an opening drainage falling at 3 degrees to the W." In contrast, Thompson describes 42Sa6397 as being 100 m in diameter on a slope that falls to the east. This latter site description better fits the site that Dykman (1978b) tested as 42Sa6393.

Site 42Sa6392 appears to have been confused with 42Sa6431, which lies to the south of the former (See Figure 8). A comparison of the original site description for 42Sa6431 (Thompson 1977) with the description offered by Nielson for 42Sa6392 during testing indicates that the two are one and the same. Thompson notes that the site is "located on aeolian soil that slopes to the SW at 3 degrees." Nielson writes that "the site occupies a small, south-west oriented ridge," a description that is contrary to Thompson's vision of the 42Sa6392 (cited above). For the current project, a site was located in the approximate location of Thompson's 42Sa6392 that matches his description of the site. Thus, it seems likely that Nielson misapplied the 42Sa6392 number, imposing it on the site that Thompson had identified as 42Sa6431.

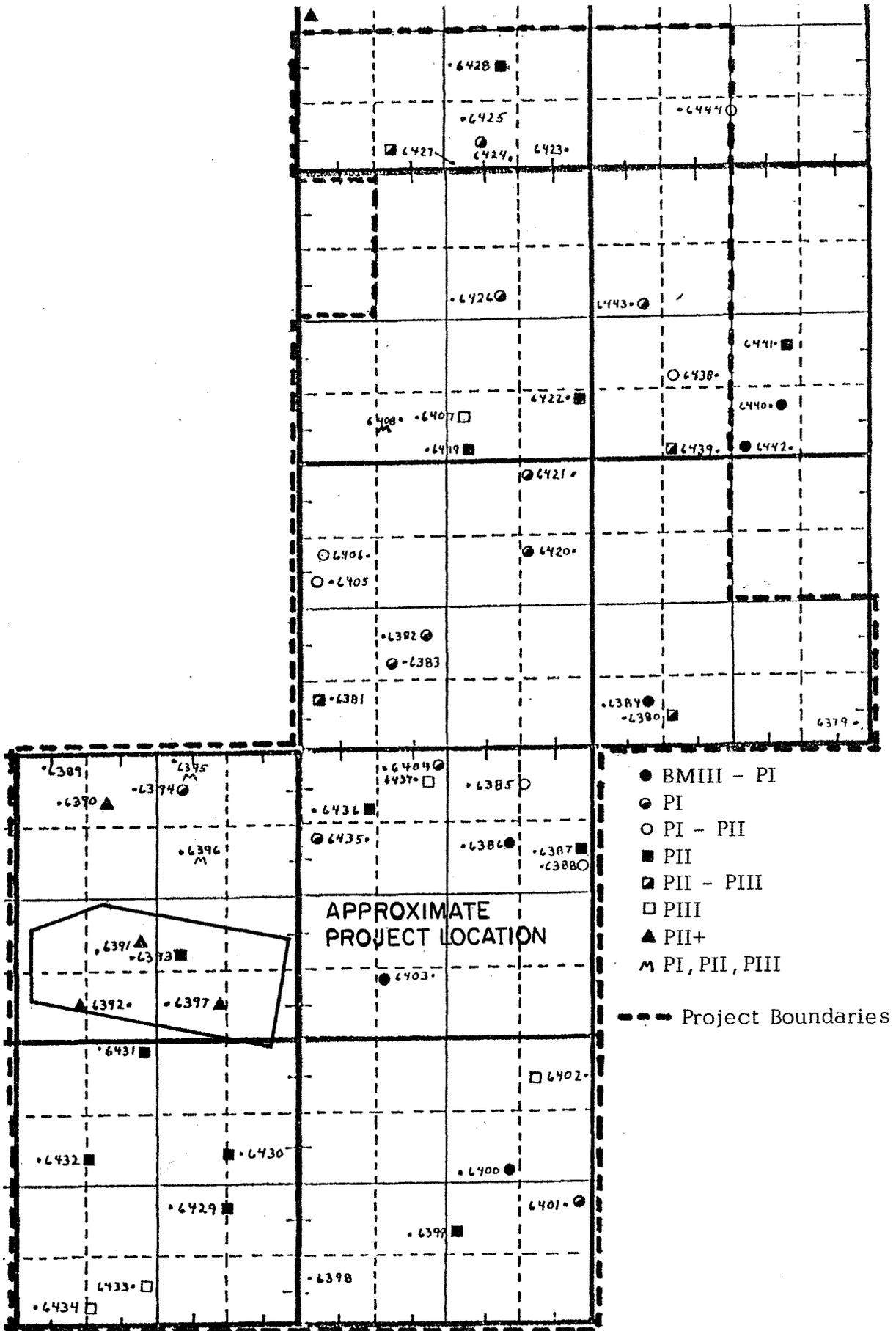


Figure 8. Site Location Map for Thompson's survey (1977:7).

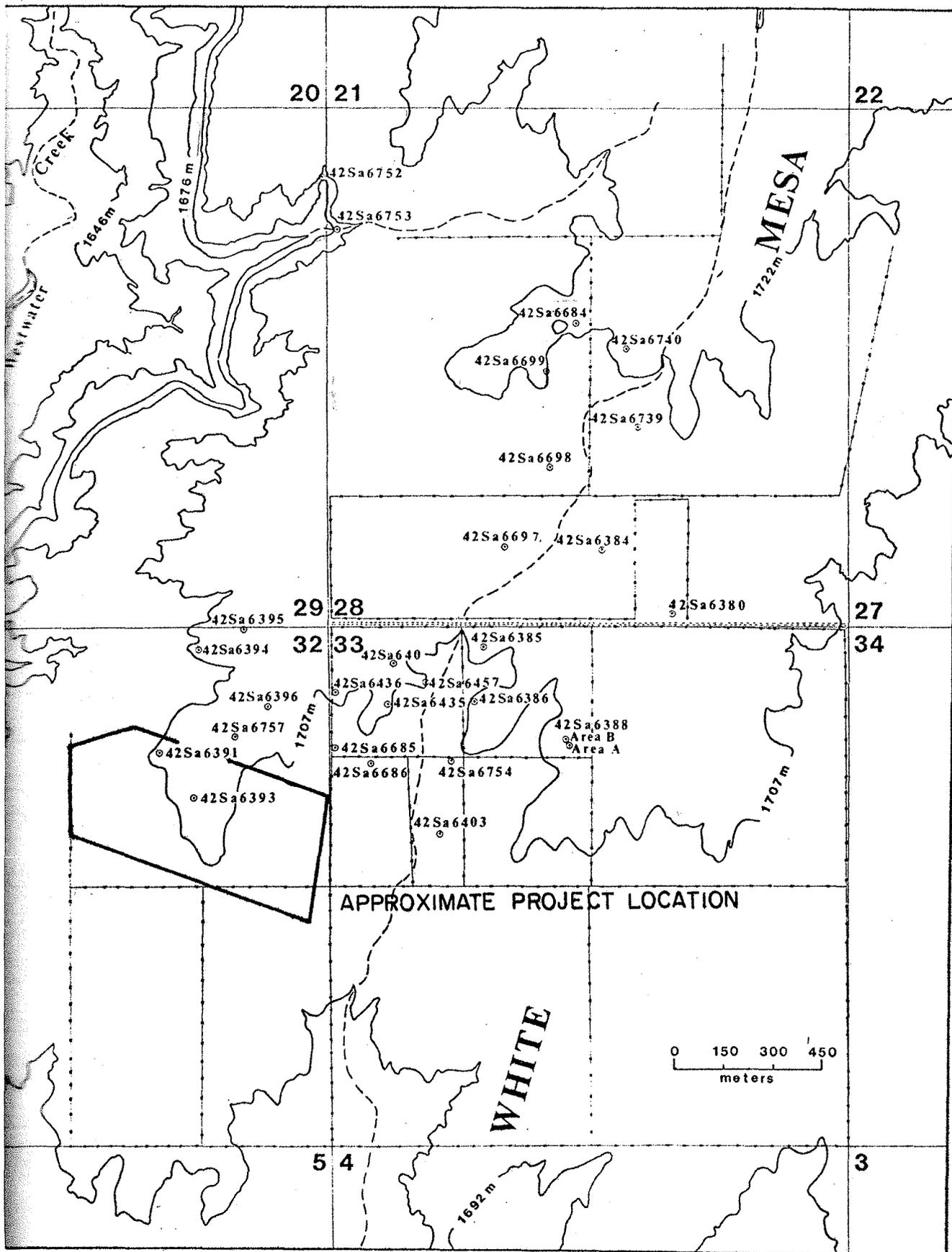


Figure 9. White Mesa archaeological sites (After Lindsay 1978:20).

Table 5 summarizes the seven previously documented sites considered here. This section first discusses the two intensively excavated sites, then turns to the other five sites.

#### Site 42Sa6391

The site was initially documented by Thompson (1977:21) as a "very thin scatter of sherds, flakes, and ground stone fragments near the top of a very low ridge." Thompson noted that the site covered an area about 40 m in diameter. No collections were procured from the site at that time. Based on the pottery sherds observed, Thompson concluded that the site dated to A.D. 900 or later. Thompson (1977:14) indicated that the site would require mitigation.

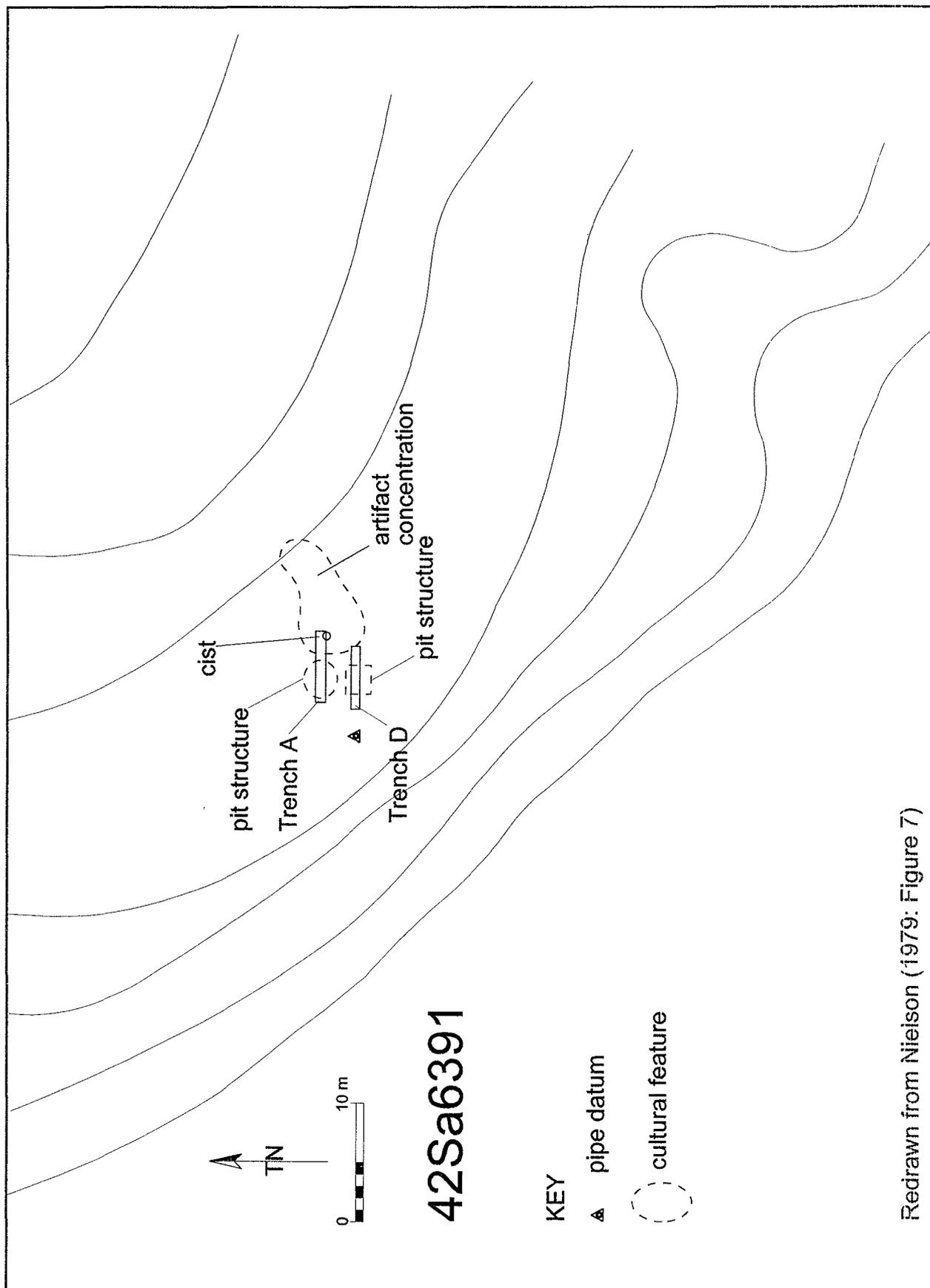
Soon after, the site was the subject of two testing programs performed by the Antiquities Section of the Utah Division of State History (Lindsay 1978; Nielson 1979). The site was first tested under the supervision of James Dykman (1978a) in April of 1978. Dykman (1978a:71) notes that the site's surface manifestations consisted of a "large, 10 m by 6 m artifact concentration. This concentration included ceramics, chipped stone, and ground stone that has a density of up to 20 artifacts per square meter." Dykman (1978a:71) indicates that two test trenches were excavated at that time: one trench, Trench A, was excavated close to the site datum; the second trench, Trench B, was excavated 100 m east of the site's datum to "bisect a small concentration of cultural material." While the testing report provided a map showing Trench A in relation to the site datum, Trench B was not. Trench A located two features (Dykman 1978a:73). The first of these is an apparent pit structure of unknown size and depth. The second feature consisted of a small cist, lined with sandstone slabs, that contained a partial Mancos Corrugated jar (Dykman 1978a: Figures 22 and 23) and an unfinished stone adze.

Several months later the site was again tested, this time under the supervision of Asa Nielson (1979). Nielson notes that the previously excavated Trench B was "about 125 m" east of the site's datum. Nielson emplaced two additional trenches on the site. Trench C was located 132 m east of the datum, apparently parallel to Trench B. Nielson did not provide a map illustrating Trench C's relationship to the site's datum. Trench D, like Trench A, was placed much closer to the site's datum. Trench C located a pit structure in the site's eastern locus. Trench D also located a pit structure (Figure 10).

Considering the great distance between these two cultural loci, it is now apparent that the eastern locus (with Trenches B and C) is the site that Thompson had recorded as 42Sa6393. For this reason, the materials and data from Trenches B and C will be discussed below with 42Sa6393. The salient point here is that at least two pit structures and one cist have been documented as subsurface features on 42Sa6391 proper.

The current survey project places the 42Sa6391 slightly east of its previously given location (ca. 40 meters). As it appears now, 42Sa6391 consists of a scatter of lithic and pottery artifacts. Sandstone rock on the surface may be the remains of architecture, though there does not appear to be any patterning to its occurrence on the surface. The scatter is contained within an area that measures about 40 m north/south by 30 m east/west, and occupies the crest of a low, sandy finger-ridge. A 3/4-in. steel pipe, representing an earlier site datum, indicates that the site had been previously documented. The faint traces of at least one, and perhaps two, of the previously excavated test trenches just east of the site datum are just barely discernable. These trenches appear to have been backfilled.

Site Number	Temp. No.	Tested?	Excavated?	Description	Sources
42Sa6391	4	Y	N	Testing located a pit structure and a cist with a Mancos Corrugated jar. These and other testing data suggest that this is a Pueblo II period habitation.	Dykman 1978a; Thompson 1977
42Sa6392		Y	N		Thompson 1977
42Sa6393	5	Y	N	Testing located two small pit features. Earlier survey data suggest a Pueblo II period component.	Dykman 1978b
42Sa6397	7	N	N	Early survey data suggest an early Pueblo II period association.	Thompson 1977
42Sa6431	6	Y	N		
42Sa6757		Y	Y	Excavation data yielded evidence of four Basketmaker III period pit structures.	Davis 1985; Lindsay 1978; Worthington 1978
42Sa8014		Y	Y	Excavation data provided evidence of a Pueblo I period pit structure and an associated cist.	Casjens 1980b; Davis 1985



Redrawn from Nielson (1979: Figure 7)

Figure 10. Site 42Sa6391, site map (After Nielson 1979).

The previous test excavations may have posed the most extensive effects to the site. However, a collector pile also indicates recent visits and perhaps collecting activity on the site. Rodent disturbance is also evident on modern ground surface. In terms of surface impacts, the greatest agents of effect were probably chaining and raiing as well as activities associated with historic farming and grazing practices.

The surface of the site is composed of the fine, red aeolian loess that dominates the sediments in the immediate area. Rodent burrows are notable for the white, calcium carbonate-rich chunks of earth. If the burrows are shallow, this suggests a high B-horizon. If the burrows are deep, then rodents are unearthing deep subsoils. Current on-site vegetation consists of little sagebrush, bunch grasses, snakeweed, and prickly pear cactus. Pinyon-juniper woodland is visible to the west as one approaches the canyon rim.

The artifact scatter comprises pottery, lithic debitage, one chipped stone tool (a biface), and pecked and ground stone tools (Figure 11). As noted earlier, there is a scatter of sandstone rock on the site, suggesting the presence of subsurface architecture.

A total of 51 sherds were documented on the surface of the site; 12 of these sherds were found in the collector pile on the site (Table 6). Corrugated jar body sherds are the most abundant pottery sherd types (n=23). The rest of the assemblage includes 3 Mancos B/w sherds (1 jar, 1 bowl, 1 form unknown), 14 Late White Unpainted sherds (3 bowl body, 3 jar body, and 8 form unknown), 1 Late White Painted bowl sherd, 4 undifferentiated neckbanded jar sherds, 4 Mancos Gray jar sherds, and 2 San Juan Red Ware sherds (form unknown).

The lithic debitage assemblage recorded on the surface suggests that the latter stages of reduction are well represented (Table 7). In addition, a variety of material types were observed on the site. Nine material types were observed in the debitage assemblage; most of these materials probably derive from the local Morrison and Dakota Formations. These materials include: a translucent gray and white chert (most abundant); a translucent, mottled, gray and white chert; an opaque white chert; an opaque light gray chert; Brushy Basin chert; a gray, white, and olive silicified sandstone; a green silicified mudstone; a dark green and brown mudstone; and a chalcedony.

In addition to the debitage, a total of eight lithic tools (T1-T8) were located and described for the site. The tools included four undifferentiated metate fragments, one biface, and 3 hammerstones. Tools T4-T8 are located in the collector pile about 20 m east of the site datum (See Figure 11). The tools are described further below.

**T1** is a metate fragment made from a dense white and brown sandstone. One facet is ground and exhibits peck marks. The object measures 11.5 x 5.8 x 4.3 cm.

**T2** is another metate fragment made from a white, silicified sandstone. One facet is ground-this facet is slightly concave and exhibits pecking. The item measures 6.5 x 7.2 x 6.5 cm.

The biface, **T3**, is a Stage 4 biface made from a mottled, light and dark gray opaque chert (Figure 12). The item appears to have broken during manufacture as the distal end of the artifact exhibits a transverse fracture. The tool measures 3.4 x 2.3 x 0.6 cm (the last measurement, thickness, is the only complete measure of the artifact).

**T4** is a hammerstone made from a disk-shaped white quartzite alluvial cobble. The artifact measures 7.5 x 7.0 x 2.8 cm.

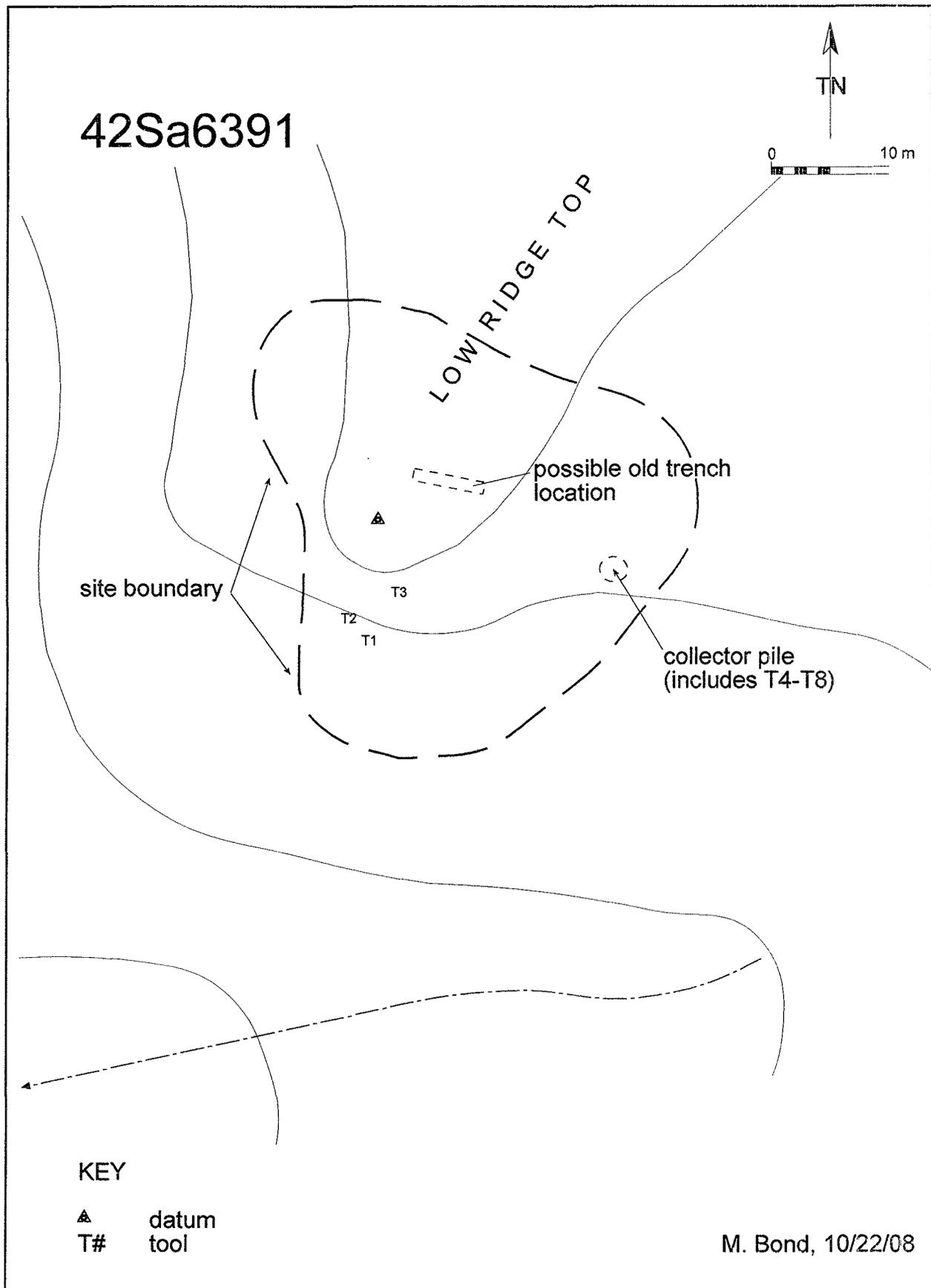


Figure 11. Site 42Sa6391, site map.

Table 6 . Pottery Types by Count, Percent, and Site

Site	Chapin Gray		Mocassin Gray		Mancos Gray		Mancos Corrugated		Plain Gray		Neckbanded, Undifferentiated		Corrugated, Undifferentiated		Chapin B/w		Piedra B/w		Early White		Late White, Unpainted		Late White, Painted		White Ware, Undifferentiated		Mancos B/w		Abajo R/o		Bluff B/r		Deadmans B/r		Bluff/Deadmans B/r		San Juan Red Ware, Undifferentiated		TOTAL		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
	42Sa28128													1	25.0												3	75.0												4	100.0
42Sa28129	1	7.1											9	64.3											2	14.3	2	14.3											14	100.0	
42Sa6392					3	25.0			1	8.3			6	50.0																									12	100.0	
42Sa6391					4	7.8					4	7.8	23	45.1												15	29.4	3	5.9								2	3.9	51	100.0	
42Sa6393	1	0.9			2	1.7	3	2.6	7	6.0		0.0	53	45.7					1	0.9					34	29.3	3	2.6			6	5.2			6	5.2	116	100.0			
42Sa6431					1	1.9			18	34.0			11	20.8											10	18.9	9	17.0					2	3.8	2	3.8			53	100.0	
42Sa6397	3	8.1					4	10.8	24	64.9	2	5.4	2	5.4																								2	5.4	37	100.0
42Sa28130							2	25.0					6	75.0																										8	100.0
42Sa28132									10	100.0																														10	100.0

Table 7 . Lithic Debitage by Flake Stage, Count, and Percent, All Sites

Site	Primary		Secondary		Tertiary		Shatter		TOTAL		Comments
	N	%	N	%	N	%	N	%	N	%	
42Sa28128	1	14.3	3	42.9	1	14.3	2	28.6	7	100.0	The tertiary flake is a pressure flake.
42Sa28129	1	20.0	3	60.0	1	20.0			5	100.0	
42Sa6392			25	40.3	32	51.6	5	8.1	62	100.0	Tertiary flakes include 22 pressure flakes.
42Sa6391			42	45.7	25	27.2	25	27.2	92	100.0	Tertiary flakes include 18 pressure flakes.
42Sa6393			19	28.4	17	25.4	31	46.3	67	100.0	Tertiary flakes include 16 pressure flakes.
42Sa6431	2	6.3	18	56.3	7	21.9	5	15.6	32	100.0	All the tertiary flakes are pressure flakes.
42Sa6397	3	15.0	6	30.0	10	50.0	1	5.0	20	100.0	Tertiary flakes include 5 pressure flakes.
42Sa28130	1	25.0	1	25.0	2	50.0			4	100.0	Both tertiary flakes are pressure flakes.
42Sa28132			2	100.0					2	100.0	
42Sa28134			3	75.0	1	25.0			4	100.0	The tertiary flake is a pressure flake.

**T5** is a peckingstone made from a subrectangular nodule of Brushy Basin chert. The artifact measures 7.3 x 6.5 x 6.0 cm.

**T6** is a small, well-used, disk-shaped hammerstone made from a light gray chert. The artifact measures 6.0 x 4.8 x 2.5 cm.

**T7** is a fire-reddened metate fragment made from a white, silicified sandstone. A one face is slightly concave and bears peck marks. The artifact measures 13.5 x 10.0 x 4.5 cm.

**T8** is a metate fragment made from a dark brown sandstone. The item measures 10.1 x 9.8 x 1.7 cm.

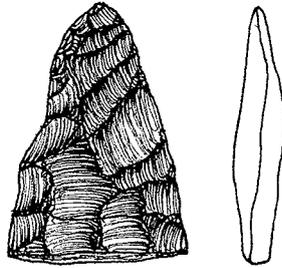


Figure 12. Site 42Sa6391, Tool No. 3, Stage 4 biface. Actual size.

The pottery assemblage suggests an association with the early to middle Pueblo II period. This tentative assessment is based on the presence of corrugated body sherds, narrow neckbanded sherds (probably late Mancos Gray), Mancos Black-on-white sherds (with Dogoszhi and Black Mesa design styles), and a red ware sherd. Alternatively, there might be both a late Pueblo I component and a Pueblo II component on the site.

The diversity of artifact types suggest that a variety of activities occurred on the site, which may be indicative of the site's use as a habitation. This proposition is further corroborated by the presence of pit structures documented in the test units by the Division of State History.

#### Site 42Sa6392

This site was first documented by Thompson (1977) and subsequently confused with a site located just to the south, 42Sa6431, during test excavations conducted by the Antiquities Section (Nielson 1979:30-46). Thompson (1977:21) described the site as being "40 meters in diameter and is found in a very narrow, natural crescentic depression with an opening drainage falling at 3 degrees to the W." As noted earlier, this does not fit the description of the site tested later by Nielson as 42Sa6392. That site, as Nielson (1979:30) notes, is found on a "small, south-west oriented ridge." It is important that future researchers examining collections made from 42Sa6392 during test excavations by the Antiquities Section in the late 1970s and early 1980s are not from 42Sa6392, but rather 42Sa6431. Thompson, apparently, did not collect anything from 42Sa6392 during its initial documentation.

At the time of its initial documentation, the site manifested itself as a "thin scatter of...flakes, ground stone fragments, and a few sherds either painted

or corrugated..." (Thompson 1977:21). Thompson proffers that the site dates to after A.D. 900, and suggests that the site would require further mitigation.

Our documentation of 42Sa6392 places the site about 100 m west and slightly north of its previously recorded location. The site currently manifests as a scatter of lithic and pottery artifacts and includes a small concentration of jacal (Figure 13). The site occupies an area measuring approximately 40 m in diameter, although the centrally located cluster of jacal materials is smaller, covering an area that measures about 5 m in diameter. The site is perched on a slight west-facing slope below the crest of a finger-ridge. On the ground, Thompson's observation that the site is in a "natural crescentic depression" is suggested by a very slight depression in the middle of the site area that may be more impressionistic than real. Lithic artifacts include debitage and flaked and ground stone tools. Pottery items include white ware bowl sherds, and neckbanded and corrugated cooking jar sherds. The pottery may indicate a primary use of the site during the years that span the early to middle Pueblo II periods.

Rodents probably pose the greatest recent impact to the site. Other impacting agents on the site may include activities associated with historic farming and grazing, and possibly chaining.

The site's sediments appear to consist of the deep aeolian soils forming much of this portion of White Mesa's modern ground surface. On-site vegetation, which is sparse, currently consists of bunch grasses, small sage, snakeweed, prickly pear cactus, and Russian thistle (tumbleweed).

The site consists of a scatter of pottery sherds, chipped stone artifacts (including debitage and a biface), and a ground stone tool. In addition there is a concentration of jacal, described here as Feature 1, that measures about 5 m in diameter.

A total of 12 sherds were documented on the site's surface (See Table 6). These include cooking jar sherds as well as bowl sherds. Included in the assemblage are 6 corrugated jar body sherds, 1 plain gray jar body sherd, 3 Mancos Gray jar sherds (including 1 jar rim), 1 Late White Painted bowl sherd, and 1 Bluff/Deadmans B/r bowl body sherd.

The site's surface debitage assemblage is more substantial and includes 62 pieces of debitage and a variety of lithic materials. The later stages of reduction are well represented in the assemblage (See Table 7). At least 11 material types are represented in the debitage assemblage, most of which are probably associated with Morrison and Dakota Formations. The materials are as follows: light gray, translucent chert (most abundant); opaque white chert; opaque, mottled white and gray chert; translucent white and gray chert; opaque, mottled gray and brown chert; fine-grained, black basalt; opaque, gray chert; olive and tan silicified siltstone; Brushy Basin chert; tan silicified sandstone; and an opaque tan chert.

The chipped stone tool, **T1**, is a Stage 3 or Stage 4 biface made from a light gray translucent chert (Figure 14). The artifact may be a projectile point preform.

The groundstone artifact, **T2**, is a metate fragment that probably derived from the margin of the larger tool. The artifact was made from a brown sandstone. Only one facet was apparently ground, and only lightly so. T2 measures 13.5 x 6.5 x 4.0 cm.

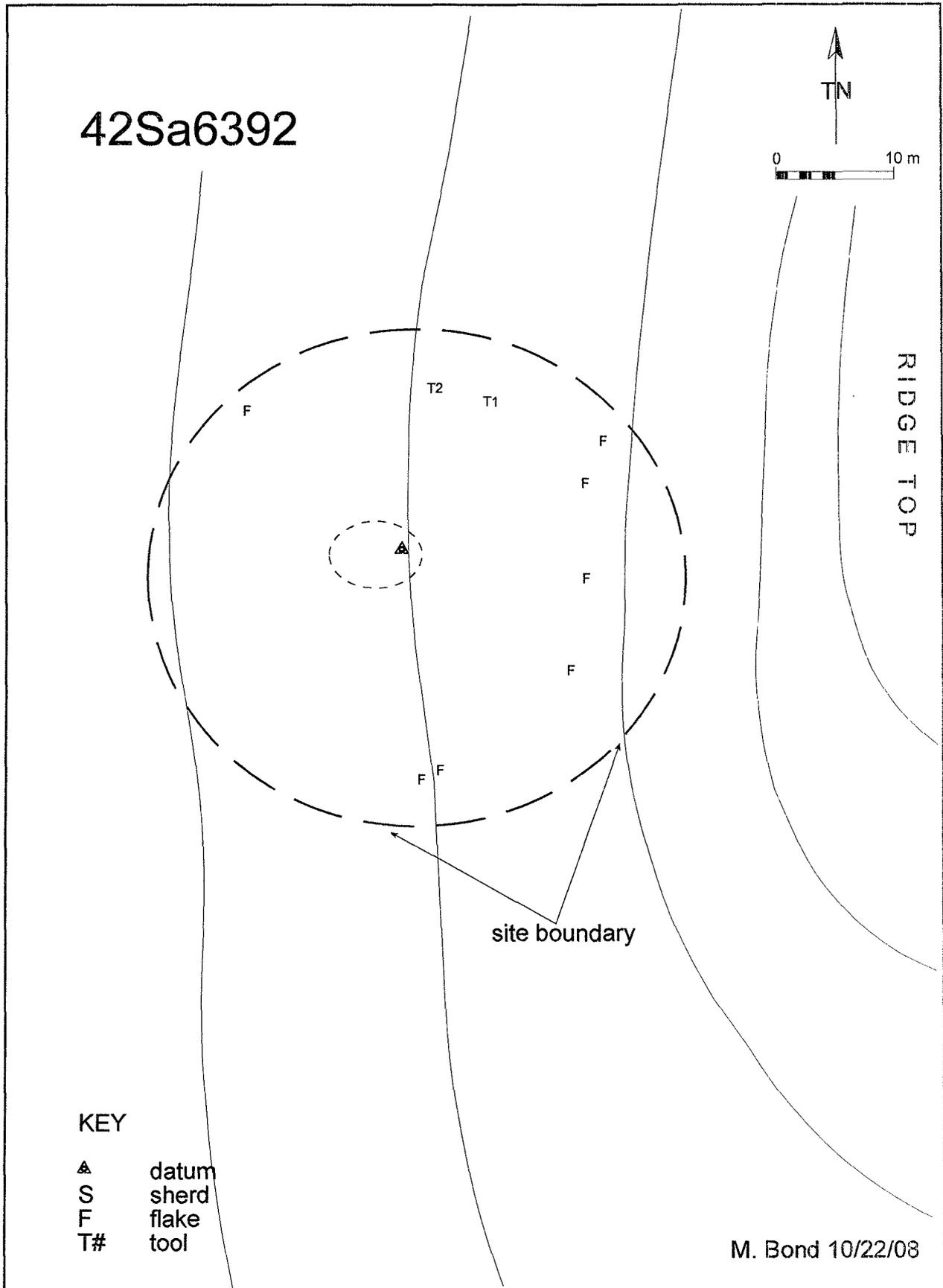


Figure 13. Site 42Sa6392, site map.

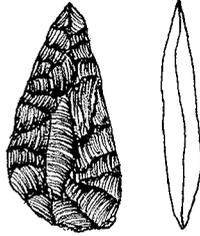


Figure 14. Site 42Sa6392, Tool No. 1, Stage 3 or Stage 4 biface. Actual size.

Feature 1 consists of a concentration of jacal and sandstone rubble. The concentration lies in the approximate center of the artifact scatter and measures about 5 m in diameter. The chunks of jacal measure 5 to 6 cm in diameter, while the sandstone rock measures about 10 cm in diameter. These materials are also associated with considerable rodent disturbance, suggesting that the jacal and rock could have been extracted from subsurface contexts by industrious rodents.

Although small, the pottery assemblage suggests an association with the early to middle Pueblo II period. This tentative assessment is based on the presence of corrugated body sherds, narrow neckbanded sherds (probably late Mancos Gray), and one Bluff/Deadmans B/r sherd. Alternatively, there might be both Pueblo I and Pueblo II components on the site.

The variety of artifact types on the site suggest that a diversity of activities took place at 42Sa6392. Additionally, Feature 1 suggests the presence of architecture on the site, perhaps indicating the remains of surface architecture. While sediment depth is unknown, it is quite possible that the site harbors one or more subsurface architectural features.

#### Site 42Sa6393

This site was initially recorded by Thompson (1977) as a locus of cultural materials that measured 50 meters in diameter. Artifacts that he observed on the site included a notched axe, mano fragments, cores, flakes, and pottery sherds. Thompson (1977:21) indicates that the site is situated on a 3 degree slope with a western aspect. Thompson's location of the site places it about 100 meters east of 42Sa6391. The initial documentation included a collection of pottery, which included Mancos Corrugated, Mancos B/w, and Deadmans B/r, pottery types that are indicative of the Pueblo II period. Thompson's site form for 42Sa6391 indicates that the axe was also collected. Thompson implicitly suggests that the site should be the target of future mitigation efforts.

To that end, the Antiquities Section apparently intended to test the site in spring of 1978 (Lindsay 1978). Unfortunately, archaeologists at that time failed to correctly relocate the site. Instead, the site designation was applied to a locus of cultural materials well to the south of Thompson's 42Sa6393. As noted earlier, it seems likely that Thompson's site 42Sa6397 was misidentified as 42Sa6393. James Dykman (1978b) excavated a series of trenches on the site erroneously identified as 42Sa6393; the data from these excavations are not reported here, but are instead discussed with 42Sa6397.

Further compounding the confusion, it is now apparent that Antiquities Section personnel did test the location of the original 42Sa6393, but did so

under another site number, 42Sa6391 (discussed earlier in this report). Two parallel trenches, Trenches B and C, were placed in the approximate center of the site. In one episode of testing, Dykman (1978a) excavated Trench B, which did not yield any evidence for cultural features, nor did Dykman indicate the presence of artifacts. A few months later, Nielson (1979) excavated Trench C and located a pit structure. Nielson (1979:21 and Figure 8) reports that the structure's floor was located about 1.4 m below modern ground surface. Nielson reports that one diagnostic artifact, a possible Mancos Gray sherd, was recovered from the floor. Other pottery sherds recovered from the trench included one Chapin B/g, three plain gray, on Mancos B/w, nine corrugated body sherds, and one unidentified red ware sherd.

Currently, the site consists of a scatter of lithic and pottery artifacts (Figure 15). In addition, two parallel trenches and their associated backdirt piles are very evident on the site. These are apparently Trenches B and C, excavated by Dykman (1978b) and Nielson (1979), respectively. The site measures approximately 60 m north/south by 45 m east/west in an area immediately west of the crest of a finger-ridge. Two concentrations of artifacts (Artifact Clusters 1 and 2) were noted on the west side of the site. The site's lithic assemblage includes debitage as well as ground stone items. The pottery assemblage includes white ware jar sherds, red ware sherds, and neckbanded and corrugated jar body sherds. It is possible that the site dates to the early to middle Pueblo II period. However, it is also possible that the site has a late Pueblo I component as well as a middle Pueblo II component.

The primary impacting agent to the site is probably the previous activities of archaeologists on the site. The site was apparently trenched in the past with heavy equipment: two backhoe trench depressions and their associated berms are still present. As noted above, the trenches probably correspond to Trenches B and C, which were erroneously excavated for 42Sa6391 (Dykman 1978a; Nielson 1979). Rodent burrowing has also affected the site.

On-site sediments consist of the red aeolian loess that dominates this portion of White Mesa. Current on-site vegetation consists of sagebrush, bunch grasses, snakeweed, and prickly pear. Pinyon-juniper woodland is visible to the west, near the canyon rim.

The surface artifact assemblage consists of pottery, lithic debitage, and several ground stone tools. Most of the artifacts are found in one of the two artifact clusters identified on the site (AC-1 and AC-2).

A total of 115 pottery sherds were documented on the surface of the site (See Table 6). At nearly one-half of the assemblage, corrugated body sherds are the most common type of sherd on the site. Early cooking jar types include several possible sherds of Mancos Gray, several plain gray sherds, and one Chapin Gray rim sherd. A number of white ware sherds are present, including one sherd that appears to be early (either Chapin B/w or Piedra B/w). Several of the white ware sherds appear to be Mancos B/w-these include sherds with Black Mesa and Dogoszhi design styles. Also present are San Juan Red Ware sherds, including several that were typed to Deadmans B/r. A variety of forms are represented on the site, including cooking jars, bowls, white ware jars, a seed jar, and a pitcher.

The lithic debitage assemblage is characterized by the later stages of reduction (See Table 7). Four material types were observed for the site's debitage assemblage: Brushy Basin chert; a translucent, mottled gray and white chert; a translucent white chert; and a white and gray silicified sandstone. At nearly 80 percent of the assemblage, Brushy Basin chert is clearly the dominant material on the site.

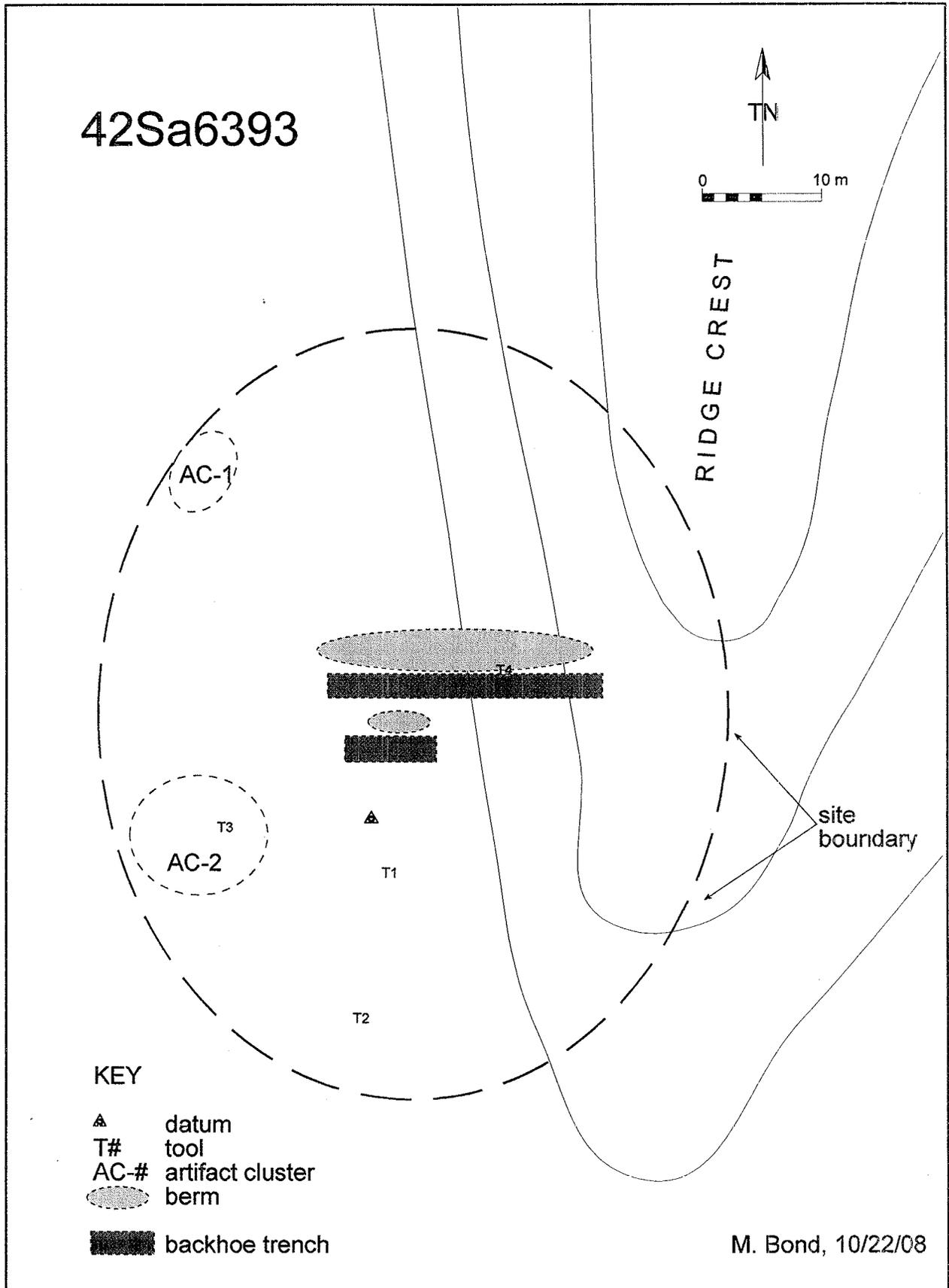


Figure 15. Site 42Sa6393, site map.

The lithic tools found on the site (T1-T4) consist entirely of ground stone items, all of which are undifferentiated metate fragments. These are described below:

**T1** is a metate fragment made from a dense, white silicified sandstone. One facet exhibits use and is slightly concave on its entire surface. The artifact measures 15 x 10 x 7 cm.

**T2** is made from the same material as T1 (probably Dakota silicified sandstone). It too has a single, slightly concave used facet, but is also heavily stippled with peck marks. T2 measures 8.5 x 8.0 x 2.5 cm.

**T3** is found in AC-2. It is made from a relatively soft brown sandstone. It has one slightly concave, used facet and measures 9.5 x 8.0 x 3.5 cm.

**T4** is located in the larger of the two backhoe trenches mapped during this project. It is made of the same material as T3. It has a single slightly concave used facet that is also heavily stippled. It measures 14.0 x 8.5 x 2.5 cm.

The pottery assemblage is rather ambiguous with regard to the number of components on the site. The gray ware assemblage includes neckbanded sherds with narrow bands (probably Mancos Gray), as well as corrugated jar sherds. A Chapin Gray sherd is present as are several plain gray sherds. White ware pottery types include Mancos B/w. Deadmans B/r is also present. Thus, it is possible that Basketmaker III, Pueblo I, and Pueblo II components are represented at this site.

The diversity of the site's assemblage suggests that a variety of activities occurred on the site. Paired with the presence of a pit structure discovered in one of the backhoe trenches, these data suggest that the site may have functioned as a habitation.

#### Site 42Sa6397

This site was originally recorded by Thompson (1977:22) as a "thin flake and sherd scatter" in an area that measures 100 meters in diameter. Thompson notes that the site is situated on a gentle three-degree slope with an eastern aspect. While Thompson did not make any collections from the site, he did observe "plain corrugated" and painted sherds in the assemblage, prompting him to suggest that the site dates to around A.D. 900.

Unfortunately, the site was erroneously tested under the site number 42Sa6393 by the Antiquities Section in April, 1978 under the supervision of James Dykman (1978b). Dykman's description of the site better fits Thompson's description of 42Sa6397. Dykman (1978b:78) notes that "the site is on the end of a small ridge that trends north to south. An artifact concentration is located on top of the ridge and down the slope to the east." The testing report's plot of the site varies considerably from Thompson's original placement of 42Sa6393, moving it considerably farther south (Lindsay 1978: Figure 2), essentially siting Dykman's 42Sa6393 in the location of Thompson's 42Sa6397. Confusing the issue further, however, Nielson (1979:51-52) reports that he revisited 42Sa6397 in July of 1978 and determined that testing or further mapping of the site was not required. We can only speculate that Nielson encountered 42Sa28132, which is indeed a sparse scatter of artifacts. Nielson's observations are discussed further with Site 42Sa28132.

A total of seven backhoe trenches were excavated on the site (Figure 16). Two of the trenches located subsurface cultural features, both of which were classified as "storage pits." Dykman (1978b:84) reports that only two artifacts, both Chapin Gray artifacts, were collected from their excavations. He does not say with what frequency artifacts were encountered, however. Dykman (1978b:84) does conclude his comments for the site by saying, "The presence of these two features indicate the possibility that there is probably a habitation structure located in the area. It is, therefore, recommended that further development or impact of this site locality should be preceded by further testing and salvage."

As it appears now, the site consists of a scatter of lithic and pottery artifacts, as well as fragments of sandstone rock and jacal (Figure 17). The lithic artifact assemblage includes debitage as well as chipped stone and ground stone tools. The pottery assemblage is dominated by plain gray jar sherds. The site occupies a space that measures about 60 meters in diameter. Two concentrations of cultural materials are apparent on the site, referred to here as Artifact Clusters 1 and 2 (AC-1 and AC-2). The site is centered on the crest of a finger-ridge with a north-to-south orientation. Previous investigations on the site are apparent by the presence of a steel, 3/4 pipe datum. The faint remnants of the seven backhoe trenches, which were apparently backfilled, are barely visible.

By far the greatest impacts to the site are the aforementioned archaeological test excavations. Arguably, the conflation of site numbers also affects the site, particularly if collections from 42Sa6393 and 42Sa6397 are confused. Rodent disturbance has also exacted a toll on the site. It seems likely that past chaining and riling activities have greatly affected the surface of the site. Thompson (1977:22) notes the likelihood that the site has been "smeared" by these activities. Grazing and other agricultural activities have also probably affected the surface manifestations of the site in significant ways.

The site's surficial sediments are composed of the red aeolian loess that so characterizes this portion of White Mesa. The current vegetation on the site consists of bunch grasses, mustard, snakeweed, prickly pear, and sagebrush.

As noted above, cultural materials on the site consist of pottery, chipped stone debitage, and a number of lithic tools. Several loci of artifacts were documented on the site, including two artifact clusters (AC-1 and AC-2). AC-1, located on the south end of the site, includes a concentration of burned sandstone and jacal (Feature 1). Most of the pottery observed in AC-1 indicates a Basketmaker III component. However, several Mancos Corrugated rim sherds suggest a Pueblo II period component, too. AC-2, found in the site's center, includes small burned sandstone slabs, pottery, and lithic artifacts. A collector pile in this location includes plain gray pottery and a neckbanded sherd. Additionally, a collector pile at the site datum includes pottery and lithic artifacts.

The site's surface pottery assemblage, as documented for this project, includes 37 sherds (See Table 6). Most of these sherds are cooking jar sherds (including Chapin Gray sherds, plain gray sherds, neckbanded sherds, and corrugated sherds). Two red ware sherds were also noted, but their vessel form was not documented. Most of the pottery sherds occur in one of three areas on the site: AC-1, AC-2, and the collector pile near the site datum.

All stages of reduction are represented in the site's debitage assemblage (See Figure 7). The dominant material type for the debitage assemblage is Brushy Basin chert, though several other material types are also present. These other types, most or all of which derive from local sources, include: dark green silicified mudstone; green mudstone with accretionary lapilli; translucent mottled gray and white chert; translucent white and gray chert; translucent white

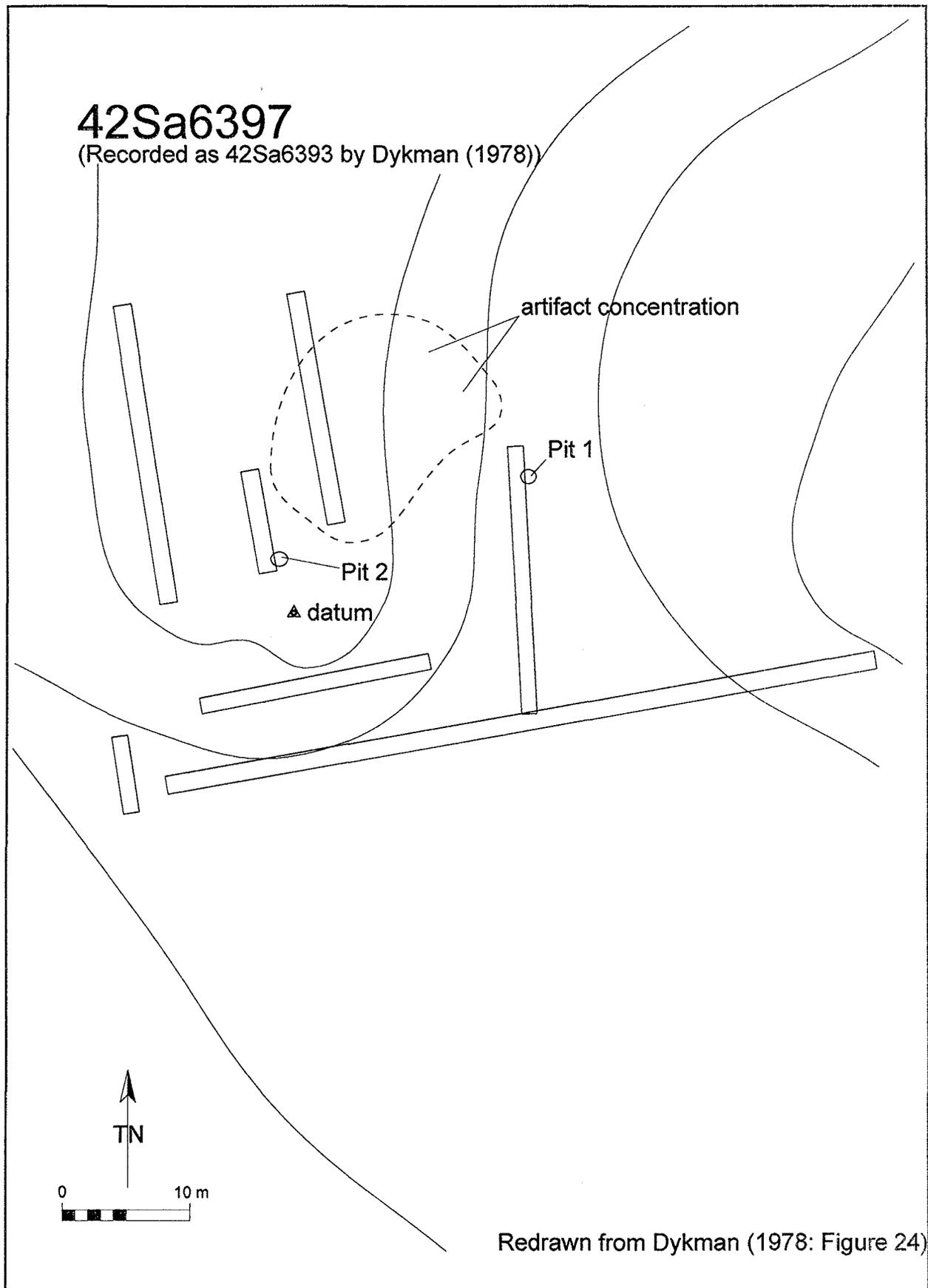


Figure 16. Site 42Sa6397, site map (After Dykman 1978).

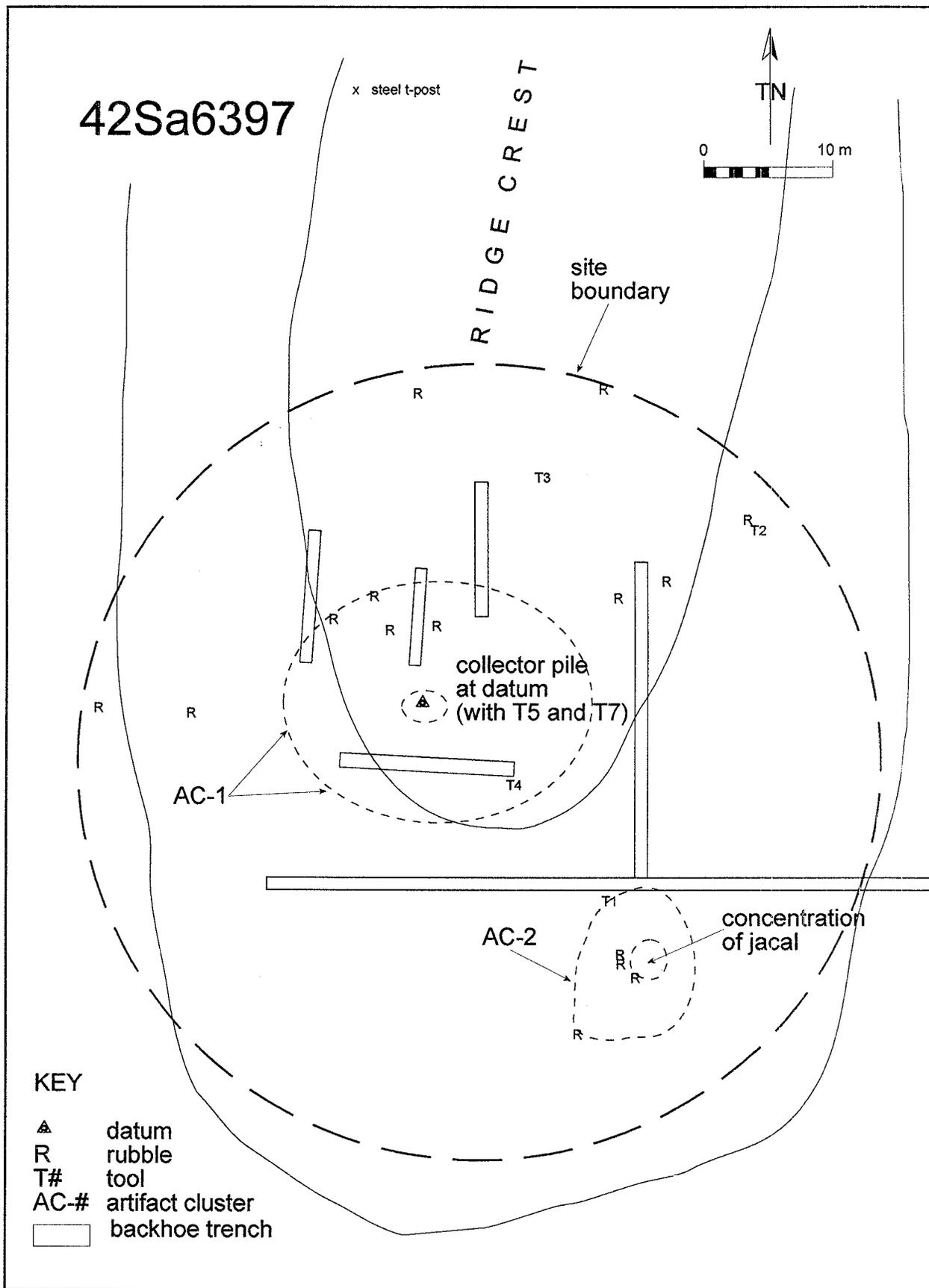


Figure 17. Site 42Sa6397, site map.

and light green chert; opaque white chert; translucent white chert; light cream and tan silicified sandstone; and an opaque dark gray chert.

The lithic tool assemblage consists of seven items (T1-T7). These artifacts include four metate fragments, one mano fragment, and two bifaces. These objects are described further below.

**T1** is a fragment from the margin of a trough metate. The artifact is made from a dense, white silicified sandstone. A deep basin is apparent in the cross-section of the artifact. This ground basin is also stipple-pecked. The object measures 16.0 x 10.5 x 4.0, though the ground facet penetrates 2.5 cm deep.

**T2** is similarly a fragment of a trough metate. It is also made of the dense, white silicified sandstone. The object has a single, slightly concave facet that is also stipple-pecked. It measures 16 x 9 x 8 cm.

**T3** is similar to T2. Again, it probably derived from a trough metate and was made of the white silicified sandstone. It has a single, concave, stipple-pecked facet. The object measures 13.0 x 9.5 x 5.0 cm.

**T4** is a small fragment of ground stone. It is made from white, silicified sandstone. One facet is lightly ground. The item measures 10.2 x 5.3 x 2.2 cm.

**T5** appears to be a fragment of a two-hand mano. Made from white, silicified sandstone, one facet is beveled, yielding a triangular cross-section. This feature securely identifies the artifact as a two-hand mano. The item measures 16.5 x 12.0 x 2.5 cm.

**T6** is a Stage 4 biface fragment with a missing base (Figure 18a). It is made from a translucent, light pink chert. The margins are denticulated. The artifact was probably a projectile point. It measures 1.3 cm wide x 0.3 cm thick. Its length is unknown. See the attached figure for more detail.

**T7** is a Stage 2 or 3 biface fragment (Figure 18b). It is made from a translucent light pink and lavender chert. The apparent distal end is missing. The item measures 3.2 cm wide and 0.5 cm thick. Its length is unknown. See the attached figure for more detail.

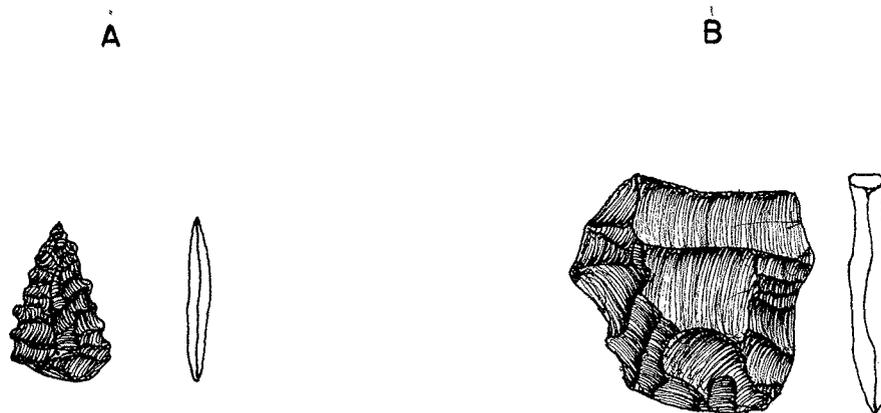


Figure 18. Site 42Sa6397, (A) Tool No. 6, Stage 4 biface fragment; (B) Tool No. 7, Stage 2 or Stage 3 biface fragment.

The one feature identified on the site, Feature 1, consists of a concentration of small fragments of burned jacal. This material is confined to a 2 by 3-meter area contained within AC-1. The pieces of jacal are very small, friable, and appear to be burned. The fragments are 1 to 5 cm in diameter. About 20 small fragments of burned sandstone co-occur with the jacal. It seems likely that these materials represent the remains of a structure that incorporated jacal in its architecture.

The site's pottery assemblage suggests at least two components: a substantial Basketmaker III component and a relatively minor Pueblo II component. Considering that several Mancos Corrugated rim sherds are located on the site, as well as a few neckbanded sherds, it is possible that the Pueblo II occupation could be more specifically characterized as an early Pueblo II period component. Given that early Pueblo II components are well represented on this portion of White Mesa, it seems reasonable to suggest that this site was contemporaneous with this occupation. However, the site's occupation may be more complex. Neckbanded pottery, and the red ware, may signal an intermediate occupation during the Pueblo I period.

The function of the site is difficult to assess. The relatively small number of artifacts in the surface assemblage may indicate one or more brief occupations of the location. Earlier test excavations failed to locate evidence of pit structures. However, such a feature may have been missed by the test trenches. The discovery of two small pit features, and the presence Feature 1, suggest the likelihood that other significant subsurface features remain to be identified.

#### Site 42Sa6431

Thompson (1977:28) first documented this site, describing its location as a place of "aeolian soil that slopes to the SW at 3 degrees." Noting that the site was contained within an area that measures 30 meters in diameter, Thompson describes a diverse assemblage of cultural materials. "Cultural debris consists of primary and secondary flakes, a hammerstone, 1 mano and numerous ground stone fragments as well as sherds. Sherds collected have been analyzed to reveal 2 Chapin Gray, 1 Mancos Corrugated rim (16 corrugated body sherds), 16 Mancos B/W, and 3 Deadmans B/R." While brief, Thompson's description of the site's size, setting, and artifact assemblage figured importantly in the site's re-identification for this project. However, testing activities that apparently took place on the site should be discussed first.

In July of 1978, Antiquities Section archaeologists had conducted test excavations on a site that they determined to be 42Sa6392 (Nielson 1979:30-46). As argued earlier, the locational data supplied by Thompson, scant though they are, indicate the conflation of 42Sa6392 with 42Sa6431. Supervised by Asa Nielson, testing activities first involved the placement of nine test trenches (Figure 19). Test excavations located three features: a hearth, a burial, and a lens of charcoal and daub. Cultural materials collected include 39 pottery sherds (Chapin Gray and Plain Gray), two possible mauls, several flakes, and a "tanged" or "split-stemmed" point that was probably curated and reworked (Nielson 1979: Figure 20). The pottery is indicative of the Basketmaker III period, a fact that was not lost on Nielson, who seems a little perplexed that he failed to locate a Pueblo II period assemblage when he writes, "Subsurface collections recovered during test excavation differ from surface collection(s) made by Thompson (1977). The collections of subsurface material show a complete lack of corrugated or painted wares. Thompson's collections suggest a possible Pueblo II (ca 1075-800 B.P.) occupation." As noted earlier, Thompson did not make collections from

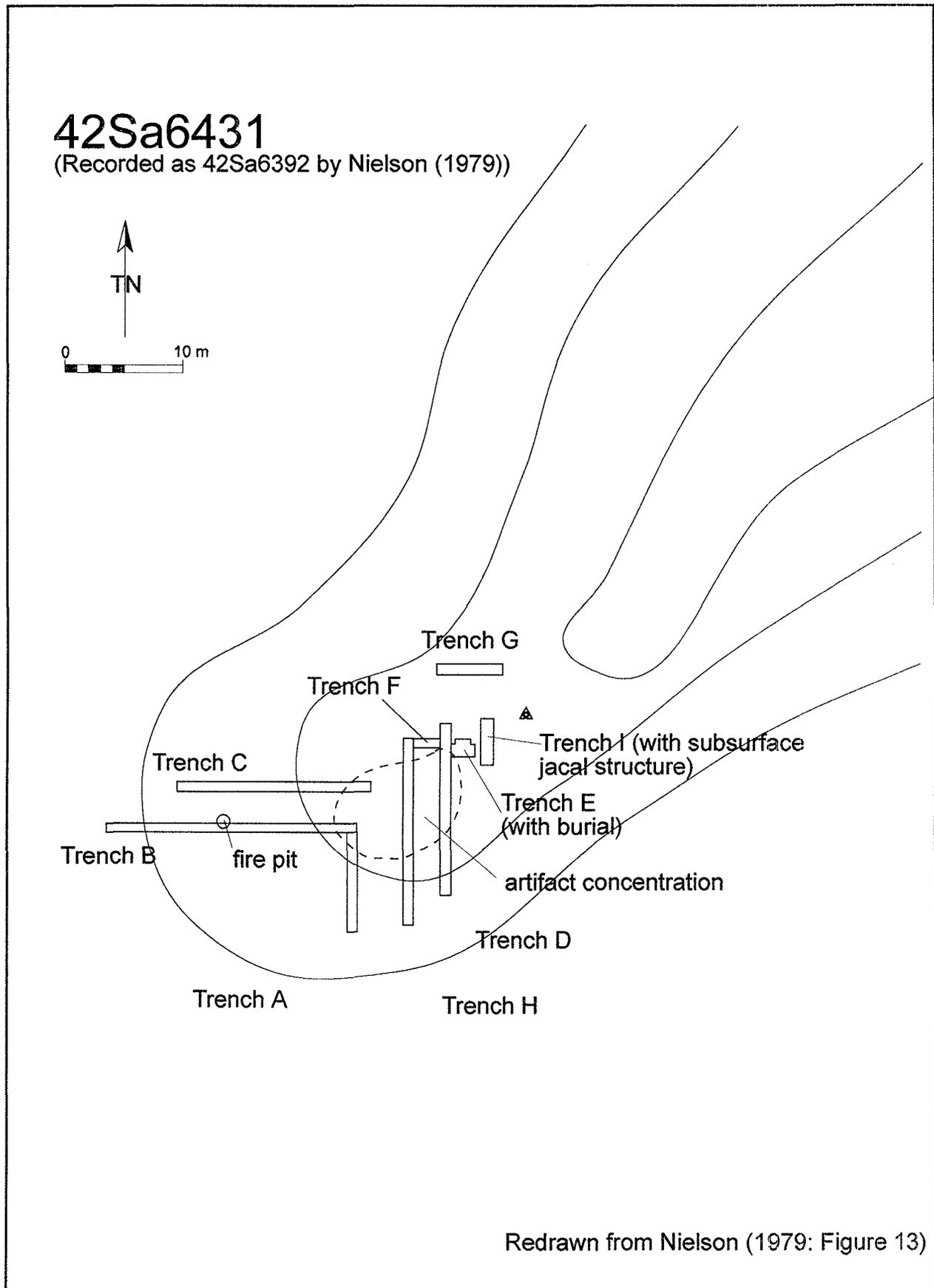


Figure 19. Site 42Sa6431, site map (After Nielson 1979).

42Sa6392. We assume that Nielson was aware of Thompson's collections from 42Sa6431, however, which did demonstrate a strong Pueblo II period signature (see the preceding paragraph).

The trenches that Nielson excavated in July of 1978 are now difficult to discern. Nielson's trenches were apparently backfilled—a few alignments were barely detectable by the differential desiccation of cheatgrass. Relocation of the trenches was made even more difficult by the fact that at least one other session of test excavations occurred on the site, evidently after Nielson's initial testing efforts.

This second testing event, which apparently involved the excavation of seven backhoe trenches, is readily apparent on the site. As is the case with 42Sa6393, these trenches were not backfilled and are accompanied by parallel berms of backdirt (Figure 20). To date, a report for these excavations has not been found.

In addition to the backhoe trenches, a ¾-inch length of metal pipe was located just north of the site's approximate center and in the same relative place as the datum depicted by Nielson (1979: Figure 13) for his map of 42Sa6392. The site, as Bond mapped it for the current project, consists of a scatter of lithic and pottery artifacts as well as a concentration of jacal (Feature 2). A probable midden area (Feature 1) is located in the southern portion of the site. Feature 1 includes a lot of Pueblo II period pottery, which is consistent with Thompson's observations and collections. It is also the same approximate size and setting as the scatter that Thompson (1977:28) described in his survey report. Bond also observed a dispersed scatter of plain gray pottery in the vicinity of the datum, and east of it (See Figure 20). This scatter is in the same location as the Basketmaker materials that Nielson observed and tested in 1978.

As we understand it now, the site covers an area that measures approximately 120 m north/south by 60 m east/west. 42Sa6431 occupies the crest of a finger-ridge and the ridge's terminal southern end. Cultural materials may be found on the west- and east-facing slopes on either side of the ridge crest as well. Lithic artifacts recorded on the site include debitage and ground stone items. The pottery assemblage, as a whole, includes white ware bowl sherds, and corrugated, neckbanded, and plain gray jar sherds.

As noted above, a possible midden (Feature 1) is located in the southern end of the site, on a gentle slope with a southwestern exposure. Feature 1 measures approximately 30 m in diameter. Feature 1 contains a pottery assemblage that indicates a Pueblo II period component. A small concentration of jacal (Feature 2), just northeast of the midden area, may represent architectural remains associated with the midden area. Feature 2 covers a 2 m<sup>2</sup> area.

By far the greatest impact to the site is the archaeological test excavations that occurred on the site. As noted above, the site was subjected to at least two episodes of test excavations. Nielson documents the first set of excavations, but recorded his activities as having occurred at 42Sa6392. The conflation of these two sites may result in "off-site effects," particularly if future researchers mistake Nielson's collections with 42Sa6392. Rodent burrowing has also taken place on the site. Other impacts to the site probably include chaining and railing, and probably plowing and grazing as well.

Sediments on the site are dominated by the red aeolian loess that characterizes this portion of White Mesa. Vegetation on the site includes sagebrush, cheatgrass, snakeweed, mustard, juniper, Mormon tea, prickly pear, and globe mallow.

As noted above, the site's artifact assemblage consists of pottery and lithic artifacts. Fifty-three sherds were documented on the site's surface (See

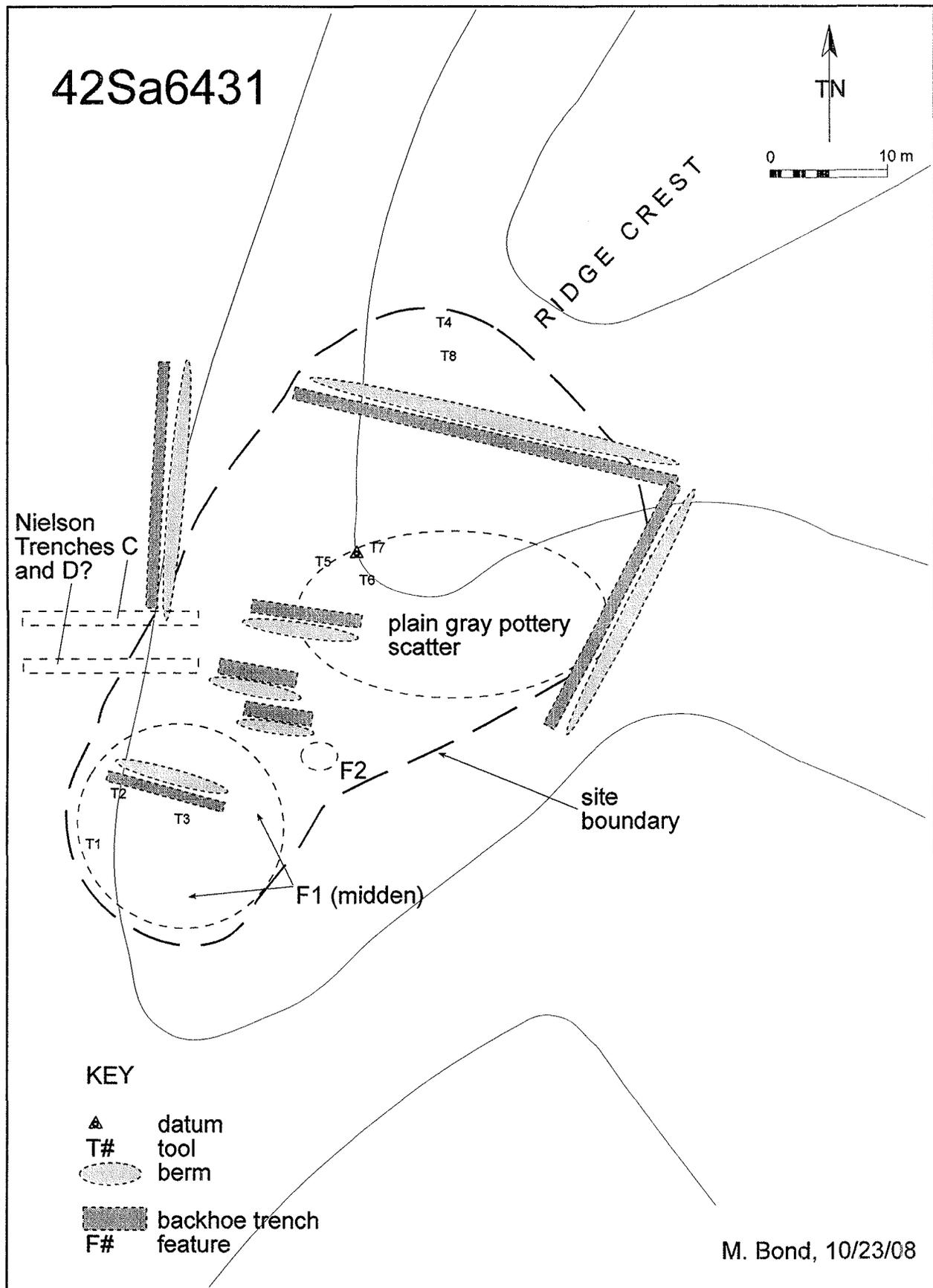


Figure 20. Site 42Sa6431, site map.

Table 6). Many of these are either corrugated jar body sherds (n=11) or plain gray jar body sherds (n=18). Interestingly, all of the latter are found in an area just east of the site's datum, suggesting the presence of a Basketmaker III component in this location. A possible Mancos Gray jar sherd was also noted in this area. In contrast, Feature 1, the possible midden area, harbors many of the later pottery types. These include Mancos B/w (n=9), four San Juan Red Ware sherds (of which two are Deadmans B/r bowl rim sherds), six Late White Unpainted, and four Late White Painted sherds. The Mancos B/w sherds exhibit Black Mesa (n=5) and Dogoszhi (n=4) design styles. At least one of these sherds is a bowl rim sherd. While not documented, it seems likely that the white ware sherds represent both bowl and jar forms.

The lithic debitage assemblage (n=32) is characterized by a high frequency of Brushy Basin chert (See Table 7). In addition to this material, a green mudstone with accretionary lapilli, and a light "tan" and brown silicified sandstone were observed on the site. The Brushy Basin chert and green mudstone derive from the Morrison Formation; the third material probably comes from the Dakota Formation.

The site's lithic tool assemblage comprises eight items (T1-T8), including five slab metate fragments, two likely manos, and one hammerstone. Each object is discussed further below.

**T1** may actually represent two tool types. One facet of this fragmented tool is convex, ground, and stipple-pecked, indicating this item's use as a mano. It is not possible to distinguish whether this tool is a one-hand mano or two-hand mano. The tool's opposing face is slightly concave, but also exhibits peck marks and has been ground, suggesting the use of this side of the tool as a palette or lap stone. The object is made from a dense, fine-grained sandstone and measures 13.5 x 11.5 x 2.8 cm.

**T2** is a complete hammerstone made from an alluvial cobble of gray quartzite. The artifact is battered along its margins and measures 9.0 x 5.5 x 3.8 cm.

**T3** consists of several fragments of a metate made from a piece of white, tabular sandstone. Only one facet is ground. The item measures 12.5 x 10.0 x 2.6 cm.

**T4** is a small fragment of a metate made from white silicified sandstone. Enough of the object is present to indicate that the artifact had a single use surface, which is concave. The remaining artifact measures 18 x 5 cm, and was 8 cm thick. It is possible that this item was a trough metate, but not enough of the item was present to distinguish it from a basin metate.

**T5** is a fragment of a metate. This item is made from a relatively soft, tabular, brown sandstone. One facet is ground. None of the metate's original margins are intact. The item measures 8.0 x 6.0 x 3.4.

**T6** is a metate fragment. The artifact is made from a white silicified sandstone. Both faces are lightly ground and pecked. An original margin is edge-flaked (scabbled). The artifact measures 16.0 x 11.6 x 4.3 cm.

**T7** is a fragment of some kind of handstone, perhaps a mano, made from an alluvial cobble. Both facets show wear. The artifact, originally disk-shaped, measures 8 x 5.5 x 3.8 cm.

**T8** is a small fragment of a metate made from sandstone. The item may be fire-oxidized. Both sides are ground, though one more than the other. The artifact measures 8.5 x 8.0 x 2.7 cm.

The site's pottery assemblage suggests two components: a Basketmaker III component and an early to middle Pueblo II component. The Basketmaker III

component is characterized by the presence of a relatively large number of plain gray jar body sherds. These are localized to one portion of the site, a 30 x 40 m area that is east of the site's datum, an observation that is consistent with test excavations conducted by Nielson (1979). The midden area, described here as Feature 1, contains the highest frequency of Pueblo II period pottery. Feature 1 is located at the southern end of the site. The formal pottery types most characteristic of the Pueblo II period on the site are Mancos B/w and Deadmans B/r, while the incidence of corrugated pottery more generally reflects a Pueblo II/III occupation. The Mancos B/w sherds exhibit both Black Mesa and Dogoszhi design styles.

It is reasonable to suggest at least a seasonal habitation function for both components. Nielson's discovery of a burial in the Basketmaker component suggests that a pithouse may be within the vicinity. Feature 1, a midden with a variety of artifacts, indicates a high likelihood that a buried habitation feature is present on the site.

#### Site 42Sa6757

Site 42Sa6757 may be described as a habitation site with at least one pit structure that may have been a year-round dwelling, and other smaller structures that may have served as seasonal habitations or food processing facilities (Figure 21). The site was apparently originally documented through the efforts of the Antiquities Section (Lindsay 1978: Table III; Worthington 1978). The site was later tested for significance (Nielson 1979:85-95) and extent (Nielson 1981?). At the time of its initial documentation, the site was simply recorded as a "Mesa Verde Anasazi" site (Worthington 1978).

Site 42Sa6757 is situated on a gentle, east-facing slope of a low finger ridge that has a north-south orientation. The current vegetation does not appear to differ significantly from what was present at the time of the site's excavation, which consisted of sagebrush, Russian thistle, prickly pear cactus, snakeweed, and introduced grasses (Davis and others 1985:128). At the time of excavation, impacts documented for the site had included historic chaining and/or other land-leveling activities, re-seeding, and collecting (apparent by way of a collector's artifact pile). Davis and others (1985:128-129) note that three backhoe trenches had been excavated to test for significance and that the State later excavated 13 other trenches to determine extent. Agenbroad (1985: Figure 8-5) illustrates that the overburden of the aeolian loess is 50 to 70 cm deep across much of the site, at which point caliche-rich sediments are encountered.

Excavation of the site documented a total of five features, including two pit structures and two very small habitations or field houses (Davis and others 1985:128-164). A fifth feature, Feature 5, is briefly described as a basin-shaped hearth. The hearth is situated on the north end of the site's midden. The midden defined and tested at 42Sa6757 was not immediately apparent at the surface (Davis 1985:164). Instead, this cultural deposit is partially buried under 3 to 5 cm of aeolian sediments. The midden is south of the pit structures, is roughly elliptical, and covers approximately 650 square meters. It is characterized by a relatively dark color and relatively high concentrations of artifacts. The midden is fairly shallow and does not appear to be more than 15 cm thick. This area was tested by backhoe trenches, but otherwise not systematically sampled. Pottery data indicate that all of the features and the midden date to the Basketmaker III period. Brief descriptions of Features 1 through 4 follow.

Feature 1 is a roughly D-shaped or sub-circular pithouse with a relatively straight eastern wall. The room measured 4.5 m north-south by 4.7 m east-west, and was approximately 1.2 m deep. Feature 1 did not have the appended antechamber that many Basketmaker III pithouses have. Instead, the southern wall is sloped,

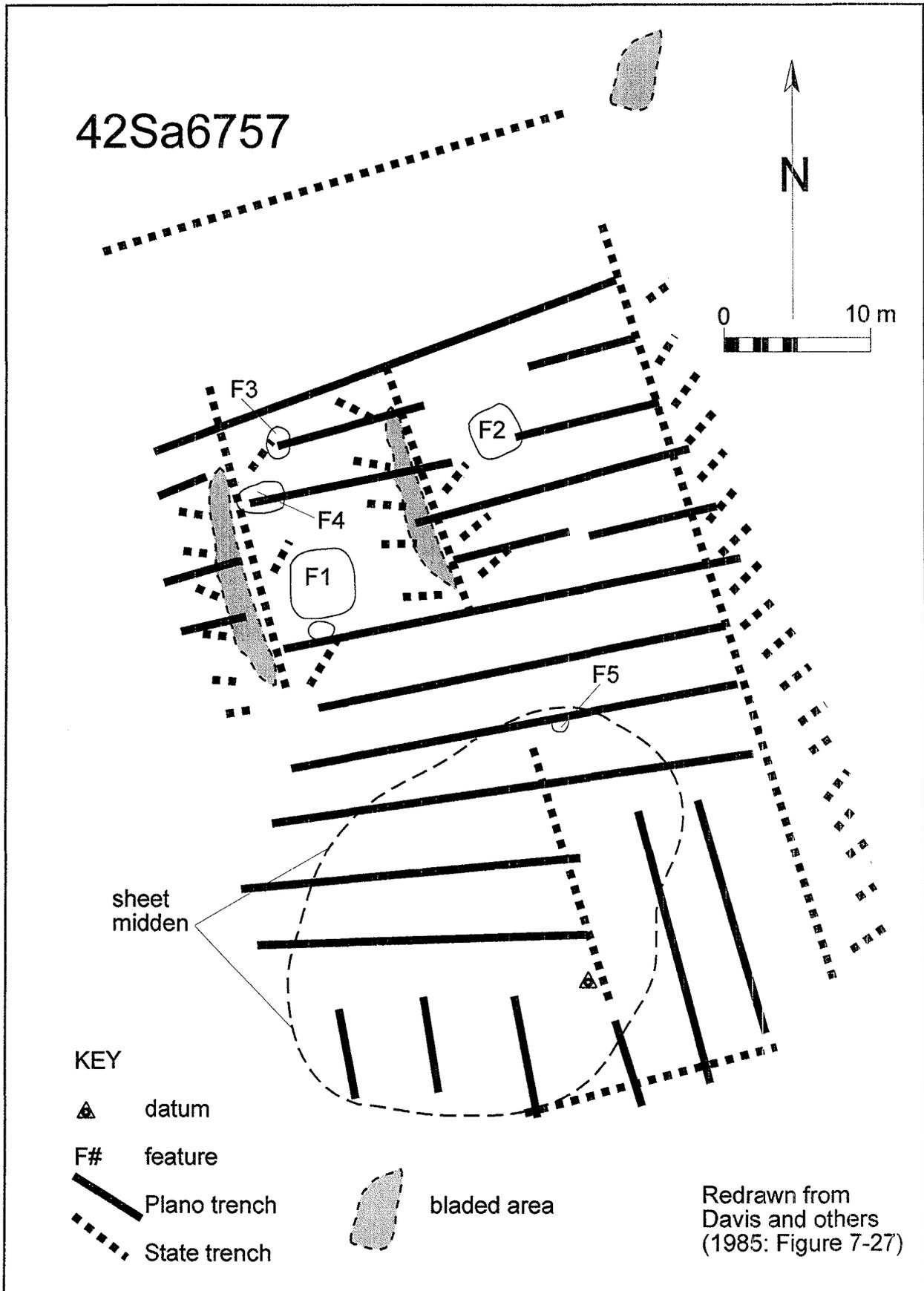


Figure 21. Site 42Sa6757, site map.

not vertical. A set of bilaterally symmetrical floor features, including wing walls, post holes, and pits were documented, as was an uncoped hearth. The structure was not burned; instead, it appears as though wooden architectural elements were recycled. In spite of this, enough of a roof and/or floor artifact assemblage was recovered to suggest a few food-processing activity areas in the room, particularly in the area enclosed by the wing walls in the south part of a the room, and in the area immediately surrounding the hearth.

Feature 2 is a sub-circular pit structure that measured 4.2 m in diameter and was 45 cm deep. Like Feature 1, this room did not have the appended antechamber common to Basketmaker III pithouses. Rather, a vent tunnel along the southeast side of the room supplied the feature with air. Other features in the room were organized bilaterally and in a pattern to suggest a southeast alignment for the room. These features included wing walls, a hearth, and apparent deflector postholes. A milling bin as well as several relatively deep pit features were also documented in the room. The room had burned. One of the room beams yielded a noncutting date of A.D. 627. A relatively high number of ground stone artifacts were recovered from the floor; these items, and the room's features, indicate a primary function of food-processing for the structure.

Feature 3 is a sub-rectangular, semi-subterranean room that measured 2.3 m north-south by 2.1 m east-west and was about 20 cm deep. The room was divided by an interior, upright slab wall that segregated the eastern 1/3 of the room from the western 2/3. No hearth was observed in the structure; however, I suggest that a test trench may have obliterated an ephemeral hearth. No other internal features were present. Two exterior postholes on the west side of the feature indicate an expedient exterior roofing technique, such as a lean-to, might have been used to roof the structure. The structure was not burned. Davis and others (1985) suggest that the room was used as an informal habitation with some storage function.

Feature 4 is a rectangular pit structure that measured 3.5 m east-west by 2.2 m north-south. It is difficult to assess how deep the original structure was; its floor was located at about 30 cm below modern ground surface. Only a few features were found in the room. These included a hearth, a pit, and a single posthole. The room was burned upon abandonment. Most artifacts had been removed from the feature before burning. Davis and others (1985:162-164) suggest that the room may have functioned as an expedient habitation.

#### Site 42Sa8014

Site 42Sa8014 was probably a seasonally occupied habitation (Figure 22). As with 42Sa6757, this site was initially documented by the Utah Division of State History Antiquities Section (Davis and others 1985:165). It was subsequently tested for significance, although no citation for that work could be found. Casjens (1980b:344-345) writes that the site was further tested for extent; Davis and others (1985: Figure 7-38) indicate the location of the Antiquities Section's trenches on the excavation plan view of the site.

Site 42Sa8014 is located near the base of the same ridge slope that 42Sa6757 occupies. Davis and others (1985:165) note that, prior to the mill's construction, a small east-flowing drainage passed just to the north of the site. On-site vegetation at that time was much the same as it is today, consisting of sagebrush, Russian thistle, prickly pear cactus, snakeweed, introduced grasses, and several juniper trees.

Two features were located and excavated on the site. One of the features is a pit structure while the other is a slab-lined cist. Pottery assemblages associated with both features suggest that the two were probably contemporaneous.

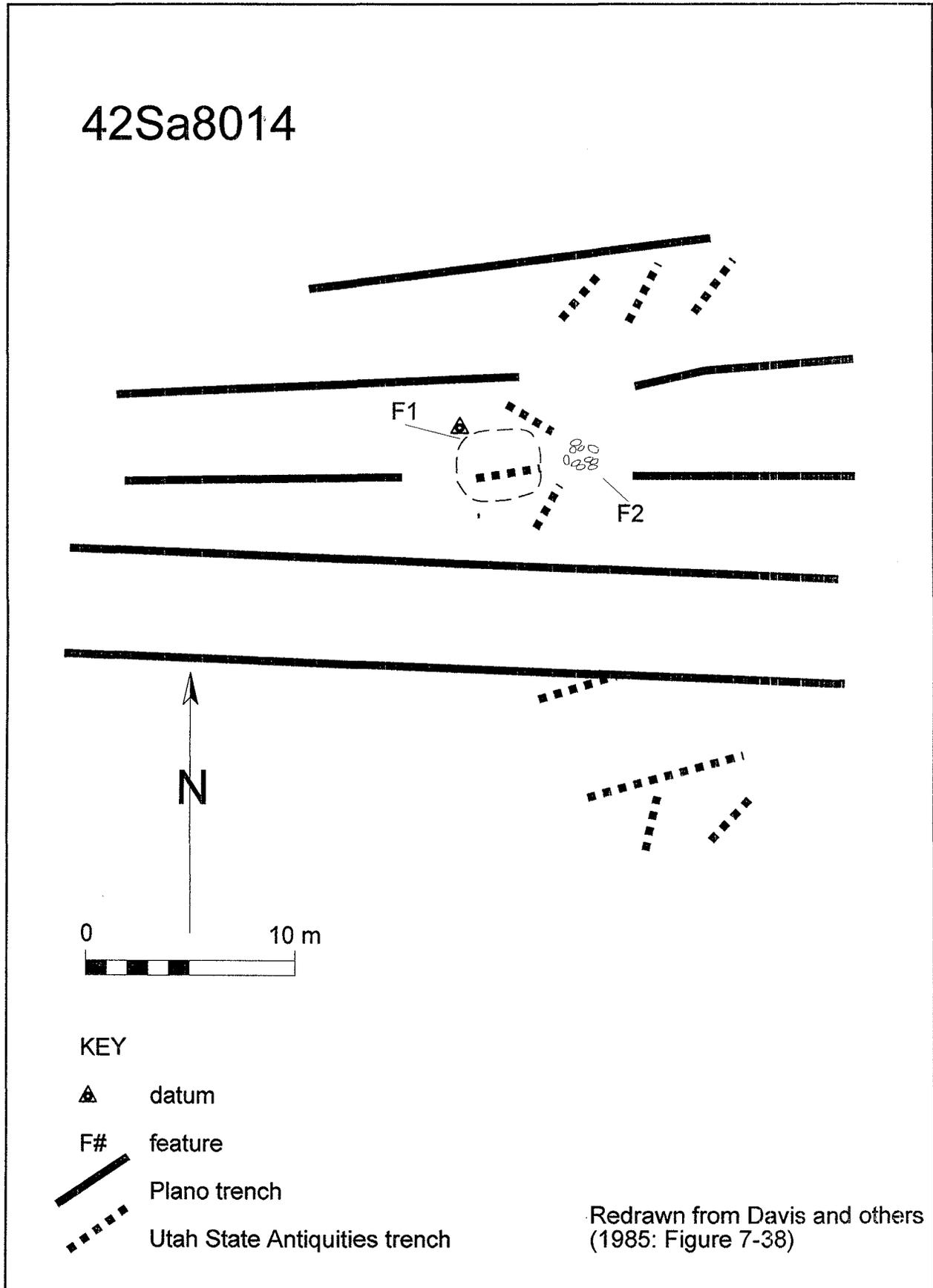


Figure 22. Site 42Sa8014, site map.

One absolute date, a C-14 sample from the floor of Feature 1, yielded a date of 1455±130 B.P. Considering the pottery assemblages, this seems far too early to accurately represent the feature's occupation. Bond (1985:274) recommends that the site dates to the late Pueblo I period. Based on the pottery assemblage, it seems likely that the site was in use sometime during the late ninth and/or early tenth century.

Feature 1 is a sub-circular pit structure. The feature measures 3.3 m north-south by 3.5 m east-west, and is about 45 cm below modern ground surface. Six pit features and one mealing bin were located within the room, but no postholes. The utter lack of postholes suggests that the roof was an ephemeral, exterior structure that may have been removed upon the feature's abandonment. The room was not burned. Though not recognized, one or two of the structure's pit features probably served as an informal hearth. The mealing bin and artifact assemblage suggest a variety of activities were associated with the room, including food processing, tool production and maintenance, and perhaps hunting-related activities. However, the feature's small size and its relatively informal construction indicate a seasonal occupation (Davis and others 1985:172).

Feature 2 is the remains of a rectangular, slab-lined cist that measured 1.9 m east-west by 0.7 m north-south and was about 40 cm deep. The feature was partially destroyed during testing activities. Enough of the feature remained however to indicate that Feature 2's interior had been burned, perhaps as a part of food-processing activities. Located only 1.2 m east of Feature 1, the cist was most probably associated with the activities centered on the pit structure.

#### **Newly Recorded Sites**

A total of seven "new" sites, not previously recorded, were documented in the course of this project (See Figure 5). These new sites are generally small, but most occupy locations with relatively deep deposits of aeolian sediments. Furthermore, most of the site locations, if not all, were subjected to considerable ground disturbance. These historic ground-disturbing activities apparently included chaining, railing, perhaps plowing, and re-seeding. In addition to these disturbances, the landscape has also been grazed and many sites have been looted or surface-collected. In combination, these impacts have reduced the number of artifacts visible on the surface and have obscured the remains of archaeological features. Therefore, while I may describe the sites as "small," it is with some qualification, and in recognition that the surface may not well reflect the subsurface remains of the sites in question.

#### Site 42Sa28128

Site 42Sa28128 consists of a scatter of lithic and pottery artifacts. Located in the southeast corner of the project area, the scatter appears to be contained within an area that measures 30 m N/S x 20 m E/W (Figure 23). The site is situated on a relatively flat plain a few hundred meters east of a low, sandy ridge crest. Prior to the development of the White Mesa Mill, the landscape was probably relatively flat, but with a slight southern aspect.

Current vegetation on the site includes bunch grasses, snakeweed, sage, prickly pear cactus, and tumbleweed. On-site sediments appear to consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. Considerable sediment depth, at least 0.5 m, is indicated by surface-stripping activities that occurred immediately north of the site.

These surface-stripping activities, probably conducted with a belly-scraper, constitute the most serious effect to the site. Other impacting agents

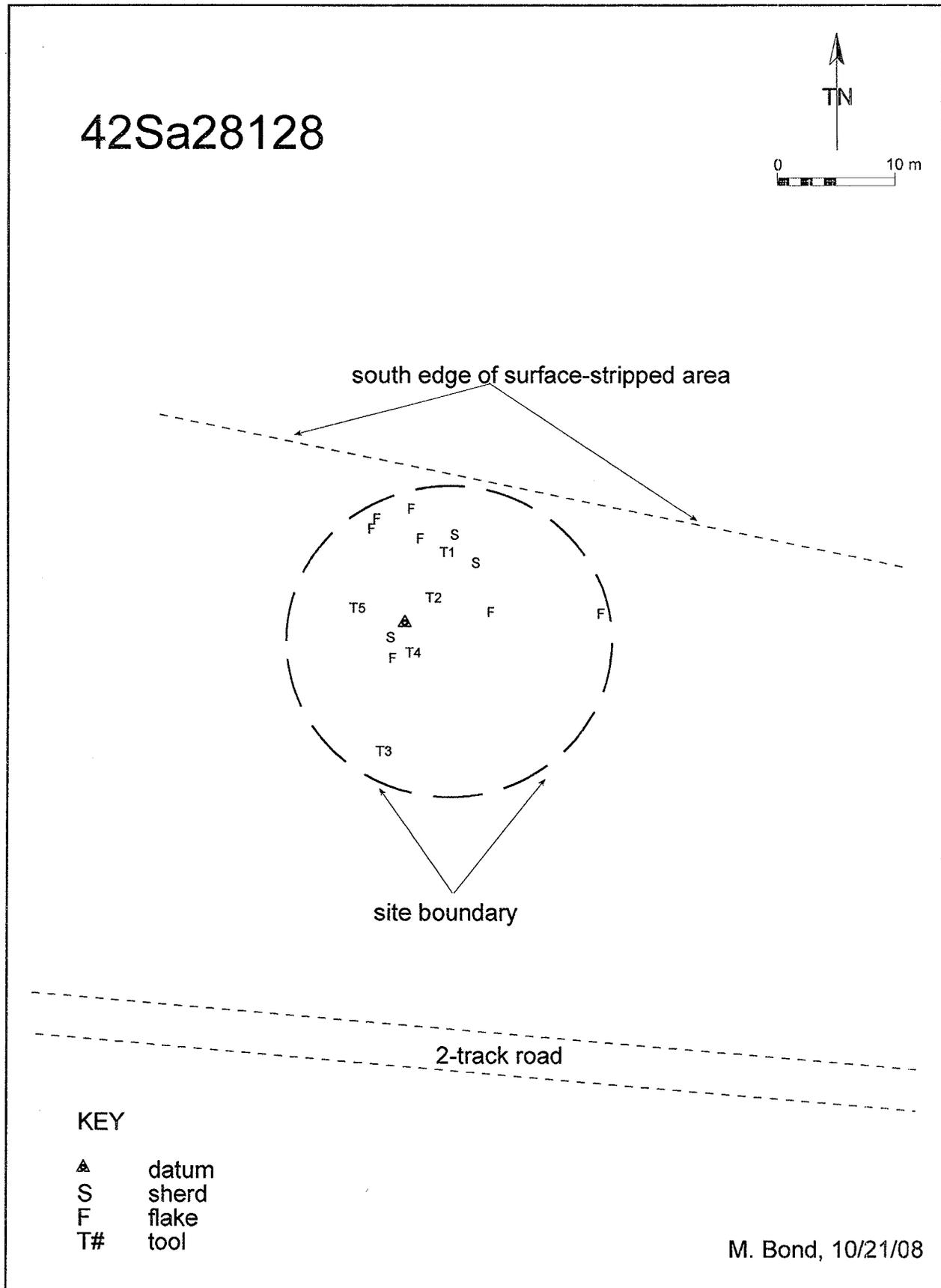


Figure 23. Site 42Sa28128, site map.

include historic farming and grazing activities, and probably chaining as well. Rodents have also burrowed through the site, unearthing artifacts that might otherwise have gone hidden.

Cultural materials on the site include a scatter of pottery sherds, debitage, and several ground stone tools. The pottery assemblage consists simply of four sherds: 1 white ware bowl sherd, 2 white ware jar sherds, and 1 corrugated jar body sherd (See Table 6). All sherds are presumably local. The corrugated sherd suggests that the site might post-date A.D. 950. The debitage assemblage consists of only seven flakes (See Table 7). The lithic materials represented in this assemblage are probably local, and likely derive from the Morrison, Burro Canyon, and Dakota Formations. The materials include chert, mudstone, and silicified sandstone. Although small, the assemblage appears to represent all stages of lithic reduction.

The ground stone assemblage includes five tools or tool fragments (T1-T5). Four of the tools are metate fragments. None of these is complete enough to ascertain the metate type, however (i.e. trough metates, basin metates, or slab metates). These tools are described below.

**T1** is a small, irregular-shaped fragment of tabular, dense white sandstone with a single surface that is pecked and slightly concave. The artifact, probably a metate fragment, currently measures 8.5 x 7.0 x 2.3 cm.

**T2** is a metate fragment that consists of the same material as T1. Both sides of the artifact appear ground and have flat to slightly concave surfaces. Both sides are well-smoothed, and one side is polished. No peck marks are evident. However, multiple grinding striae are apparent on both sides. The artifact measures 21.5 x 16.0 x 5.0 cm.

**T3** is also a metate fragment made from the same material as T1 and T2. One side has a deeply ground and pecked facet. The item measures 17.5 x 13.5 x 3.5 cm.

**T4** is a metate fragment that consists of a light brown, fine-grained sandstone. Both sides exhibit grinding and pecking. The object measures 13.0 x 8.5 x 3.0 cm.

**T5** is a possible mano blank. This item is composed of a piece of coarse white sandstone that has been shaped into a subrectangular form. While the edges have definitely been flaked into shape, no grinding or other use-wear is apparent. The item measures 26.0 x 15.5 x 5.0 cm. The white sandstone described above may derive from the local Dakota Formation.

In summary, 42Sa28128 consists of a scatter of artifacts in a small area. As noted above, the only temporally diagnostic artifact recorded on the site is a corrugated jar body sherd. Corrugated pottery was produced after about A.D. 950 (Pueblo II and/or III periods). The surface treatment of the white ware sherds is consistent with this assessment. However, given that the temporal assignment is based only on a few sherds, this assessment is tentative. Given the site's size, location, and focus on ground stone, the site may have been the locus of specialized activities such as food processing.

#### Site 42Sa28129

Site 42Sa28129 consists of a scatter of lithic and pottery artifacts (Figure 24). The site is approximately 100 m west of Site 42Sa28128. Like that site, 42Sa28129 is small and is contained within a 30 x 30 m area. The artifact

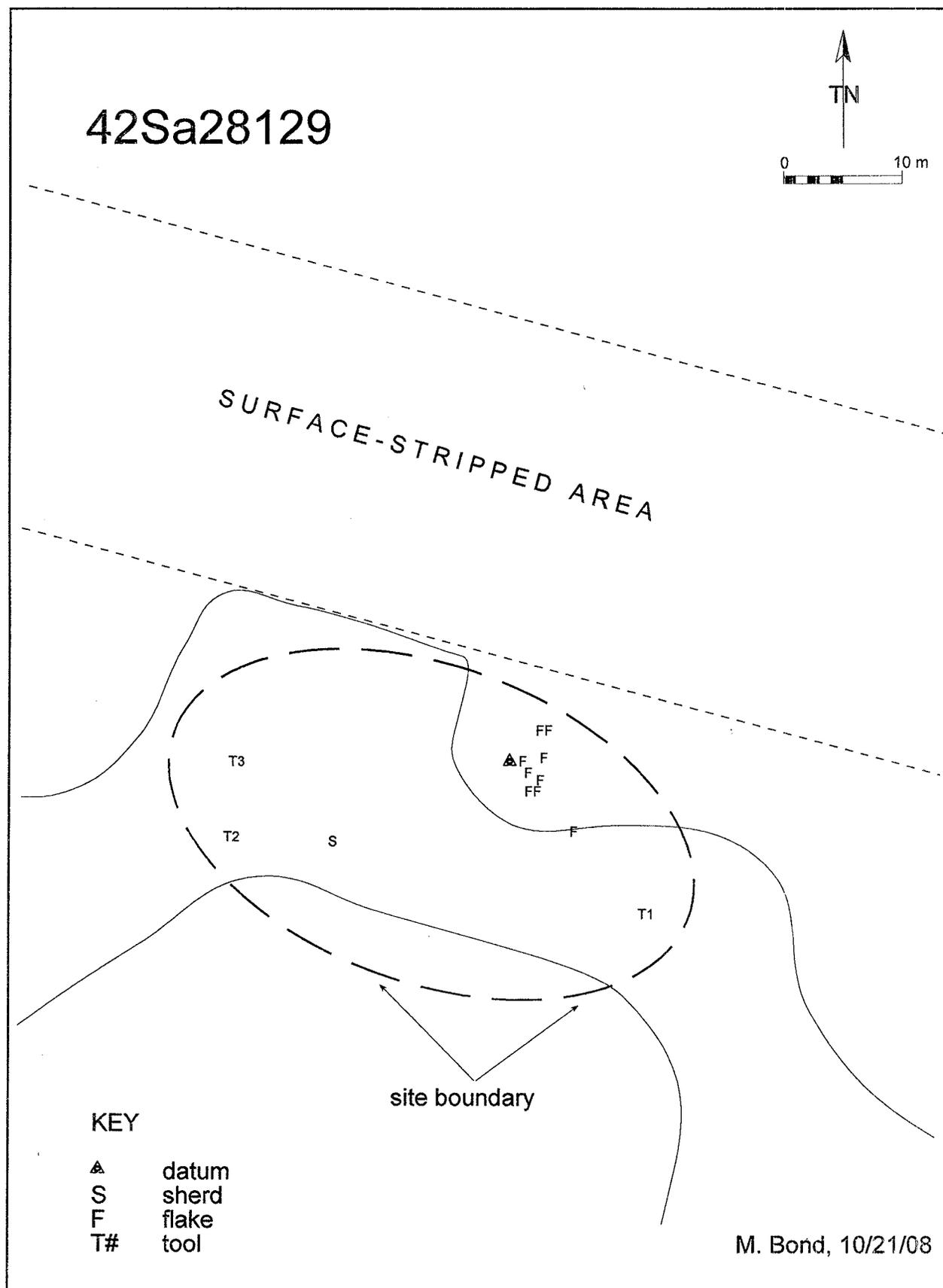


Figure 24. Site 42Sa28129, site map.

scatter is situated on a very slight rise in an otherwise flat terrain. The landscape rises to the west toward the crest of a low ridge.

Current vegetation on the site includes bunch grasses, snakeweed, small sage, prickly pear cactus, and tumbleweed. On-site sediments appear to consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. The sediment depth is indicated in the recent (ca. within the last 10 years?) removal of at least 50 cm of sediments to the north of the site.

As with Site 42Sa28128, borrow excavations apparently occurred immediately north of the site. At least 50 cm of fill was systematically removed or stripped from the landscape just north of the site, possibly removing cultural materials that had been associated with this location. Other impacting agents to the site probably included chaining and raiing, re-seeding, and historic farming and grazing. Rodents have also burrowed through the site, unearthing artifacts that might otherwise have gone hidden.

Cultural materials documented on the site include pottery, lithic debitage, and several ground stone tools. The pottery assemblage consists of 14 sherds (See Table 6). Corrugated jar body sherds dominate the assemblage (n=9). In addition to these cooking jar sherds, one Chapin Gray jar rim sherd was found. Other sherds include two Mancos B/w (one jar body sherd with Dogoszhi design style, one bowl body sherd with Black Mesa design style), one Late White Unpainted jar body sherd, and one Late White Painted sherd of unknown form. The small pottery assemblage suggests that the primary use of the site occurred during the Pueblo II period; however, one or more earlier components (dating to the Basketmaker III and/or Pueblo I periods) may also be indicated.

Only five pieces of debitage were noted, but all stages of reduction are represented (See Table 7). The flakes consisted of several material types, all of which may have derived from the Morrison Formation. One is a "tan/olive-green silicified sandstone," another is a "brown silicified sandstone," a third is a light gray mudstone, and the fourth is Brushy Basin chert.

Three ground stone tools or tool fragments were also documented on the site (T1-T3). All three artifacts are metate fragments, two of which are large enough to identify as slab metate fragments. These tools are described further below.

**T1** is a large, "non-portable" unifacial slab metate. Made from a white, dense sandstone, the slab has an uneven grinding facet on one surface. Peck marks are also apparent on this surface. Extant margins around the artifact indicate that the object was flaked to shape it. The item measures 41.0 x 27.0 x 9.0 cm.

**T2** is a fragment of a unifacial metate. The artifact is made from a brown sandstone. The object measures 11.0 x 6.0 x 2.3 cm.

**T3** is smashed, unifacial slab metate consisting of several fragments. The item is made from a light brown sandstone similar to T2. Refit, T3 measures 29 x 35 cm, and was 2 to 4 cm thick.

As noted above, the site probably dates to the Pueblo II period or later. The small artifact assemblage and the site's setting suggest that this location harbored a small, special use site or temporary habitation.

Site 42Sa28130

The site comprises of a scatter of pottery and lithic artifacts (Figure 25). Located on relatively flat terrain with a slight slope to the southeast, the scatter is confined to a small area that measures approximately 10 m north/south by 30 m east/west.

As with sites 42Sa28128 and 42Sa28129, the greatest impact to the site was a surface-stripping episode that occurred some time in the recent past. Approximately 40 cm of fill was removed in a long and wide swath immediately south of the site. Rodents have burrowed through the site, unearthing artifacts that might otherwise have gone hidden. Other impacting agents on the site may include historic farming and grazing, and possibly chaining.

On-site sediments consist of the red aeolian loess that characterizes this portion of White Mesa. Current vegetation includes sagebrush, bunch grasses, snakeweed, and prickly pear. Much of the modern ground surface is barren.

As noted above, pottery and lithic artifacts constitute the material cultural evident on modern ground surface. The site's pottery assemblage is very small, and includes just Mancos Corrugated rim sherds (n=2) and several corrugated body sherds (See Table 6). Indeed, these sherds may all derive from a single vessel. The Mancos Corrugated rim sherds suggest that this locus may have been used during the Pueblo II period.

The lithic artifact assemblage includes debitage and a single ground stone tool. Only four flakes were observed on the site, but all stages of reduction were represented (See Table 7). Three material types were noted in this small assemblage: Brushy Basin chert, white silicified sandstone, and an opaque dark gray chert. The lithic tool, Tool 1 (T1), is a simple fragment of ground stone. It consists of white sandstone, and has a single ground surface. The item was apparently from a corner of the tool, which was both pecked and ground into shape. The object measures 11.0 x 15.0 x 3.5 cm. A limestone cobble was also observed on the site. Though unmodified, the object is probably a manuport.

Site 42Sa28130 is the third in a cluster of four small sites in the southeastern corner of the project area. As with the preceding two sites, 42Sa28130 may date to the Pueblo II period and may have been the locus of specialized activities such as food-processing.

Site 42Sa28131

The site is an historic camp with a single feature (Feature 1) and a few historic artifacts (Figure 26). The site's topographic location might be described as the bottom of a small valley or alluvial bottomland. The whole site measures about 5 by 14 m, incorporating a fenceline to the north. Impacts to the site and its feature include natural erosional processes associated with the wash bottom. Additionally, fenceline construction may have impacted the site as well.

On-site sediments consist of red aeolian sediments, some of which have been redeposited by the alluvial of the small wash that winds by and through the site. Vegetation is fairly sparse, but includes a juniper tree, snakeweed, mustard, cheatgrass, prickly pear, and globe mallow.

This site simply consists of several artifacts and a feature, an historic hearth or campfire (Feature 1). The artifact assemblage includes fragments of sanitary-seal tin cans and a rifle cartridge. Feature 1, a campfire, is lined with small sandstone slabs and measures 1.2 m in diameter.



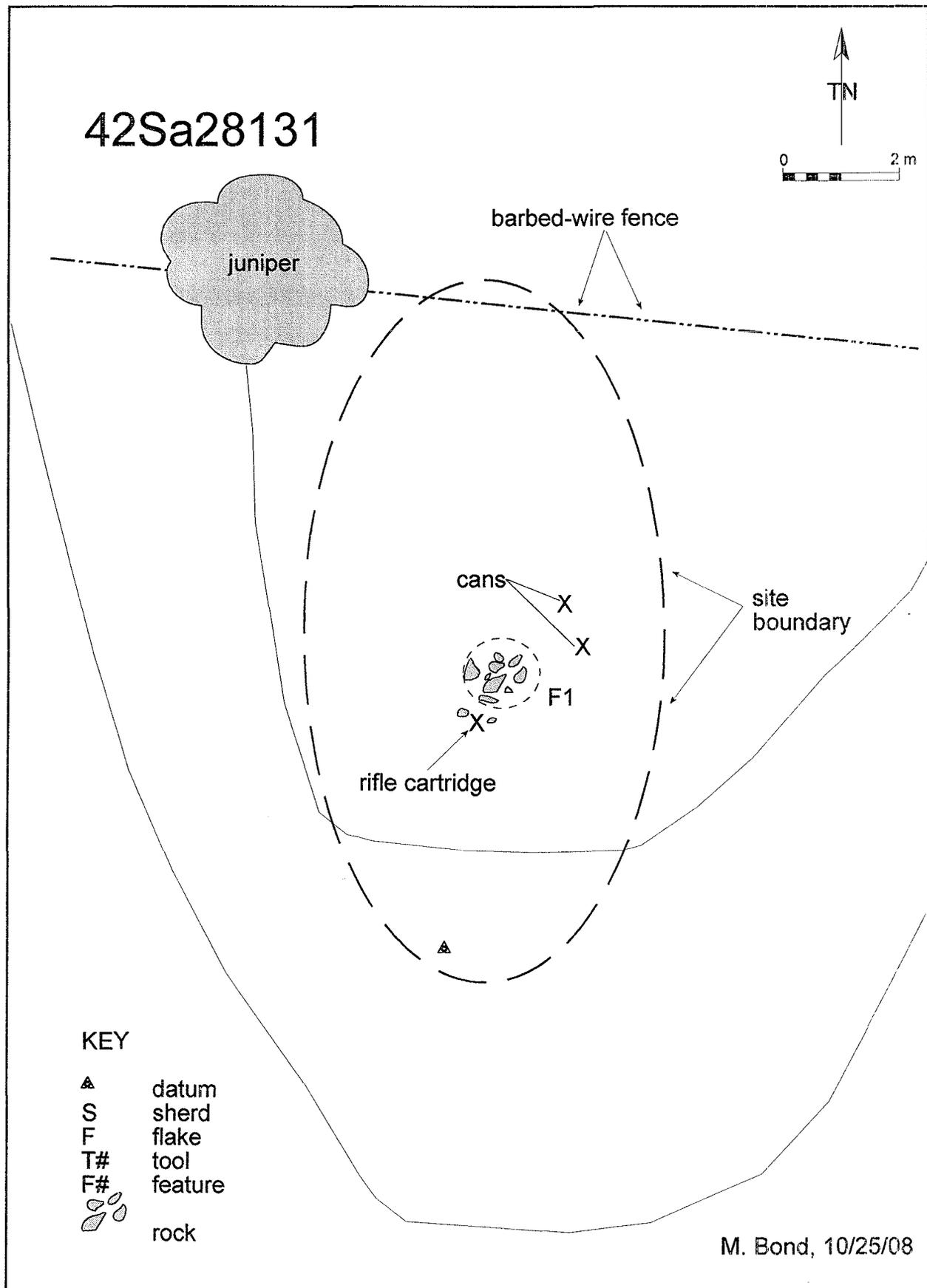


Figure 26. Site 42Sa28131, site map.

The historic artifacts suggest that the site might date to A.D.1950. The cultural affiliation of the site is difficult to assess. It could have resulted from Anglo, Ute, or Navajo farmers, hunters, ranchers, or passers-though.

#### Site 42Sa28132

This site simply consists of a small, prehistoric artifact and rock scatter (Figure 27). The artifacts include a few items of lithic debitage and several plain gray jar body sherds. The rock consists of a few pieces of fire-cracked rock. The site is situated on the slope of a finger-ridge, the crest of which is just to the west. The artifact scatter is primarily concentrated in an area that measures approximately 15 m in diameter. The site may well be associated with the early component (Basketmaker III?) on nearby 42Sa6397, which lies just to the north on the crest of the finger-ridge.

Rodent disturbance and natural erosional processes appear to have been the most immediate disturbances to the site. Historic agricultural practices and land improvement techniques such as chaining, railing, plowing, and grazing may have also damaged the site, though these aren't immediately apparent.

The sediments on the site's surface consist of the fine-grained, red aeolian loess that characterizes this portion of White Mesa. On-site vegetation currently consists of snakeweed, cheatgrass, sagebrush, prickly pear, and globe mallow.

The site simply consists of a scatter of artifacts, including pottery and lithic debitage, and a few pieces of burned rock. The site's pottery assemblage consists of 10 pottery sherds, all of which are Plain Gray jar body sherds (See Table 6). The debitage consists of two secondary flakes that are made from a white silicified sandstone (possibly from the Dakota Formation) (See Table 7). The fragments of burned rock on the site are not particularly concentrated, but are distributed among the artifacts. About 20 meters south of the artifact scatter is a relatively large, edge-flaked sandstone slab with no apparent use wear.

It is possible that Nielson (1979:51-52) confused 42Sa28132 for Thompson's (1977:22) 42Sa6397, which lies just to the north. Thompson writes that 42Sa6397 has an aspect oriented to the east and northeast. Nielson alters this description in noting that his observation of the aspect at 42Sa6397 is oriented to the southeast, which better fits the description for this site. Further, Nielson also notes a "single large sandstone slab" on the site, which probably corresponds to the slab that Bond observed in his survey of the site for the current project.

Considering the exclusion of other pottery types, this small assemblage tentatively suggests a Basketmaker III occupation of the site. It is possible that activities conducted in this locus were associated with the apparent Basketmaker III component at nearby 42Sa6397. We disagree with Nielson's (1979:52) assessment that "the site is likely a secondary deposit from other [upslope] sites," that "testing or mapping of the site is unnecessary," or that "no further investigation is required." Though small, the concentration of cultural materials, which include artifacts and rock, in this location is likely indicative of one or more subsurface features.

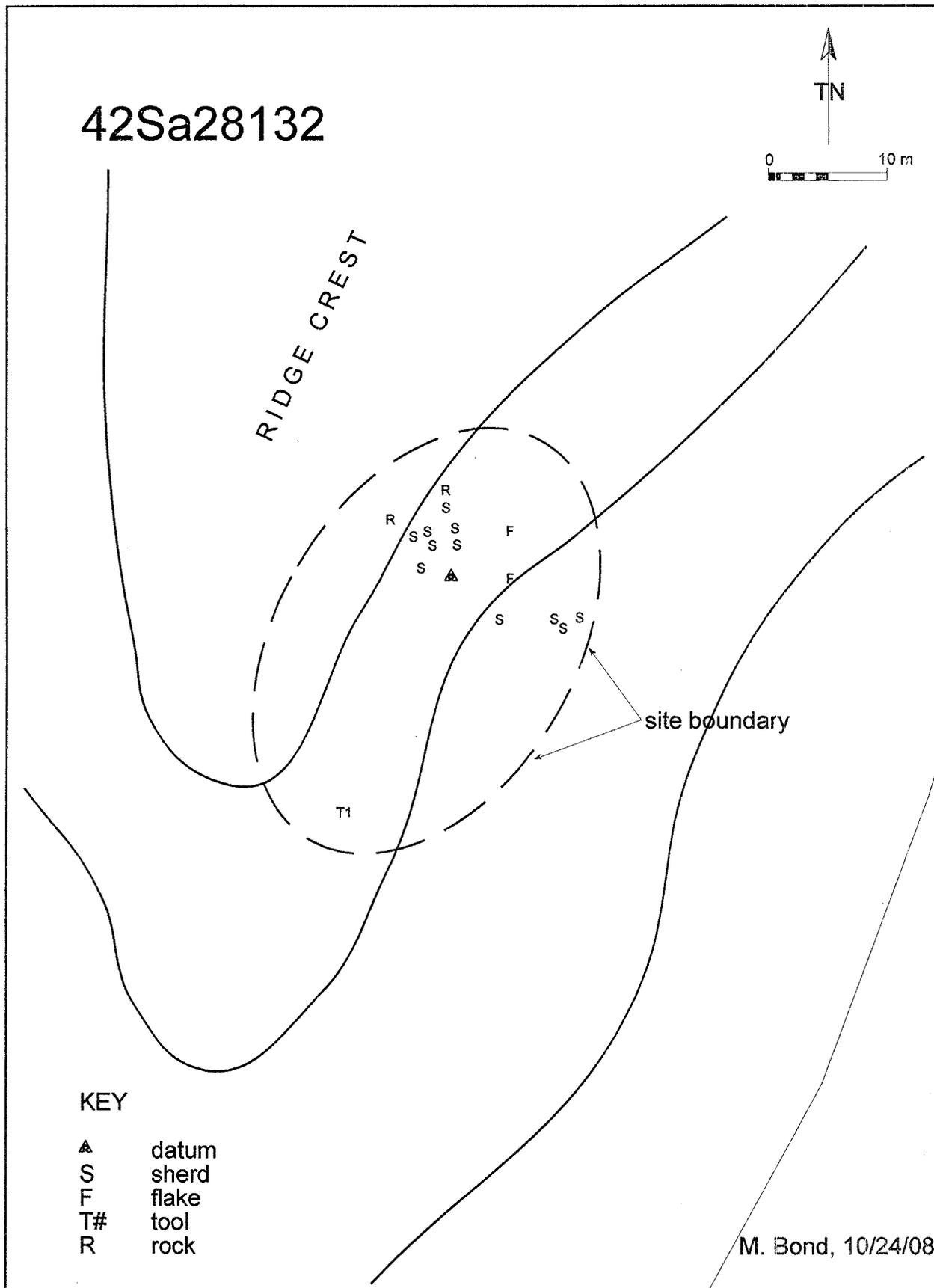


Figure 27. Site 42Sa28132, site map.

Site 42Sa28133

This site consists of a very small scatter of artifacts and several pieces of sandstone (Figure 28). All items are confined to an area measuring 5 m in diameter. The site is located on a small "bench" or flat step, on the slope of a finger-ridge, the crest of which lies east of the site. No diagnostic artifacts are present that might indicate the site's age.

Old rodent burrows are apparent on the site. Otherwise natural erosional processes probably constitute the greatest current impacting agent to the site. The site has probably endured past impacts by chaining and raiing, as well as historic grazing and agricultural activities.

On-site sediments consist primarily of the red aeolian loess that characterizes this part of White Mesa. The current vegetation includes snakeweed, bunch grasses, and prickly pear cactus. Sagebrush grows close by. To the west, one can see the pinyon-juniper woodland along the canyon rim that overlooks Cottonwood Wash.

As noted above, the site manifests itself on modern ground surface as a scatter of lithic tools and several fragments of sandstone. The artifacts consist of three stone tools (T1-T3, detailed below). The several pieces of sandstone are small and tabular. These may be remnants of one or more broken artifacts or may be architectural.

Three tool fragments were documented on the site. Two of these are ground stone tools (T1 and T3) and the third is a hammerstone fragment (T2).

**T1** is a metate fragment made from white silicified sandstone. This item has a single ground facet. The artifact measures 9.5 x 13.0 x 2.3 cm.

**T2** is a hammerstone fragment made from an alluvial cobble of silicified gray mudstone. Battering marks occur on one margin of the artifact. The remaining tool measures 5.5 x 5.5 x 4.5 cm.

**T3** is a complete ground stone implement that may have functioned as a type of netherstone. The artifact is made from a brown sandstone. It has a single, lightly ground and pecked facet. The item measures 29 x 18 x 5 cm. The bottom of the artifact is gray, as if it was discolored by fire.

None of the artifacts is temporally diagnostic. It is possible that the site represents the remnants of a special activity locus, such as a food-processing facility.

Site 42Sa28134

Site 42Sa28134 is the last in a cluster of four small artifact scatters in this portion of the the project area (the other sites being 42Sa28128, 42Sa28129, and 42Sa28130). This site consists of a small scatter of lithic artifacts (Figure 29). The artifacts include several pieces of lithic debitage and two ground stone tools. The site occupies a space measuring about 10 m in diameter and is located on the crest of a small finger-ridge that rises just slightly above the grassy flats of White Mesa.

Rodent burrows pose the most immediate impact to the site. Other impacts may include historic agricultural clearing and other associated activities. The construction of the old fenceline about 15 meters north of the site and its associated two-track road may have also affected the appearance of the site.

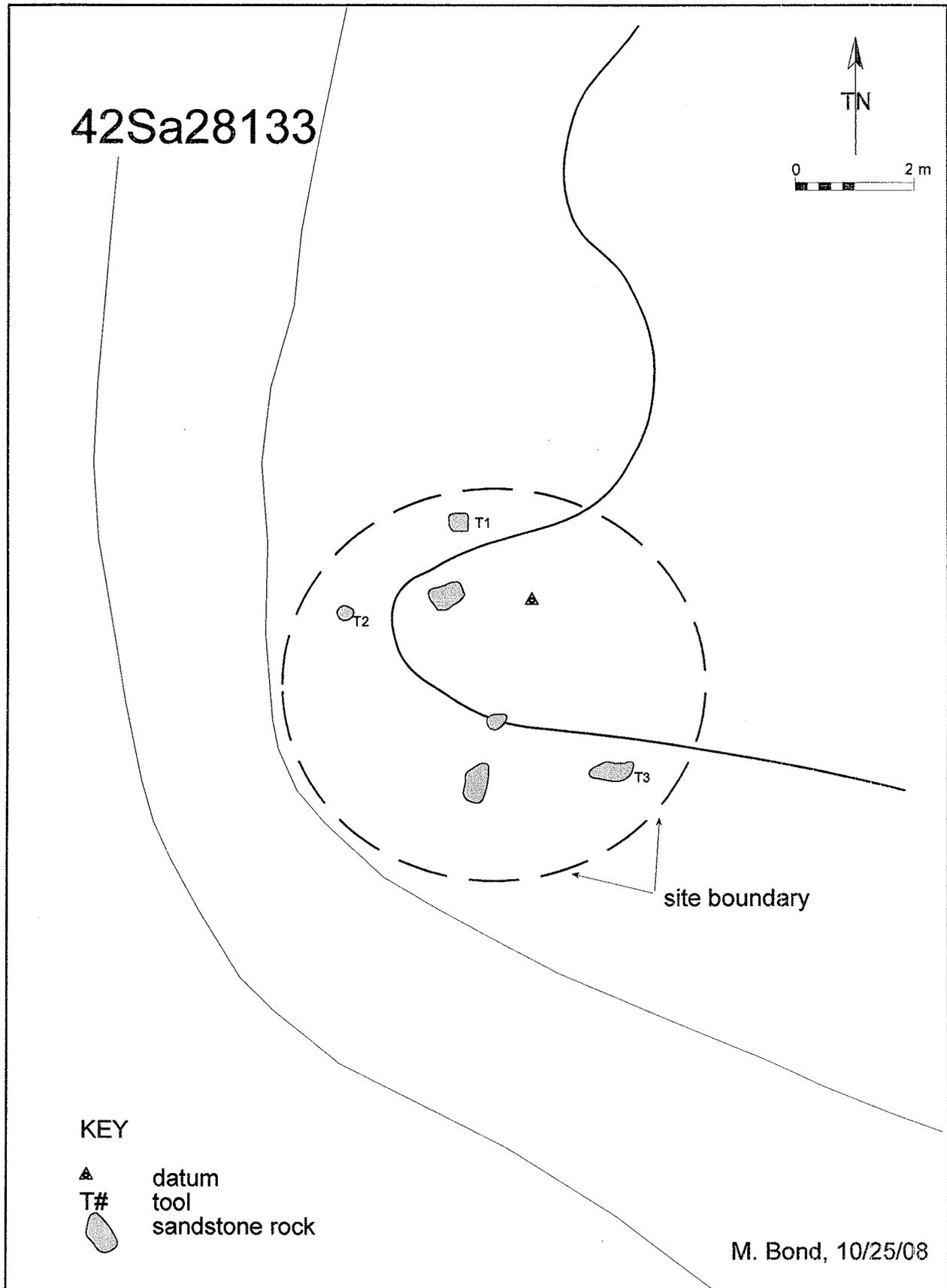


Figure 28. Site 42Sa28133, site map.

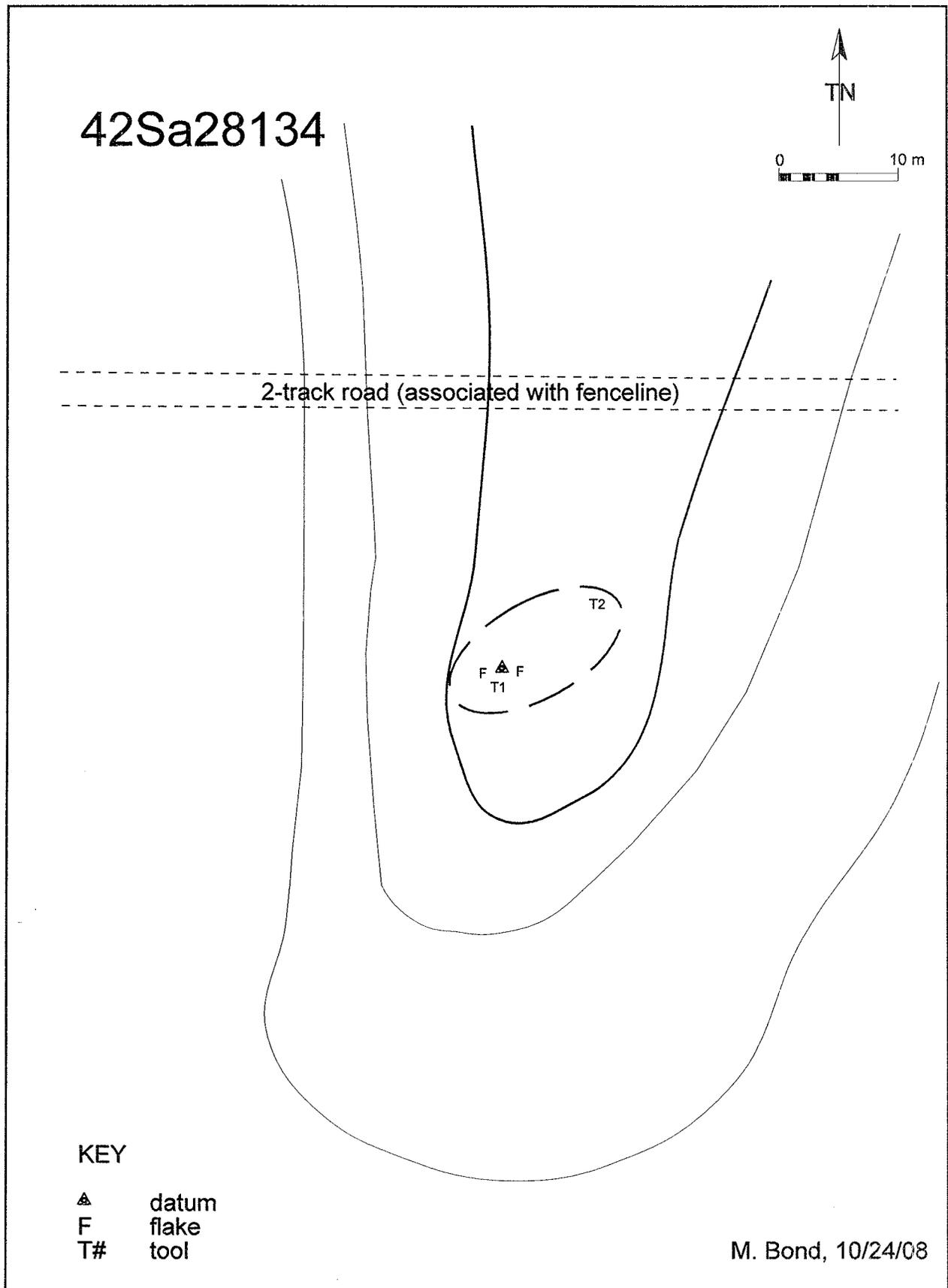


Figure 29. Site 42Sa28134, site map.

On-site sediments consist of the reddish aeolian loess that characterizes this portion of White Mesa. Current vegetation consists of bunch grasses, snakeweed, and prickly pear cactus. Doubtless this represents a departure from the site's original vegetation, particularly if this location had been cleared for farming and/or grazing in the historic past. To the west, near the edge of the mesa overlooking Cottonwood Wash, is pinyon-juniper woodland.

The site simply consists of a small scatter of lithic debitage and a few ground stone tools. The debitage assemblage comprises four flakes, including three secondary flakes and one tertiary flake (See Table 7). Two material types were observed in this small debitage assemblage: a white silicified sandstone (probably from the Dakota Formation) and Brushy Basin chert.

Two ground stone tools (T1 and T2) were documented on the site, and are described further below.

**T1** is a metate fragment. It is made from a dark brown, fine-grained sandstone. The artifact consists of two pieces. These articulate and demonstrate that both faces are lightly ground. Together the fragments measure 13.0 x 9.5 x 4.0 cm.

**T2** is a large piece of white silicified sandstone with a single slightly concave facet. The object measures 12.0 x 8.5 x 7.0 cm.

Site 42Sa28134 is difficult to assess for its temporal association. However, like the other three small sites in this corner of the project area, this site may represent the remains of a special activity site, such as a food-processing feature.

#### Isolated Finds of Cultural Materials

A total of 16 isolated finds of cultural materials was documented during the course of this inventory project (Figure 30). Table 8 describes these items.

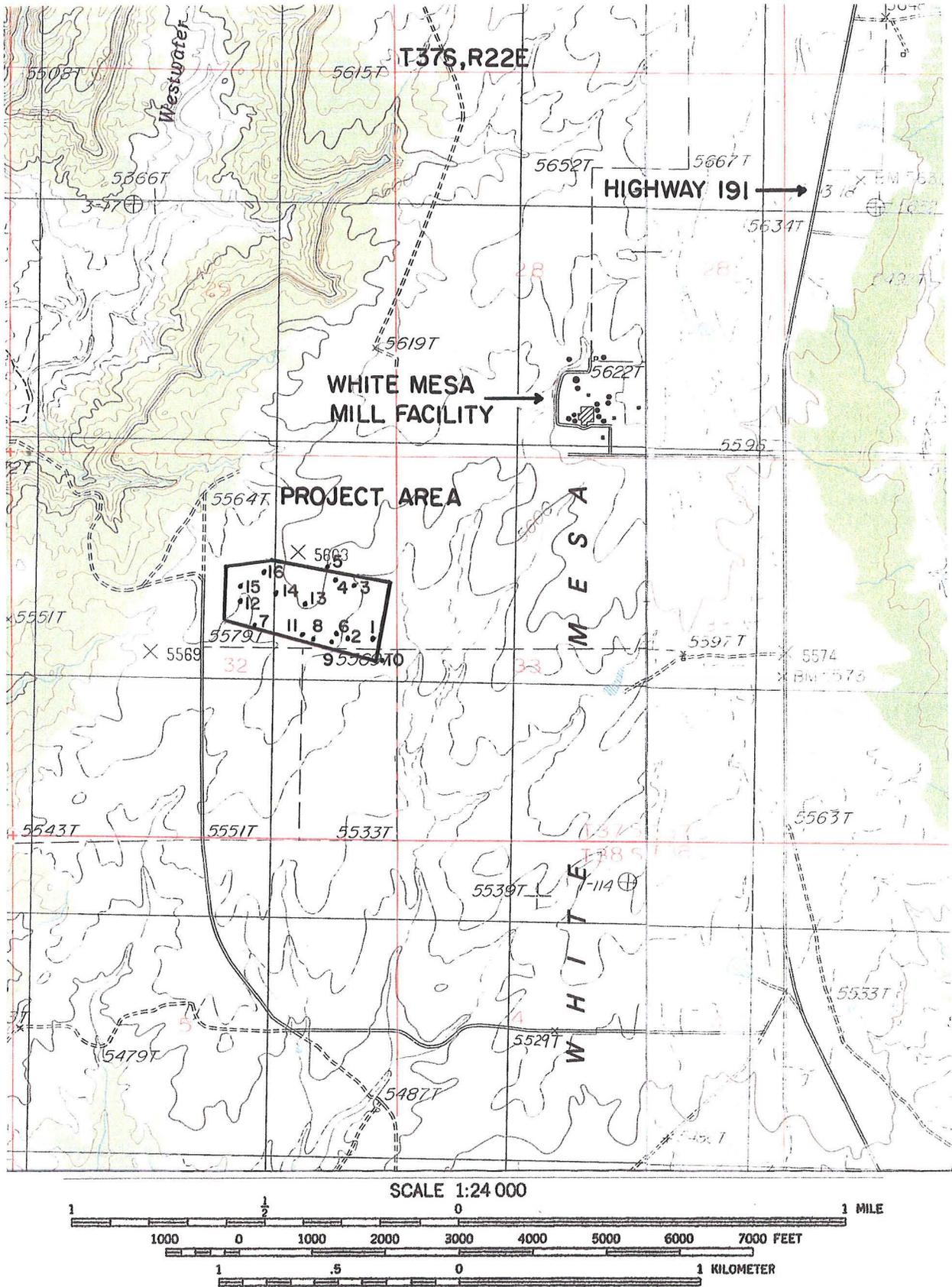


Figure 30. Denison Mines White Mesa Mill Cell 4B Project Map showing the location of isolated finds of cultural material.

Table 8 . Isolated Finds, White Mesa Mill Survey

IF #	UTMs		Description
	Easting	Northing	
1	631365	4154367	Cobble mano.
2	631261	4154374	Ground-stone fragment.
3	631288	4154605	Ground-stone fragment in a patch of wolfberry.
4	631201	4154624	Two-hand mano fragment and a Deadmans B/r sherd.
5	631171	4154677	Slab metate fragment. Made from a white/tan silicified sandstone, the object has a single, flat grinding facet. A portion of the artifact's original edge is intact and shaped. Measures 34.0 x 23.0 x 5.5 cm.
6	631210	4154393	Possible ground-stone artifact consisting of a large, shattered slab.
7	630875	4154409	Slab metate fragment. Made from a white silicified sandstone, the artifact has a single partial facet. A portion of the artifact's original scabbled margin is intact. Measures 18 x 7 x 7 cm.
8	631114	4154356	Two-hand mano fragment. The artifact is unifacial, worn, and weathered, and is made from coarse, light brown sandstone. The artifact measures 19.0 x 13.0 x 2.7 cm.
9	631190	4154351	Trough metate fragment. Made from a white silicified sandstone. Trough is about 1.75 cm deep. The artifact measures 15.5 x 9.0 x 4.7 cm. A portion of the original margin is present, and is pecked and ground. A corrugated body sherd is 6 m from the metate fragment.
10	631418	4154284	Metate fragment. Made from a brown silicified sandstone. The item has one slightly concave, ground facet. Measures 7.0 x 6.0 x 2.5 cm.
11	631067	4154373	Ground-stone fragment. Has a single ground facet. Measures 8.7 x 7.3 x 2.4 cm.
12	630799	4154521	Ground-stone fragment. Made from a fine, gray and reddish brown sandstone, the item has two ground faces. No original edge remains. Measures 20.0 x 18.0 x 2.8 cm. A Chapin B/w sherd is 14 m to the east. A piece of debitage is 6 m to the south.
13	631071	4154510	Metate fragment. Made from a tan/brown sandstone, the item has two facets. One facet is slightly concave; the other is flat. The item measures 19.0 x 14.0 x 6.3 cm.
14	630951	4154563	Metate fragment. Made from a fine, white sandstone, the artifact has a single, slightly concave facet. A portion of the original edge survives and is scabbled. Measures 16.5 x 11.0 x 3.3 cm.
15	630804	4154590	Metate fragment. One facet exhibits a slightly concave surface and has deep peck marks. Measures 12.6 x 8.7 x 3.8 cm.
16	630909	4154644	Metate fragment. Made from a fine, white sandstone, the artifact has a single slightly concave facet. The facet exhibits faint peck marks. Measures 19.7 x 10.2 x 4.5 cm.

## CHAPTER 5: EVALUATION OF SIGNIFICANCE AND MANAGEMENT RECOMMENDATIONS

### Evaluation of Significance

The National Register of Historic Places (NRHP) for the evaluation of site significance are outlined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that they:

- a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
- b)...are associated with the lives of persons significant in our past; or
- c)...embody the distinctive characteristic of a type, period, or method of construction; or that represents the work of a master, or that possess high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- d)...have yielded, or may be expected to yield information important in prehistory or history.

In addition, 36 CFR 60.4 also states that cultural resources that may meet the above criteria, but have achieved such significance within the past 50 years, shall not be considered eligible for nomination to the NRHP unless they are integral parts of districts that do meet the criteria.

Fourteen sites are documented within the project area. Two of these sites, 42Sa6757 and 42Sa8014, have been the subjects of past mitigation efforts (Davis 1985). While it is likely that most of the cultural features associated with these sites have been excavated, it is possible that small features peripheral to the excavated portions of these sites have not been located. In other words, while known features were mitigated, intact subsurface sediments remain unexamined on both sites, making the two sites eligible under criterion (d).

Four of the sites (42Sa6391, 42Sa6393, 42Sa6397, and 42Sa6431) in the project area have been tested in the past, and have demonstrated the presence of significant subsurface stratigraphy. Site 42Sa6391 was tested by Dykman (1978a) and Nielson (1979); two pit structures and one cist were located in these limited excavations. The pottery assemblage on the site suggests that the site was occupied during the middle Pueblo II period. The diversity of artifact types suggests that a variety of activities occurred on the site. These materials, and the subsurface features, suggest that data recovered from the site may have been a locus of habitation for one or more ancestral Pueblo family groups. Data recovered from the site might address a number of research domains including, but not limited to, chronology, settlement, subsistence, and social structure. Thus, site 42Sa6391 is eligible under criterion (d).

Site 42Sa6393 was incorrectly tested as a part of 42Sa6391 (Dykman 1978a; Nielson 1979). The site's pottery assemblage suggests that the site may have dated to the early to middle Pueblo II periods. The relatively diverse artifact assemblage observed on the site's surface, and a pit structure located during test excavations by Nielson (1979), suggest that the site may have functioned as a habitation for one or more ancestral Pueblo family groups. Data recovered from the site might address problems under a number of research domains including, but not limited to, chronology, settlement, subsistence, and social structure. Thus, site 42Sa6393 is eligible under criterion (d).

Site 42Sa6397 was also misidentified during testing phase excavations by the Antiquities Section of the Division of State History (Dykman 1978b). Tested as 42Sa6393, at least two pit features were located in backhoe trenches excavated on the site. The pottery assemblage suggests at least two components on the site: a Basketmaker III period component and an early Pueblo II period component are suggested. The site's functions remain ambiguous. At the least, it seems likely that subsurface investigations on the site would yield data pertinent to such research domains as chronology, settlement, subsistence, and social structure. Thus, the site is eligible for nomination to the NRHP under criterion (d). This site is not to be confused with the locus identified by Nielson (1979:51-52) as 42Sa6397, which that author suggests is not significant, an assessment with which we disagree anyway.

Site 42Sa6431 was tested in 1978 as 42Sa6392 (Nielson 1979), resulting in even more confusion in this portion of the White Mesa mill property. Nielson's test excavations resulted in the documentation of three cultural features, including a probable hearth, a burial, and a subsurface lens of charcoal and daub. At least two components are apparent on the site. A Basketmaker III component is associated with the features documented by Nielson (1979). Such features would yield data pertinent to research domains such as chronology, subsistence, and social structure. A midden on the site is associated with the Pueblo II period, suggesting the presence of a habitation feature. Should such a feature be located, research issues under such domains as chronology, settlement, subsistence, and social structure may be addressed. Thus the site is eligible for nomination to the NRHP under criterion (d).

The remaining eight sites (42Sa6392, and 42Sa28128 through 42Sa28134) on the property are relatively small. However, all eight sites rest on sediments that have the high potential to yield significant subsurface cultural stratigraphy.

Pottery assemblage data suggest that Site 42Sa6392 dates to the early to middle Pueblo II period. The artifact assemblage, and the possible remains of a jacal structure, suggest that the site may have functioned as a seasonal habitation. Data recovery efforts at the site may provide information pertinent to research domains such as chronology, subsistence, and settlement. Thus, the site is eligible for nomination to the NRHP under criterion (d).

Site 42Sa28128 may date to the Pueblo II and/or Pueblo III periods. The relatively small artifact assemblage suggests that the site was a locus of limited activity, perhaps including food processing. Data recovered from subsurface deposits might be used to address research domains such as chronology, settlement, and subsistence. The site is eligible for nomination to the NRHP under criterion (d).

Based on pottery assemblage data, Site 42Sa28129 may harbor features associated with one or more components that include the Pueblo II period and Basketmaker III and Pueblo I periods. The site's artifact assemblage suggest limited activity functions (such as food processing) or seasonal habitation. Data from significant subsurface deposits may yield information pertinent to research domains such as chronology, subsistence, and settlement. The site is eligible for nomination to the NRHP under criterion (d).

Site 42Sa28130 appears to date to the Pueblo II period. Its small artifact assemblage suggests a limited activity function such as food processing. Subsurface deposits could yield data pertinent to research domains such as chronology, subsistence, and settlement. The site is eligible for nomination to the NRHP under criterion (d).

Site 42Sa28131 is an historic site with at least one feature, a hearth, that probably contains significant deposits. This site is eligible under nomination to the NRHP under criterion (d).

Site 42Sa28132 is a possible Basketmaker III period site that may be associated with nearby 42Sa6397. The artifact assemblage is ambiguous with regard to function, though the small size of the assemblage suggests that only few activities took place in this locus. However, one or more subsurface features may be present. Such subsurface deposits may yield data pertinent to research domains such as chronology, subsistence, and settlement. Thus, 42Sa28132 is considered eligible for nomination to the NRHP under criterion (d).

Both 42Sa28133 and 42Sa28134 are small artifact assemblages of unknown aboriginal affiliation. While chronologically diagnostic artifacts are absent from the surface, food processing activities are indicated on both. Research domains that might be addressed with data from subsurface deposits in these sites include chronology, subsistence, and settlement. Both sites are therefore considered eligible for nomination to the NRHP under criterion (d).

#### Management Recommendations

We recommend that all of the archaeological sites in the White Mesa Mill Cell 4B project area will require further investigation. The nature of these investigations will vary according to the individual site, generally by the degree to which they have been previously documented.

Two of the sites, 42Sa6757 and 42Sa8014, have been subjected to intensive mitigation efforts in the past. While it is likely that the main structural features for each site have been documented, we suggest that the remains of smaller, peripheral features may still be present, particularly at 42Sa6757. We recommend that a careful, systematic program of surface stripping be developed to investigate these areas. Such features might include the remains of surface structures north of the pitstructures documented at these sites (especially Features 1 and 2 at 42Sa6757 and Feature 1 at 42Sa8014), and human burials in the midden area at 42Sa6757. Further, the midden area associated with 42Sa6757 remains to be better characterized. We recommend that the midden area be systematically sampled prior to surface stripping.

Four of the sites have been previously tested and are known to harbor subsurface features. These sites include 42Sa6391, 42Sa6393, 42Sa6397, and 42Sa6431. We recommend that the previously excavated trenches on these sites be relocated and, if necessary, reopened to define the presence or absence of cultural stratigraphy. This is particularly true at 42Sa6393 and 42Sa6431, where previous testing operations poorly documented the location of backhoe trenches and their associated subsurface features. Additionally, we recommend the development of a testing program for these sites to better document the nature, location, and extent of subsurface cultural deposits and/or features.

Based on surface evidence, eight of the sites in the project area are relatively small. These sites include 42SaSa6392, and 42Sa28128 through 42Sa28133. We recommend that a systematic program of testing be developed for these sites to investigate the nature, location, and extent of subsurface cultural deposits and/or features for these sites.

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APPENDIX A:

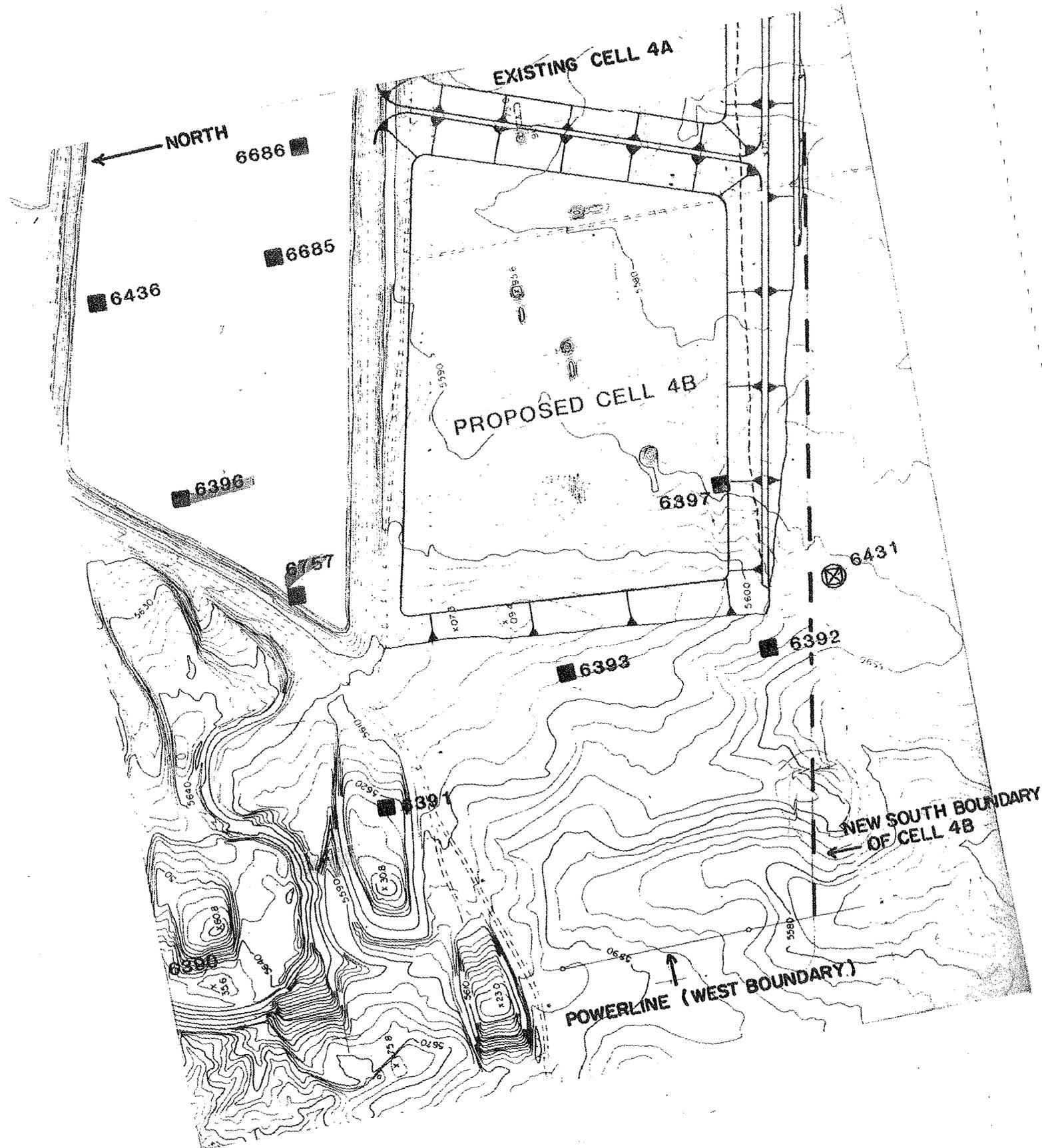
Intermountain Antiquities Computer System (IMACS)  
Site Forms

on file at:

Utah Division of State History

APPENDIX B:  
PORTION OF BLUE-LINE MAP  
"ARCHAEOLOGICAL SITES"

By D.L.M, 6/21/88





IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28128
2. AGENCY NO:
3. TEMP NO.: Site 1
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Artifact scatter
10. ELEVATION: 5574 ft.
11. UTM GRID: Zone 12, 631332 m East, 4154376 m North
12. [SE] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)-White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: Site 42Sa28128 consists of a scatter of lithic and pottery artifacts that appears to be contained within an area that measures 30 m N/S x 20 m E/W. The scatter is situated on a relatively flat plain just east of a low sandy ridge. Lithic artifacts include debitage and ground stone items; pottery artifacts include white ware bowl and jar sherds as well as a corrugated cooking jar sherd. The few pottery sherds noted on the surface suggest a use of the site at one or more times during the years that span the Pueblo II and III periods.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): Impacting agents on the site may include historic farming (AG) and grazing (GR), and possibly chaining (CL). More important, perhaps, were possible borrow excavations that apparently occurred immediately north of the site (OT). It appears that at least 0.5 m of fill was systematically removed or stripped from the landscape just north of the site, possibly removing cultural materials that had been associated with the site. Rodents have burrowed through the site (RO), unearthing artifacts that might otherwise have gone hidden.
23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28128 may date to the Pueblo II and/or Pueblo III periods. The relatively small artifact assemblage suggests that the site was a locus of limited activity, perhaps including food processing. Data recovered from subsurface deposits might be used to

address research domains such as chronology, settlement, and subsistence.  
The site is eligible for nomination to the NRHP under criterion (d).

- 24. **PHOTOS:** See attached
- 25. **RECORDED BY:** Mark Bond
- 26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
- 27. **ASSISTING CREW MEMBERS:** Jonathan Till
- 28. **SURVEY DATE:** 10/21/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [0] DEGREES ASPECT: [ ] DEGREES
30. DISTANCE TO PERMANENT WATER: [29] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Plain (O)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More specifically, the site is located on a relatively level plain a few hundred meters east of a low, sandy ridge. Prior to the development of the White Mesa Mill, the landscape was probably relatively flat with a slight southern aspect.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments appear to consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. The sediment depth is indicated in the recent (ca. within the last 10 years?) removal of sediments to the north of the site.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: grassland (M)  
SECONDARY ON-SITE: Big sagebrush (P)  
SURROUNDING SITE: pinyon-juniper (H)  
DESCRIBE: Current vegetation on the site includes bunch grasses, snakeweed, immature sage, prickly pear cactus, and tumbleweed. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. **SITE TYPE:** Artifact scatter
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Pueblo II-III periods (P4)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** Diagnostic artifacts recorded on the site include a corrugated jar body sherd. Corrugated pottery was produced after about A.D. 950. The surface treatment of the white ware sherds is consistent with this assessment. Given that the temporal assignment is based only on a few sherds, this assessment is extremely tentative.
3. **SITE DIMENSIONS:** [30] m by [20] m  
**AREA:** [600] sq m
4. **SURFACE COLLECTION/METHOD:** None (A)
5. **ESTIMATED DEPTH OF CULTURAL FILL:** More than 100 cm (D)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** This observation is based on a large area of stripped sediments immediately north of the site.
6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
**TESTING METHOD:**
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and groundstone scatter (GS)  
**DESCRIBE:** The site consists of a scatter of pottery sherds, debitage, and several groundstone tools. The pottery consists of several white ware sherds, and one corrugated gray jar body sherd. Documented chipped stone artifacts include 7 pieces of debitage. The groundstone assemblage includes 5 tools or tool fragments. These are described below.
8. **LITHIC TOOLS:**

#	TYPE
4	metate fragments (MZ)
1	unknown handstone (NZ)

**DESCRIBE:** Five groundstone tools (T1-T5) were documented on the site. Four of these are metate fragments. None of these is complete enough to ascertain the metate type (i.e. trough metates, basin metates, or slab metates).

T1 is a small, irregular-shaped fragment of tabular, dense white sandstone with a single surface that is pecked and slightly concave. The artifact, probably a metate fragment, currently measures 8.5 x 7.0 x 2.3 cm.

T2 is a metate fragment that consists of the same material as T1. Both sides of the artifact appear ground and have flat to slightly concave surfaces. Both sides are well-smoothed, and one side is polished. No peck marks are evident. However, multiple grinding striae are apparent on both sides. The artifact measures 21.5 x 16.0 x 5.0 cm.

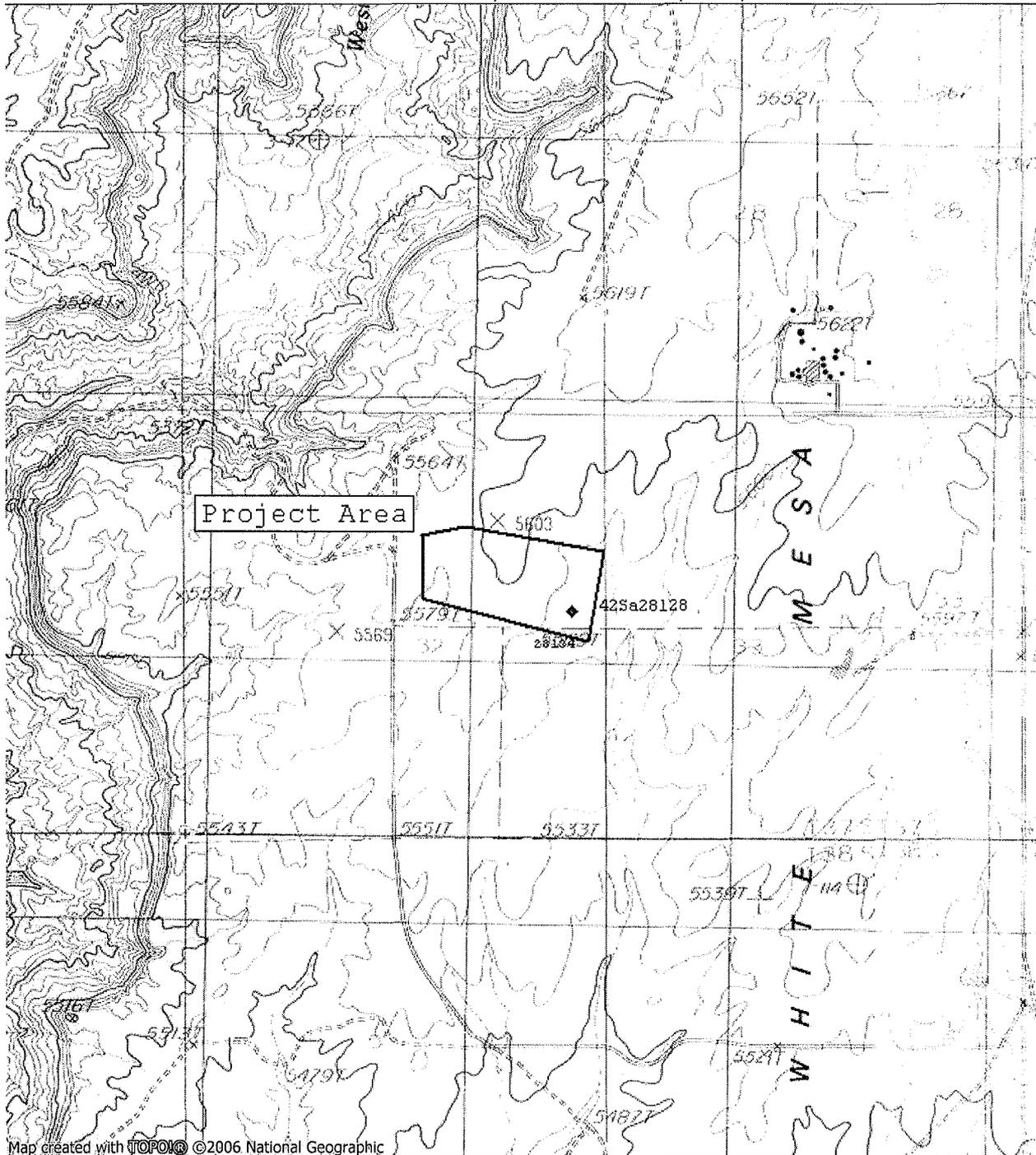
T3 is also a metate fragment made from the same material as T1 and T2. One side has a deeply ground and pecked facet. The item measures 17.5 x 13.5 x 3.5 cm.

T4 is a metate fragment that consists of a light brown, fine-grained sandstone. Both sides exhibit grinding and pecking. The object measures 13.0 x 8.5 x 3.0 cm.

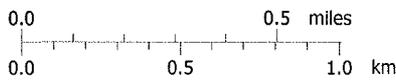
T5 is a possible mano blank. This item is composed of a piece of coarse white sandstone that has been shaped into a subrectangular form. While the edges have definitely been flaked into shape, no grinding or other use-wear is apparent. The item measures 26.0 x 15.5 x 5.0 cm. The white sandstone described above may derive from the local Dakota Formation.

9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 7 pieces of debitage (B)  
**MATERIAL TYPE:** A few varieties of Morrison mudstone, including an "olive green" silicified mudstone; a coarse-grained "tan/cream" mudstone; a "tan/light green" silicified sandstone, which is probably a Morrison silicified sandstone; and a light gray opaque chert.  
**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[2] DECORTICATION [2] SECONDARY [2] TERTIARY  
[2] SHATTER [ ] CORE
10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):** 2/sq. meter
11. **CERAMIC ARTIFACTS:**
- | # | TYPE                                 |
|---|--------------------------------------|
| B | Mesa Verde white ware (EC)           |
| B | Mesa Verde corrugated gray ware (E1) |
- DESCRIBE:** The pottery assemblage consists simply of four sherds: 1 white ware bowl sherd, 2 white ware jar sherds, and 1 corrugated jar body sherd. All sherds are presumably local.
12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** 1/sq. meter
13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**  
**DESCRIBE:**
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**
- | #                | MATERIAL | TYPE |
|------------------|----------|------|
| <b>DESCRIBE:</b> |          |      |
15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa28128, Black Mesa Butte, Utah, 7.5'

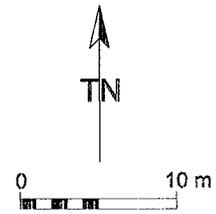


Map created with TOPO! © 2006 National Geographic

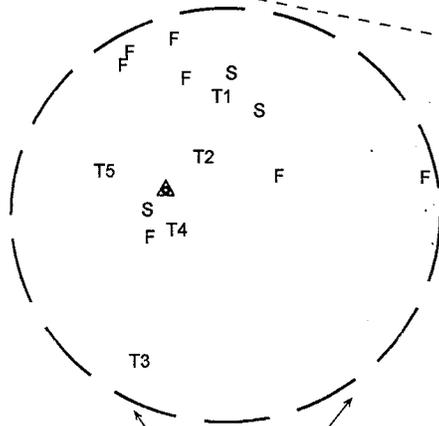
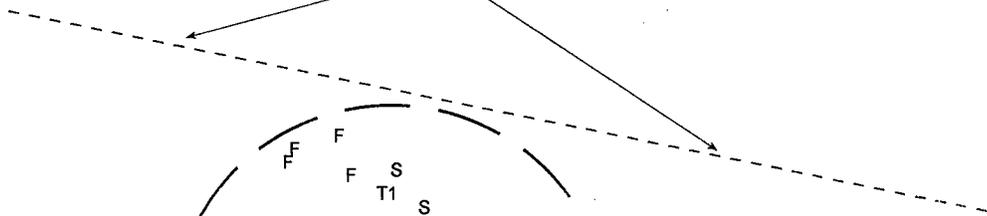


TN MN  
11½'  
07/06/09

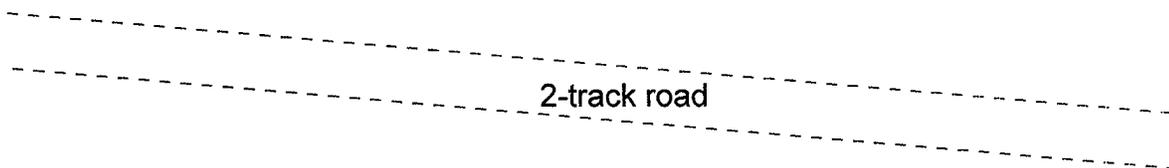
42Sa28128



south edge of surface-stripped area



site boundary



2-track road

KEY

- ▲ datum
- S sherd
- F flake
- T# tool

M. Bond, 10/21/08



Top: 42Sa28128, overview, facing north, cap over datum, Abajo Mountains in background

Bottom: 42Sa28128, overview, facing north, close-up of cap over datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28129
2. AGENCY NO:
3. TEMP NO.: Site 2
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Artifact scatter
10. ELEVATION: 5579 ft.
11. UTM GRID: Zone 12, 631232 m East, 4154393 m North
12. [SW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)-White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: Site 42Sa28129 consists of a scatter of lithic and pottery artifacts contained within a 30 x 30 m area. This artifact scatter is concentrated on a very slight rise in an otherwise flat terrain. The landscape rises to the west toward the crest of a low ridge. Lithic artifacts include debitage and ground stone tools; pottery items include white ware bowl and jar sherds, as well as corrugated cooking jar sherds and one Chapin Gray jar rim. The small pottery assemblage suggests that the primary use of the site occurred during the Pueblo II period; however, one or more earlier components (dating to the Basketmaker III and/or Pueblo I periods) may also be indicated.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): Impacting agents on the site may include historic farming (AG) and grazing (GR), and possibly chaining (CL). More important, perhaps, were borrow excavations that apparently occurred immediately north of the site (OT). It appears that at least 0.5 m of fill was systematically removed or stripped from the landscape just north of the site, possibly removing cultural materials that had been associated with the site. Rodents have burrowed through the site (RO), unearthing artifacts that might otherwise have gone hidden.
23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

JUSTIFY: The site is deemed significant by virtue of the presence of subsurface cultural deposits. Based on pottery assemblage data, Site 42Sa28129 may harbor features associated with one or more components that

include the Pueblo II period and Basketmaker III and Pueblo I periods. The site's artifact assemblage suggest limited activity functions (such as food processing) or seasonal habitation. Data from significant subsurface deposits may yield information pertinent to research domains such as chronology, subsistence, and settlement. The site is eligible for nomination to the NRHP under criterion (d).

- 24. **PHOTOS:** See attached.
- 25. **RECORDED BY:** Mark Bond
- 26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
- 27. **ASSISTING CREW MEMBERS:** Jonathan Till
- 28. **SURVEY DATE:** 10/21/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [1] DEGREES ASPECT: [180] DEGREES  
30. DISTANCE TO PERMANENT WATER: [28] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Plain (O)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More specifically, the site is located on a relatively level plain just below, and east of, the base of a low, sandy finger-ridge.  
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments appear to consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. The sediment depth is indicated in the recent (ca. within the last 10 years?) removal of at least 50 cm of sediments to the north of the site.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: grassland (M)  
SECONDARY ON-SITE: Big sagebrush (P)  
SURROUNDING SITE: juniper-sage (2)  
DESCRIBE: Current vegetation on the site includes bunch grasses, snakeweed, small sage, prickly pear cactus, and tumbleweed. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. **SITE TYPE:** Artifact scatter
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Pueblo II period (P3)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** Although small, the pottery assemblage suggests a Pueblo II period association. Corrugated body sherds, a white ware jar body sherd with Dogoszhi design, and a bowl body sherd with Black Mesa design suggest a Pueblo II period designation. One Chapin Gray jar rim sherd was also noted, suggesting an earlier presence on or near the site as well.
3. **SITE DIMENSIONS:** [30] m by [30] m  
**AREA:** [900] sq m
4. **SURFACE COLLECTION/METHOD:** None (A)
5. **ESTIMATED DEPTH OF CULTURAL FILL:** Fill noted but depth unknown (E)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** At least 50 cm of sediment depth are apparent by the stripping of sediments to the immediate north of the site.
6. **EXCAVATION STATUS:**             EXCAVATED (A)    TESTED (B)  
                                   UNEXCAVATED (C)  
**TESTING METHOD:**
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and groundstone scatter (GS)  
**DESCRIBE:** The site consists of a scatter of pottery sherds, debitage, and several groundstone tools. The pottery consists of corrugated jar body sherds, white ware bowl and jar sherds, and one Chapin Gray jar rim sherd. Only five pieces of debitage were noted, but consisted of several material types. Three groundstone tools or tool fragments were also documented on the site (T1-T3). These are described further below.
8. **LITHIC TOOLS:**

#	TYPE
1	slab metate, portable (ME)
1	slab metate, nonportable (MF)
1	metate fragment (MZ)

**DESCRIBE:** Three groundstone tools (T1-T3) were documented on the site. All three artifacts are metate fragments, two of which are large enough to identify as slab metate fragments.

T1 is a large, "non-portable" unifacial slab metate. Made from a white, dense sandstone, the slab has an uneven grinding facet on one surface. Peck marks are also apparent on this surface. Extant margins around the artifact indicate that the object was flaked to shape it. The item measures 41.0 x 27.0 x 9.0 cm.

T2 is a fragment of a unifacial metate. The artifact is made from a brown sandstone. The object measures 11.0 x 6.0 x 2.3 cm.

T3 is smashed, unifacial slab metate consisting of several fragments. The item is made from a light brown sandstone similar to T2. Refit, T3 measures 29 x 35 cm, and was 2 to 4 cm thick.
9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 5 pieces of debitage (B)  
**MATERIAL TYPE:** Several material types were observed on the site, all of which may have derived from the Morrison formation. One is a "tan/olive-green silicified sandstone," another is a "brown silicified sandstone," a third is a light gray mudstone, and the fourth is Brushy Basin chert.  
**FLAKING STAGES:**   (0) NOT PRESENT   (1) RARE  
  (2) COMMON   (3) DOMINANT  
           DECORTICATION    SECONDARY    TERTIARY  
                   SHATTER                    CORE
10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):** 2/sq. m

11. CERAMIC ARTIFACTS:

#	TYPE
B	Mesa Verde corrugated ware (E1)
B	Mancos B/w (EP)
B	Late White Painted (EC)
B	Late White Unpainted (EC)

DESCRIBE: The pottery assemblage consists of 14 sherds. Corrugated jar body sherds dominate the assemblage (n=9). In addition to these cooking jar sherds, 1 Chapin Gray jar rim sherd was found. Other sherds include 2 Mancos B/w (one jar body sherd with Dogoszhi design style, one bowl body sherd with Black Mesa design style), one Late White Unpainted jar body sherd, and one Late White Painted sherd of unknown form.

12. MAXIMUM DENSITY-#/SQ M (CERAMICS): 2/sq. m

13. NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):

DESCRIBE:

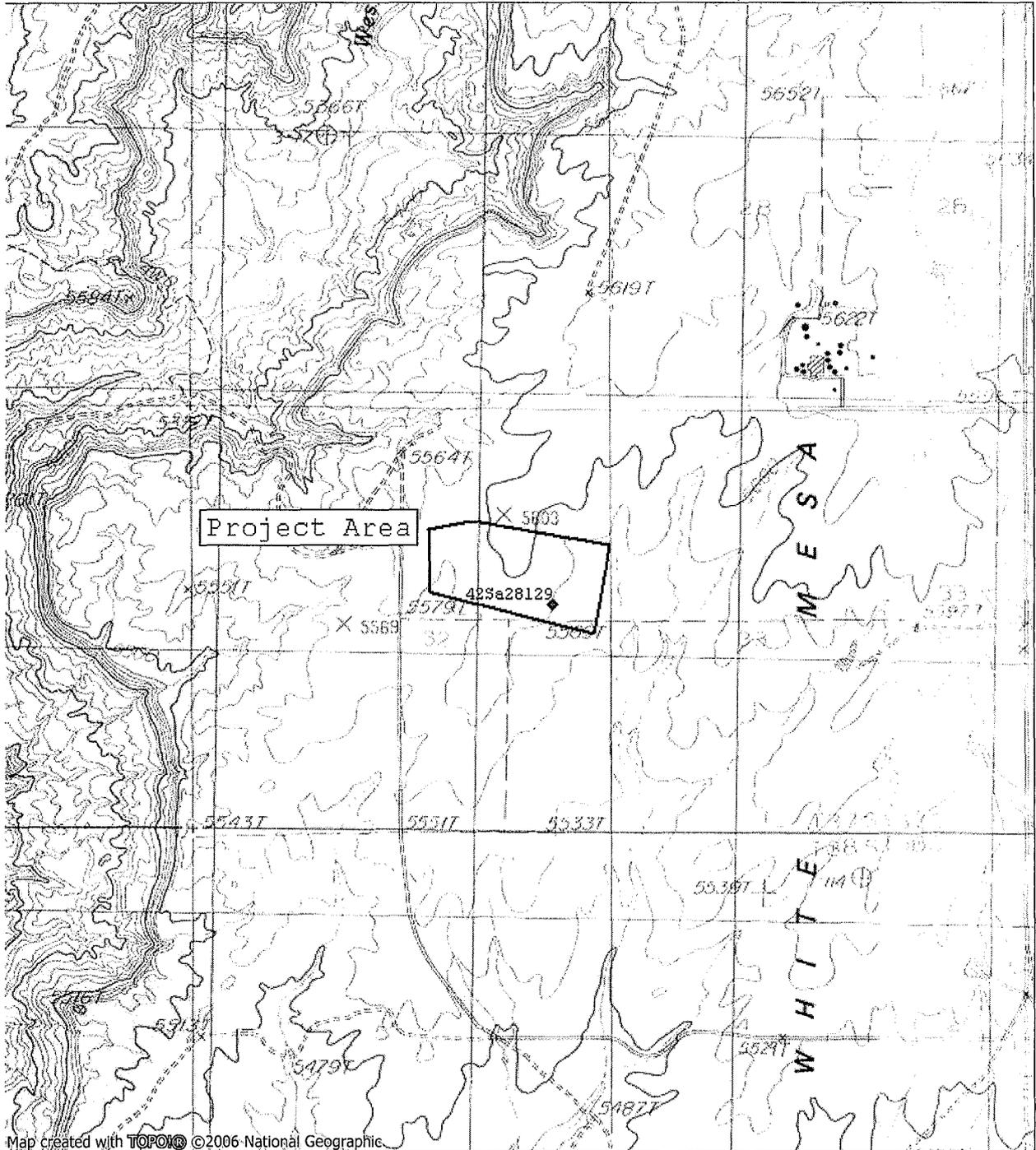
14. ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):

#	MATERIAL	TYPE
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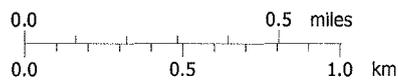
DESCRIBE:

15. COMMENTS/CONTINUATIONS:

Location for 42Sa28129, Black Mesa Butte, Utah, 7.5'

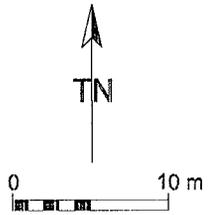


Map created with TOPO! ©2006 National Geographic

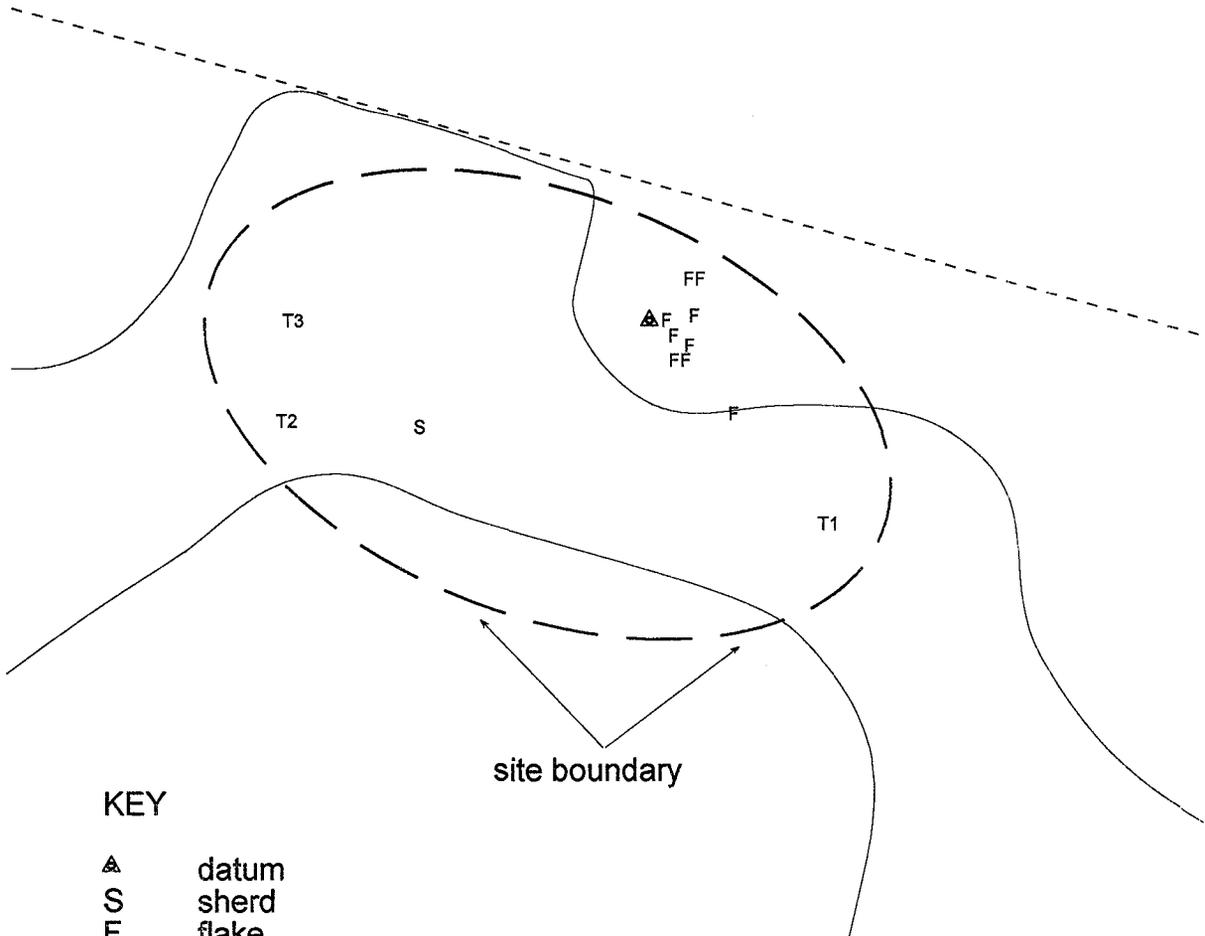


TN MN  
11 1/2  
07/06/09

42Sa28129



SURFACE-STRIPPED AREA



KEY

- ▲ datum
- S sherd
- F flake
- T# tool

M. Bond, 10/21/08



Top: 42Sa28129, overview, facing north, close-up of cap over datum

Bottom: 42Sa28129, overview, facing north, cap over datum; note the sediment cut in the immediate background of the datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28130
2. AGENCY NO:
3. TEMP NO.: Site 8
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Artifact scatter
10. ELEVATION: 5578 ft.
11. UTM GRID: Zone 12, 631285 m East, 4154451 m North
12. [SE] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: Site 42Sa28130 consists of a scatter of lithic and pottery artifacts. Located on relatively flat terrain with a slight slope to the southeast, the scatter is confined to a small area that measures approximately 10 m north/south by 30 m east/west. The lithic artifact assemblage includes debitage and a single ground stone tool. The pottery assemblage consists of several gray ware (corrugated) jar sherds. A few Mancos Corrugated rim sherds suggest that this locus may have been used during the Pueblo II period.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): Perhaps the greatest impact to the site was a surface-stripping episode that occurred some time in the recent past (OT). Approximately 40 cm of fill was removed in a long and wide swath just immediately south of the site. Rodents have burrowed through the site (RO), unearthing artifacts that might otherwise have gone hidden. Other impacting agents on the site may include historic farming (AG) and grazing (GR), and possibly chaining (CL).
23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

JUSTIFY: The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28130 appears to date to the Pueblo II period. Its small artifact assemblage suggests a limited activity function such as food processing. Subsurface deposits could yield data pertinent to research domains such as chronology, subsistence, and

settlement. The site is eligible for nomination to the NRHP under criterion (d).

24. PHOTOS:

25. RECORDED BY: Mark Bond

26. SURVEY ORGANIZATION: Abajo Archaeology (AS)

27. ASSISTING CREW MEMBERS: Jonathan Till

28. SURVEY DATE: 10/24/08

LIST OF ATTACHMENTS:

<input checked="" type="checkbox"/> PART B	<input checked="" type="checkbox"/> TOPO MAP
<input type="checkbox"/> ARTIFACT/FEATURE SKETCH	<input type="checkbox"/> PART C
<input checked="" type="checkbox"/> SITE SKETCH	<input type="checkbox"/> CONTINUATION SHEETS
<input type="checkbox"/> PART E	<input checked="" type="checkbox"/> PHOTOS
<input type="checkbox"/> OTHER:	

PART A - ENVIRONMENTAL DATA

29. SLOPE: [2] DEGREES ASPECT: [100] DEGREES
30. DISTANCE TO PERMANENT WATER: [29] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Plain (O), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site located on a very gently sloped plain that slowly drops to the southeast.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist of the red aeolian loess that characterizes this portion of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Big sagebrush (P)  
SECONDARY ON-SITE: Barren (R)  
SURROUNDING SITE: Juniper-sage (2)  
DESCRIBE: Current on-site vegetation includes small sagebrush, bunch grasses, snakeweed, mustard, and prickly pear. Most of the modern ground surface is not covered by vegetation. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. **SITE TYPE:** Artifact scatter
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Pueblo II (P3)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** The site's pottery assemblage is very small, and includes just Mancos Corrugated rim sherds (n=2) and several corrugated body sherds. Indeed, these sherds may all derive from a single vessel.
3. **SITE DIMENSIONS:** [10] m by [30] m  
**AREA:** [300] sq m
4. **SURFACE COLLECTION/METHOD:** None (A)
5. **ESTIMATED DEPTH OF CULTURAL FILL:** Depth suspected but not tested (F)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** An area of surface stripping occurs immediately south of the site. At least 35 to 40 cm of fill was removed in this area, suggesting that cultural deposits could be this deep at the least.
6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
**TESTING METHOD:**
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and ground and pecked stone artifacts (GS).  
**DESCRIBE:** The site's cultural materials consist of a small scatter of pottery sherds and lithic debitage. Additionally a single lithic tool, a fragment of ground stone (T1), was noted on the site. Also nearby is a limestone cobble, an item that probably represents a manuport.
8. **LITHIC TOOLS:**

#	TYPE
1	metate fragment (MZ)

**DESCRIBE:** Only one tool was documented on this site. This object, Tool 1 (T1), is a simple fragment of ground stone. It consists of white sandstone, and has a single ground surface. The item was apparently from a corner of the tool, which was both pecked and ground into shape. The object measures 11.0 x 15.0 x 3.5 cm.
9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 4 (B)  
**MATERIAL TYPE:** Three material types were noted in this small assemblage: Brushy Basin chert, white silicified sandstone, and an opaque dark gray chert.  
**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[2] DECORTICATION [2] SECONDARY [2] TERTIARY  
[0] SHATTER [0] CORE
10. **MAXIMUM DENSITY--#/SQ M (ALL LITHICS):** 1/ sq. meter
11. **CERAMIC ARTIFACTS:**

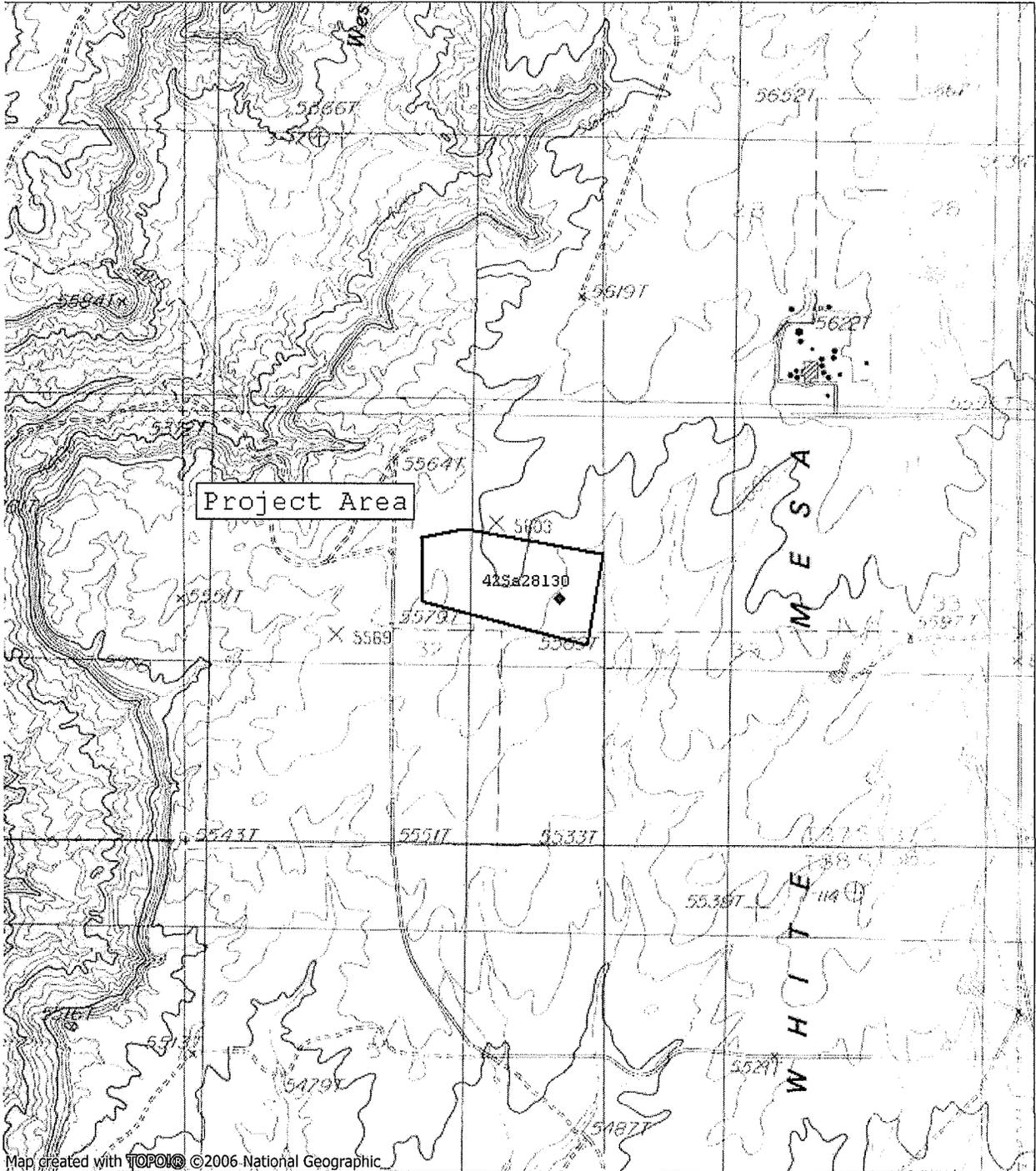
#	TYPE
B	Mancos Corrugated (ET)
B	Corrugated body sherds (E1)

**DESCRIBE:** The sherds in the pottery assemblage may derive from a single, Mancos Corrugated vessel. The assemblage simply consists of 2 Mancos Corrugated jar rim sherds and 6 corrugated jar body sherds.
12. **MAXIMUM DENSITY--#/SQ M (CERAMICS):** 2/sq. meter
13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**  
**DESCRIBE:**
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

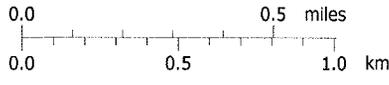
#	MATERIAL	TYPE
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**DESCRIBE:**
15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa28130, Black Mesa Butte, Utah, 7.5'



Map created with **TOPO!** ©2006 National Geographic

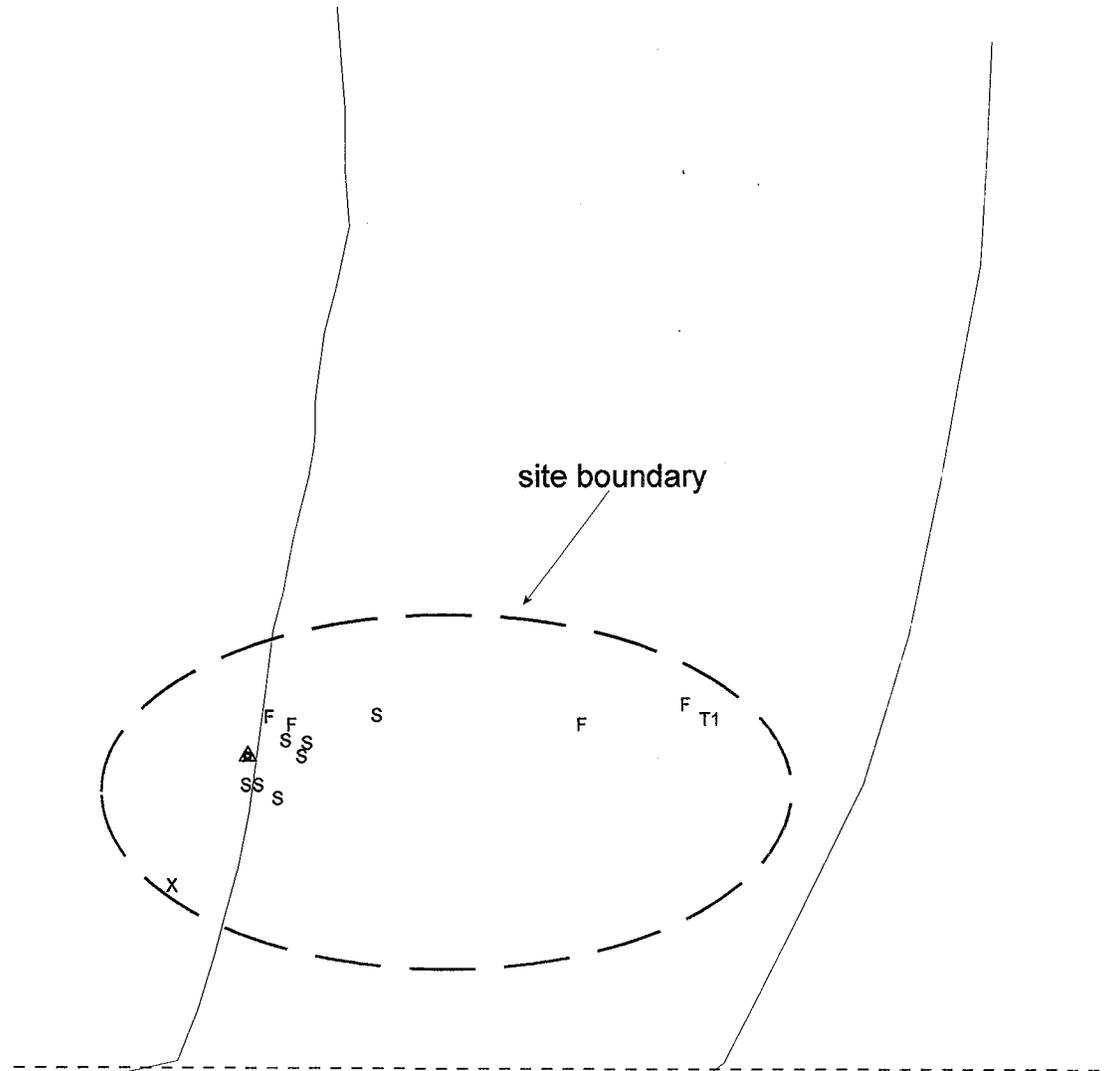
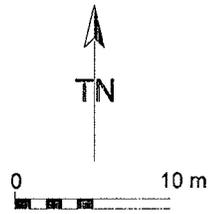


TN MN

11½'

07/06/09

42Sa28130



site boundary

north edge of surface stripped-area  
(this area steps down 35 to 40 cm from  
the site area to the north)

KEY

- ▲ datum
- S sherd
- F flake
- T# tool

M. Bond, 10/24/08



Top: 42Sa28130, overview, facing NNE, Abajo Mountains in background

Bottom: 42Sa28130, overview, facing NNE, cap over datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28131
  2. AGENCY NO:
  3. TEMP NO.: Site 9
  4. STATE: Utah COUNTY: San Juan
  5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
  6. REPORT NO.: U-09-AS-0334p
  7. SITE NAME/PROPERTY NAME: N/A
  8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
  9. SITE TYPE: Camp
  10. ELEVATION: 5584 ft.
  11. UTM GRID: Zone 12, 631293 m East, 4154650 m North
  12. [NE] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
  13. MERIDIAN: SLC (1)
  14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
  15. AERIAL PHOTO: N/A
  16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
  17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
  18. FEDERAL ADMIN. UNITS:
  19. LOCATION OF CURATED MATERIALS: N/A
  20. SITE DESCRIPTION: Site 42Sa28131 is an historic camp with a single feature and a few artifacts. The site is situated on an alluvial flat, immediately adjacent to a small wash or rill. The feature is a hearth (Feature 1), lined with small sandstone slabs, that measures 1.2 m in diameter. The artifacts consist of two fragments of sanitary-sealed tin cans and a single rifle cartridge. These items suggest that the site might date to A.D. 1945 (see Part C, #4). The whole site measures about 6 by 14 m, incorporating a fenceline to the north.
  21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
  22. IMPACT AGENT(S): The most immediate threat to this historic feature is posed by the erosional forces of a small wash adjacent to the feature (ER). Just north of the site is an access road for the Mill (RD). Considering the nature of the facility, it seems appropriate to note the potential for development projects (PR) to impact the site.
  23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)
- JUSTIFY: The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28131 is an historic site with at least one feature, a hearth, that probably contains significant deposits. This site is eligible under nomination to the NRHP under criterion (d).
24. PHOTOS: See attached
  25. RECORDED BY: Mark Bond
  26. SURVEY ORGANIZATION: Abajo Archaeology (AS)

27. ASSISTING CREW MEMBERS: Jonathan Till

28. SURVEY DATE: 10/25/08

LIST OF ATTACHMENTS:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [2] DEGREES ASPECT: [150] DEGREES  
30. DISTANCE TO PERMANENT WATER: [29] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Floodplain (J)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is found among low dunes of White Mesa's interior. It is nestled in a small "valley" among these dunes, and immediately along the small wash or rill at the bottom of this small valley.  
33. ON-SITE DEPOSITIONAL CONTEXT: Alluvial Plain (H)  
DESCRIPTION OF SOIL: On-site sediments probably derive from two processes, aeolian and alluvial. Aeolian materials consist of the fine, light reddish brown sands deposited on the top of White Mesa. This same material, as well as finer local silt and clay, is also redeposited alluvium from the nearby wash bottom.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: grassland (M)  
SECONDARY ON-SITE: juniper-sage (2)  
SURROUNDING SITE: developed (U)  
DESCRIBE: On-site vegetation consists of grasses, cheatgrass, mustard, heron's bill, and globemallow. Nearby are juniper and sage. The landscape and its vegetation has been radically altered by the on-going development activities at the Mill.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

PART C - HISTORIC SITES

1. SITE TYPE: Camp
2. HISTORIC THEME (s): Farming/ranching (FR)
3. CULTURE:
 

CULTURAL AFFILIATION	DATING METHOD
Unknown (ZZ)	Cross-dating/diagnostic artifacts

DESCRIBE: A cultural affiliation cannot be determined base on the small assemblage of items recorded with the site. It is likely associated with farming and/or ranching activities, and may have been associated with Anglo, Navajo, or Ute farm or ranch hands.
4. OLDEST DATE: 1942 RECENT DATE:
 

HOW DETERMINED: Present are two sanitary-seal tin cans and a rifle cartridge. The rifle cartridge is a 2 1/8-inch long, British .303 cartridge with a rebated rim. It has a VPT 42 headstamp, dating its creation in 1942. The cartridge probably came to the United States soon after the cessation of World War II.
5. SITE DIMENSIONS: [6] m x [14] m Area: [84] Sq. m
6. SURFACE COLLECTION/METHOD: None (A)
- SAMPLING METHOD:
7. ESTIMATED DEPTH OF CULTURAL FILL: Fill noted, by exact depth unknown (E)
 

HOW ESTIMATED (If tested, show location on map):
8. EXCAVATION STATUS:
 

<input type="checkbox"/>	EXCAVATED
<input type="checkbox"/>	TESTED
<input checked="" type="checkbox"/>	UNEXCAVATED

TESTING METHOD:
9. SUMMARY OF ARTIFACTS AND DEBRIS: Ammunition with marks (AW), Sanitary cans (TC)
 

DESCRIBE: This site simply consists of several artifacts and a feature, an historic hearth or campfire feature (Feature 1). The artifact assemblage includes fragments of sanitary-seal tin cans and a rifle cartridge.
10. CERAMIC ARTIFACTS:
 

	1	2	3	4	5	6	7
#							
PASTE							
GLAZE/SLIP							
DECORATION							
PATTERN							
VESSEL FORM(s)							

ESTIMATED NUMBER OF CERAMIC TRADEMARKS: [ ]

DESCRIBE:
11. GLASS:
 

	1	2	3	4	5	6	7
#							
MANUFACTURE							
COLOR							
FUNCTION							
TRADEMARK							
DECORATION							

DESCRIBE:
12. MAXIMUM DENSITY #/SQ. M (glass and ceramics):

13. TIN CANS:

1 2 3 4 5 6 7 8

TYPE  
OPENING  
SIZE  
MODIFIED  
LABEL/MARK  
FUNCTION

DESCRIBE: Two sanitary-seal cans were noted on the site, but more specific data were not recorded.

14. LANDSCAPE AND CONSTRUCTED FEATURES (locate on site map):

DESCRIBE:

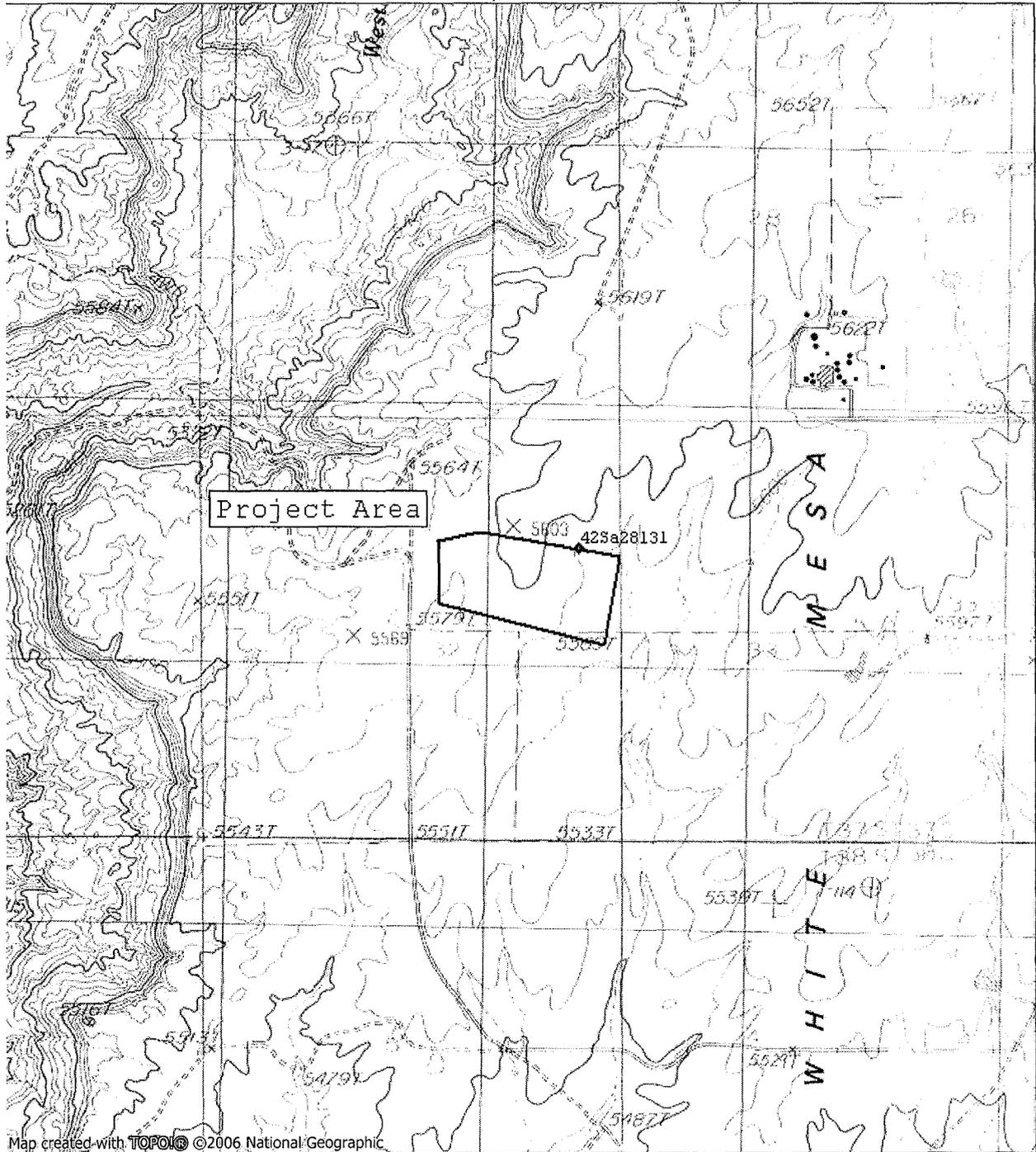
15. BUILDING AND STRUCTURES (locate on site map):

# MATERIAL TYPE

DESCRIBE:

16. COMMENTS/CONTINUATIONS:

Location for 42Sa28131, Black Mesa Butte, Utah, 7.5'

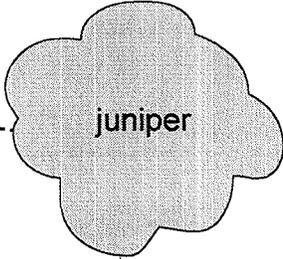
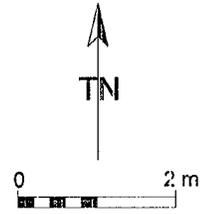


Map created with TOPO!© ©2006 National Geographic

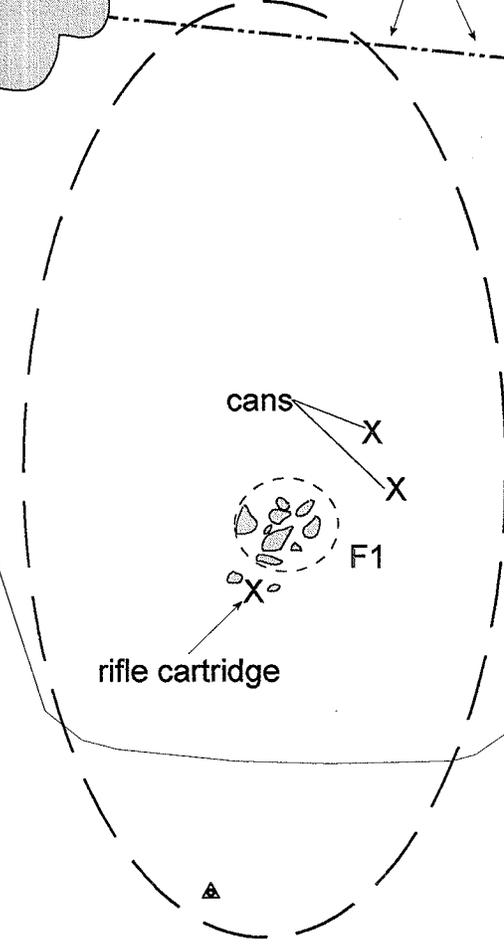


TN MN  
11½'  
07/06/09

42Sa28131



barbed-wire fence



site boundary

cans



rifle cartridge



KEY

- ▲ datum
- S sherd
- F flake
- T# tool
- F# feature
-  rock

M. Bond, 10/25/08



42Sa28131, overview, facing SW; site is on other side of fenceline; juniper tree on right; lathe stands over site datum

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28132
2. AGENCY NO:
3. TEMP NO.: Site 10
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: artifact and rock scatter
10. ELEVATION: 5587 ft.
11. UTM GRID: Zone 12, 631113 m East, 4154386 m North
12. [SW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: Site 42Sa28132 simply consists of a small artifact and rock scatter. The artifacts include a few pieces of lithic debitage and several plain gray jar body sherds. The rock consists of a few pieces of fire-cracked rock. The site is situated on the slope of a finger-ridge, the crest of which is just to the west. The artifact scatter is primarily concentrated in an area that measures approximately 15 m in diameter. The site may well be associated with the early (Basketmaker III?) component on nearby Site 42Sa6397, which lies just to the north on the crest of the finger-ridge.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): Rodent disturbance (RO) and natural erosional processes (ER) appear to have been the most immediate disturbances to the site. Historic agricultural practices and land improvement techniques may have also damaged the site, though these aren't immediately apparent.
23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28132 is a possible Basketmaker III period site that may be associated with nearby 42Sa6397. The artifact assemblage is ambiguous with regard to function, though the small size of the assemblage suggests that only few activities took place in this locus. However, one or more subsurface features may be present. Such subsurface deposits may yield data pertinent to research domains such as chronology,

subsistence, and settlement. Thus, 42Sa28132 is considered eligible for nomination to the NRHP under criterion (d).

- 24. **PHOTOS:** See attached
- 25. **RECORDED BY:** Mark Bond
- 26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
- 27. **ASSISTING CREW MEMBERS:** Jonathan Till
- 28. **SURVEY DATE:** 10/24/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

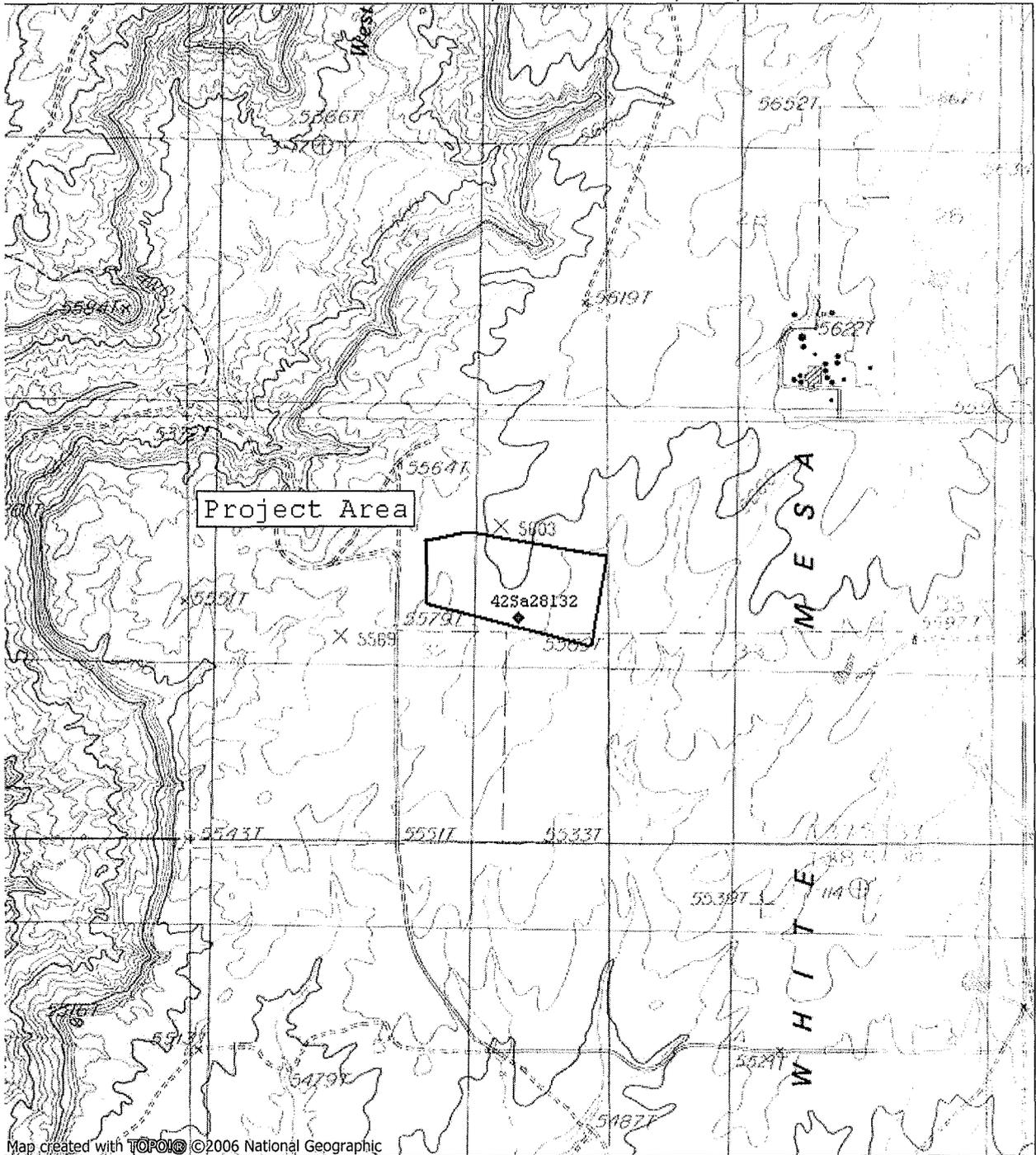
PART A - ENVIRONMENTAL DATA

29. SLOPE: [5] DEGREES ASPECT: [135] DEGREES
30. DISTANCE TO PERMANENT WATER: [26] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is located on the slope of a finger-ridge, the crest of which is immediately west of the cluster of artifacts defining the site.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: The sediments on the site's surface consist of the fine-grained, red aeolian loess that characterizes this portion of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Grassland (M)  
SECONDARY ON-SITE: Big sagebrush (P)  
SURROUNDING SITE: Big sagebrush(P)  
DESCRIBE: On-site vegetation includes sagebrush, snakeweed, cheatgrass, and mustard. There are several barren patches in the vicinity as well. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

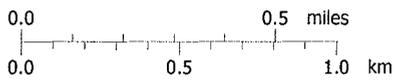
1. SITE TYPE: Artifact and rock scatter
2. CULTURE - CULTURAL AFFILIATION: Ancestral Pueblo, Basketmaker III (B5)  
DATING METHOD: Ceramic cross-dating (M)  
DESCRIBE: The pottery assemblage of the site simply consists of 10 pottery sherds, all of which are plain gray jar body sherds. Considering the exclusion of other pottery types, this small assemblage very tentatively suggests a Basketmaker III occupation of the site.
3. SITE DIMENSIONS: [15] m by [15] m  
AREA: [177] sq m
4. SURFACE COLLECTION/METHOD: None (A)
5. ESTIMATED DEPTH OF CULTURAL FILL: Depth suspected, but not tested (F)  
HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):
6. EXCAVATION STATUS: [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
TESTING METHOD:
7. SUMMARY OF ARTIFACTS AND DEBRIS: Ceramic scatter (CS), lithic scatter (LS)  
DESCRIBE: The site simply consists of a scatter of artifacts, including pottery and lithic debitage, and a few pieces of burned rock.
8. LITHIC TOOLS:  
# TYPE  
DESCRIBE:
9. LITHIC DEBITAGE - ESTIMATED QUANTITY: 2 (B)  
MATERIAL TYPE: The two secondary flakes noted on the site are made from a white silicified sandstone (possibly from the Dakota Formation).  
FLAKING STAGES: (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[0] DECORTICATION [3] SECONDARY [0] TERTIARY  
[0] SHATTER [0] CORE
10. MAXIMUM DENSITY-#/SQ M (ALL LITHICS): 1/sq. meter
11. CERAMIC ARTIFACTS:  
# TYPE  
C Plain gray jar body (EY)  
DESCRIBE: A total of 10 sherds were documented on the site. All of these are plain gray jar body sherds.
12. MAXIMUM DENSITY-#/SQ M (CERAMICS): 2/sq. meter
13. NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):  
DESCRIBE:
14. ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):  
# MATERIAL TYPE  
DESCRIBE:
15. COMMENTS/CONTINUATIONS:

Location for 42Sa28132, Black Mesa Butte, Utah, 7.5'



Map created with TOPO! © 2006 National Geographic

 NATIONAL  
GEOGRAPHIC

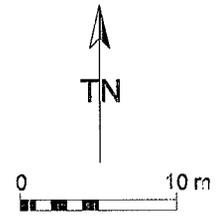


TN MN

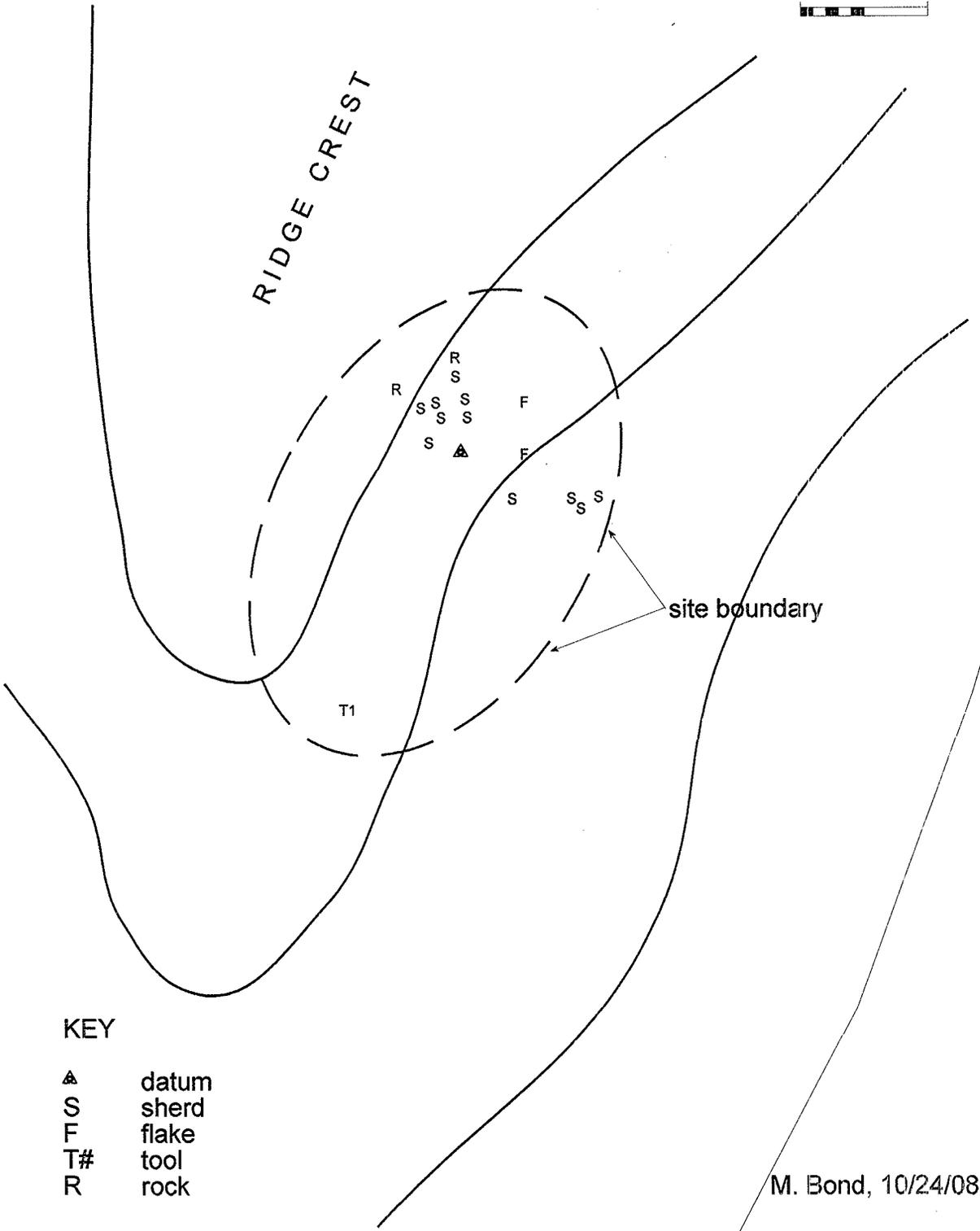
11½'

07/06/09

42Sa28132



RIDGE CREST



KEY

- ▲ datum
- S sherd
- F flake
- T# tool
- R rock

M. Bond, 10/24/08



Top: 42Sa28132, overview, facing south, cap over datum; truck in background is near project's south boundary

Bottom: 42Sa28132, overview, facing WNW, cap over datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28133
  2. AGENCY NO:
  3. TEMP NO.: Site 11
  4. STATE: Utah COUNTY: San Juan
  5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
  6. REPORT NO.: U-09-AS-0334p
  7. SITE NAME/PROPERTY NAME: N/A
  8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
  9. SITE TYPE: Artifact and rock scatter
  10. ELEVATION: 5585 ft.
  11. UTM GRID: Zone 12, 630855 m East, 4154516 m North
  12.  OF  SW  OF  NE  OF SECTION  [32], T.  [37S], R.  [38S]
  13. MERIDIAN: SLC (1)
  14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
  15. AERIAL PHOTO: N/A
  16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
  17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
  18. FEDERAL ADMIN. UNITS:
  19. LOCATION OF CURATED MATERIALS: N/A
  20. SITE DESCRIPTION: Site 42Sa28133 consists of a very small scatter of artifacts and several pieces of sandstone rock. Considering the setting, it seems likely that all of these items must be manuports. The artifacts consist of three stone tools (a ground stone fragment, a hammerstone fragment, and a possible lapstone). The several pieces of sandstone are small and tabular. These may be remnants of one or more broken artifacts or may be architectural. All items are confined to an area measuring 5 m in diameter.
  21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
  22. IMPACT AGENT(S): Old rodent burrows are apparent on the site (RO). Otherwise natural erosional processes (ER) probably constitute the greatest impacting agent to the site.
  23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)
- JUSTIFY: The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28133 is a small artifact assemblage of unknown aboriginal affiliation. While chronologically diagnostic artifacts are absent from the surface, food processing activities are indicated. Research domains that might be addressed with data from subsurface deposits in this site includes chronology, subsistence, and settlement. The site is therefore considered eligible for nomination to the NRHP under criterion (d).
24. PHOTOS: See attached

- 25. RECORDED BY: Mark Bond
- 26. SURVEY ORGANIZATION: Abajo Archaeology (AS)
- 27. ASSISTING CREW MEMBERS: Jonathan Till
- 28. SURVEY DATE: 10/25/08

LIST OF ATTACHMENTS:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [ ] DEGREES ASPECT: [ ] DEGREES
30. DISTANCE TO PERMANENT WATER: [24] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q), Bench (R)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is located on a small "bench" or flat step, on the slope of a finger-ridge, the crest of which lies east of the site.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist primarily of the red aeolian loess that characterizes this part of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Grassland (M)  
SECONDARY ON-SITE: Big sagebrush (P)  
SURROUNDING SITE: Juniper-sage (2)  
DESCRIBE: On-site vegetation includes snakeweed, bunch grasses, and prickly pear cactus. Sagebrush grows close by. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. SITE TYPE: Artifact and rock scatter
2. CULTURE - CULTURAL AFFILIATION: Unknown Aboriginal (ZZ)  
DATING METHOD: None (A)  
DESCRIBE: No diagnostic artifacts were observed in association with this site.
3. SITE DIMENSIONS: [5] m by [5] m  
AREA: [20] sq m
4. SURFACE COLLECTION/METHOD: None (A)
5. ESTIMATED DEPTH OF CULTURAL FILL: Depth suspected, but not tested (F)  
HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):
6. EXCAVATION STATUS: [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
TESTING METHOD:
7. SUMMARY OF ARTIFACTS AND DEBRIS: Ground/pecked stone (GS)  
DESCRIBE: The artifact assemblage consists of three tools (T1-T3), of which two are groundstone artifacts (T1 and T3) and one is a hammerstone fragment (T2).
8. LITHIC TOOLS:

#	TYPE
2	Metate fragment (MZ)
1	Hammerstone (IF)

DESCRIBE: Three tool fragments were documented on the site. Two of these are groundstone tools (T1 and T3) and the third is a hammerstone fragment (T2).

T1 is a metate fragment made from white silicified sandstone. This item has a single ground facet. The artifact measures 9.5 x 13.0 x 2.3 cm.

T2 is a hammerstone fragment made from an alluvial cobble of silicified gray mudstone. Battering marks occur on one margin of the artifact. The remaining tool measures 5.5 x 5.5 x 4.5 cm.

T3 is a complete groundstone implement that may have functioned as a type of netherstone. The artifact is made from a brown sandstone. It has a single, lightly ground and pecked facet. The item measures 29 x 18 x 5 cm. The bottom of the artifact is gray, as if it was discolored by fire.
9. LITHIC DEBITAGE - ESTIMATED QUANTITY:  
MATERIAL TYPE:  
FLAKING STAGES: (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[ ] DECORTICATION [ ] SECONDARY [ ] TERTIARY  
[ ] SHATTER [ ] CORE
10. MAXIMUM DENSITY-#/SQ M (ALL LITHICS):
11. CERAMIC ARTIFACTS:

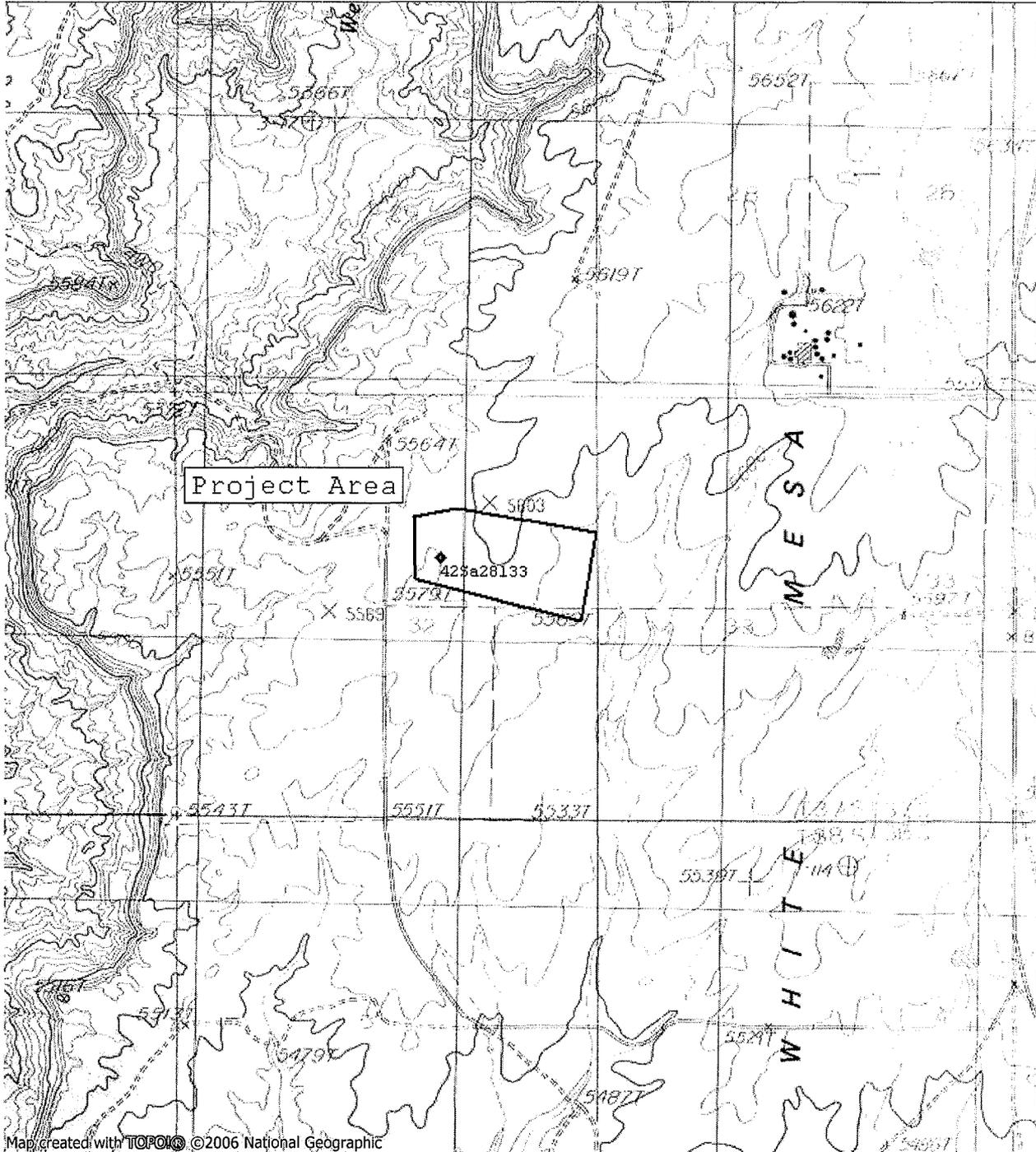
#	TYPE
---	------

DESCRIBE:
12. MAXIMUM DENSITY-#/SQ M (CERAMICS):
13. NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):  
DESCRIBE:
14. ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):

#	MATERIAL	TYPE
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DESCRIBE:
15. COMMENTS/CONTINUATIONS:

Location for 42Sa28133, Black Mesa Butte, Utah, 7.5'

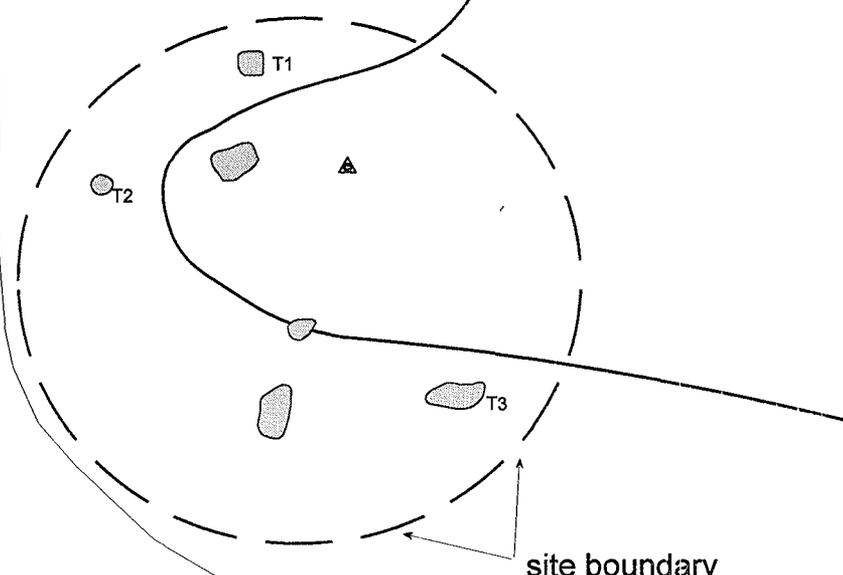
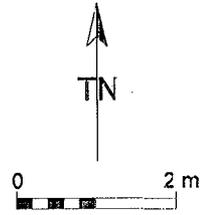


Map created with TOPO! © 2006 National Geographic



TN MN  
11 1/2'  
07/06/09

42Sa28133



KEY

- ▲ datum
- T# tool
-  sandstone rock

M. Bond, 10/25/08



Top: 42Sa28133, overview, facing north, cap over datum; sediment push piles and Abajo Mountains in background

Bottom: 42Sa28133, overview, facing NW, cap over datum; powerline poles mark west edge of Cell 4B project area; Bears Ears and Elk Ridge in far background



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa28134
2. AGENCY NO:
3. TEMP NO.: Site 12
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Lithic artifact scatter
10. ELEVATION: 5571 ft.
11. UTM GRID: Zone 12, 631284 m East, 4154318 m North
12. [NE] OF [NE] OF [SE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: Site 42Sa28134 consists of a small scatter of lithic artifacts. The artifacts include several pieces of lithic debitage and two ground stone tools. The site occupies a space measuring about 10 m in diameter and is located on the crest of a small finger-ridge. No diagnostic artifacts are present that might indicate the site's age.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): Rodent burrows pose the most immediate impact to the site (RO). Other impacts may include historic agricultural clearing and other associated activities (AG, GR). The construction of the old fenceline to the immediate north of the site (ca. 15 m) and its associated two-track road may have also affected the appearance of the site (OT).
23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)  

JUSTIFY: The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa28134 is a small artifact assemblage of unknown aboriginal affiliation. While chronologically diagnostic artifacts are absent from the surface, food processing activities are indicated on both. Research domains that might be addressed with data from subsurface deposits in this site includes chronology, subsistence, and settlement. The site is therefore considered eligible for nomination to the NRHP under criterion (d).
24. PHOTOS: See attached
25. RECORDED BY: Mark Bond

26. SURVEY ORGANIZATION: Abajo Archaeology (AS)

27. ASSISTING CREW MEMBERS: Jonathan Till

28. SURVEY DATE: 10/24/08

LIST OF ATTACHMENTS:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [98] DEGREES ASPECT: [ ] DEGREES
30. DISTANCE TO PERMANENT WATER: [28] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Plain (O)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, this small site is situated on the crest of a small finger-ridge that rises just slightly above the grassy flats of White Mesa.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist of the reddish aeolian loess that characterizes this portion of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Grassland (M)  
SECONDARY ON-SITE: Barren (R)  
SURROUNDING SITE: Big sagebrush (Q)  
DESCRIBE: Current on-site vegetation consists of bunch grasses, snakeweed, and prickly pear cactus. Doubtless this represents a departure from the site's original vegetation, particularly if this location had been cleared for farming and/or grazing in the historic past. To the west, near the edge of the mesa overlooking Cottonwood Wash, vegetation expected of the sage to juniper ecotone is present.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

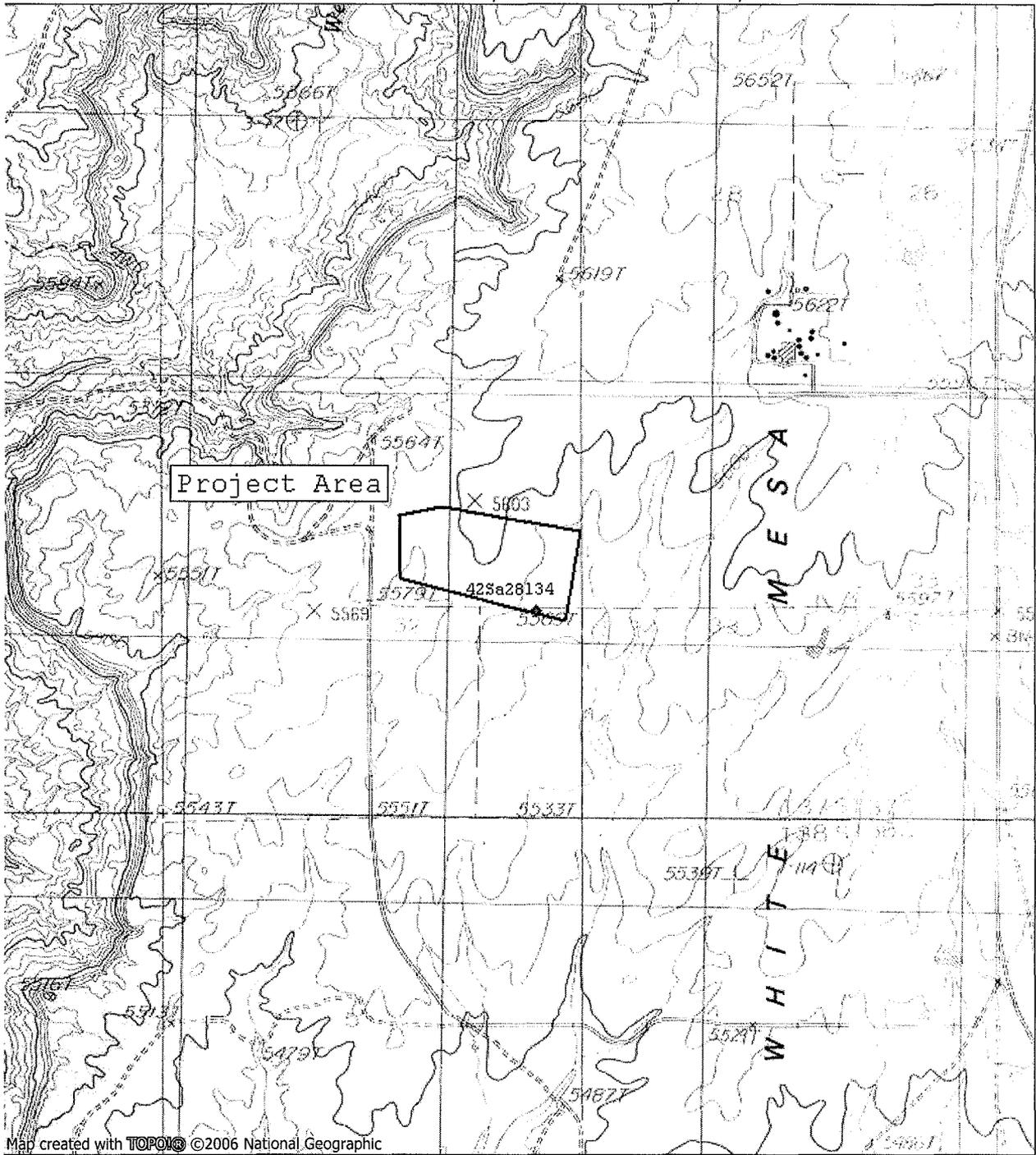
PART B - PREHISTORIC SITES

1. SITE TYPE: Lithic artifact scatter
2. CULTURE - CULTURAL AFFILIATION: Unknown Aboriginal (ZZ)  
DATING METHOD: None (A)  
DESCRIBE: No diagnostic artifacts were observed on the site.
3. SITE DIMENSIONS: [10] m by [10] m  
AREA: [79] sq m
4. SURFACE COLLECTION/METHOD: None (A)
5. ESTIMATED DEPTH OF CULTURAL FILL: Depth suspected, but not tested (F)  
HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):
6. EXCAVATION STATUS: [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
TESTING METHOD:
7. SUMMARY OF ARTIFACTS AND DEBRIS: Lithic scatter (LS) and ground and pecked stone artifacts (GS)  
DESCRIBE: The site simply consists of a small scatter of lithic debitage and a few groundstone artifacts.
8. LITHIC TOOLS:  
# TYPE  
2 Metate fragment (MZ)  
DESCRIBE: Two tools (T1 and T2) were documented on the site. Both items are groundstone artifacts.  

T1 is a metate fragment. It is made from a dark brown, fine-grained sandstone. The artifact consists of two pieces. These articulate and demonstrate that both faces are lightly ground. Together the fragments measure 13.0 x 9.5 x 4.0 cm.

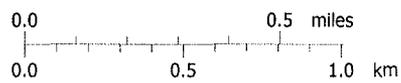
T2 is a large piece of white silicified sandstone with a single slightly concave facet. The object measures 12.0 x 8.5 x 7.0 cm.
9. LITHIC DEBITAGE - ESTIMATED QUANTITY: 4 (B)  
MATERIAL TYPE: Two material types were observed in this small debitage assemblage: a white silicified sandstone (probably from the Dakota Formation), and Brushy Basin chert.  
FLAKING STAGES: (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[2] DECORTICATION [2] SECONDARY [0] TERTIARY  
[0] SHATTER [0] CORE
10. MAXIMUM DENSITY-#/SQ M (ALL LITHICS): 1/sq. meters
11. CERAMIC ARTIFACTS:  
# TYPE  
DESCRIBE:
12. MAXIMUM DENSITY-#/SQ M (CERAMICS):
13. NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):  
DESCRIBE:
14. ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):  
# MATERIAL TYPE  
DESCRIBE:
15. COMMENTS/CONTINUATIONS:

Location for 42Sa28134, Black Mesa Butte, Utah, 7.5'



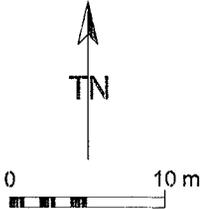
Map created with TOPOLIC ©2006 National Geographic

**NATIONAL  
GEOGRAPHIC**

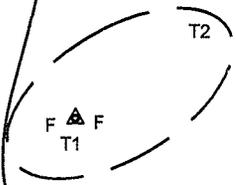


TN MN  
11 1/2  
07/06/09

42Sa28134



2-track road (associated with fenceline)



KEY

- ▲ datum
- F flake
- T# tool

M. Bond, 10/24/08



Top: 42Sa28134, overview, facing SW, lathe stands over datum

Bottom: 42Sa28134, overview, facing south, lathe stands over datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6391
2. AGENCY NO:
3. TEMP NO.: Site 4 (Abajo Archaeology, 2009)
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Habitation
10. ELEVATION: 5600 ft.
11. UTM GRID: Zone 12, 630940 m East, 4154617 m North
12. [NE] OF [SW] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: Thompson (1977) collected items from the site when it was first recorded. These were curated at Southern Utah State College (SUSC). It was not reported where the Division of State History curated its materials during James Dykman's testing activities in 1978 (Lindsay 1978). These materials are assumed to have been curated at the Utah Museum of Natural History (UMH).
20. SITE DESCRIPTION: The site was initially documented by Thompson (1977:21) as a "very thin scatter of sherds, flakes, and ground stone fragments near the top of a very low ridge." Thompson noted that the site covered an area about 40 m in diameter. No collections were procured from the site at that time. Based on the pottery sherds observed, Thompson recommended that the site dated to A.D. 900 or later. Thompson (1977:14) indicated that the site would require mitigation.

Soon after Thompson's initial documentation of the site, the site was the subject of two testing programs performed by the Antiquities Section of the Utah Division of State History (Lindsay 1978; Nielson 1979). Refer to Part B, #6 for more details of the testing. The salient point here is that two loci were tested, each locus separated by more than 100 meters. Considering the great distance between these two cultural loci, it is now apparent that the eastern locus (with Trenches B and C) is the site that Thompson had recorded as 42Sa6393. For this reason, the materials and data from Trenches B and C will be discussed below with 42Sa6393. The salient point here is that at least two pit structures and one cist have been documented as subsurface features on 42Sa6391 proper.

The current survey project places the 42Sa6391 slightly east of its previously given location (ca. 40 meters). As it appears now, 42Sa6391 consists of a scatter of lithic and pottery artifacts. Sandstone rock on the surface may be the remains of architecture, though there does not appear to be any patterning to its occurrence on the surface. The scatter is contained within an area that measures about 40 m north/south by 30 m east/west, and occupies the crest of a low, sandy finger-ridge. A 3/4-in. steel pipe, representing an earlier site datum, indicates that the site had been previously documented. The faint traces of at least one, and perhaps two, of the previously excavated test trenches just east of the site datum are just barely discernable. These trenches appear to have been backfilled.

The artifact scatter comprises pottery, lithic debitage, one chipped stone tool (a biface), and pecked and ground stone tools. As noted earlier, there is a scatter of sandstone rock on the site, suggesting the presence of subsurface architecture.

21. **SITE CONDITION:**     EXCELLENT (A)     GOOD (B)  
                                   FAIR (C)                     POOR (D)
22. **IMPACT AGENT(S):** Recent archaeological investigations, taking place in the late 1970s/early 1980s, may have posed the most extensive effects to the site (RE). A collector pile indicates historic visits and collections on the site (VA). Rodent disturbance is also evident on modern ground surface (RO). Impacting agents on the site may also include historic farming (AG) and grazing (GR), and possibly chaining (CL).
23. **NAT. REGISTER STATUS:**     SIGNIFICANT (C)  
     NONSIGNIFICANT (D)  
     UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa6391 was tested by Dykman (1978a) and Nielson (1979); two pit structures and one cist were located in these limited excavations. The pottery assemblage on the site suggests that the site was occupied during the middle Pueblo II period. The diversity of artifact types suggests that a variety of activities occurred on the site. These materials, and the subsurface features, suggest that data recovered from the site may have been a locus of habitation for one or more ancestral Pueblo family groups. Data recovered from the site might address a number of research domains including, but not limited to, chronology, settlement, subsistence, and social structure. Thus, site 42Sa6391 is eligible under criterion (d).

24. **PHOTOS:** Exposures 237 and 238
25. **RECORDED BY:** Mark Bond
26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
27. **ASSISTING CREW MEMBERS:** Jonathan Till
28. **SURVEY DATE:** 10/22/08

- LIST OF ATTACHMENTS:**
- |   |  |
|---|--|
| <input checked="" type="checkbox"/> PART B                  | <input checked="" type="checkbox"/> TOPO MAP |
| <input checked="" type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH             | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                             | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                             |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [98] DEGREES ASPECT: [ ] DEGREES  
30. DISTANCE TO PERMANENT WATER: [25] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More specifically, the site is located on the crest of a small finger-ridge. The main ridge lies just to the east.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: The surface of the site is composed of the fine, red aeolian loess that dominates the sediments in the immediate area. Rodent burrows are notable for the white, calcium carbonate-rich chunks of earth. If the burrows are shallow, this suggests a high B-horizon. If the burrows are deep, then rodents are unearthing deep subsoils.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Big sagebrush (P)  
SECONDARY ON-SITE: Grassland (M)  
SURROUNDING SITE: Juniper-sage (2)  
DESCRIBE: Current on-site vegetation consists of little sagebrush, bunch grasses, snakeweed, and prickly pear cactus. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. **SITE TYPE:** Habitation
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Pueblo II period (P3)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** The pottery assemblage suggests an association with the early to middle Pueblo II period. This tentative assessment is based on the presence of corrugated body sherds, narrow neckbanded sherds (probably late Mancos Neckbanded), Mancos Black-on-white sherds (with Dogoszhi and Black Mesa design styles), and a red ware sherd. Alternatively, there might be both a Pueblo I component and a Pueblo II component on the site.
3. **SITE DIMENSIONS:** [40] m by [30] m  
**AREA:** [1200] sq m
4. **SURFACE COLLECTION/METHOD:** None (A)
5. **ESTIMATED DEPTH OF CULTURAL FILL:** Depth suspected, but not tested (F)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):**
6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [X] TESTED (B)  
[ ] UNEXCAVATED (C)

**TESTING METHOD:** The site was first tested under the supervision of James Dykman (1978a) in April of 1978. Dykman (1978a:71) notes that the site's surface manifestations consisted of a "large, 10 m by 6 m artifact concentration. This concentration included ceramics, chipped stone, and ground stone that has a density of up to 20 artifacts per square meter." Dykman (1978a:71) indicates that two test trenches were excavated at that time: one trench, Trench A, was excavated close to the site datum; the second trench, Trench B, was excavated 100 m east of the site's datum to "bisect a small concentration of cultural material." While the testing report provided a map showing Trench A in relation to the site datum, Trench B was not. Trench A located two features (Dykman 1978a:73). The first of these is an apparent pit structure of unknown size and depth. The second feature consisted of a small cist, lined with sandstone slabs, that contained a partial Mancos Corrugated jar (Dykman 1978a: Figures 22 and 23) and an unfinished stone adze.

Several months later the site was again tested, this time under the supervision of Asa Nielson (1979). Nielson notes that the previously excavated Trench B was "about 125 m" east of the site's datum. Nielson emplaced two additional trenches on the site. Trench C was located 132 m east of the datum, apparently parallel to Trench B. Like Dykman, Nielson did not provide a map illustrating the far-flung trench's relationship to the site's datum. Trench D, like Trench A, was placed much closer to the site's datum. Trench C located a pit structure in the site's eastern locus. Trench D also located a pit structure.

7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and ground stone and pecked stone artifacts (GS). Also present is a scatter of fragmented sandstone.  
**DESCRIBE:** The artifact scatter comprises pottery, lithic debitage, one chipped stone tool (a biface), and pecked and ground stone tools. Additionally, there is a scatter of sandstone rock on the site, suggesting the presence of subsurface architecture. The pottery assemblage includes corrugated and neckbanded jar body sherds, white ware bowl and jar body sherds, and one red ware sherd of unknown form.
8. **LITHIC TOOLS:**

#	TYPE
1	Biface (IG)
4	Metate fragment (MZ)
3	Hammerstone (IF)

**DESCRIBE:** A total of eight tools (T1-T8) were located and described for the site. The tools included four undifferentiated metate fragments, one

biface, and 3 hammerstones. Tools T4-T8 are located in the collector pile about 20 m east of the site datum.

T1 is a metate fragment made from a dense white and brown sandstone. One facet is ground and exhibits peck marks. The object measures 11.5 x 5.8 x 4.3 cm.

T2 is another metate fragment made from a white, silicified sandstone. One facet is ground-this facet is slightly concave and exhibits pecking. The item measures 6.5 x 7.2 x 6.5 cm.

The biface, T3, is a Stage 4 biface made from a mottled, light and dark gray opaque chert. The item appears to have broken during manufacture as the distal end of the artifact exhibits a transverse fracture. The tool measures 3.4 x 2.3 x 0.6 cm (the last measurement, thickness, is the only complete measure of the artifact). See the attached figure for more detail.

T4 is a hammerstone made from a disk-shaped white quartzite alluvial cobble. The artifact measures 7.5 x 7.0 x 2.8 cm.

T5 is a peckingstone made from a subrectangular nodule of Brushy Basin chert. The artifact measures 7.3 x 6.5 x 6.0 cm.

T6 is a small, well-used, disk-shaped hammerstone made from a light gray chert. The artifact measures 6.0 x 4.8 x 2.5 cm.

T7 is a fire-reddened metate fragment made from a white, silicified sandstone. A one face is slightly concave and bears peck marks. The artifact measures 13.5 x 10.0 x 4.5 cm.

T8 is a metate fragment made from a dark brown sandstone. The item measures 10.1 x 9.8 x 1.7 cm.

9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 92 (D)

**MATERIAL TYPE:** Nine material types were observed in the debitage assemblage; most of these materials probably derive from the Morrison and Dakota Formations. These artifacts include: a translucent gray and white chert (most abundant); a translucent, mottled, gray and white chert; an opaque white chert; an opaque light gray chert; Brushy Basin chert; a gray, white, and olive silicified sandstone; a green silicified mudstone; a dark green and brown mudstone; and a chalcedony.

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[0] DECORTICATION [2] SECONDARY [2] TERTIARY  
[2] SHATTER [0] CORE

10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):**

11. **CERAMIC ARTIFACTS:**

#	TYPE
C	Corrugated body sherds (EI)
B	Mancos B/w (EP)
C	Mesa Verde White Ware (EC)
B	Neckbanded, NFS (ZZ)
B	Mancos Gray (EG)
B	San Juan Red Ware (EB)

**DESCRIBE:** A total of 51 sherds were documented on the surface of the site; 12 of these sherds were found in the collector pile on the site. Corrugated jar body sherds are the most abundant pottery sherd types (n=23). The rest of the assemblage includes 3 Mancos B/w sherds (1 jar, 1 bowl, 1 form unknown), 14 Late White Unpainted sherds (3 bowl body, 3 jar body, and 8 form unknown), 1 Late White Painted bowl sherd, 4

undifferentiated neckbanded jar sherds, 4 Mancos Gray jar sherds, and 2 San Juan Red Ware sherds (form unknown).

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** 3/square meter

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**  
**DESCRIBE:**

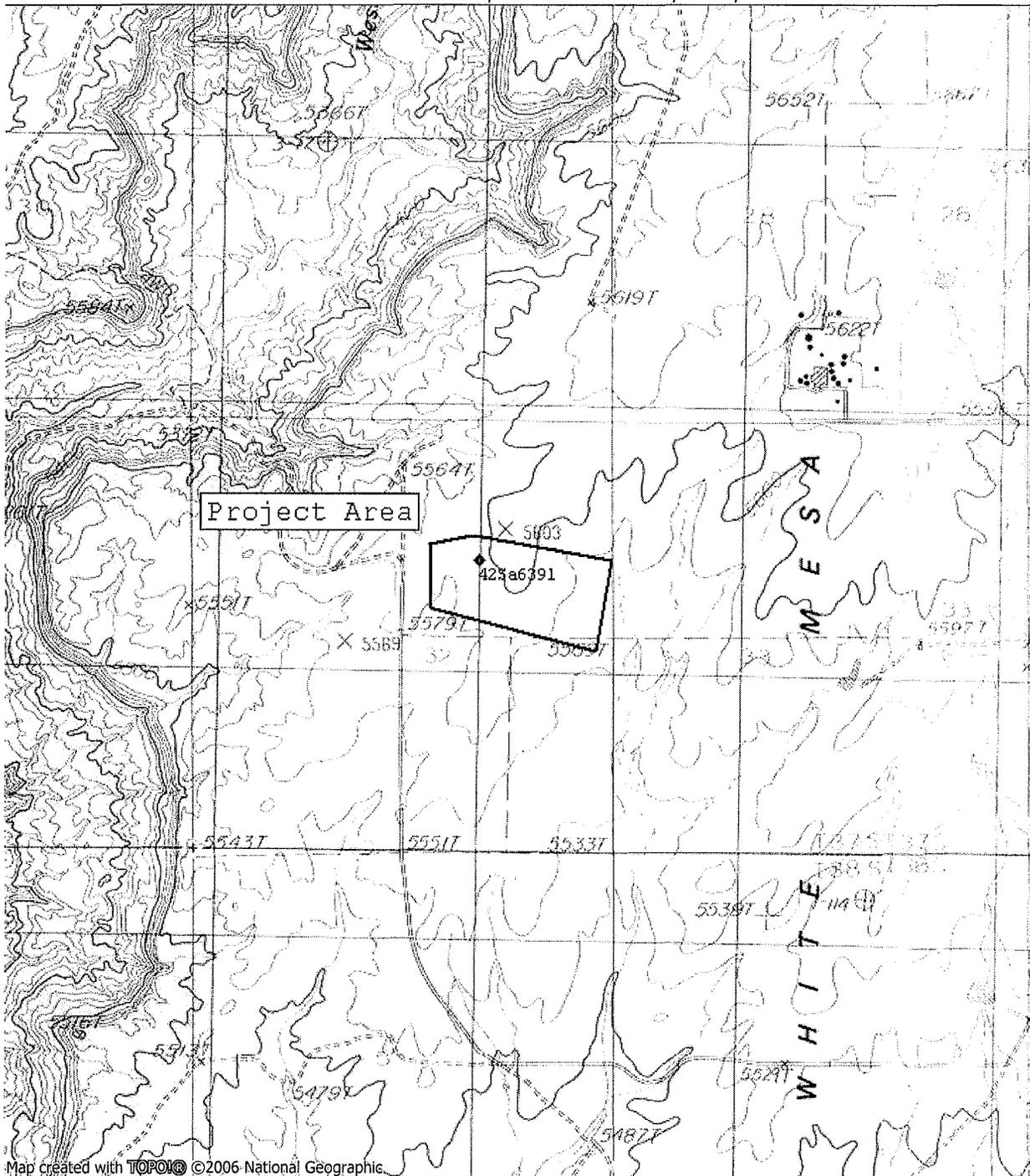
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
2	Earthen/Subterranean (I)	Pithouse (AF)
1	Masonry (B)	Cist (AE)

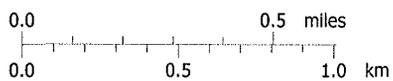
**DESCRIBE:** Dykman (1978:73) located two features in Trench A (Dykman 1978:73). The first of these is an apparent pit structure of unknown size and depth. It seems likely that this feature represents a pithouse. The second feature consisted of a small cist, lined with sandstone slabs, that contained a partial Mancos Corrugated jar (Dykman 1978: Figures 22 and 23) and an unfinished stone adze. Trench D, excavated several months later by Nielson (1979:24), revealed the location of a second pithouse. Nielson suggests that the structure is a north-to-south oriented structure with a bench. It seems likely that this feature is a pithouse.

15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa6391, Black Mesa Butte, Utah, 7.5'



Map created with TOPO! © 2006 National Geographic



TN MN  
11 1/2  
07/06/09

42Sa6391



0 10 m

LOW RIDGE TOP

possible old trench location

site boundary



T3

T2

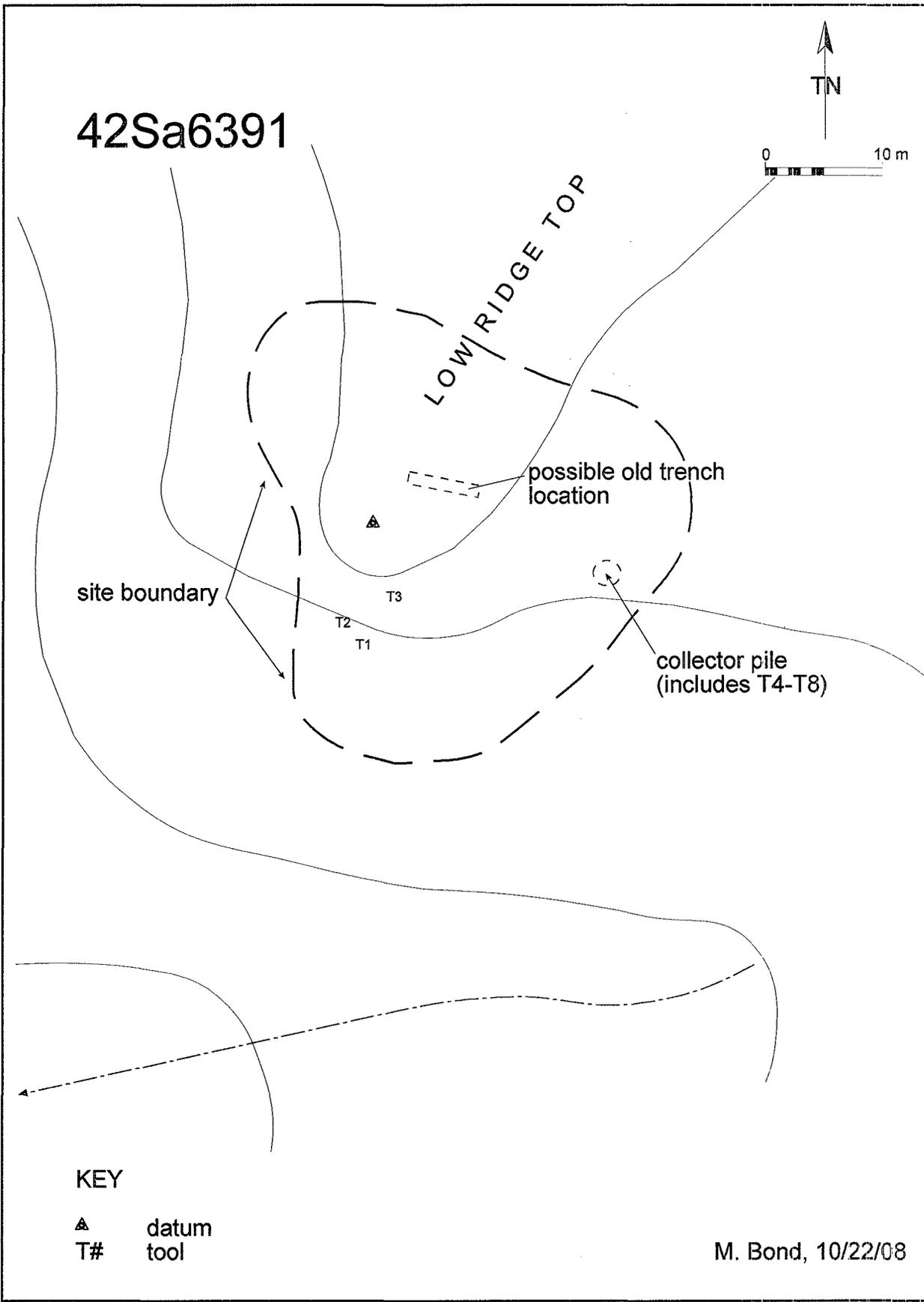
T1

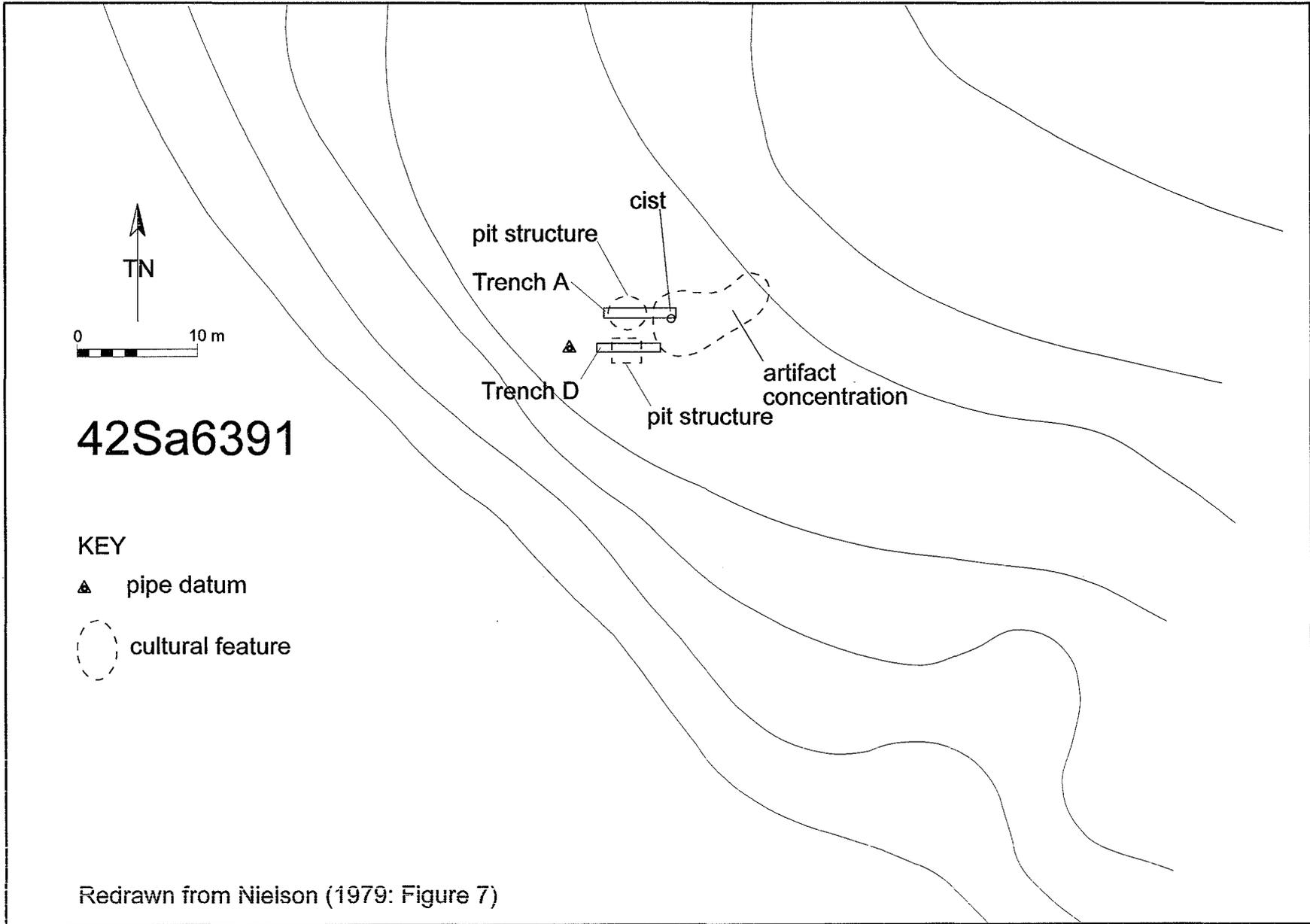
collector pile  
(includes T4-T8)

KEY

▲ datum  
T# tool

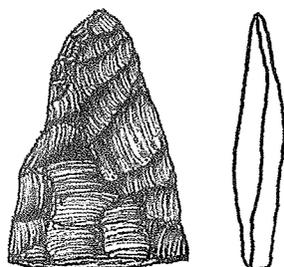
M. Bond, 10/22/08





Site 42Sa6391

Tool # 3



---

Actual Size



Top: 42Sa6391, stake at datum, orange jug and yellow folder marking west ends of old trenches, facing west; powerline pole on right marks west edge of project area

Bottom: 42Sa6391, stake at datum, orange jug and yellow folder marking locations of old trenches





Top: 42Sa6391, overview, facing SW, cap over datum

Bottom: 42Sa6391, overview, facing SW, close-up of cap over datum



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6392
2. AGENCY NO:
3. TEMP NO.: Site 3
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Seasonal habitation
10. ELEVATION: 5587 ft.
11. UTM GRID: Zone 12, 630859 m East, 4151457 m North
12. [SE] OF [SW] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)-White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: N/A
20. SITE DESCRIPTION: This site was first documented by Thompson (1977) and subsequently confused with a site located just to the south, 42Sa6431, during test excavations conducted by the Antiquities Section (Nielson 1979:30-46). Thompson (1977:21) described the site as being "40 meters in diameter and is found in a very narrow, natural crescentic depression with an opening drainage falling at 3 degrees to the W." As noted earlier, this does not fit the description of the site tested later by Nielson as 42Sa6392. That site, as Nielson (1979:30) notes, is found on a "small, south-west oriented ridge." It is important that future researchers examining collections made from 42Sa6392 during test excavations by the Antiquities Section in the late 1970s and early 1980s are not from 42Sa6392, but rather 42Sa6431. Thompson, apparently, did not collect anything from 42Sa6392 during its initial documentation.

At the time of its initial documentation, the site manifested itself as a "thin scatter of...flakes, ground stone fragments, and a few sherds either painted or corrugated..." (Thompson 1977:21). Thompson proffers that the site dates to after A.D. 900, and suggests that the site would require further mitigation.

Our documentation of 42Sa6392 places the site about 100 m west and slightly north of its previously recorded location. The site currently manifests as a scatter of lithic and pottery artifacts and includes a small concentration of jacal. The site occupies an area measuring approximately 40 m in diameter, although the centrally located cluster of jacal materials is smaller, covering an area that measures about 5 m in

diameter. The site is perched on a slight west-facing slope below the crest of a finger-ridge. On the ground, Thompson's observation that the site is in a "natural crescentic depression" is suggested by a very slight depression in the middle of the site area that may be more impressionistic than real. Lithic artifacts include debitage and flaked and ground stone tools. Pottery items include white ware bowl sherds, and neckbanded and corrugated cooking jar sherds. The pottery may indicate a primary use of the site during the years that span the early to middle Pueblo II periods.

21. **SITE CONDITION:**     EXCELLENT (A)     GOOD (B)  
    FAIR (C)                     POOR (D)
22. **IMPACT AGENT(S):** Rodents probably posed the greatest recent impact to the site (RO). Other impacting agents on the site may include historic farming (AG) and grazing (GR), and possibly chaining (CL).
23. **NAT. REGISTER STATUS:**     SIGNIFICANT (C)  
    NONSIGNIFICANT (D)  
    UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Pottery assemblage data suggest that Site 42Sa6392 dates to the early to middle Pueblo II period. The artifact assemblage, and the possible remains of a jacal structure, suggest that the site may have functioned as a seasonal habitation. Data recovery efforts at the site may provide information pertinent to research domains such as chronology, subsistence, and settlement. Thus, the site is eligible for nomination to the NRHP under criterion (d).

24. **PHOTOS:** See attached
25. **RECORDED BY:** Mark Bond
26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
27. **ASSISTING CREW MEMBERS:** Jonathan Till
28. **SURVEY DATE:** 10/22/08

**LIST OF ATTACHMENTS:**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> PART B                  | <input checked="" type="checkbox"/> TOPO MAP |
| <input checked="" type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH             | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                             | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                             |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [270] DEGREES ASPECT: [10] DEGREES  
30. DISTANCE TO PERMANENT WATER: [24] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is located on the west-facing slope of a low finger-ridge found on the in-land portion of the larger mesa.  
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: Sediments appear to consist of the deep, fine-grained, reddish brown aeolian sediments forming much of this portion of White Mesa's surface.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Big sagebrush (P)  
SECONDARY ON-SITE: Barren (R)  
SURROUNDING SITE: Juniper-sage (2)  
DESCRIBE: On-site vegetation, which is sparse, currently consists of bunch grasses, immature sage, snakeweed, prickly pear cactus, and Russian thistle (tumbleweed). The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

**PART B - PREHISTORIC SITES**

1. **SITE TYPE:** Seasonal habitation
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Pueblo II period (P3)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** Although small, the pottery assemblage suggests an association with the early to middle Pueblo II period. This tentative assessment is based on the presence of corrugated body sherds, narrow neckbanded sherds (probably late Mancos Neckbanded), and one Bluff/Deadmans B/r sherd. Alternatively, there might be both a Pueblo I component and a Pueblo II component on the site.
3. **SITE DIMENSIONS:** [40] m by [40] m  
**AREA:** [1260] sq m
4. **SURFACE COLLECTION/METHOD:** None (A)
5. **ESTIMATED DEPTH OF CULTURAL FILL:** Depth suspected, but not tested (F)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):**
6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [ ] TESTED (B)  
[X] UNEXCAVATED (C)  
**TESTING METHOD:**
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and groundstone (GS). Also present is a concentration of jacal (JA).  
**DESCRIBE:** The artifact scatter consists of a scatter of pottery sherds, chipped stone artifacts, and a groundstone tool. In addition there is a concentration of jacal that measures about 5 min diameter. Several pieces of sandstone rock, measuring up to 10 cm in diameter, are associated with the jacal fragments. The pottery assemblage consists of 6 corrugated body sherds, 1 plain gray body sherd, 3 neckbanded gray sherds, 1 white ware bowl sherd, and one red ware bowl sherd. The chipped stone artifact scatter is more substantial and includes 62 pieces of debitage and one biface (T1). The groundstone artifact (T2) consists of an undifferentiated metate fragment. All artifacts are discussed further below.
8. **LITHIC TOOLS:**

#	TYPE
1	Biface (IG)
1	Metate fragment (MZ)

  
**DESCRIBE:** The chipped stone tool, T1, is a Stage 3 or Stage 4 biface made from a light gray translucent chert. The artifact may be a projectile point preform. See the attached figure for more detail. The groundstone artifact, T2, is a metate fragment that probably derived from the margin of the larger tool. The artifact was made from a brown sandstone. Only one facet was apparently ground, and only lightly so. T2 measures 13.5 x 6.5 x 4.0 cm.
9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 62 (D)  
**MATERIAL TYPE:** At least 11 material types are represented in the debitage assemblage, most of which are probably associated with Morrison and Dakota Formations. The materials are as follows: light gray, translucent chert (most abundant); opaque white chert; opaque, mottled white and gray chert; translucent white and gray chert; opaque, mottled gray and brown chert; fine-grained, black basalt; opaque, gray chert; olive and tan silicified siltstone; Brushy Basin chert; tan silicified sandstone; and an opaque tan chert.  
**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[0] DECORTICATION [2] SECONDARY [3] TERTIARY  
[1] SHATTER [0] CORE
10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):** 3/square meter

11. CERAMIC ARTIFACTS:

#	TYPE
B	Corrugated body sherds (E1)
B	Mancos Gray (narrow neckbanded)
B	Plain gray body sherd (EY)
B	Late White, Painted (EC)
B	Bluff/Deadmans B/r (EB)

**DESCRIBE:** A total of 12 sherds were documented on the site's surface. These include cooking jar sherds as well as bowl sherds. Included in the assemblage are 6 corrugated jar body sherds, 1 plain gray jar body sherd, 3 Mancos Gray jar sherds (including 1 jar rim), 1 Late White Painted bowl sherd, and 1 Bluff/Deadmans B/r bowl body sherd.

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** 2/square meter

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

**DESCRIBE:**

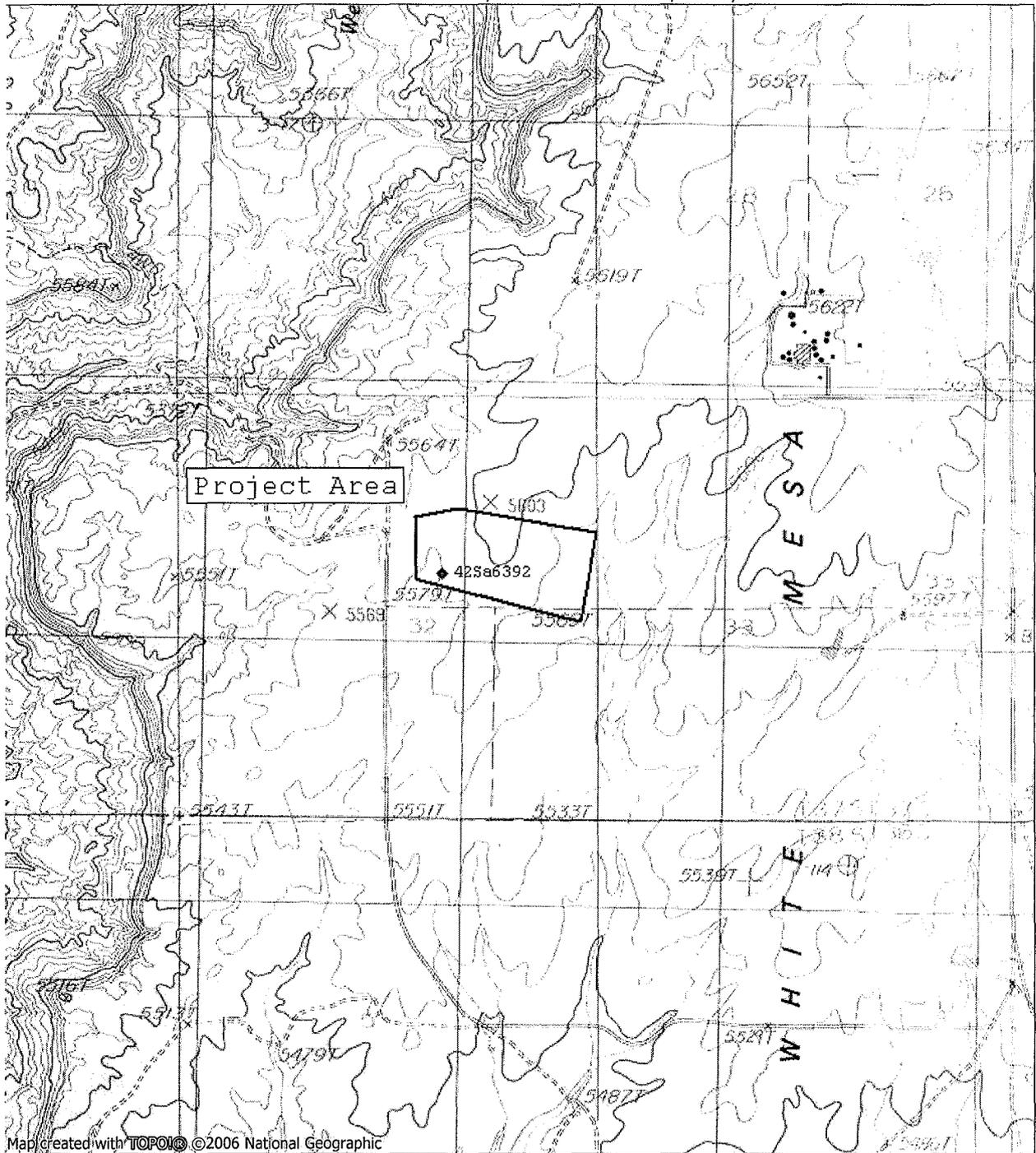
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
1	Jacal (D)	Unknown (ZZ)

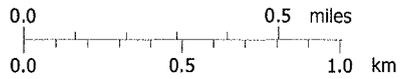
**DESCRIBE:** This feature (Feature 1) consists of a concentration of jacal and sandstone rubble. The concentration lies in the approximate center of the artifact scatter and measures about 5 m in diameter. The chunks of jacal measure 5 to 6 cm in diameter, while the sandstone rock measures about 10 cm in diameter. These materials are also associated with considerable rodent disturbance, suggesting that the jacal and rock could have been extracted from subsurface contexts by industrious rodents.

15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa6392, Black Mesa Butte, Utah, 7.5'

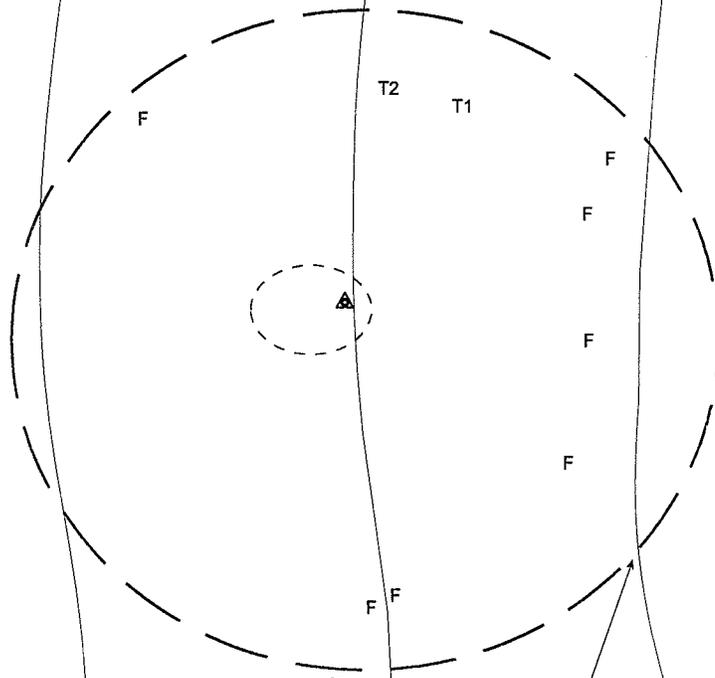
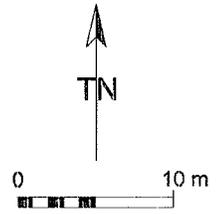


Map created with TOPO!® ©2006 National Geographic



TN MN  
11½  
07/06/09

42Sa6392



RIDGE TOP

site boundary

KEY

- ▲ datum
- S sherd
- F flake
- T# tool

M. Bond 10/22/08



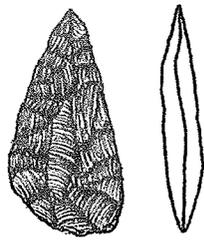
Top: 42Sa6392, overview, facing north, cap over datum

Bottom: 42Sa6392, overview, facing north, close-up of cap over datum



Site 42Sa6392

Tool # 1



Actual Size

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6393
2. AGENCY NO:
3. TEMP NO.: Site 5
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Habitation
10. ELEVATION: 5604 ft.
11. UTM GRID: Zone 12, 631078 m East, 4154612 m North
12. [NW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: Thompson (1977) collected items from the site when it was first recorded. These were curated at Southern Utah State College (SUSC). It was not reported where the Division of State History curated its materials during James Dykman's testing activities in 1978 (Lindsay 1978). These materials are assumed to have been curated at the Utah Museum of Natural History (UMH).
20. SITE DESCRIPTION: This site was initially recorded by Thompson (1977) as a locus of cultural materials that measured 50 meters in diameter. Artifacts that he observed on the site included a notched axe, mano fragments, cores, flakes, and pottery sherds. Thompson (1977:21) indicates that the site is situated on a 3 degree slope with a western aspect. Thompson's location of the site places it about 100 meters east of 42Sa6391. The initial documentation included a collection of pottery, which included Mancos Corrugated, Mancos B/w, and Deadmans B/r, pottery types that are indicative of the Pueblo II period. Thompson's site form for 42Sa6391 indicates that the axe was also collected. Thompson implicitly suggests that the site should be the target of future mitigation efforts.

To that end, the Antiquities Section apparently intended to test the site in spring of 1978 (Lindsay 1978). Unfortunately, archaeologists at that time failed to correctly relocate the site. Instead, the site designation was applied to a locus of cultural materials well to the south of Thompson's 42Sa6393. As noted earlier, it seems likely that Thompson's site 42Sa6397 was misidentified as 42Sa6393. James Dykman (1978b) excavated a series of trenches on the site erroneously identified as 42Sa6393; the data from these excavations are not reported here, but are instead discussed with 42Sa6397.

Further compounding the confusion, it is now apparent that Antiquities Section personnel did test the location of the original 42Sa6393, but did so under another site number, 42Sa6391. The details of these test excavations are discussed in Part B, #6. It will suffice to say here that one of the two test trenches yielded evidence of a pit structure, which may be a pithouse.

Currently, the site consists of a scatter of lithic and pottery artifacts. In addition, two parallel trenches and their associated backdirt piles are very evident on the site. These are apparently Trenches B and C, excavated by Dykman (1978b) and Nielson (1979), respectively. The site measures approximately 60 m north/south by 45 m east/west in an area immediately west of the crest of a finger-ridge. Two concentrations of artifacts (Artifact Clusters 1 and 2) were noted on the west side of the site. The site's lithic assemblage includes debitage as well as ground stone items. The pottery assemblage includes white ware jar sherds, red ware sherds, and neckbanded and corrugated jar body sherds. It is possible that the site dates to the early to middle Pueblo II period. However, it is also possible that the site has a late Pueblo I component as well as a middle Pueblo II component.

21. **SITE CONDITION:**     EXCELLENT (A)     GOOD (B)  
                                  FAIR (C)                     POOR (D)
22. **IMPACT AGENT(S):** The primary impacting agent to the site is probably the previous activities of archaeologists on the site (RE). The site was apparently trenched in the past with heavy equipment: two backhoe trench depressions and their associated berms are still present. Rodent burrowing has also affected the site (RO).
23. **NAT. REGISTER STATUS:**     SIGNIFICANT (C)  
    NONSIGNIFICANT (D)  
    UNEVALUATED (Z)
- JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa6393 was incorrectly tested as a part of 42Sa6391 (Dykman 1978a; Nielson 1979). The site's pottery assemblage suggests that the site may have dated to the early to middle Pueblo II periods. The relatively diverse artifact assemblage observed on the site's surface, and a pit structure located during test excavations by Nielson (1979), suggest that the site may have functioned as a habitation for one or more ancestral Pueblo family groups. Data recovered from the site might address problems under a number of research domains including, but not limited to, chronology, settlement, subsistence, and social structure. Thus, site 42Sa6393 is eligible under criterion (d).
24. **PHOTOS:** See attached
25. **RECORDED BY:** Mark Bond
26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
27. **ASSISTING CREW MEMBERS:** Jonathan Till
28. **SURVEY DATE:** 10/22/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [270] DEGREES ASPECT: [5] DEGREES
30. DISTANCE TO PERMANENT WATER: [26] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is located on a slight ridge slope immediately west of the finger-ridge's crest.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist of the red aeolian loess that dominates this portion of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Big sagebrush (P)  
SECONDARY ON-SITE: Barren (R)  
SURROUNDING SITE: Juniper-sage (2)  
DESCRIBE: Current on-site vegetation consists of little sagebrush, bunch grasses, snakeweed, and prickly pear. The landscape and vegetation have been much altered from their original state by historic land-clearing practices. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

## PART B - PREHISTORIC SITES

1. **SITE TYPE:** Habitation
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Basketmaker III (B5) and Pueblo I-II periods (P2)  
**DATING METHOD:** Ceramic cross-dating (M)  
**DESCRIBE:** The pottery assemblage is rather ambiguous to the assessment of the number of components on the site. The gray ware assemblage includes narrow neckbanded sherds (probably Mancos Gray), as well as corrugated jar sherds. A Chapin Gray sherd is present as are several plain gray sherds. White ware pottery types include Mancos B/w. Deadmans B/r is also present. Thus, it is possible that the entire assemblage might represent an early to middle Pueblo II component. It is also possible that a late Pueblo I period component is represented as well as a later Pueblo II component. It is also possible that a Basketmaker III component is represented in combination with one or more of the aforementioned components.
3. **SITE DIMENSIONS:** [60] m by [45] m  
**AREA:** [2700] sq m
4. **SURFACE COLLECTION/METHOD:** Grab sample (B). Thompson (1977:21) collected sherds from the site, including 41 corrugated body sherds, 4 Mancos Corrugated sherds, 18 Mancos B/w, and 5 Deadmans B/r.
5. **ESTIMATED DEPTH OF CULTURAL FILL:** More than 100 cm (D)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** Test excavations, conducted with backhoes, located a pit structure, the floor of which is 1.4 m below modern ground surface.
6. **EXCAVATION STATUS:**        [ ] EXCAVATED (A)   [X] TESTED (B)  
                                  [ ] UNEXCAVATED (C)  
**TESTING METHOD:** Two parallel backhoe trenches, Trenches B and C, were placed in the approximate center of the site. In one episode of testing, Dykman (1978) excavated Trench B, which did not yield any evidence for cultural features, nor did Dykman indicate the presence of artifacts. A few months later, Nielson (1979) excavated Trench C and located a pit structure. Nielson (1979:21 and Figure 8) reports that the structure's floor was located about 1.4 m below modern ground surface. Nielson reports that one diagnostic artifact, a possible Mancos Gray sherd, was recovered from the floor. Other pottery sherds recovered from the trench included one Chapin B/g, three plain gray, on Mancos B/w, nine corrugated body sherds, and one unidentified red ware sherd.  
  
The backhoe trenches were not backfilled. Currently the trenches, and their associated backfill piles, are readily apparent on the modern ground surface.
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and groundstone artifacts (GS).  
**DESCRIBE:** The artifact assemblage consists of pottery, lithic debitage, and several groundstone tools. Most of the artifacts are found in one of the two artifact clusters identified on the site (AC-1 and AC-2). The pottery assemblage (n=115) includes plain gray cooking jar sherds, neckbanded cooking jar sherds, and corrugated cooking jar sherds; additionally, white ware bowls and jars are represented as is a pitcher form; several red ware sherds are also present, one of which derived from a seed jar. The debitage is perhaps characterized by its high frequency of Brushy Basin chert. The groundstone tool assemblage (T1-T4) consists entirely of undifferentiated metate fragments. Artifact assemblage components are discussed further below.

8. LITHIC TOOLS:

#	TYPE
4	metate fragments (MZ)

**DESCRIBE:** The lithic tools found on the site (T1-T4) consist entirely of groundstone items, all of which are undifferentiated metate fragments.

T1 is a metate fragment made from a dense, white silicified sandstone. One facet exhibits use and is slightly concave on its entire surface. The artifact measures 15 x 10 x 7 cm.

T2 is made from the same material as T1 (probably Dakota silicified sandstone). It too has a single, slightly concave used facet, but is also heavily stippled with peck marks. T2 measures 8.5 x 8.0 x 2.5 cm.

T3 is found in AC-2. It is made from a relatively soft brown sandstone. It has one slightly concave, used facet and measures 9.5 x 8.0 x 3.5 cm.

T4 is located in the larger of the two backhoe trenches mapped during this project. It is made of the same material as T3. It has a single slightly concave used facet that is also heavily stippled. It measures 14.0 x 8.5 x 2.5 cm.

9. LITHIC DEBITAGE - ESTIMATED QUANTITY: 66 (D)

**MATERIAL TYPE:** Four material types were observed for the site's debitage assemblage: Brushy Basin chert; a translucent, mottled gray and white chert; a translucent white chert; and a white and gray silicified sandstone. At nearly 80 percent of the assemblage, Brushy Basin chert is clearly the dominant material on the site.

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[0] DECORTICATION [2] SECONDARY [2] TERTIARY  
[2] SHATTER [0] CORE

10. **MAXIMUM DENSITY--#/SQ M (ALL LITHICS):** 25/sq. meter (in AC-1)

11. CERAMIC ARTIFACTS:

#	TYPE
D	Corrugated body sherds (E1)
B	Plain gray (EY)
B	Mancos Gray (EG)
B	Chapin Gray (EE)
B	Mancos Corrugated (ET)
D	Mesa Verde White Ware
B	Mancos B/w (EP)
B	Deadmans B/r (EL)
B	San Juan Red Ware (EB)

**DESCRIBE:** A total of 115 pottery sherds were documented on the surface of the site. At nearly one-half of the assemblage, corrugated body sherds are the most common type of sherd on the site. Early cooking jar types include several possible sherds of Mancos Gray, several plain gray sherds, and one Chapin Gray rim sherd. A number of white ware sherds are present, including one sherd that appears to be early (either Chapin B/w or Piedra B/w). Several of the white ware sherds appear to be Mancos B/w-these include sherds with Black Mesa and Dogoszhi design styles. Also present are San Juan Red Ware sherds, including several that were typed to Deadmans B/r. A variety of forms are represented on the site, including cooking jars, bowls, white ware jars, a seed jar, and a pitcher.

12. **MAXIMUM DENSITY--#/SQ M (CERAMICS):** 9/sq. meter (in AC-1)

13. NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):

**DESCRIBE:**

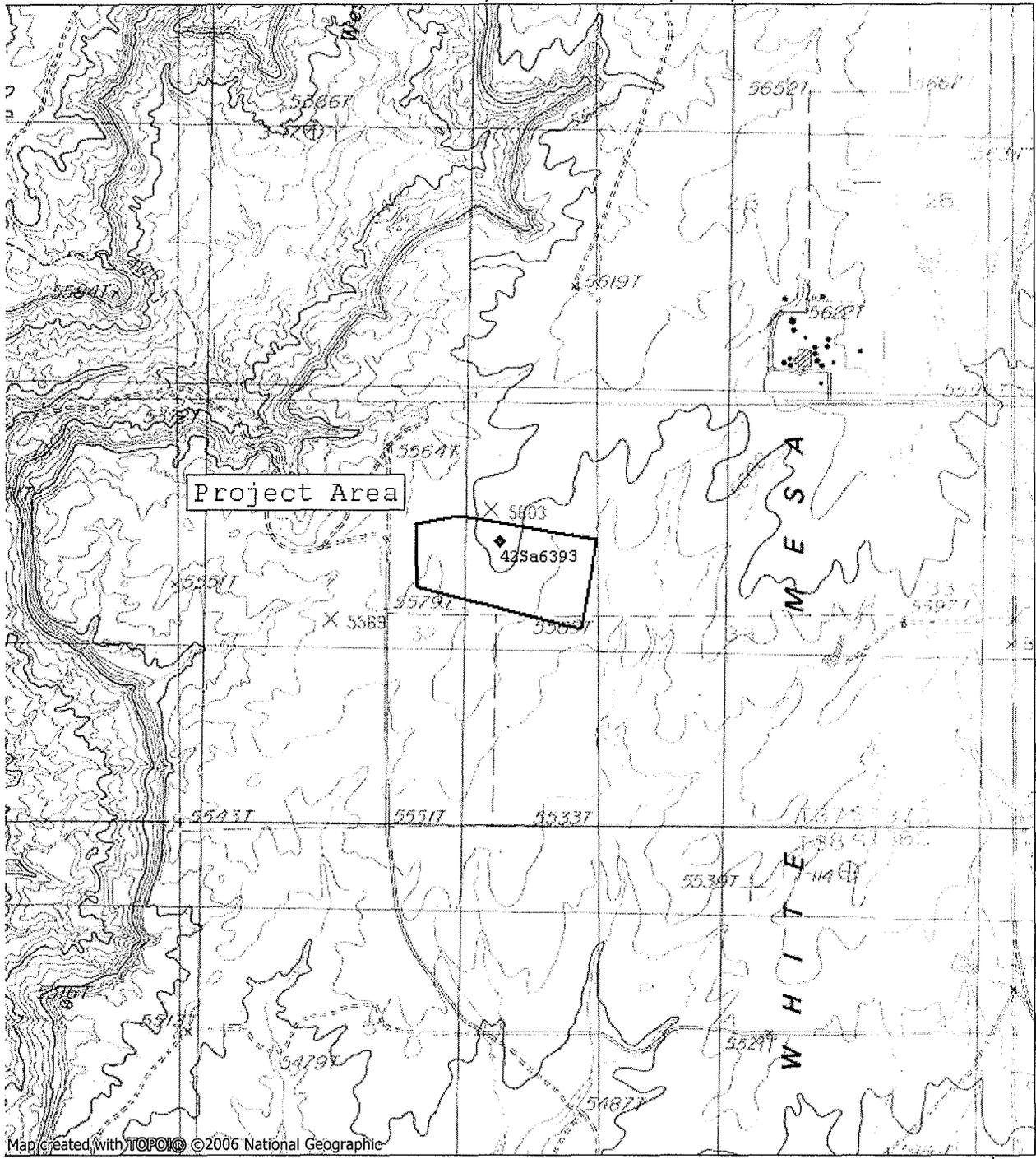
14. ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):

#	MATERIAL	TYPE
1	earthen/subterranean (I)	pithouse (AF)

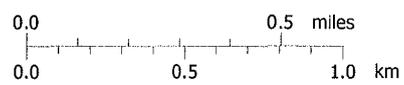
DESCRIBE: Nielson (1979:21-24) describes the feature, as it was exposed in Trench C, as an oval or "quadrilateral" pit structure that measures at least 1.8 meters wide. The structure's floor is approximately 1.4 meters below modern ground surface. Nielson states that the floor "appears to be level, with no special clay or sand covering."

15. COMMENTS/CONTINUATIONS:

Location for 42Sa6393, Black Mesa Butte, Utah, 7.5'

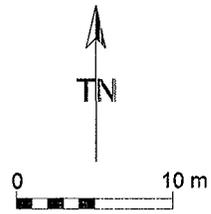


Map created with TOPO!® ©2006 National Geographic

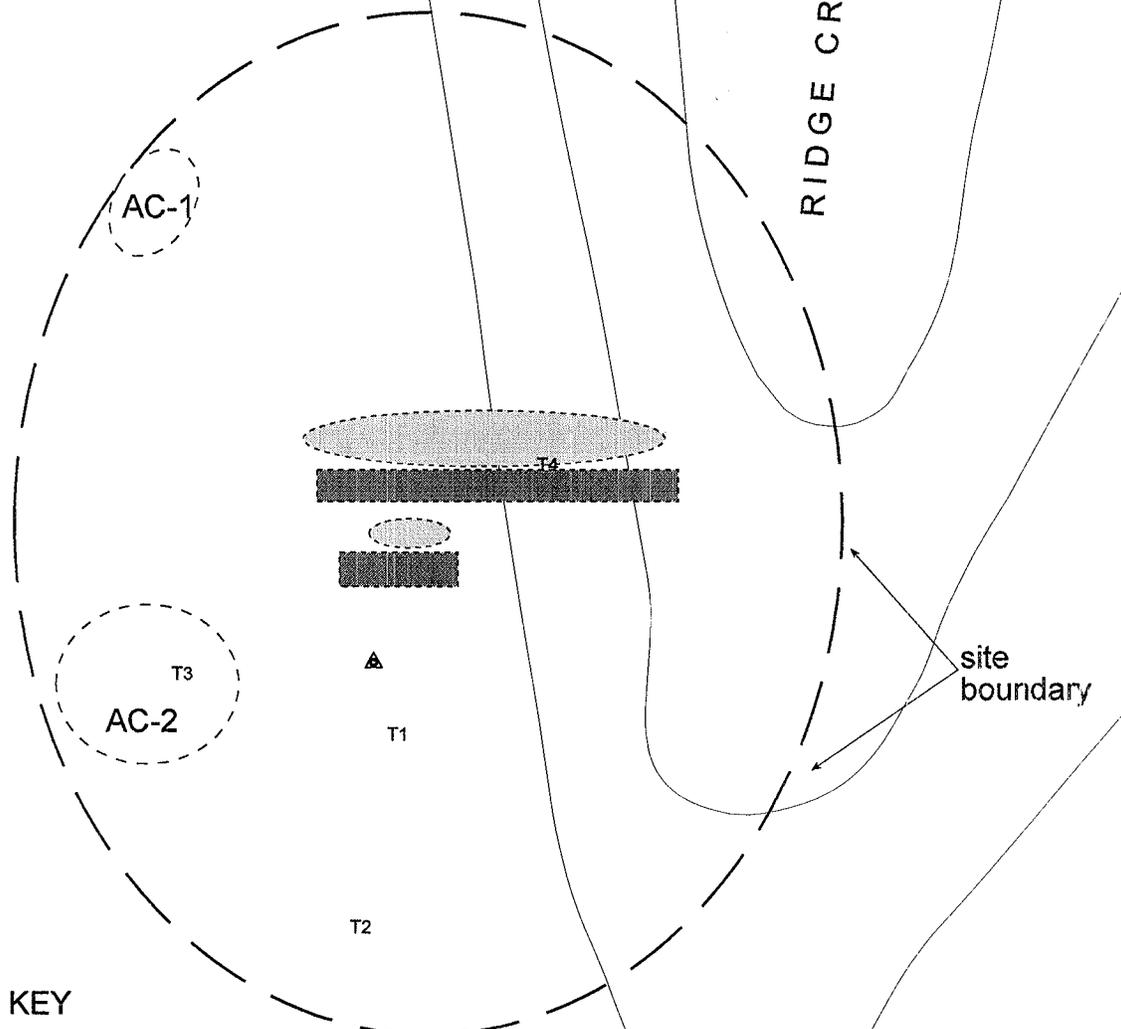


TN MN  
11½'  
07/06/09

42Sa6393



RIDGE CREST



KEY

- ▲ datum
- T# tool
- AC-# artifact cluster
- berm
- backhoe trench

M. Bond, 10/22/08



Top: 42Sa6393, overview, facing north, cap over datum

Bottom: 42Sa6393, overview, facing north, close-up of cap over datum





Top: 42Sa6393, facing WSW, old berm and trench on right

Bottom: 42Sa6393, facing WSW, smaller old trench and berm on right



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6397
2. AGENCY NO:
3. TEMP NO.: Site 7
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Artifact, rock, and jacial scatter
10. ELEVATION: 5597 ft.
11. UTM GRID: Zone 12, 631083 m East, 4154473 m North
12. [SW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: Dykman (1978:84) reports that only two artifacts, both Chapin Gray artifacts, were collected from their excavations. The location of these objects was not stated in the testing report (Lindsay 1978), but are assumed to have been curated at the Utah Museum of Natural History (UMH).
20. SITE DESCRIPTION: This site was originally recorded by Thompson (1977:22) as a "thin flake and sherd scatter" in an area that measures 100 meters in diameter. Thompson notes that the site is situated on a gentle three-degree slope with an eastern aspect. While Thompson did not make any collections from the site, he did observe "plain corrugated" and painted sherds in the assemblage, prompting him to suggest that the site dates to around A.D. 900.

Unfortunately, the site was erroneously tested under the site number 42Sa6393 (Dykman 1978). Dykman's description of that site better fits Thompson's description of 42Sa6397. Dykman (1978:78) notes that "the site is on the end of a small ridge that trends north to south. An artifact concentration is located on top of the ridge and down the slope to the east." The testing report's plot of the site varies considerably from Thompson's original placement of 42Sa6393, moving it considerably farther south (Lindsay 1978: Figure 2), essentially siting Dykman's 42Sa6393 in the location of Thompson's 42Sa6397. Confusing the issue further, however, Nielson (1979:51-52) reports that he revisited 42Sa6397 in July of 1978 and determined that testing or further mapping of the site was not required. We can only speculate that Nielson encountered 42Sa28132, which is indeed a sparse scatter of artifacts. Nielson's observations are discussed further with Site 42Sa28132.

A total of seven backhoe trenches were excavated on the site. The details of these test excavations are discussed in greater detail in Part B, #6.

As it appears now, the site consists of a scatter of lithic and pottery artifacts, as well as fragments of sandstone rock and jacal. The lithic artifact assemblage includes debitage as well as chipped stone and ground stone tools. The pottery assemblage is dominated by plain gray jar sherds. The site occupies a space that measures about 60 meters in diameter. Two concentrations of cultural materials are apparent on the site, referred to here as Artifact Clusters 1 and 2 (AC-1 and AC-2). The site is centered on the crest of a finger-ridge with a north-to-south orientation. Previous investigations on the site are apparent by the presence of a steel, 3/4 pipe datum. The faint traces of the seven backhoe trenches, which were apparently backfilled, are barely visible. Site 42Sa6397 consists of a scatter of lithic and pottery artifacts, as well as fragments of sandstone rock and jacal. Two concentrations of cultural are apparent on the site, referred to here as Artifact Clusters 1 and 2 (AC-1 and AC-2).

The site is centered on the crest of a finger-ridge with a north-to-south orientation. The artifact scatter occupies a space that measures 60 m in diameter. AC-1 is located on the southern end of the site. AC-2 is nestled in the site's approximate center. As a whole, the site's lithic artifact assemblage includes debitage as well as chipped stone and ground stone tools. The site's pottery assemblage is dominated by plain gray jar sherds.

AC-1, located on the south end of the site, includes a concentration of burned sandstone and jacal (Feature 1). Most of the pottery observed in AC-1 indicates a Basketmaker III component. However, several Mancos Corrugated rim sherds suggest Pueblo II period component, too.

AC-2, found in the site's center, includes small burned sandstone slabs, pottery, and lithic artifacts. A collectors pile in this location includes plain gray pottery and a neckbanded sherd.

Based on the pottery sherds mentioned above, the site appears to harbor a Basketmaker III component as well as a minor Pueblo II component. As noted above, a neckbanded sherd was observed in AC-2. A few other neckbanded sherds, as well as a few red ware sherds, were located in the site's general scatter. If the neckbanded sherds are associated with the corrugated pottery, these may more specifically indicate an early Pueblo II period component.

Previous investigations on the site are apparent by the presence of a steel, 3/4 pipe datum and at least one backhoe trench.

21. **SITE CONDITION:**     EXCELLENT (A)     GOOD (B)  
                                  FAIR (C)                     POOR (D)
22. **IMPACT AGENT(S):** By far the greatest impact to the site is the archaeological test excavations that occurred on the site at an earlier date (RE). Rodent disturbance (RO) has also exacted a toll on the site.
23. **NAT. REGISTER STATUS:**     SIGNIFICANT (C)  
    NONSIGNIFICANT (D)  
    UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa6397 was misidentified during testing phase excavations by the Antiquities Section of the Division of State History (Dykman 1978b). Tested as 42Sa6393, at least two pit

features were located in backhoe trenches excavated on the site. The pottery assemblage suggests at least two components on the site: a Basketmaker III period component and an early Pueblo II period component are suggested. The site's functions remain ambiguous. At the least, it seems likely that subsurface investigations on the site would yield data pertinent to such research domains as chronology, settlement, subsistence, and social structure. Thus, the site is eligible for nomination to the NRHP under criterion (d).

- 24. **PHOTOS:** See attached
- 25. **RECORDED BY:** Mark Bond
- 26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
- 27. **ASSISTING CREW MEMBERS:** Jonathan Till
- 28. **SURVEY DATE:** 10/24/08

**LIST OF ATTACHMENTS:**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> PART B                  | <input checked="" type="checkbox"/> TOPO MAP |
| <input checked="" type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH             | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                             | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                             |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [98] DEGREES ASPECT: [ ] DEGREES
30. DISTANCE TO PERMANENT WATER: [26] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site rests squarely on the crest and slopes of a north-to-south oriented finger-ridge.
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments are composed of the red aeolian loess that so characterizes this portion of White Mesa.
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: grassland (M)  
SECONDARY ON-SITE: big sagebrush (P)  
SURROUNDING SITE: juniper-sage (2)  
DESCRIBE: On-site vegetation includes sagebrush, cheatgrass, heron's bill, mustard, snakeweed, and globe mallow. The original landscape and its vegetation have probably been radically altered by historic clearing activities. It is likely that this location harbored vegetation characteristic of the sage to juniper ecotone.
35. MISCELLANEOUS TEXT:
36. COMMENTS/CONTINUATIONS:

**PART B - PREHISTORIC SITES**

1. **SITE TYPE:** Artifact, rock, and jacal scatter
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Basketmaker III (B5) and Pueblo II (P3)

**DATING METHOD:** Ceramic cross-dating (M)

**DESCRIBE:** The site's pottery assemblage suggests at least two components: a substantial Basketmaker III component and a relatively minor Pueblo II component. Considering that several Mancos Corrugated rim sherds are located on the site, as well as a few neckbanded sherds, it is possible that the Pueblo II occupation is more specifically characterized as an early Pueblo II period component. Given that early Pueblo II components are well represented on this portion of White Mesa, it seems reasonable to suggest that this site is similarly occupied.

3. **SITE DIMENSIONS:** [60] m by [60] m  
**AREA:** [2800] sq m

4. **SURFACE COLLECTION/METHOD:** None (A)

5. **ESTIMATED DEPTH OF CULTURAL FILL:** 20-100 cm (C)

**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** The cultural features encountered in Trenches B and E were reported as 45 and 30 cm deep, respectively. It seems likely that, if pit structures are present, the depth of cultural materials will exceed 100 cm.

6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [X] TESTED (B)  
[ ] UNEXCAVATED (C)

**TESTING METHOD:** A total of seven backhoe trenches were excavated on the site. Two of the trenches (Trenches B and E) located subsurface cultural features, both of which were classified as "storage pits." The feature in Trench B, a north-to-south oriented trench on the east side of the site, is a "small square shaped storage pit...located near the northern end of the trench." Trench E is a relatively short north-to-south oriented trench located just west of the site datum. Dykman (1978:82) notes that "a small use surface or storage pit was located in the southern end of the trench."

7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and ground and pecked stone artifacts (GS). There is also a concentration of jacal (JA).

**DESCRIBE:** Cultural materials on the site consist of pottery, chipped stone debitage, and a number of lithic tools. Several loci of artifacts were documented on the site, including two artifact clusters (AC-1 and AC-2). Additionally, a collector pile at the site datum includes pottery and lithic artifacts. A concentration of sandstone rubble and jacal is associated with AC-1, and is described as Feature 1.

All of the pottery sherds documented on the site's surface derives from cooking jars (including Chapin Gray sherds, plain gray sherds, neckbanded gray sherds, and corrugated sherds). The debitage assemblage is dominated by Brushy Basin chert, though several other material types are also present. The lithic tool assemblage consists of seven items (T1-T7). These artifacts include four metate fragments, one mano fragment, and two bifaces.

8. **LITHIC TOOLS:**

#	TYPE
3	trough metate (MC)
1	indeterminate ground stone (MN)
1	two-hand mano (NB)
2	biface (IG)

**DESCRIBE:** The lithic tools (T1-T7) include four metate fragments, one mano fragment, and two bifaces.

T1 is a fragment from the margin of a trough metate. The artifact is made

from a dense, white silicified sandstone. A deep basin is apparent in the cross-section of the artifact. This ground basin is also stipple-pecked. The object measures 16.0 x 10.5 x 4.0, though the ground facet penetrates 2.5 cm deep.

T2 is similarly a fragment of a trough metate. It is also made of the dense, white silicified sandstone. The object has a single, slightly concave facet that is also stipple-pecked. It measures 16 x 9 x 8 cm.

T3 is similar to T2. Again, it probably derived from a trough metate and was made of the white silicified sandstone. It has a single, concave, stipple-pecked facet. The object measures 13.0 x 9.5 x 5.0 cm.

T4 is a small fragment of ground stone. It is made from white, silicified sandstone. One facet is lightly ground. The item measures 10.2 x 5.3 x 2.2 cm.

T5 appears to be a fragment of a two-hand mano. Made from white, silicified sandstone, one facet is beveled, yielding a triangular cross-section. This feature securely identifies the artifact as a two-hand mano. The item measures 16.5 x 12.0 x 2.5 cm.

T6 is a Stage 4 biface fragment with a missing base. It is made from a translucent, light pink chert. The margins are denticulated. The artifact was probably a projectile point. It measures 1.3 cm wide x 0.3 cm thick. Its length is unknown. See the attached figure for more detail.

T7 is a Stage 2 or 3 biface fragment. It is made from a translucent light pink and lavender chert. The apparent distal end is missing. The item measures 3.2 cm wide and 0.5 cm thick. Its length is unknown. See the attached figure for more detail.

9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** 78 (D)

**MATERIAL TYPE:** Several material types were documented for the lithic debitage assemblage. These include: Brushy Basin chert; dark green silicified mudstone; green oolitic mudstone; translucent mottled gray and white chert; translucent white and gray chert; translucent white and light green chert; opaque white chert; translucent white chert; light cream and tan silicified sandstone; and an opaque dark gray chert.

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[1] DECORTICATION [2] SECONDARY [2] TERTIARY  
[1] SHATTER [0] CORE

10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):**25/sq. m

11. **CERAMIC ARTIFACTS:**

#	TYPE
B	Corrugated body sherds (E1)
C	Plain gray (EY)
B	Neckbanded, NFS (EA)
B	San Juan Red Ware (EB)
B	Chapin Gray (EE)
B	Mancos Corrugated (ET)

**DESCRIBE:** The site's pottery assemblage includes 37 sherds. Most of the pottery sherds documented were cooking jar sherds. Two red ware sherds were also noted on the site, but their form was not documented. Most of the pottery sherds occur in one of three areas on the site: AC-1, AC-2, and the collector pile near the site datum. The small assemblage suggests two components on the site: a Basketmaker III component (suggested by the Chapin Gray pottery) and a Pueblo II component (suggested by the Mancos Corrugated pottery). However, the site's occupation may be more complex.

Neckbanded pottery, and the red ware, may signal an intermediate occupation during the Pueblo I.

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** 3/square meter

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	TYPE
2	Other-pit (OT)

**DESCRIBE:** Dykman (1978:80-82) notes that two small pit features were found during the course of test excavations. Little construction detail is available for these features. For "Pit 1" in Trench B, Dykman notes that "a small square shaped storage pit was located near the northern end of the trench. The storage pit measured .45 m deep and 0.5 m wide. The fill consisted of light gray charcoal and pieces of burned daub. No artifacts were located in the cist, and the top .15 m of the storage pit had been obliterated by chaining." While Dykman describes the feature as a "cist," there is no way to know how the feature was constructed (i.e. masonry? earthen walled?); furthermore, its shape is unusual for most storage cists. Pit 2 is a "small use surface or storage pit...located in the southern end of the trench. The cultural feature measures 1.3 m in diameter and 0.3 m deep. The fill consisted of light gray charcoal. Two Chapin Gray sherds were recovered from the fill, but no final definition was made of the feature because of the disturbance of discing and plowing" (Dykman 1978:82).

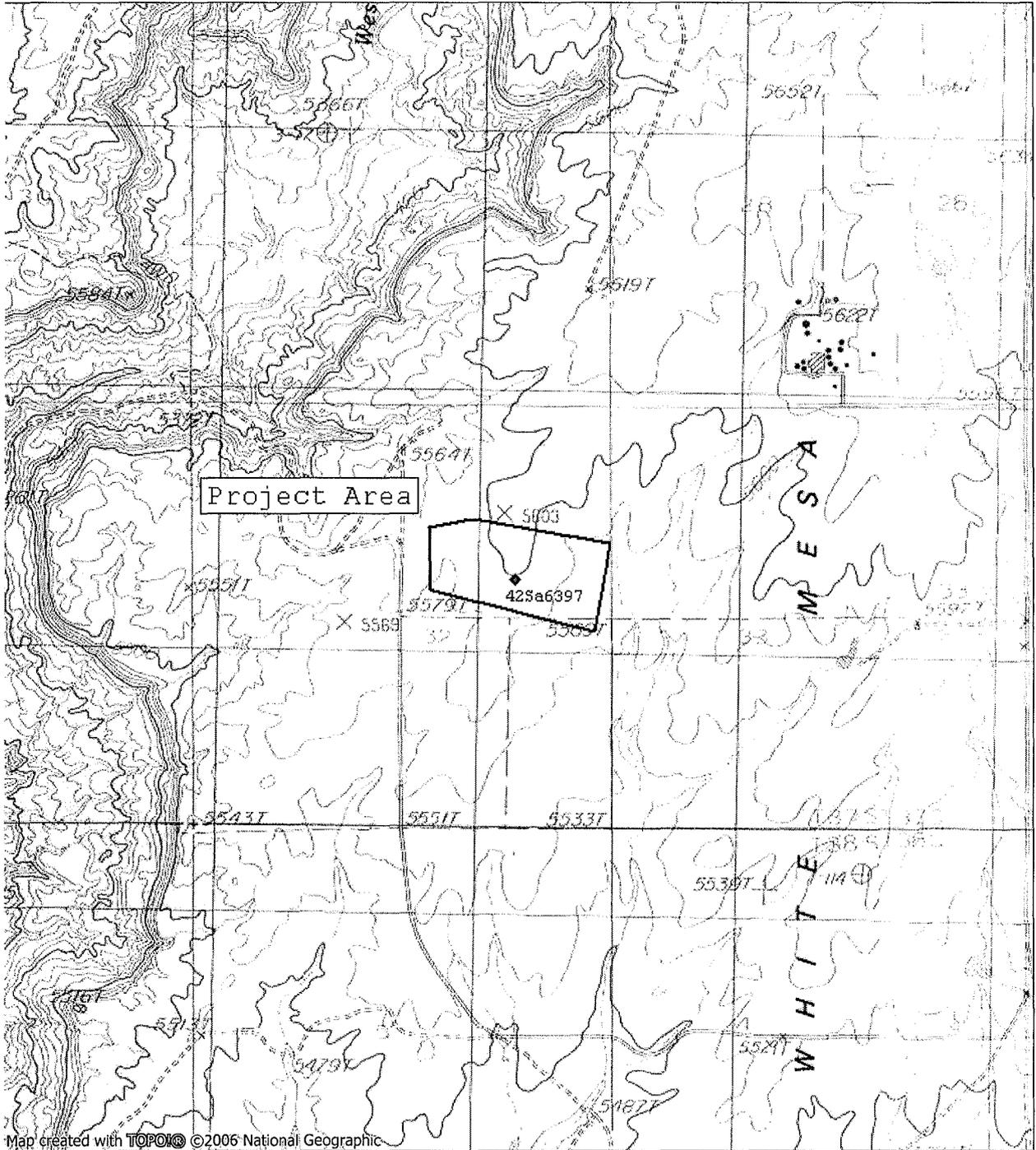
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
1	Jacal/Adobe (H)	Unknown (ZZ)

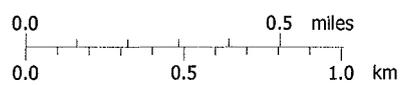
**DESCRIBE:** This feature (Feature 1), defined during the current survey, consists of a concentration of small fragments of burned jacal. This material is confined to a 2 by 3-meter area contained within Artifact Cluster 1 (AC-1). The pieces of jacal are very small, friable, and appear to be burned. The fragments are 1 to 5 cm in diameter. About 20 small fragments of burned sandstone co-occur with the jacal.

15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa6397, Black Mesa Butte, Utah, 7.5'



Map created with **TOPO!** ©2006 National Geographic



TN/MN  
11½  
07/06/09

42Sa6397

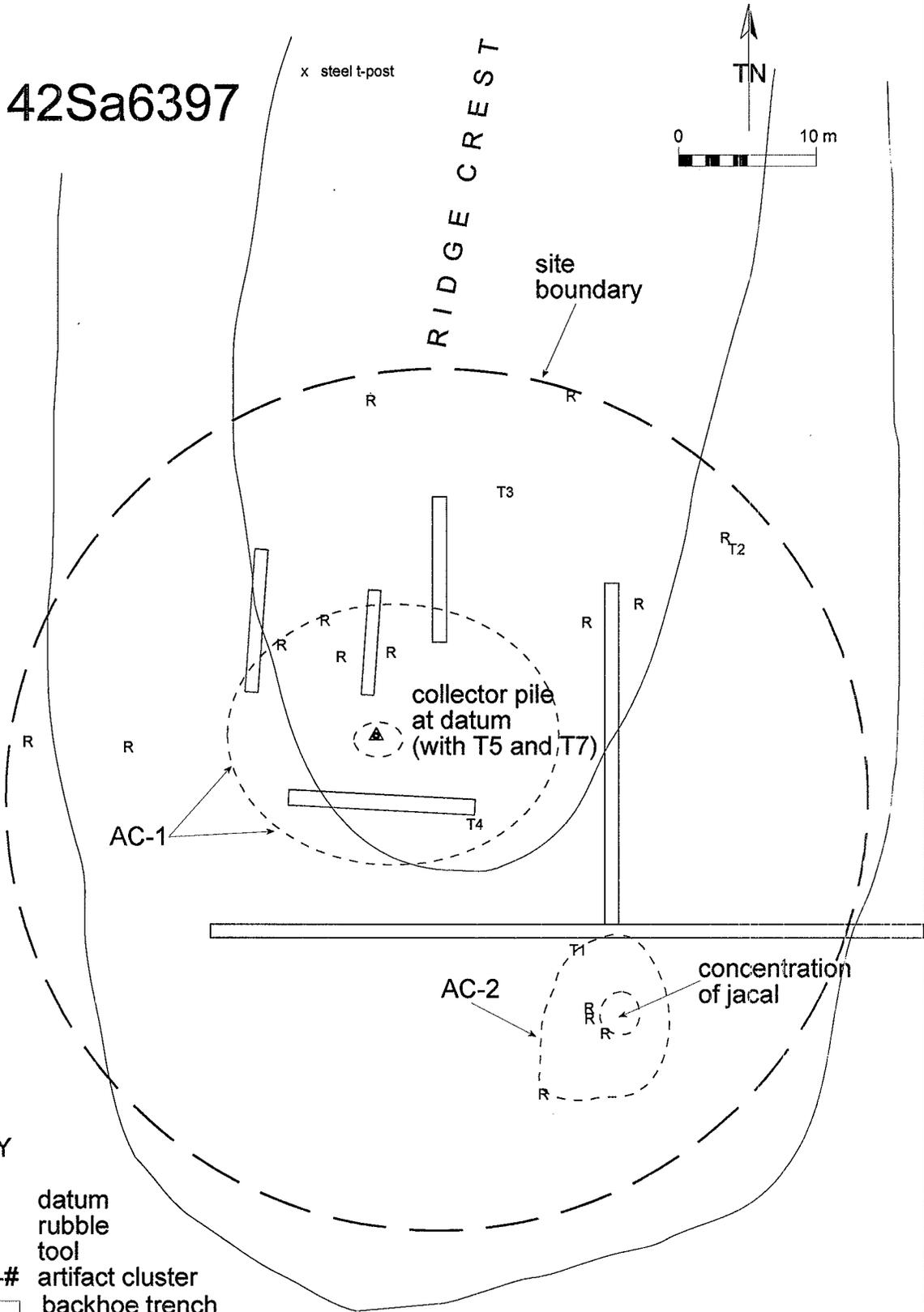
x steel t-post

RIDGE CREST

TN

0 10 m

site boundary

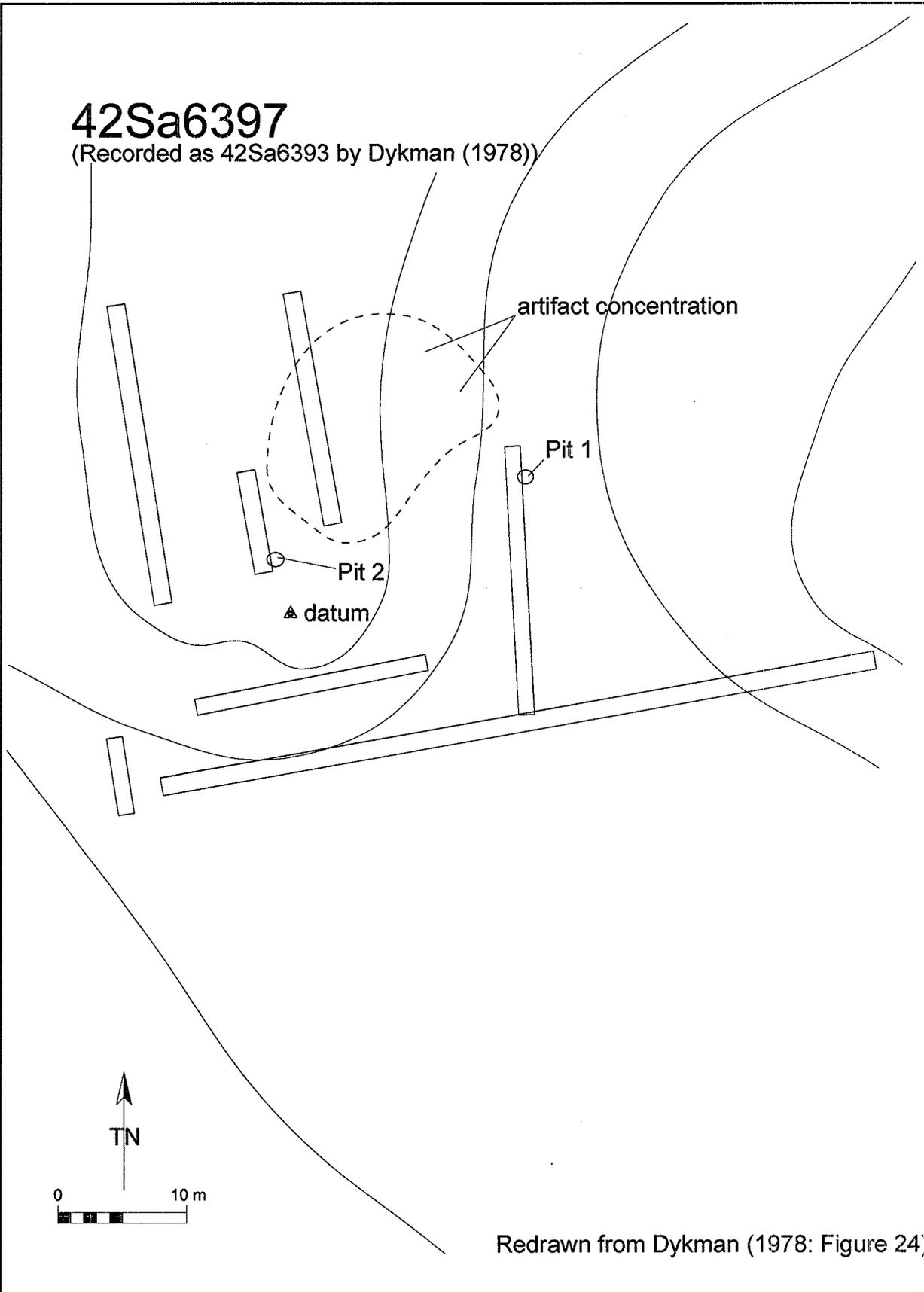


KEY

- ▲ datum
- R rubble
- T# tool
- AC-# artifact cluster
- ▭ backhoe trench

# 42Sa6397

(Recorded as 42Sa6393 by Dykman (1978))



Redrawn from Dykman (1978: Figure 24)



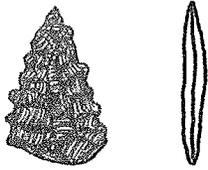
Top: 42Sa6397, overview, facing north, cap over datum

Bottom: 42Sa6397, overview, facing north, close-up of cap over datum

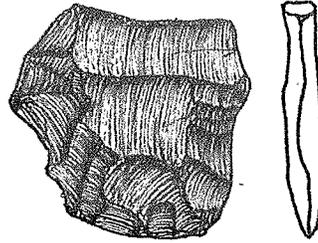


Site 42Sa6397

Tool # 6



Tool # 7



Scale: Actual Size

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6431
2. AGENCY NO:
3. TEMP NO.: Site 6
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Habitation
10. ELEVATION: 5582 ft.
11. UTM GRID: Zone 12, 630866 m East, 4154373 m North
12. [SE] OF [SW] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (1)
14. MAP REFERENCE: Black Mesa Butte, Utah, Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)--White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS:
19. LOCATION OF CURATED MATERIALS: Thompson (1977) collected items from the site when it was first recorded. These were curated at Southern Utah State College (SUSC). It was not reported where the Division of State History curated its materials during Asa Nielson's testing activities in 1978 (Nielson 1979). Cultural materials collected by Nielson include 39 pottery sherds (Chapin Gray and Plain Gray), two possible mauls, several flakes, and a "tanged" or "split-stemmed" point that was probably curated and reworked. These materials are assumed to have been curated at the Utah Museum of Natural History (UMH).
20. SITE DESCRIPTION: Thompson (1977:28) first documented this site, describing its location as a place of "aeolian soil that slopes to the SW at 3 degrees." Noting that the site was contained within an area that measures 30 meters in diameter, Thompson describes a diverse assemblage of cultural materials. "Cultural debris consists of primary and secondary flakes, a hammerstone, 1 mano and numerous ground stone fragments as well as sherds. Sherds collected have been analyzed to reveal 2 Chapin Gray, 1 Mancos Corrugated rim (16 corrugated body sherds), 16 Mancos B/W, and 3 Deadmans B/R." While brief, Thompson's description of the site's size, setting, and artifact assemblage figured importantly in the site's re-identification for this project. However, testing activities that apparently took place on the site should be discussed first.

In July of 1978, Antiquities Section archaeologists had conducted test excavations on a site that they determined to be 42Sa6392 (Nielson 1979:30-46). The locational data supplied by Thompson, scant though they are, indicate the conflation of 42Sa6392 with 42Sa6431. Supervised by Asa Nielson, testing activities first involved the placement of nine test

trenches. Test excavations located three features: a hearth, a burial, and a lens of charcoal and daub. More details for these features are provided in Part B, #13.

Cultural materials that Nielson collected include 39 pottery sherds (Chapin Gray and Plain Gray), two possible mauls, several flakes, and a "tanged" or "split-stemmed" point that was probably curated and reworked (Nielson 1979: Figure 20). The pottery is indicative of the Basketmaker III period, a fact that was not lost on Nielson, who seems a little perplexed that he failed to locate a Pueblo II period assemblage when he writes, "Subsurface collections recovered during test excavation differ from surface collection(s) made by Thompson (1977). The collections of subsurface material show a complete lack of corrugated or painted wares. Thompson's collections suggest a possible Pueblo II (ca 1075-800 B.P.) occupation." As noted earlier, Thompson did not make collections from 42Sa6392. We assume that Nielson was aware of Thompson's collections from 42Sa6431, however, which did demonstrate a strong Pueblo II period signature (see the preceding paragraph).

As it looks now, Site 42Sa6431 is a scatter of lithic and pottery artifacts as well as a concentration of jacal. A probable midden area is located in the southern portion of the site. It seems likely that the site includes at least one habitation feature.

The site is further distinguished by a number of backhoe trenches, and their associated berms, that had been excavated in the late 1970s/early 1980s during exploratory testing. A 3/4 in. piece of metal pipe had been installed as a datum just north of the site's approximate center.

The site covers an area that measures approximately 120 m north/south by 60 m east/west. The site occupies the crest of a finger-ridge and the ridge's terminal southern end. Lithic artifacts recorded on the site include debitage and ground stone items. The pottery assemblage, as a whole, includes white ware bowl sherds, and corrugated, neckbanded, and plain gray jar sherds.

A possible midden area is located in the southern end of the site, on a gentle slope with a southern exposure. The midden area, described as Feature 1, measures approximately 30 m in diameter. A small concentration of jacal (Feature 2) just northeast of the midden area may represent architectural remains associated with the midden area. Feature 1 contains a pottery assemblage that indicates a Pueblo II period component.

In contrast, a possible concentration of Basketmaker III pottery is found in the up-slope, or northern, portion of the site. The pottery in this location is dominated by plain gray pottery.

21. **SITE CONDITION:**     EXCELLENT (A)     GOOD (B)  
                                  FAIR (C)                     POOR (D)
22. **IMPACT AGENT(S):** By far the greatest impact to the site is the archaeological test excavations that occurred on the site at an earlier date (RE). Rodent burrowing has also taken place on the site (RO).
23. **NAT. REGISTER STATUS:**  SIGNIFICANT (C)  
                                  NONSIGNIFICANT (D)  
                                  UNEVALUATED (Z)

**JUSTIFY:** The site is deemed significant by virtue of the presence of subsurface cultural deposits. Site 42Sa6431 was tested in 1978 as 42Sa6392 (Nielson 1979). Nielson's test excavations resulted in the documentation of three cultural features, including a probable hearth, a burial, and a subsurface lens of charcoal and daub. At least two components are apparent

on the site. A Basketmaker III component is associated with the features documented by Nielson (1979). Such features would yield data pertinent to research domains such as chronology, subsistence, and social structure. A midden on the site is associated with the Pueblo II period, suggesting the presence of a habitation feature. Should such a feature be located, research issues under such domains as chronology, settlement, subsistence, and social structure may be addressed. Thus the site is eligible for nomination to the NRHP under criterion (d).

- 24. **PHOTOS:** See attached
- 25. **RECORDED BY:** Mark Bond
- 26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)
- 27. **ASSISTING CREW MEMBERS:** Jonathan Till
- 28. **SURVEY DATE:** 10/23/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [210] DEGREES ASPECT: [5] DEGREES  
30. DISTANCE TO PERMANENT WATER: [24] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Ridge (P), Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). More immediately, the site is located on the spine and crest of a finger-ridge. The possible midden area is situated on the south end of the site, which occupies a gentle slope marking the terminal end of the finger-ridge. Cultural materials may be found on the west- and east-facing slopes on either side of the ridge crest as well.  
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: Sediments on the site are dominated by the red aeolian loess that characterizes this portion of White Mesa.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: grassland (M)  
SECONDARY ON-SITE: juniper-sage (2)  
SURROUNDING SITE: juniper-sage (2)  
DESCRIBE: On-site vegetation includes sagebrush, cheatgrass, snakeweed, mustard, juniper, Mormon tea, prickly pear, and globe mallow. The site's original vegetation probably included a lot more juniper than is currently present. Only one small, young juniper is present, the survivor of historic chaining activities. The original vegetation was probably much like that to the west, along the Cottonwood Canyon rim, which seems to represent the sage to juniper ecotone.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

## PART B - PREHISTORIC SITES

1. **SITE TYPE:** Habitation
2. **CULTURE - CULTURAL AFFILIATION:** Ancestral Pueblo, Basketmaker III (B5) and Pueblo II (P3)

**DATING METHOD:** Ceramic cross-dating (M)

**DESCRIBE:** The site's pottery assemblage suggests two components: a Basketmaker III component and an early to middle Pueblo II component. The Basketmaker III component is characterized by the presence of a relatively large number of plain gray jar body sherds. These are localized to one portion of the site, a 30 x 40 m area that is east of the site's datum. The midden area, described here as Feature 1, contains the highest frequency of Pueblo II period pottery. Feature 1 is located at the southern end of the site. The formal pottery types most characteristic of the Pueblo II period on the site are Mancos B/w and Deadman's B/r, while the incidence of corrugated pottery more generally reflects a Pueblo II/III occupation. The Mancos B/w sherds exhibit both Black Mesa and Dogoszhi design styles.

3. **SITE DIMENSIONS:** [60] m by [120] m  
**AREA:** [7200] sq m

4. **SURFACE COLLECTION/METHOD:** Grab sample (B), by Thompson (1977)

5. **ESTIMATED DEPTH OF CULTURAL FILL:** 20-100 cm (C)

**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** At least two sessions of testing were performed on the site. Nielson (1979) first tested the site in 1978. The site was tested again at a later, unknown date. Nielson documented three features, all of which appear to be around 50 cm below modern ground surface. It seems likely that the site contains pitstructures. If this is the case, cultural deposits may exceed 100 cm.

6. **EXCAVATION STATUS:** [ ] EXCAVATED (A) [X] TESTED (B)  
[ ] UNEXCAVATED (C)

**TESTING METHOD:** The backhoe trenches that Nielson excavated in July of 1978 are now difficult to discern. Nielson's trenches were apparently backfilled—a few alignments were barely detectable by the differential desiccation of cheatgrass. Relocation of the trenches was made even more difficult by the fact that at least one other session of test excavations occurred on the site, evidently after Nielson's initial testing efforts.

This second testing event, which apparently involved the excavation of seven backhoe trenches, is readily apparent on the site. As is the case with 42Sa6393, these trenches were not backfilled and are accompanied by parallel berms of backdirt. To date, a report for these excavations has not been found.

7. **SUMMARY OF ARTIFACTS AND DEBRIS:** Ceramic scatter (CS), lithic scatter (LS), and ground and pecked stone artifacts (GS). There is also a concentration of jacal (JA).

**DESCRIBE:** The artifact assemblage on the site consists of pottery, debitage, and eight lithic tools, which include both groundstone items as well as a battered stone tool. The pottery assemblage (n=53) includes cooking jars (plain gray, neckbanded, and corrugated jar sherds) as well as white ware and red ware bowls and, probably, jars. The lithic debitage assemblage (n=32) is characterized by a high frequency of Brushy Basin chert. The lithic tools documented on the site (T1-T8) include five undifferentiated metate fragments, two manos, and one hammerstone. In addition to these artifacts, a concentration of jacal, described here as Feature 2, occupies a 2 square meter area in the southern portion of the site just northeast of Feature 1. Feature 2 may represent the location of a subsurface architectural feature.

8. LITHIC TOOLS:

#	TYPE
5	metate fragments (MZ)
2	handstones (NZ)
1	hammerstone (IF)

**DESCRIBE:** The site's lithic tool assemblage comprises eight items (T1-T8), including five slab metate fragments, two likely manos, and one hammerstone.

T1 may actually represent two tool types. One facet of this fragmented tool is convex, ground, and stipple-pecked, indicating this item's use as a mano. It is not possible to distinguish whether this tool is a one-hand mano or two-hand mano. The tool's opposing face is slightly concave, but also exhibits peck marks and has been ground, suggesting the use of this side of the tool as a palette or lap stone. The object is made from a dense, fine-grained sandstone and measures 13.5 x 11.5 x 2.8 cm.

T2 is a complete hammerstone made from an alluvial cobble of gray quartzite. The artifact is battered along its margins and measures 9.0 x 5.5 x 3.8 cm.

T3 consists of several fragments of a metate made from a piece of white, tabular sandstone. Only one facet is ground. The item measures 12.5 x 10.0 x 2.6 cm.

T4 is a small fragment of a metate made from white silicified sandstone. Enough of the object is present to indicate that the artifact had a single use surface, which is concave. The remaining artifact measures 18 x 5 cm, and was 8 cm thick. It is possible that this item was a trough metate, but not enough of the item was present to distinguish it from a basin metate.

T5 is a fragment of a metate. This item is made from a relatively soft, tabular, brown sandstone. One facet is ground. None of the metate's original margins are intact. The item measures 8.0 x 6.0 x 3.4.

T6 is a metate fragment. The artifact is made from a white silicified sandstone. Both faces are lightly ground and pecked. An original margin is edge-flaked (scabbled). The artifact measures 16.0 x 11.6 x 4.3 cm.

T7 is a fragment of some kind of handstone, perhaps a mano, made from an alluvial cobble. Both facets show wear. The artifact, originally disk-shaped, measures 8 x 5.5 x 3.8 cm.

T8 is a small fragment of a metate made from sandstone. The item may be fire-oxidized. Both sides are ground, though one more than the other. The artifact measures 8.5 x 8.0 x 2.7 cm.

9. LITHIC DEBITAGE - ESTIMATED QUANTITY: 32 (D)

**MATERIAL TYPE:** Just three material types were documented for the lithic debitage assemblage: Brushy Basin chert, a green mudstone with oolitic inclusions, and a light "tan" and brown silicified sandstone. The first two materials derive from the Morrison Formation; the third material probably comes from the Dakota Formation.

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[1] DECORTICATION [2] SECONDARY [2] TERTIARY  
[2] SHATTER [0] CORE

10. MAXIMUM DENSITY-#/SQ M (ALL LITHICS): 3/square meter

11. CERAMIC ARTIFACTS:

#	TYPE
C	Corrugated body sherds (E1)
C	Plain gray (EY)
B	Mancos Gray (EG)
B	Mancos B/w (EP)
C	Mesa Verde White Ware (EC)
B	San Juan Red Ware (EB)
B	Deadmans B/r (EL)

**DESCRIBE:** The pottery assemblage at this site consists of 53 sherds. Many of these are either corrugated jar body sherds (n=11) or plain gray jar body sherds (n=18). Interestingly, all of the latter are found in an area just east of the site's datum, suggesting the presence in the location of a Basketmaker III component. Also found in this location is a possible Mancos Gray jar sherd. In contrast, Feature 1, the possible midden area, harbors many of the later pottery types. These include Mancos B/w (n=9), 4 San Juan Red Ware sherds (of which 2 are Deadmans B/r bowl rim sherds), 6 Late White Unpainted and 4 Late White Painted sherds. The Mancos B/w sherds exhibit Black Mesa (n=5) and Dogoszhi (n=4) design styles. At least one of these sherds is a bowl rim sherd. While not documented, it seems likely that the white ware sherds represent both bowl and jar forms.

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** 4/square meter

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	TYPE
1	Midden (MD)
1	Burial (BU)
1	Hearth (HE)
1	Other—lens of ash and daub (OT)

**DESCRIBE:** The midden area, Feature 1 as it was defined during the current survey project, is located on the southern end of the site. The midden is situated on a slope below the possible location of one or more buried pit structures. The midden includes pottery sherds and debitage as well as several tools (T1-T3). The midden measures approximately 30 m in diameter. At least one old backhoe trench bisects the feature.

Three other subsurface features were located during Nielson's test excavations in 1978. Nielson describes the first of these as a "probable slab-lined fire hearth," which was found on the west end of his Trench B. He writes that the feature was observed at 43 cm below modern ground surface, but that the top of it was truncated by historic activities (probably plowing). The feature bottoms out at 60 cm below MGS. It is 67 cm (east-west) by 43 cm (north-south).

The second feature is a disturbed burial. Most of the body, excepting the left arm, is present. The body was extended. Two possible mauls and several Plain Gray sherds were found in association with the body.

Nielson (Nielson 1979:40) describes his third feature as a "lens of ash associated with fire-hardened clay and occasional burned daub." This lens of material measures about 20 cm thick and measures 1.4 m long. Nielson suggests that "the ash lens may be the remains of a jacal surface structure as suggested by small amounts of burned daub and pieces of burned sandstone on the surface."

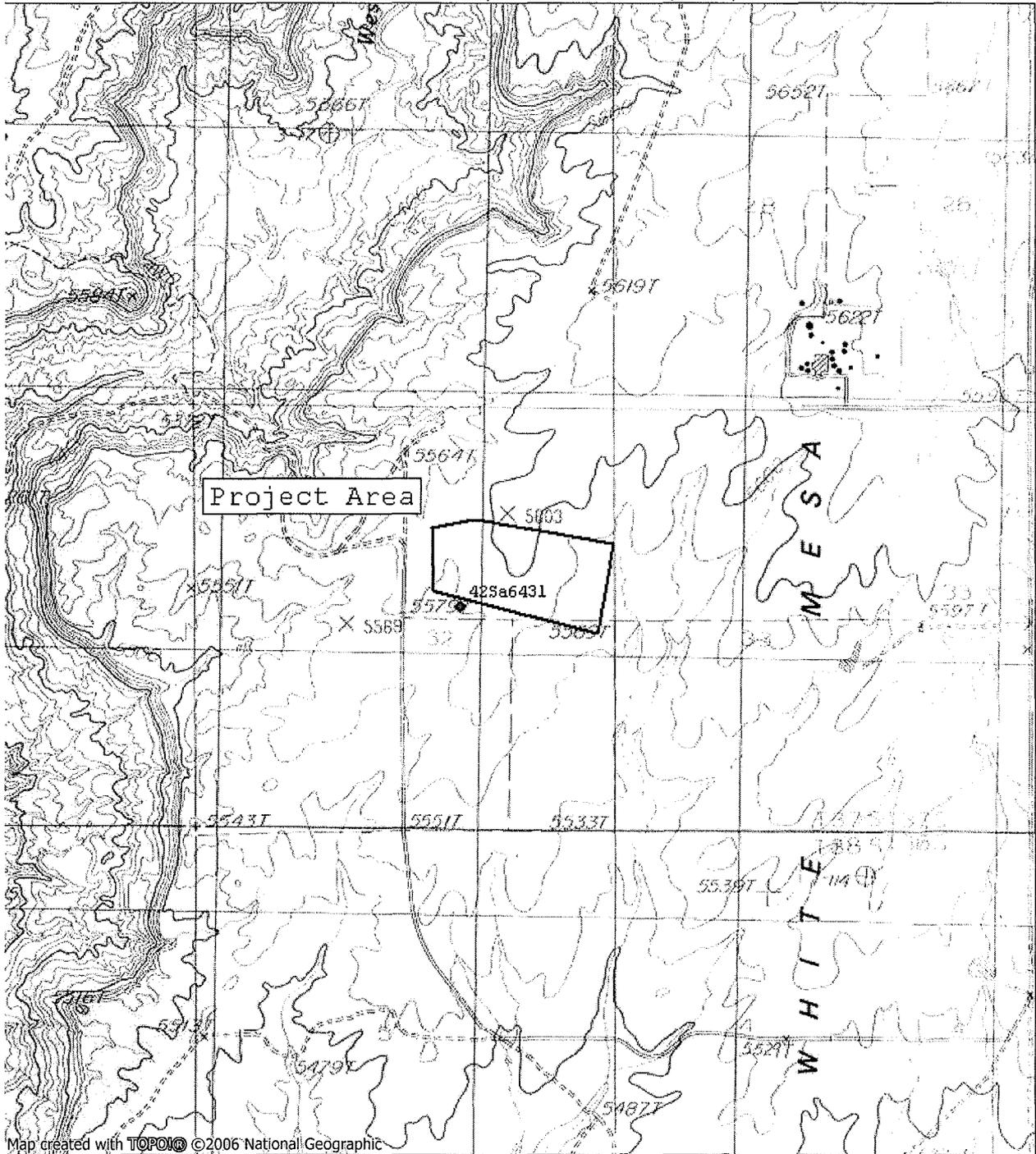
14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
1	Jacal/Adobe (H)	Unknown (ZZ)

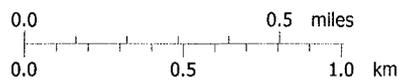
**DESCRIBE:** This feature (Feature 2) consists of a concentration of small fragments of burned jacal. This material is confined to a 2 square meter area just northeast of the midden (Feature 1).

15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa6431, Black Mesa Butte, Utah, 7.5'



Map created with **TOPO!** ©2006 National Geographic



TN MN  
11 1/2'  
07/06/09

42Sa6431



RIDGE CREST

Nielson  
Trenches C  
and D?

T4  
T8

T5  
T6  
T7

plain gray pottery  
scatter

site  
boundary

T1  
T2  
T3  
F1 (midden)  
F2

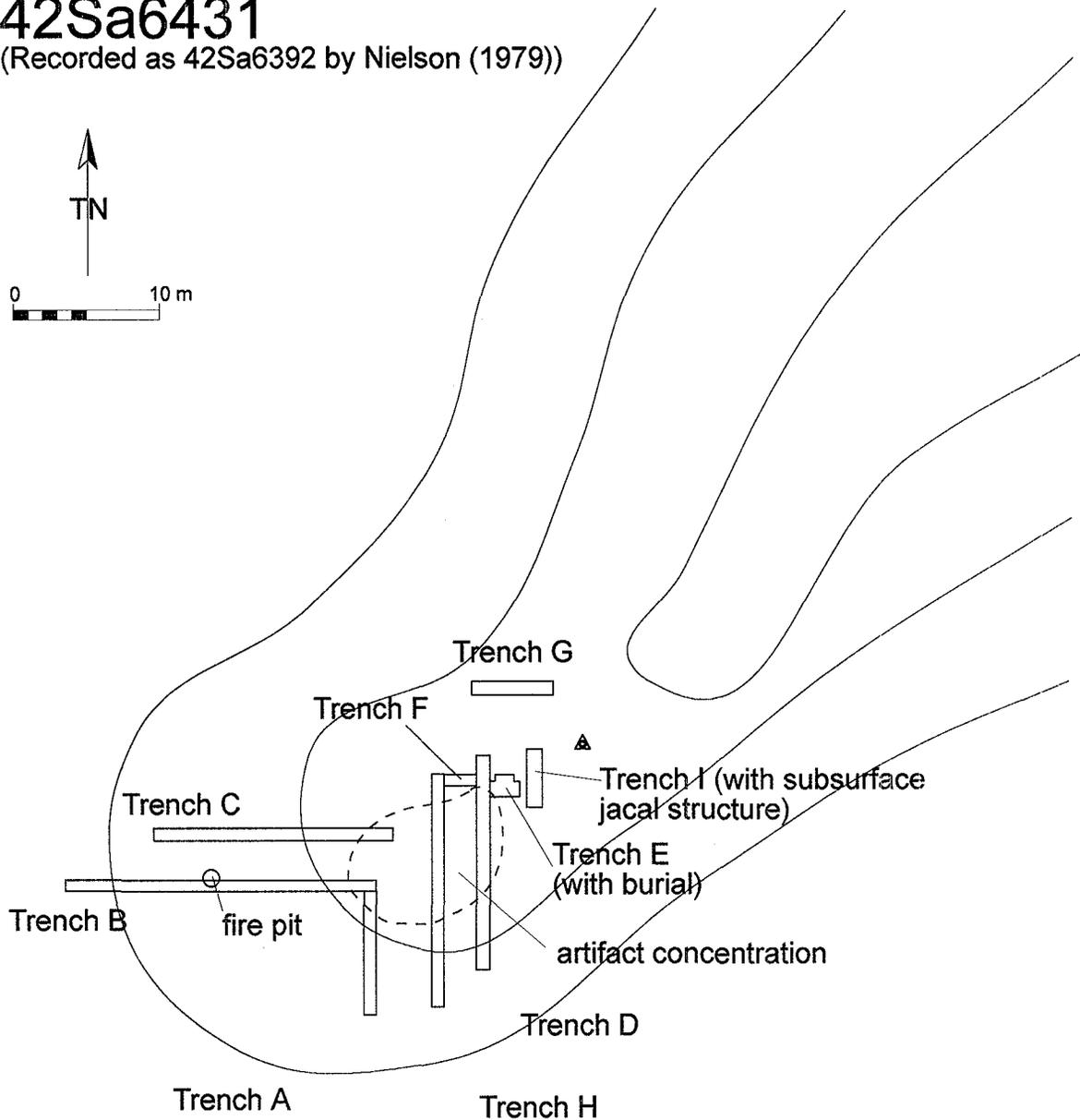
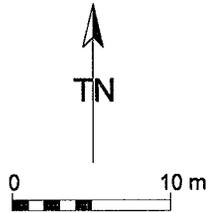
KEY

- datum
- tool
- berm
- backhoe trench
- feature

M. Bond, 10/23/08

# 42Sa6431

(Recorded as 42Sa6392 by Nielson (1979))



Redrawn from Nielson (1979: Figure 13)



Top: 42Sa6431, overview of north end of site, facing SW, cap over datum

Bottom: 42Sa6431, overview of north end of south, facing SW, close-up of cap over datum





Top: 42Sa6431, overview of south end of site, facing SW

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa6757
2. AGENCY NO:
3. TEMP NO.:
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Habitation
10. ELEVATION: 5592 ft.
11. UTM GRID: Zone 12, 631191 m East, 4154564 m North
12. [NW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (Utah)
14. MAP REFERENCE: Black Mesa Butte, Utah, 7.5' Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)-White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS: N/A
19. LOCATION OF CURATED MATERIALS: Edge of the Cedars State Park (ECP)
20. SITE DESCRIPTION: Site 42Sa6757 may be described as a habitation site with at least one pit structure that may have been a year-round dwelling, and other smaller structures that may have served as seasonal habitations or food processing facilities. The site was apparently originally documented through the efforts of the Antiquities Section of Utah's Division of State History (Lindsay 1978: Table III; Worthington 1978). The site was later tested for significance (Nielson 1979:85-95) and extent (Nielson 1981?). At the time of its initial documentation, the site was simply recorded as a "Mesa Verde Anasazi" site (Worthington 1978).

Excavation of the site documented a total of five features, including two pit structures and two very small habitations or field houses (Davis and others 1985:128-164). A fifth feature, Feature 5, is noted on the site's map but is not otherwise described except in association with artifacts (Davis and others 1985: Figure 7-27 and Table 10-2); it seems reasonable to surmise that Feature 5 was a small pit feature of some type. Pottery data indicate that all features dated to the Basketmaker III period. Brief descriptions of the four main features follow in Part B, #14.

21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): The excavation of the site by Abajo Archaeology (Davis 1985) constitutes the greatest impact to the site (CE). At the time of excavation, impacts documented for the site had included historic chaining and/or other land-leveling activities (CL), re-seeding (AG), and

collecting (VA) (apparent by way of a collector's artifact pile). Davis and others (1985:128-129) note that three backhoe trenches had been excavated to test for significance and that the State later excavated 13 other trenches to determine extent.

23. **NAT. REGISTER STATUS:**  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

**JUSTIFY:** While it is likely that most of the cultural features associated with this site have been excavated, it is possible that small features peripheral to the excavated portions of 42Sa6757 have not been located. In other words, while known features were mitigated, intact subsurface sediments may remain on the site. Further, the site's midden area has not been examined in a systematic fashion. Data recovery from these areas of the site may still provide data pertinent to research domains such as chronology, subsistence, settlement, and social structure. Thus, the site is still eligible under criterion (d).

24. **PHOTOS:**  
25. **RECORDED BY:** Mark Bond  
26. **SURVEY ORGANIZATION:** Abajo Archaeology (AS)  
27. **ASSISTING CREW MEMBERS:** Jonathan Till  
28. **SURVEY DATE:** 10/25/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [90] DEGREES ASPECT: [3] DEGREES  
30. DISTANCE TO PERMANENT WATER: [27] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). Site 42Sa6757 is situated on a gentle, east-facing slope of a low finger ridge that has a north-south orientation.  
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. Agenbroad (1985: Figure 8-5) illustrates that the overburden of the aeolian loess is 50 to 70 cm deep across much of the site, at which point caliche-rich sediments are encountered.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Grassland (M)  
SECONDARY ON-SITE: Big Sagebrush (P)  
SURROUNDING SITE: Juniper-Sage (2)  
DESCRIBE: The site's current plant profile has been heavily affected by past excavation efforts as well as historic chaining and raiing. Current vegetation includes bunch grasses, cheat grass, sage, snakeweed, prickly pear, and mustard.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

PART B - PREHISTORIC SITES

1. **SITE TYPE:** Habitation
2. **CULTURE - CULTURAL AFFILIATION:** Basketmaker III (B5)  
**DATING METHOD:** Pottery cross-dating (M), tree-ring dating (C), architectural style (L), lithic cross-dating (N), Carbon-14 (B)  
**DESCRIBE:** The excavation data for 42Sa6757 yielded multiple lines of evidence for a chronological assessment of the site. Most telling are the pottery and architectural data, both of which indicate a Basketmaker III period occupation for all features on the site. Tree-ring and projectile point data corroborate this assessment. A C-14 date (2140 +/- 145 B.P.) was too ambiguous to be of much use. See Davis (1985) for more information.
3. **SITE DIMENSIONS:** [56] m by [76] m  
**AREA:** [4256] sq m
4. **SURFACE COLLECTION/METHOD:** Unknown (Z)  
Worthington (1978) does not document surface collections in the original site for 42Sa6757. Likewise, Nielson (1979) does not indicate surface collection for subsequent testing. It is not known if later testing at an unknown date resulted in surface collections. Presumably surface collections occurred in the excavated portions of the site by Davis (1985). Bond (1985:271 and Table C-44) does note that 102 sherds were collected from the "surface collection" of the site.
5. **ESTIMATED DEPTH OF CULTURAL FILL:** 20-100 cm (C)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** As noted in Part A, #33, Agenbroad (1985) illustrates the general depth to caliche across the site. Where pit structures were encountered, the depth of cultural fill exceeded 1 meter in depth.
6. **EXCAVATION STATUS:**  EXCAVATED (A)  TESTED (B)  
 UNEXCAVATED (C)  
**TESTING METHOD:** Backhoe trenches accomplished the test excavations conducted by the Division of State History (Nielson 1979) and Abajo Archaeology (Davis 1985).
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** pottery (CS), chipped stone artifacts (LS), ground/pecked stone artifacts (GS), faunal bone (WB), vegetal remains samples (VR), and shell (SL)  
**DESCRIBE:** Arbitrarily listed above are multiple artifact classes retrieved from the excavated site. Naturally, this list is not exhaustive. The reader is referred to Davis (1985) for a full accounting of the artifacts collected and cataloged for 42Sa6757. See Nielson (1979) for information regarding the artifacts collected during the testing phase excavations.
8. **LITHIC TOOLS:**

#	TYPE
2	Stemmed points (HC)
4	bifaces (IG)
2	retouched flakes (IY)
1	utilized flake (IA)
6	pecking stones (IO)
9	hammerstones (IF) (n=9)
3	polishing stones (IP)
6	one-hand manos (NA)
8	two-hand manos (NB)
2	indeterminate mano (NZ)
5	slab metate (ME)
9	trough metate (MC) (n=11)
9	basin metate (MA) (n=11)

**DESCRIBE:** Lithic tools cataloged from the site include projectile points (n=2), bifaces (n=4), retouched flakes (n=2), utilized flakes (n=1), pecking stones (n=6), hammerstones (n=9), and polishing stones (n=4). Davis (1985) describes the chipped stone assemblage more extensively in

Chapter XI in the site's excavation report.

Likewise, Westfall (1985) reports extensively on the ground stone assemblage in the site's write-up in Chapter XIII. She notes that 19 manos and 25 metates were collected from the site during the site's excavation by Abajo Archaeology. Six of the manos are one-hand manos, eight are two-hand manos, and two are of indeterminate type. Of the metates, five are slab metates, 11 are trough metates, and nine are basin metates.

Other stone artifacts removed during the site's excavation by Abajo include pendants (n=2) and shaped stone slabs (n=8).

9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** Davis (1985) notes that 885 pieces of debitage were collected during the site's excavation.

**MATERIAL TYPE:** Davis (1985: Table 11-3) distinguishes 10 material types associated with the site's debitage assemblage. These debitage material types, and their counts and percentages, are as follows: chert (n=518, 58.5%), quartzite (n=223, 25.2%), chalcedony (n=65, 7.3%), jasper (n=11, 1.2%), agate (n=14, 1.6%), siltstone (n=8, 0.9%), quartz (n=21, 2.4%), basalt (n=15, 1.7%), diorite (n=5, 0.6%), diorite (n=5, 0.6%), and sandstone (n=5, 0.6%).

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[2] DECORTICATION [2] SECONDARY [2] TERTIARY  
[2] SHATTER [1] CORE

10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):** Data not available.

11. **CERAMIC ARTIFACTS:**

#	TYPE
F	Undifferentiated Plain Gray (EY) (n=1403)
C	Undifferentiated Corrugated (E1) (n=23)
E	Chapin Gray (EE) (n=109)
B	Mancos Gray (EG) (n=1)
B	Lino Gray (JA) (n=30)
B	Mancos Corrugated (ET) (n=5)
B	Mudware (ZZ) (n=6)
D	Chapin B/w (EM) (n=48)
B	Piedra B/w (EN) (n=5)
C	Mancos B/w (EP) (n=12)
B	Undifferentiated White Ware (EC) (n=9)
B	Bluff B/r (EK) (n=1)
C	Deadmans B/r (EL) (n=12)
C	Undifferentiated Red Ware (EB) (n=11)

**DESCRIBE:** A total of 1675 pottery sherds were collected from the site. Bond (1985:271-273, Table 10-2) reports on the pottery assemblage from the data recovery excavations at 42Sa6757. A few very minor discrepancies occur between his total site tally and Tables C-44 through C-55. The correct tally for the whole site is provided above. The whole site assemblage indicates that the site's primary occupation was during the Basketmaker III period, or prior to A.D. 750 or 780 (as suggested by the lack of Abajo R/o). An early Pueblo II period presence is indicated by the Mancos Gray, corrugated pottery, Piedra B/w, Mancos B/w, and the red ware sherds. The later assemblage is probably intrusive pottery that has washed in from another site. Alternatively, there may be a small Pueblo II period feature that has yet to be discovered on the site.

Seven complete or nearly complete vessels were recovered from the site. These include two Chapin Gray short-necked ollas, a Chapin Gray "slope-necked" olla, two Chapin Gray pitchers, a Chapin B/w bowl, and a Piedra B/w bowl. Also of note was a large portion of a duck effigy vessel.

Only one worked sherd was recorded for the assemblage.

The only potential extralocal pottery is represented by the Lino Gray sherds.

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** Data not available.

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	TYPE
1	midden (MD)
1	hearth (HE)

**DESCRIBE:** The midden defined and tested at 42Sa6757 was not immediately apparent at the surface (Davis 1985:164). Instead, the feature was partially buried under 3 to 5 cm of aeolian sediments. The midden is south of the pit structures, is roughly elliptical, and covers approximately 650 square meters. It is characterized by a relatively dark color and relatively high concentrations of artifacts. The midden is fairly shallow and does not appear to be more than 15 cm thick. This area was tested by backhoe trenches, but otherwise not systematically sampled.

Feature 5 is noted in Backhoe Trench 8, which cuts through the northern portion of the midden, on the site's excavation map and receives brief description as a "basin-shaped firehearth" (Davis 1985:129 and Figure 7-27). It is not described further, however.

14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
4	subterranean (I)	pithouse (AF)

**DESCRIBE:** Feature 1 is a roughly D-shaped or sub-circular pithouse with a relatively straight eastern wall. The room measured 4.5 m north-south by 4.7 m east-west, and was approximately 1.2 m deep. Feature 1 did not have the appended antechamber that many Basketmaker III pithouses have. Instead, the southern wall is sloped, not vertical. A set of bilaterally symmetrical floor features, including wing walls, post holes, and pits were documented, as was an uncoped hearth. The structure was not burned; instead, it appears as though wooden architectural elements were recycled. In spite of this, enough of a roof and/or floor artifact assemblage was recovered to suggest a few food-processing activity areas in the room, particularly in the area enclosed by the wing walls in the south part of a the room, and in the area immediately surrounding the hearth.

Feature 2 is a sub-circular pit structure that measured 4.2 m in diameter and was 45 cm deep. Like Feature 1, this room did not have the appended antechamber common to Basketmaker III pithouses. Rather, a vent tunnel along the southeast side of the room supplied the feature with air. Other features in the room were organized bilaterally and in a pattern to suggest a southeast alignment for the room. These features included wing walls, a hearth, and apparent deflector postholes. A milling bin as well as several relatively deep pit features were also documented in the room. The room had burned. One of the room beams yielded a noncutting date of A.D. 627. A relatively high number of groundstone artifacts were recovered from the floor; these items, and the room's features, indicate a primary function of food-processing for the structure.

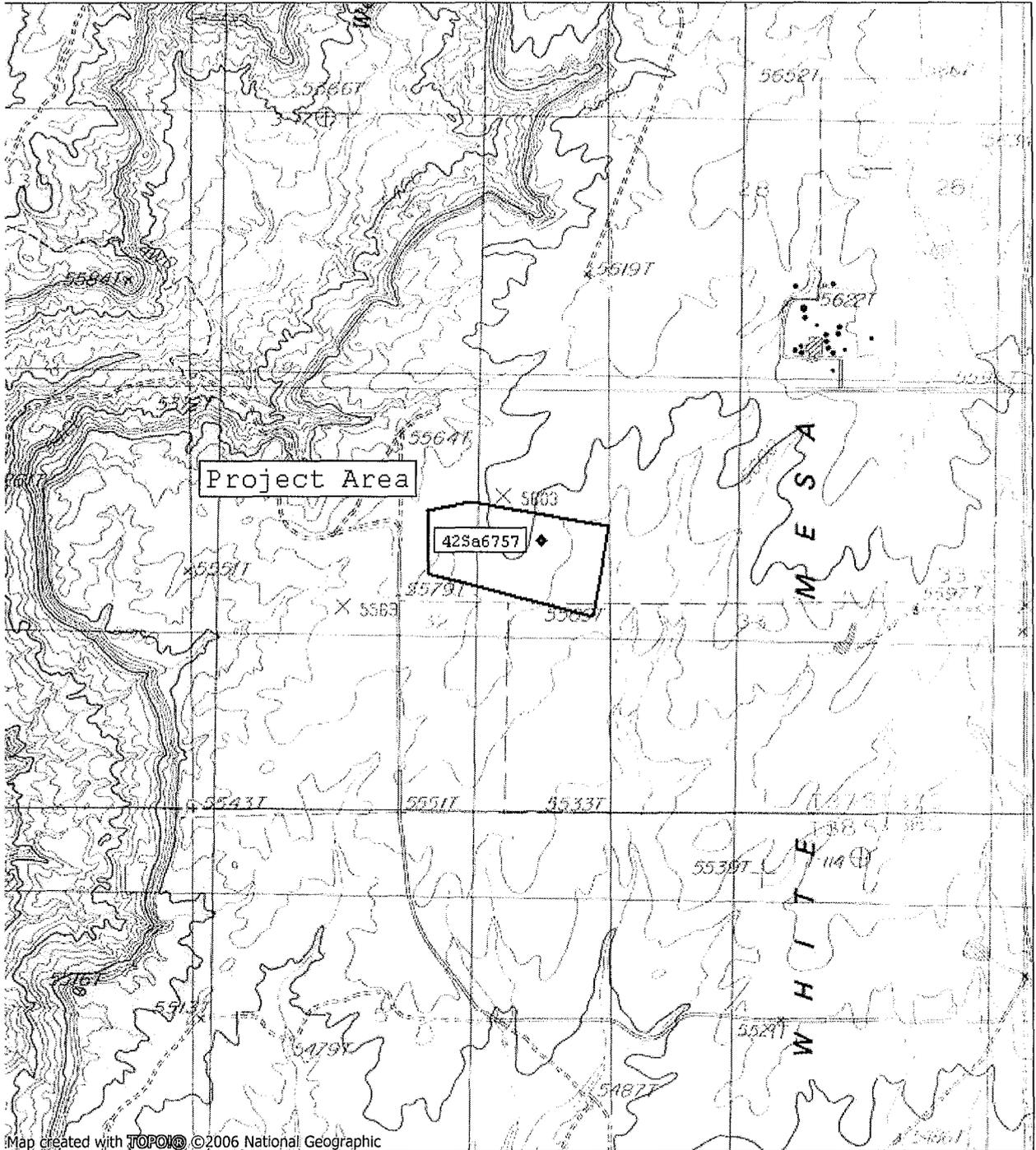
Feature 3 is a sub-rectangular, semi-subterranean room that measured 2.3 m north-south by 2.1 m east-west and was about 20 cm deep. The room was divided by an interior, upright slab wall that segregated the eastern 1/3 of the room from the western 2/3. No hearth was observed in the structure; however, I suggest that a test trench may have obliterated an ephemeral hearth. No other internal features were present. Two exterior postholes on the west side of the feature indicate an expedient exterior

roofing technique, such as a lean-to, might have been used to roof the structure. The structure was not burned. Davis and others (1985) suggest that the room was used as an informal habitation with some storage function.

Feature 4 is a rectangular pit structure that measured 3.5 m east-west by 2.2 m north-south. It is difficult to assess how deep the original structure was; its floor was located at about 30 cm below modern ground surface. Only a few features were found in the room. These included a hearth, a pit, and a single posthole. The room was burned upon abandonment. Most artifacts had been removed from the feature before burning. Davis (1985:162-164) suggests that the room may have functioned as an expedient habitation.

15. COMMENTS/CONTINUATION

Location for 42Sa6757, Black Mesa Butte, Utah, 7.5'

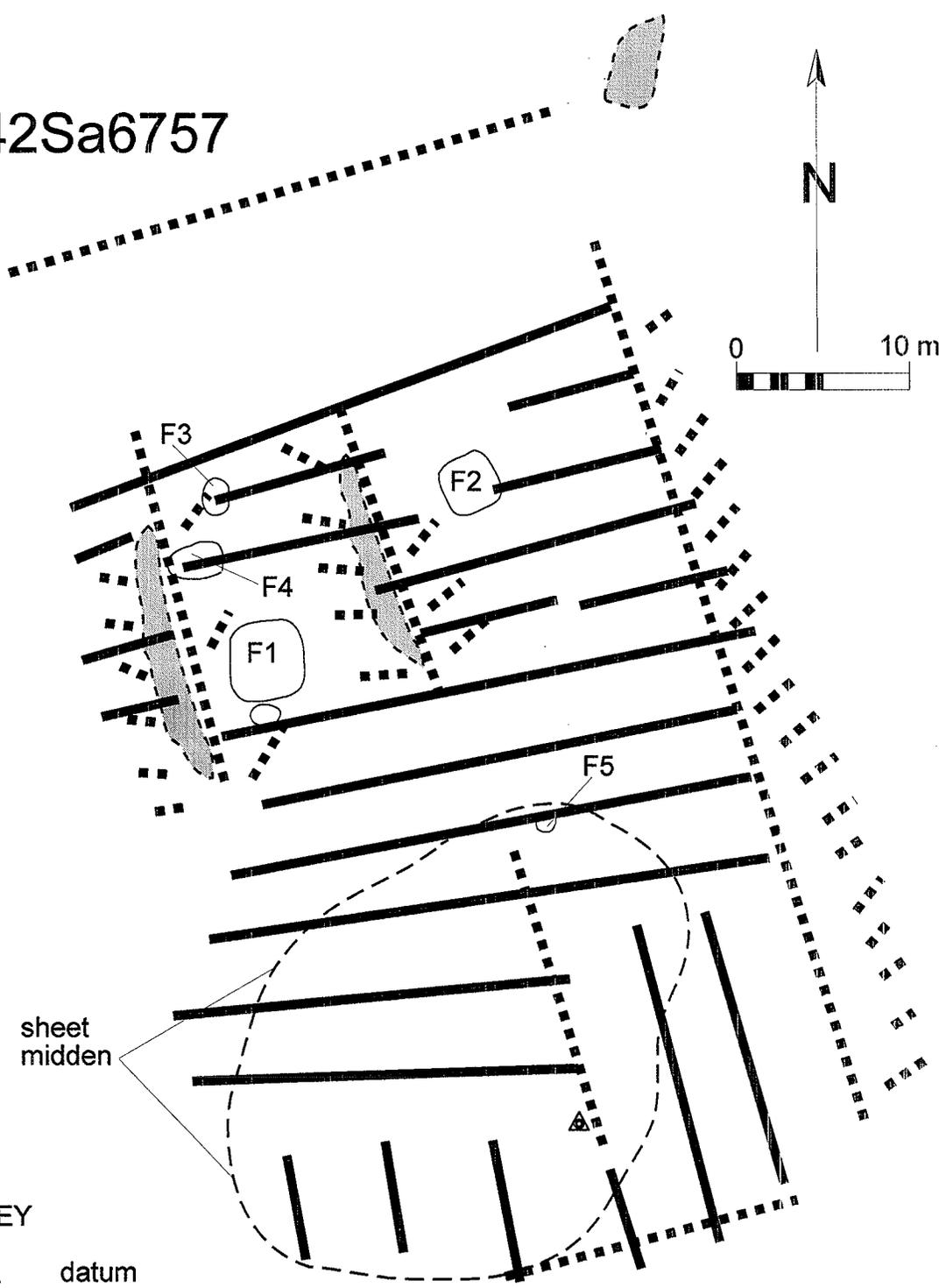


Map created with TOPO!® ©2006 National Geographic



TN MN  
11 1/2  
07/06/09

42Sa6757



KEY

-  datum
-  F# feature
-  Plano trench
-  State trench
-  bladed area

Redrawn from  
Davis and others  
(1985: Figure 7-27)



Top: 42Sa6757, facing north; note old trenches

Bottom: 42Sa6757, facing northeast; mill facility in background



IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

1. STATE NO.: 42Sa8014
2. AGENCY NO:
3. TEMP NO.:
4. STATE: Utah COUNTY: San Juan
5. PROJECT: Cultural Resource Inventory of the Proposed Denison Mines (USA) Corporation White Mesa Mill Cell 4B, San Juan County, Utah
6. REPORT NO.: U-09-AS-0334p
7. SITE NAME/PROPERTY NAME: N/A
8. CLASS:  PREHISTORIC  HISTORIC  PALEONTOLOGIC  
 ETHNOGRAPHIC
9. SITE TYPE: Seasonal habitation
10. ELEVATION: 5610 ft.
11. UTM GRID: Zone 12, 631227 m East, 4154674 m North
12. [NW] OF [SE] OF [NE] OF SECTION [32], T. [37S], R. [22E]
13. MERIDIAN: SLC (Utah)
14. MAP REFERENCE: Black Mesa Butte, Utah, 7.5' Provisional Edition 1985
15. AERIAL PHOTO: N/A
16. LOCATION AND ACCESS: The site is situated in the approximate mid-section of White Mesa, a north-to-south oriented mesa that parallels drainage systems to the east and west. By traveling approximately five miles south of Blanding, Utah on US Highway 191, one arrives at the long driveway entrance to the White Mesa Uranium Mill (currently under the ownership of Denison Mines), which is located on the west side of the highway. The site may then be reached by traveling approximately one mile to the west, essentially approaching the rim of Cottonwood Wash Canyon. The site may only be accessed by permission of the land owner.
17. LAND OWNER: Private (PR)-White Mesa Mill, Denison Mines (USA)
18. FEDERAL ADMIN. UNITS: N/A
19. LOCATION OF CURATED MATERIALS: Edge of the Cedars State Park (ECP)
20. SITE DESCRIPTION: Site 42Sa8014 was probably a seasonally occupied habitation. As with 42Sa6757, this site was initially documented by the Utah Division of State History Antiquities Section (Davis and others 1985:165). It was subsequently tested for significance, although no citation for that work could be found. Casjens (1980:344-345) writes that the site was further tested for extent; Davis and others (1985: Figure 7-38) indicate the location of the Antiquities Section's trenches on the excavation plan view of the site.

Two features were located and excavated on the site. One of the features is a pit structure while the other is a slab-lined cist. Pottery assemblages associated with both features suggest that the two were probably contemporaneous. It is likely that the site was in use sometime during the late ninth and/or early tenth century (see Part B, #2 for more detail on the site's chronological determinations). Brief descriptions of the site's two features follow in Part B, #14.
21. SITE CONDITION:  EXCELLENT (A)  GOOD (B)  
 FAIR (C)  POOR (D)
22. IMPACT AGENT(S): The excavation of the site by Abajo Archaeology (Davis 1985) constitutes the greatest impact to the site (CE). At the time of excavation, impacts documented for the site had included historic chaining and/or other land-leveling activities (CL), re-seeding (AG), and collecting (VA) (apparent by way of a collector's artifact pile). Davis and others (1985:128-129) note that nine backhoe trenches had been excavated prior to the site's mitigation by Abajo Archaeology, presumably to test

for significance and/or extent. A mill access road passes immediately north of the site. The construction of Cell 3 to the north of this road has no doubt significantly affected the immediate landscape of 42Sa8014.

23. NAT. REGISTER STATUS:  SIGNIFICANT (C)  
 NONSIGNIFICANT (D)  
 UNEVALUATED (Z)

**JUSTIFY:** While it is likely that most of the cultural features associated with this site have been excavated, it is possible that small features peripheral to the excavated portions of 42Sa8014 have not been located. Data recovery from these areas of the site may still provide data pertinent to research domains such as chronology, subsistence, settlement, and social structure. Thus, the site is still eligible for nomination to the National Register under criterion (d).

24. **PHOTOS:** See attached.  
25. **RECORDED BY:** Mark Bond  
26. **SURVEY ORGANIZATION:** Abajo Archaeology  
27. **ASSISTING CREW MEMBERS:** Jonathan Till  
28. **SURVEY DATE:** 10/25/08

**LIST OF ATTACHMENTS:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> PART B       | <input checked="" type="checkbox"/> TOPO MAP |
| <input type="checkbox"/> ARTIFACT/FEATURE SKETCH | <input type="checkbox"/> PART C              |
| <input checked="" type="checkbox"/> SITE SKETCH  | <input type="checkbox"/> CONTINUATION SHEETS |
| <input type="checkbox"/> PART E                  | <input checked="" type="checkbox"/> PHOTOS   |
| <input type="checkbox"/> OTHER:                  |  |

PART A - ENVIRONMENTAL DATA

29. SLOPE: [2] DEGREES ASPECT: [180] DEGREES  
30. DISTANCE TO PERMANENT WATER: [28] X 100 METERS  
TYPE OF WATER SOURCE: [ ] SPRING/SEEP (A)  
[X] STREAM/RIVER (B) [ ] LAKE (C) [ ] OTHER (D)  
NAME OF WATER SOURCE: Cottonwood Wash  
31. GEOGRAPHIC UNIT: Blanding Basin (CAJ)  
32. TOPOGRAPHIC LOCATION  
PRIMARY LANDFORM: Mesa (C)  
SECONDARY LANDFORM: Slope (Q)  
DESCRIBE: The site is generally situated along the midsection of the north-to-south oriented White Mesa. White Mesa itself is a long landform that parallels the drainage systems of Cottonwood Wash on the west, and Recapture Wash to the east. These drainages channel water from the Abajo Mountains (north) to the San Juan River (south). Site 42Sa8014 is located near the base of the same ridge slope as 42Sa6757. Davis and others (1985:165) note that, prior to the mill's construction, a small east-flowing drainage passed just to the north of the site.  
33. ON-SITE DEPOSITIONAL CONTEXT: Aeolian (S)  
DESCRIPTION OF SOIL: On-site sediments consist of the deep, red, fine-grained aeolian loess characteristic of this portion of White Mesa. Agenbroad (1985: Figure 8-6) illustrates that the overburden of the aeolian loess is 40 to 50 cm deep across much of the site, at which point caliche-rich sediments are encountered.  
34. VEGETATION  
A. LIFE ZONE: Upper Sonoran (E)  
B. COMMUNITY:  
PRIMARY ON-SITE: Grassland (M)  
SECONDARY ON-SITE: Developed/Industrial (U)  
SURROUNDING SITE: Juniper-Sage (2)  
DESCRIBE: The site's current plant profile has been heavily affected by past excavation efforts as well as historic chaining and raiiling. Current vegetation includes bunch grasses, sagebrush, Russian thistle, prickly pear cactus, snakeweed, introduced grasses. A few small juniper trees.  
35. MISCELLANEOUS TEXT:  
36. COMMENTS/CONTINUATIONS:

**PART B - PREHISTORIC SITES**

1. **SITE TYPE:** Seasonal habitation
2. **CULTURE - CULTURAL AFFILIATION:** Pueblo I (P1)  
**DATING METHOD:** Pottery cross-dating (M), architectural style (L), lithic cross-dating (N), Carbon-14 (B)  
**DESCRIBE:** One absolute date, a C-14 sample from the floor of Feature 1, yielded a date of 1455±130 B.P. Considering the pottery assemblage, this seems far too early to accurately represent the feature's occupation. Bond (1985:274) recommends that the site dates to the late Pueblo I period. The pottery assemblage indicates an occupation during the late A.D. 800s/early A.D. 900s. The single stemmed projectile point and the groundstone assemblage corroborate the pottery assemblage date. The architecture is not inconsistent with this interpretation.
3. **SITE DIMENSIONS:** [30] m by [30] m  
**AREA:** [900] sq m
4. **SURFACE COLLECTION/METHOD:** It is not known if the initial surface documentation resulted in collections. Likewise, Casjens (1979) does not indicate surface collection during the site's subsequent testing. It is not known if later testing at an unknown date resulted in surface collections. Collections from surface contexts did occur during the site's mitigation in 1981 (Davis 1985). Bond (1985:273 and Table C-56) does note that 18 sherds were collected from the surface of the site.
5. **ESTIMATED DEPTH OF CULTURAL FILL:** 20-100 cm (C)  
**HOW ESTIMATED (IF TESTED, SHOW LOCATION ON SITE MAP):** As noted in Part A, #33, Agenbroad (1985) illustrates the general depth to caliche across the site (40 to 50 cm deep). Where the pit structure, Feature 1, was encountered, the depth to floor was 45 cm below modern ground surface.
6. **EXCAVATION STATUS:**  EXCAVATED (A)  TESTED (B)  
 UNEXCAVATED (C)  
**TESTING METHOD:** Backhoe trenches accomplished the test excavations conducted by the Division of State History (Nielson 1979) and Abajo Archaeology (Davis 1985).
7. **SUMMARY OF ARTIFACTS AND DEBRIS:** pottery (CS), chipped stone artifacts (LS), ground/pecked stone artifacts (GS), faunal bone (WB), and vegetal remains samples (VR)  
**DESCRIBE:** Arbitrarily listed above are multiple artifact classes retrieved from the excavated site. Naturally, this list is not exhaustive. The reader is referred to Davis (1985) for a full accounting of the artifacts collected and cataloged for 42Sa8014.
8. **LITHIC TOOLS:**

#	TYPE
1	stemmed point (HB)
1	scraper (IH)
1	drill (IB)
1	core (ID)
1	utilized core (IS)
9	peckingstones (IO) (n=12)
7	hammerstones (IF)
1	polishing stone (IP)
5	one-hand mano (NA)
9	two-hand mano (NB) (n=9)
1	indet. mano (NZ)
4	trough metate (MC)

  
**DESCRIBE:** Lithic artifacts recovered from 42Sa8014 include a projectile point (a stemmed point with flared tangs, a style common to the BMIII and PI periods), a scraper, a drill, a core and a core tool, peckingstones (n=12), hammerstones (n=7), and a polishing stone. This last item was interpreted as a "floor polisher." Ground stone tools include 15 manos (5

one-hand manos, 9 two-hand manos, and 1 indeterminate) and 4 trough metate specimens.

9. **LITHIC DEBITAGE - ESTIMATED QUANTITY:** Davis (1985) notes that 142 pieces of debitage were collected from the site.

**MATERIAL TYPE:** Davis (1985: Table 11-4) distinguishes six material types associated with the site's debitage assemblage. These debitage material types, and their counts and percentages, are as follows: chert (n=81, 57.0%), quartzite (n=13, 9.2%), chalcedony (n=35, 24.6%), jasper (n=1, 0.1%), agate (n=6, 4.2%), and quartz (n=6, 4.2%).

**FLAKING STAGES:** (0) NOT PRESENT (1) RARE  
(2) COMMON (3) DOMINANT  
[1] DECORTICATION [1] SECONDARY [3] TERTIARY  
[2] SHATTER [1] CORE

10. **MAXIMUM DENSITY-#/SQ M (ALL LITHICS):** Data not available.

11. **CERAMIC ARTIFACTS:**

#	TYPE
E	Undifferentiated Plain Gray (EY) (n=413)
B	Undifferentiated Corrugated (E1) (n=1)
B	Chapin Gray (EE) (n=8)
B	Moccasin Gray (EF) (n=4)
E	Mancos Gray (EG) (n=208)
B	Piedra B/w (EN) (n=7)
B	Mancos B/w (EP) (n=1)
C	Bluff B/r (EK) (n=24)
B	Deadmans B/r (EL) (n=4)
B	Undifferentiated Red Ware (EB) (n=9)

**DESCRIBE:** A total of 681 pottery sherds were collected from the site and analyzed. Bond (1985:273-274, Table 10-4) reports on the pottery assemblage from the data recovery excavations at 42Sa8014. Several minor discrepancies occur between Table 10-4, which reports pottery type totals by feature, and Tables C-56 through C-62, which sum type by feature context. We have recalculated the tally for the whole site for this site form—these totals are provided above. The whole site assemblage indicates that the site probably represents a single occupation that dates to the late Pueblo I period, probably in the late A.D. 800s or early A.D. 900s.

12. **MAXIMUM DENSITY-#/SQ M (CERAMICS):** Data not available.

13. **NON-ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

**DESCRIBE:**

14. **ARCHITECTURAL FEATURES (LOCATE ON SITE MAP):**

#	MATERIAL	TYPE
1	subterranean (I)	pit structure (AF)
1	masonry (B)	cist (AE)

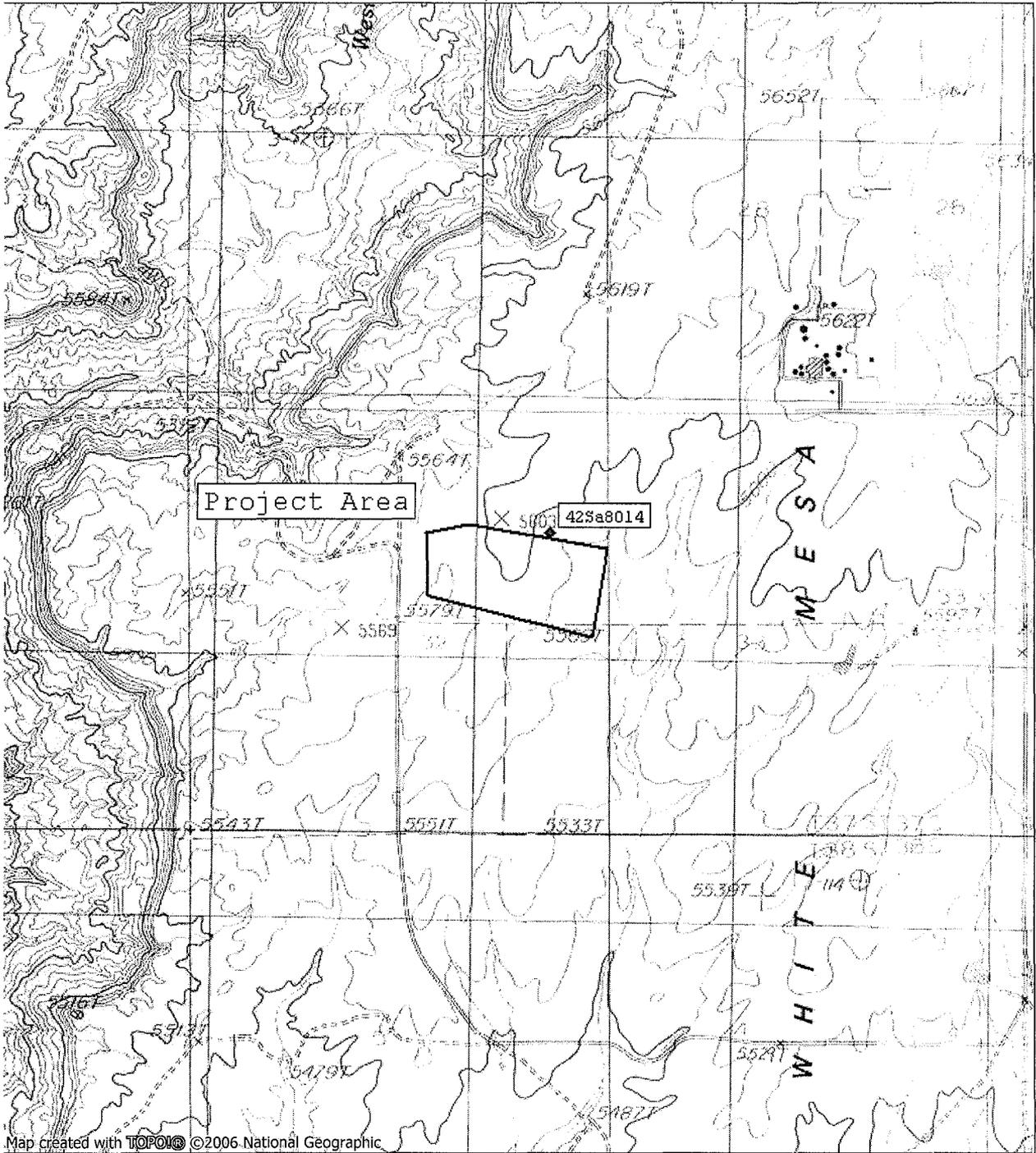
**DESCRIBE:** Feature 1 is a sub-circular pit structure. The feature measures 3.3 m north-south by 3.5 m east-west, and is about 45 cm below modern ground surface. Six pit features and one mealing bin were located within the room, but no postholes. The utter lack of postholes suggests that the roof was an ephemeral, exterior structure that may have been removed upon the feature's abandonment. The room was not burned. Though not recognized, one or two of the structure's pit features probably served as an informal hearth. The mealing bin and artifact assemblage suggest a variety of activities were associated with the room, including food processing, tool production and maintenance, and perhaps hunting-related activities. However, the feature's small size and its relatively informal construction indicate a seasonal occupation (Davis and others 1985:172).

Feature 2 is the remains of a rectangular, slab-lined cist that measured 1.9 m east-west by 0.7 m north-south and was about 40 cm deep. The feature was partially destroyed during testing activities. Enough of the feature

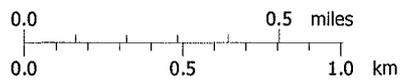
remained however to indicate that Feature 2's interior had been burned, perhaps as a part of food-processing activities. Located only 1.2 m east of Feature 1, the cist was most probably associated with the activities centered on the pit structure.

15. **COMMENTS/CONTINUATIONS:**

Location for 42Sa8014, Black Mesa Butte, Utah, 7.5'

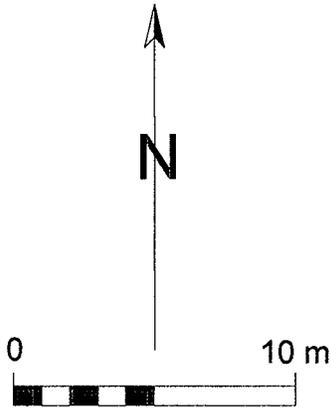
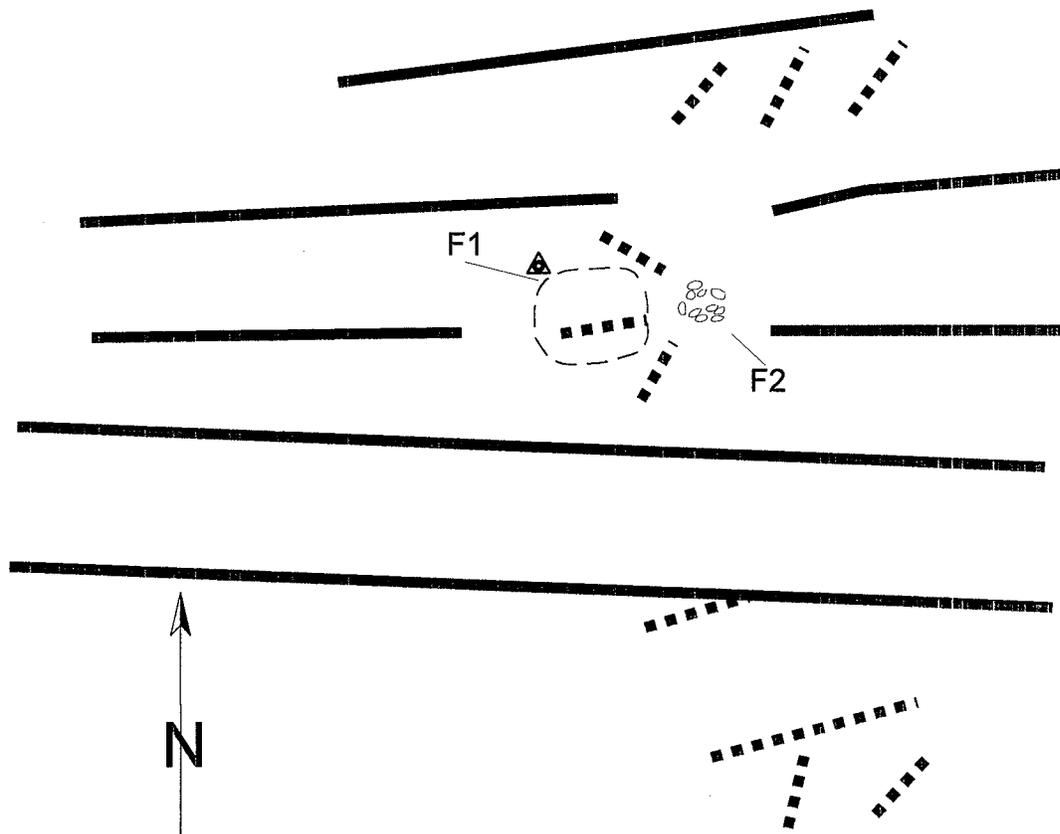


Map created with **TOPO!** ©2006 National Geographic



TN\* MN  
11 1/2'  
07/06/09

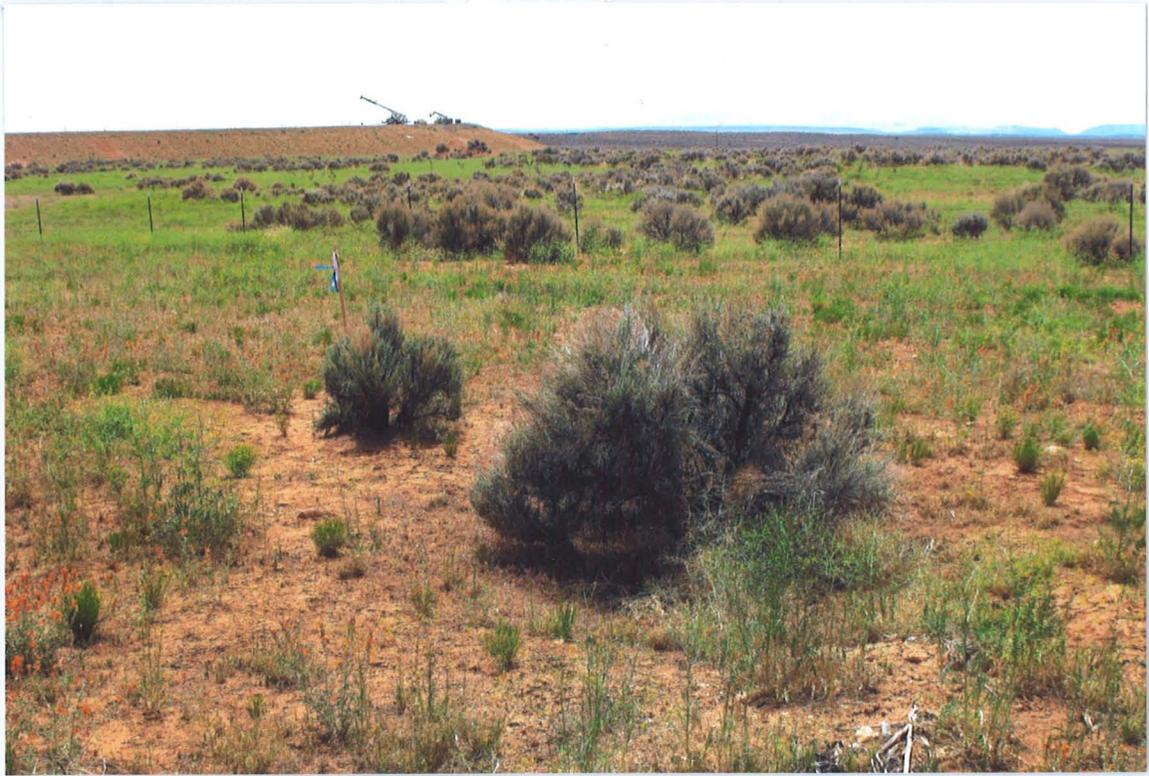
42Sa8014



KEY

- ▲ datum
- F# feature
- Plano trench
- - - Utah State Antiquities trench

Redrawn from Davis and others (1985: Figure 7-38)



Top: 42Sa8014, Feature 1 depression in foreground, facing south

Bottom: 42Sa8014, overview, facing south

