

**Archaeological Assessment of the  
Rifle Wickiup Village - 5GF308  
in  
Garfield County, Colorado**

Presented by

**Brian O'Neil**

Western Colorado Archaeological Consultants  
Dominquez Archaeological Research Group

Prepared by

**Brian O'Neil, Carl E. Conner, Barbara J. Davenport, and Richard Ott**

Dominquez Archaeological Research Group  
2832 Unaweep Ave.

Grand Junction, Colorado 81503

Presented to

**Colorado Council of Professional Archaeologists**

**Annual Meeting**

**March 4-6, 2005**

Adams Mark Hotel  
Grand Junction, CO

## **Introduction** [SLIDE # 1]

During the past 22 years, the BLM has accumulated data from 5GF308, the Rifle Wickiup Village. However, due to time and funding constraints, this data was not reported and sent to the Office of Archaeology and Historic Preservation (OAHP). Dominquez Archaeological Research Group, Inc. (DARG), a non-profit organization, approached the Bureau of Land Management, Glenwood Springs Field Office (BLM/GSFO), with a proposal for accomplishing this task. An Archaeological Assessment Grant was obtained through the State Historical Fund (SHF) in October, 2003, and was supplemented by a BLM Assistance Agreement.

DARG, in association with Western Colorado Archaeological Consultants (WCAC), Grand River Institute (GRI), and Leaf Media, Inc. (Leaf), conducted the archaeological assessment during October, November, and early December, 2003, and in March and April, 2004. Project personnel included Project Director Brian O'Neil (WCAC), Barbara J. Davenport (GRI), and Richard Ott (Leaf). Carl E. Conner, Director of DARG, contributed his time to the project as the site surveyor. The majority of the artifacts, field notes, maps, and other formal documents had been acquired through the efforts of Patti Walker-Buchanan, former BLM/GSFO archaeologist, and by Cheryl Harrison, the current BLM/GSFO archaeologist.

The goals of the project were to organize, synthesize, and summarize the known data from the site, assess its present condition, and evaluate its potential to contribute additional, significant scientific information. These tasks included: **1)** gather together all the known data: notes; maps; photographs; drawings; artifacts; and ancillary studies from a variety of disparate sources; **2)** catalog and prepare that data for curation at the Museum of Western Colorado in Grand Junction; **3)** use the previously generated site maps and photographs to identify and prepare an updated photographic record of the existing structural features; **4)** record the present structural manifestations, and the exposed surface artifacts and thermal features, by the creation of an instrument-based site map; **5)** confirm the sites extent by the inventory of the surrounding 40 acres; **6)** complete an OAHP site form; and **7)** make recommendations for future management of the site.

## **Project Location and Environmental Setting** [SLIDE #2]

The study area is located about 5 miles northeast of the town of Rifle, in Garfield County, Colorado. It is situated in an area of Juniper-Pinyon forest, atop a large alluvial fan deposited over bedrock, which extends south from the Grand Hogback. This position is on the extreme southwestern edge of the White River Uplift, a domal upwarp that is still largely covered by a mantle of Paleozoic sediments. The Grand Hogback, which lies just north of the site, is composed of nearly vertical and erosion resistant sandstones from the Tertiary and Cretaceous strata associated with Williams Fork Formation and Mesa Verde Groups. Both the Williams Fork Formation and the Mesa Verde Groups are composed of sandstones and shales, with coal beds (Young and Young 1977). Though considered a poor source for knappable raw lithic materials, Armstrong (pc, 1992) reports finding limited quantities of agates, silicified wood and bone, oolitic chert, banded chert, solid opaque chalcedonies, and jasper within the Williams Fork and Mesa Verde Formations. However, the size of these conglomerate sources is generally considered to be too small to be used as a good source of raw lithic material for tool manufacture.

The Wasatch and Ohio Creek Formations underlie the southern portion of the general study area. It consists of a series of interbedded variegated mudstones, sandstones, and siltstones of varying colors \_ brick red, tan, white, and purple - from stream, flood plain, and swamp deposits. Where the formation is thicker, its age ranges from the Paleocene to middle Eocene epochs of the Tertiary periods. Some of the siltstone in the Wasatch may be suitable as tool stone.

[SLIDE # 3]

The topography of the general project area was formed by the conjunction of the nearly vertical strata of the Grand Hogback, and the nearly horizontal Wasatch Formation. Erosion along cracks in the strata of the Grand Hogback has led to the formation of shallow, coalescing alluvial fans which lie atop the Wasatch

Formation. In the study area, this has formed small mesas and narrow ridges cut by dendritic washes that may plunge one to two hundred feet or more from the rim edges. In the vicinity of 5GF308, two intermittent drainages flowing southward from the Grand Hogback create one of these small mesa-like topographic features.

[SLIDE # 4]

These deeply incised drainages effectively bracket the site and help to form a topographic boundary for the site along the east and west sides. The drainage to the west ranges from 120 to 160 feet deep with side slopes of 40 - 50 % grade, while the drainage on the east ranges from 200 to 250 feet deep with side slopes of 50 - 60 % grade. The steep slopes of the Grand Hogback to the north have a 30 - 40 % grade, and also help to form a natural topographic boundary for the site. To the south, on the little mesa-like feature, the slope is much more gentle ranging from an 8 - 12 % grade. The overall slope on 5GF308 ranges from about 5\_ to 9\_ with small areas of more level terrain suitable for habitation structures. The elevations within a one kilometer radius range from about 6000 to 7200 feet (1828 to 2195 meters). The average on-site elevation is about 6320 feet (1926 meters). The site has a generally south to southwest aspect, which allows for increased solar radiation, the winter sunlight appearing earlier and leaving later on the site than much of this area along the Colorado River.

The soils in the study area are classified as Cushman-Lazear stony loams, which occur on mountain side and mesa breaks with slopes of 15 - 65 %. Cushman soil appears on mesa breaks in the landscape, where alluvium has accumulated to a greater depth over bedrock, while Lazear soil occurs on the steeper slopes. Both these soils formed in sandstone and shale residuum. The dominant soil on 5GF308 is the Cushman stony loam. This soil is moderately deep and well drained. Soil permeability is moderate above bedrock, and the available water capacity is low with an effective rooting depth of 50 to 100 cm. Surface runoff is medium and the erosion hazard is severe (USDA/SCS, 1985:18).

The climate in the study area is semi-arid with an average annual precipitation of about 13 inches, with slightly more than half falling as snow during the winter months. The average annual air temperature is about 48\_ F, and the average frost-free period is about 125 days. Plant growth begins about April, using winter moisture stored in the soil profile. Plant growth slows or stops during the warm months of June, July, and August (USDA/SCS, 1985). Temperature inversions can occur along the Colorado River valley during the winter months with the strongest inversions occurring from mid-December through January. Cold air gets trapped in the valley, with the top of the cold air layer occurring at an elevation of  $\pm$  6000 feet. The air temperatures above the cold air layer can be as much as 30\_ F warmer. The frequency of these temperature inversions is dynamic and highly variable from year to year depending upon snow and cloud cover (pc. USGS/ NWS, 2004). Due to the southern exposure of the site, working on the site in late November and early December was quite congenial due to its sheltered nature, which cut the wind and kept temperatures in the high 30\_ 's and low 40\_ 's, (Fahrenheit). These conditions infer that the site could have been occupied at any time between late fall and early spring.

[SLIDE # 5]

The flora of the study area is primarily Juniper-Pinyon woodland with a grass dominate under story. The dominant grasses are galleta, beardless wheatgrass, bottlebrush/squirreltail, Colorado wildrye, and Indian ricegrass, with some blue gramma and needle and thread. Forbs include arabis, biscuit root, crypantha, princes plume, pussy toes, scarlet globemallow, and sulphur eriogonum. Shrubs include big sagebrush, black sagebrush, broom snakeweed, dwarf rabbitbrush, Utah serviceberry, and winterfat. Approximate vegetative basal density is 10 %. Tree canopy cover is 15 - 35 % (USDI/BLM, 1979).

This woodland community supports a variety of faunal species including mule deer, elk, black bear, mountain lion, coyote, red fox, bobcat, skunks, badger, porcupine, desert cottontail, mountain cottontail, white-tailed jack rabbit, and yellow-bellied marmot. Big horn sheep are not found in the area now, but were

probably residents of the Grand Hogback during earlier periods. Bison may also have been present along the Colorado River Valley at various times. The study area is currently within the established winter range of local mule deer and elk populations. A variety of rodents are known to occupy the area including Richardson's ground squirrel, rock squirrel, golden mantled ground squirrel, long-tailed weasel, northern pocket gopher, and bushy-tailed wood rat. Bird species observed in the area include the jay, raven, red-shafted flicker, long-eared owl, golden eagle, and Red-tailed hawk. The present day land use in the area is primarily grazing and ranching, but real estate development and energy development are rapidly increasing in the surrounding area.

### **Basic Culture History and Ethnographic Background**

Cultural resource investigations in the region have yielded surface diagnostic artifacts and excavated cultural materials consistent with the regional cultural history. An overview of the prehistory of the region is provided in Colorado Prehistory: A Context for the Northern Colorado Plateau (Reed and Metcalf 1999), available through the Colorado Council of Professional Archaeologists. Other primary references relevant to the project are Archaeology of the Eastern Ute: A Symposium (Nickens, et al., 1988); Ethnography of the Northern Utes (Smith, 1974), and Ethnography of the Eastern Ute (Stewart, 1973). Additional sources will be referenced as they are applied.

Based upon the present data set, the general cultural/historical outline for 5GF308 that is most relevant is that developed by Reed and Metcalf (1999). It includes the Protohistoric Era, with its proposed Canella and Antero Phases, with a possible connection to the Formative Era, Aspen Tradition. According to Reed and Metcalf (1999) the Canella phase begins at about A.D. 1100 when Uncompahgre Brown Ware appears along with arrow points of the Desert Side-notched and Cottonwood Triangular types. Wickiups and other brush structures were often utilized. Toward the end of the Canella Phase, European trade goods may appear in limited quantities. The Antero phase dates from about A.D. 1650 to 1881 and represents the shift to a fully equestrian lifestyle and the addition of Euro-American trade goods such as glass beads, metal cone tinklers, gun cartridges, tin cans, and horse bits. Desert Side-notched and Cottonwood Triangular projectile points continue in use, but were increasingly replaced by metal projectile points and firearms. Uncompahgre Brown Ware continued to be manufactured.

### **Chronological Summary of Events and Previous Work at 5GF308: 1972 - 1997**

The following chronological summary was derived by DARG from the available documentation, which is composed primarily of old site forms, field notes, maps, photo-records, field specimen records, ancillary study reports, and a vandalism report. Many of the field notes and maps from the 1982 and 1986 operations appear to be incomplete, and much of the information had to be extrapolated by DARG from a combination of the above sources.

- \$ An anonymous initial report of the site occurs on a USDI/BLM Inventory Form of Historic Places, dated October 18, 1972. The site is listed as "Teepee Poles (No Name). Found approximately 30 lodges on a 10 or 15 acre site". Gives the legal location with latitude and longitude, township, range, and section, map reference, and the site description
  
- \$ The second documentation of the site is a Colorado Archaeological Survey-Site Inventory Record from the Office of the State Archaeologist, Colorado State Museum, prepared by Daniel J. Hutchison of the BLM on December 13, 1973. It lists informants: Ms. Beverly Goodrich, Director of the Museum of Western Colorado; Dr. Robert Young, Professor of Geology at Mesa College, and Steve Smith of the BLM-Grand Junction District Office. The information presented is primarily a general location document. The site is described as a Ute tipi pole village composed of 30 lodges, located on a bench. It was designated in the old BLM site file system as AR-05-07-87, "Hogback Tepees". There were no artifact or feature descriptions, or site map. Until the advent of this project, this was the only documentation available to the archaeological community in the BLM and OAHF site files.

- \$ Between July 27 and August 3, 1982, archaeologists Paul Williams and Sally Cole, along with 10 Colorado Archaeological Society (CAS) volunteers, conducted a preliminary survey of the site. They mapped 56 wickiups, photographed 24, and performed test excavations on three of the structures (1, 3, 4), which were considered to be the best preserved. A scaled contour map of the site with the location of the wickiups was made. A total of 18 excavation units were opened, encompassing a total of 30 square meters. In addition, scaled profile line drawings were made of 10 of the structures. A tree ring sample was taken from Wickiup 4. No report was written.
- \$ In early 1983, analyses of the collected faunal materials and pollen samples from Wickiups 1, 3, and 4 were conducted by the Center for Western Studies, Inc. Macrobotanical flotation analysis of samples taken from Wickiups 3 and 4 were conducted by Margaret A. Van Ness. In June of 1983, the tree ring sample from Wickiup 4 was submitted by Paul Williams to the University of Arizona, Laboratory of Tree-Ring Research, and produced a date of AD 1813 ±vv.
- \$ In the early summer of 1984, Bill Kight (BLM/GSRA) and Mary Kay High (BLM/GJRA) placed permanent rebar datums at many of the wickiups.
- \$ On July 24, 1985, two Student Conservation Association volunteers attached to the BLM archaeological program, discovered an illegal wood cutting activity had taken place on the site. An ARPA violation investigation was conducted between August 1 - 15, 1985. A report by Bill Kight (1985) indicated that approximately 23.7 cords of wood had been removed from the area, causing damage to the southwestern portion of the site, destroying five wickiups and damaging another. A copy of the vandalism report was sent in August, 1985 to Dr. Leslie Wildeson, State Archaeologist, to be filed with the State Historic Preservation Office. Two "cultural resource" signs were erected, along with "no wood cutting" signs, and the two track road created by the wood cutters was closed off. In response to this adverse impact, additional work was deemed necessary by the BLM. Additional survey, datum placement, and photo documentation of the structures was initiated.
- \$ On July 26 - 27, 1986, BLM archaeologists Bill Kight and Frank Rupp, accompanied by at least 6 avocational volunteers and 3 children conducted another survey of the site, recording 9 additional wickiups. They also performed limited test excavations at three of the structures (X, Y, Z). A total of 5 (1 x 1 m) excavation units were opened. No analysis was done, or report written.
- \$ In 1987, a petrographic analysis was conducted by David Hill on 8 sherds collected from the site surface and from testing near two of the wickiups (exact provenance unknown).
- \$ In March, 1988, Bill Kight photo-documented a Rosegate Corner-notched projectile point on the site, near Wickiup 34. Also in March, 1988, Douglas D. Scott (1988:50) referred to a verbal report by Bill Kight that 5GF308 is the "Old Squaws Camp" noted by F.V. Hayden in 1874.
- \$ In June of 1989, a small fire line was built around the site, primarily on the south and west sides. During construction of the fire line, workers observed a "probable hunter camp with brush corral and newly constructed wickiup, with trash scattered about". The construction of the modern structure destroyed another one of the wickiups. An incident report was filed with the BLM/GSFO.
- \$ On October 24, 1995, the wickiups were re-photographed by Frederick J. Athern (BLM) using a black and white, 2 1/4 inch format. The wickiups were assigned new feature numbers according to the order in which they were photographed. This led to a dual numbering system of the structural features, one from the 1980's and one from the 1990's. A simple sketch map was produced using the new numbering system. None of the features were marked with permanent identification tags, and there was no correlation with the previous work.

- \$ Between June 17 - 25, 1996, archaeologists Patty Walker-Buchanan, Kevin Thompson, and Dr. Dudley Gardner, conducted an archaeological field school at the site. Twelve students of Western Wyoming College (WWC) participated in the field school, along with five volunteers from the Colorado Archaeological Society (CAS). Nine areas were designated for test excavations. A total of 54 (1 x 1 m) excavation units were opened. The funding was withdrawn by the BLM before an analysis of the work or a report could be undertaken.
- \$ In 1997, the artifact collection, notes, etc. were retrieved from Western Wyoming College by Patti Walker-Buchanan of the BLM, and returned to the BLM warehouse in Glenwood Springs, where they resided until 2003.

### **Methodology: DARG 2003 - 2004**

The DARG investigations utilized a standard Class III cultural resource inventory of 40 acres surrounding site 5GF308. The survey was performed by two persons who walked parallel transects spaced 20 m apart on the flats and slope areas of  $\leq 30\%$  grade. Areas with a slope  $\leq 30\%$  grade were surveyed along topographic contours at intervals of 30 m. Any new cultural resources were recorded as they were encountered, to standards set by the BLM and the OAHP. Structural features, thermal features, and artifacts were flagged to establish site boundaries. A comprehensive mapping of the site was conducted using a Nikon DTM 520 total station in combination with a Trimble GEO-XT GPS Unit set to the 1983 North American Datum. The site map was completed using a combination of Surfer 8, ARCMAP, and Adobe Illustrator. Each of the observed wickiups was then identified using an often complex and time consuming process of comparative examination utilizing a combination of the 1982 and 1985 photographs, the 1982 map, the 1995 photographs and sketch map, and the 1996 excavation maps. In cases where no photographs existed, and a positive identification could not be made, a multi-level identification process was employed. This technique involved: 1) a "best fit" approach based upon a comparison of the location with the two maps, with the nearest number being assigned; 2) in cases where a "best fit" identification could not be made, the wickiup was assigned a number from a 'gap' in the sequence of the previously identified wickiups, based upon the number which most closely approximated the numbering sequence(s) of the wickiups in the immediately surrounding area; 3) if no local 'gap' number existed, then the next available 'gap' number was used; and 4) any remaining wickiups, or newly identified wickiups, were assigned numbers from the end of the number sequence. Those wickiups which had been given an alphabetic identification in 1985-86 retained those identifications in order to maintain the connection to the photographs and excavation data.

Permanent datums composed of 2 inch diameter steel rebar, or 2 inch diameter steel nails were either confirmed or established at each of the observed wickiups. The wickiups were then marked with permanent identification tags, composed of both an aluminum tag and a steel washer stamped with the finalized wickiup number. These were wired to each of the wickiup datums. Identification of the 1996 excavation units was aided by locating the 1.5 m high steel rebar poles that had been placed in the area of the excavation units.

A correlation chart showing the relationships between the 1982, 1985-86, 1995-96, and the final 2003-2004 alpha-numeric identification systems was compiled. Since the majority of the wickiups had been identified and mapped in 1982, and 1985, that identification system was considered to be the base line data set, and all the 2003-2004 activities were oriented toward conforming to that data set as much as possible.

During the recording and mapping process, two crew members would map, while the other members went through the wickiup identification and tagging procedures, or took notes regarding the cultural artifacts or features, and architecture. A Conical Wooden Structure Component Form was devised by DARG to aid in recording the data on the wickiups and/or other structural features, and was based on a recording form developed by Joanne M. Sanfilippo (1998). The structural features were classified and recorded according to whether they were a single pole structural feature, a paired-pole structural feature, a multi-pole lean-to wickiup feature, or a multi-pole free-standing wickiup feature. Structural features within 5 m of each other were assumed to be associated and contemporaneous, and were given additional alphabetic designations (ie

6-A, 6-B). Due to time and budgetary constraints, no attempt was made to sketch map each of the individual wickiups and their associated features and artifacts. However, notes to that effect were taken, and general associations between the wickiups, features, and artifacts is present on the final site map, and on the Conical Wooden Structure Component Form.

Diagnostic artifacts were collected as they were encountered in the field, because they provide useful information about site chronology, and the potential for continued illicit surface collection is high. A few non-diagnostic lithic tools were also collected for curation and future analysis purposes.

The total collection of artifacts, from all of the projects, were dry brushed, or washed as needed, then labeled with the catalog number in permanent ink, between layers of acetone based clear nail polish, and put into clear plastic bags with an acid-free card with all the pertinent provenance data. The artifacts from the previous projects were removed from their paper bags or coin envelopes and repackaged as described above. A few of the collections made by the 1996 field school students were obviously natural and not culturally modified. These items were discarded. An up-to-date catalog of all the collected artifacts and ancillary specimens over the past 22 years was created, along with a comprehensive photo log, reports on the ancillary studies/analyses, and line drawings of the wickiups. Schematic drawings of the locations of the 1982, 1986, and 1996 excavation units were compiled and illustrated. Recent photographs of the structural features were attached to the Conical Wooden Structure component forms, and are part of the OAHP site form. All the available documents, notes, photographs and their negatives, along with the artifacts were curated at the Museum of Western Colorado, in Grand Junction, Colorado, in compliance with the standards set for institutions operating as federal repositories.

## **Results of the 5GF308 Site Assessment**

### **1982 Operations**

During the week of July 27 - 31, 1982, archaeologists Paul Williams and Sally Cole, accompanied by 10 CAS volunteers, conducted a survey of the site and performed test excavations on three of the wickiups (1, 3, 4), which were considered to be the best preserved. A total of 18 excavation units were opened, encompassing a total of 30 square meters.

[SLIDE# 6]

At Wickiup 1, a series of 4 contiguous (1 x 1 m) units (1 - 4) were placed southwest of the structure in the area of a charcoal stain (Feature 1). Feature 1 appeared to be the remnants of an eroded hearth. Numerous pieces of burned and unburned bone were recovered. In addition, 10 Uncompahgre Brownware body sherds were found on the surface about 10 feet south of the support tree, which would place them in the vicinity of Feature 1, about 2 meters to the east. Four additional (1 x 1 m) units (5 - 8) were placed inside the wickiup perimeter. An estimate by Paul Williams of the periphery of the wickiup indicates that it could be classified as irregularly circular with dimensions of approximately 3.3 m N - S and 2.9 m E - W. Working from an assumed radius of 1.5 m, the estimated floor area of the wickiup is approximately 7 square meters. A bifacial, sandstone cobble mano, with battering along the lateral edges, was found in the southwestern portion of Test Pit 7, which is near the center of the structure. A total of 8 square meters were excavated to a depth of 15 cm. No charcoal or soil samples were taken.

[SLIDE # 7]

At Wickiup 3, a series of 4 contiguous (2 x 2 m) units (1 - 4) were placed across the entire area of the wickiup. The support tree and poles were mapped in, including the possible poles lying on the ground. Four of the poles were leaning against a limb extending southward from the tree, and 5 poles were laying on the ground, on the west side of the wickiup. An estimate by Paul Williams of the periphery of the wickiup indicates that it could be classified as irregularly circular with dimensions of approximately 4.4 m N - S and 4.2 m E - W. Working from an assumed radius of 2.0 m, the estimated floor area of the wickiup is

approximately 12.5 square meters. A juniper bark mat (Feature 4) was partially exposed on the surface. The juniper bark matting lay under the extended limb, beneath the standing poles, extending northward from the base of the poles, toward the trunk of the support tree. A small piece of ochre was found beneath the juniper mat. A mano fragment was also found, southeast of the juniper bark mat, outside the estimated perimeter of the wickiup. During excavation, an interior hearth (Feature 5) was uncovered about 70 - 80 cm to the west of the mat. The hearth shape was nearly circular, measuring ca. 95 cm N - S and 92 cm E - W. It was built in a shallow basin about 10 cm deep. Numerous pieces of burned and unburned bone were recovered around or in the hearth. One radiocarbon sample was collected and sent for analysis, returning a date of  $430 \pm 70$  BP (Cal A.D.1430) [Beta-187084]. One pollen sample and two macrobotanical flotation samples were analyzed, with inconclusive results. A total of 16 square meters were excavated to a depth of 6 cm. No additional pollen, soil, or radiocarbon samples are available for analysis.

[SLIDE # 8]

At Wickiup 4 a series of 7 contiguous (1 x 1 m) units (1 - 7) were placed across an estimated 80 % of the wickiup area. The support tree was mapped in, and 3 collapsed poles lying on the ground. An estimate by Paul Williams of the periphery of the wickiup indicates that it could be classified as irregularly circular with dimensions of approximately 3.4 m N - S and 3.5 m E - W. Working from an assumed radius of 1.75 m, the estimated floor area of the wickiup is 9.6 square meters. A juniper bark mat (Feature 3) was partially exposed on the surface. The juniper bark matting lay adjacent to the base, and north-northeast, of the support tree. It was about 130 cm long and 68 cm wide, and lay along a roughly N - S axis. The juniper bark matting was collected and curated with the Museum of Western Colorado (MWC). During excavation, an interior hearth (Feature 2) was uncovered about 80 cm to the east of the mat. The hearth shape is irregular, due to exterior charcoal/ash stains, but a profile of the hearth indicates it was shallow basin at least 60 cm in diameter, and about 8 - 10 cm deep. Numerous (117 +) pieces of burned and unburned bone were recovered around the hearth, and three were recovered from the hearth fill. A mule deer right mandible was recovered from the duff above the juniper bark mat. Three small pieces of ochre were also recovered from within the wickiup. A total of 7 square meters were excavated to a depth of 6 centimeters. Multiple radiocarbon, pollen and soil samples were taken and several are still available for future analysis.

An analysis of the collected faunal materials from Wickiups 1, 3, and 4 was conducted by Mr. Steve Emslie of the Center for Western Studies, Inc. Taxa identified include Odocoileus hemionus, Canis latrans, Lepus sp., Sylvilagus sp., and Artiodactyla. The majority of the specimens were too fragmentary for any identification beyond large mammal. The large long bones appear to have been broken for recovery of the marrow and then smashed for the production of bone grease. A pollen analysis of 2 samples taken from Wickiups 's 3 and 4 was also conducted by Steven A. Weber and Karin Doerr of the Center for Western Studies, Inc. The results were considered inconclusive as the 10 taxa identified currently occur in the vicinity of the site.

A macrobotanical flotation analysis of 2 samples taken from Wickiups 3 and 4 was conducted by Margaret A. Van Ness. A total of 160 complete seeds and 260 incomplete seeds were recovered. None of the seeds were charred. Twenty-one very small bone fragments were also present, 12 of which are charred. Taxa identified include Juniperus sp., Pinus edulis, Chenopodium sp., Oryzopsis hymenoides, Descurania sp., Opuntia sp., and Cleome sp. The results were considered inconclusive as the identified seeds were collected near the surface, in excellent condition, and currently occur in the vicinity of the site. Charred Juniper scales and Pinyon needles were found in all of the samples. The charcoal fragments in the samples were identified as Juniper.

A dendrochronological sample from one of the juniper poles at Wickiup 4 was submitted in 1983 by Paul Williams to the University of Arizona, Laboratory of Tree-Ring Research [TRL COM-2] and returned a date of A.D.  $1477 \pm p$  -  $1813 + vv$ . Because there was one or more of the rings missing near the end of the ring series, there was no way of estimating how far the last ring is from the true outside, and a post A.D 1813 cutting date was the best that could be determined.

In 1995, BLM archaeologist Patty Walker-Buchanan submitted a charcoal sample from the hearth (Feature 2) at Wickiup 4 for analysis. It returned a date of 400±40 BP with a calibrated intercept date of A.D. 1470 [Beta-85828]. A comparison of the dendrochronology date with the radiocarbon date indicates that there is an “old wood” problem with the radiocarbon date, which is at least 343 years too early.

### **1985-1986 Operations**

In July, 1985 an illegal wood cutting activity was discovered on the site, and an ARPA violation investigation was conducted in August. The incident caused damage to the southwestern portion of the site, destroying five wickiups (3, 49, 50, 53, 54), and damaged another (4). Rebar with flagging tape was placed at 17 more of the previously identified wickiups and they were photographed, along with the damage to the site.

On the 26<sup>th</sup> and 27<sup>th</sup> of July, 1986, archaeologists Bill Kight and Frank Rupp, accompanied by at least 6 avocational volunteers and 3 children conducted another survey of the site, recording 8 new wickiups R, S, T, U, V, (W is actually 43 from 1982), X, Y, and Z. They also performed limited test excavations at three of the wickiups (X, Y, Z). A total of five excavation units were opened, encompassing a total of five square meters: two (1 x 1m) units at Wickiup “X”; one (1 x 1 m) unit at Wickiup “Y”; and two (1 x 1 m) units at Wickiup “Z”.

At Wickiup “X”, a 6 m long east-west base line was established, and 2 diagonal test pits (each 1 x 1 m) were placed north of the line in the estimated area of the wickiup, based upon the presence of a large amorphous charcoal/ash stain and 3 pieces of fire-reddened sandstone on the surface. No definite support tree was mapped in, although there was a large juniper tree stump and 6 collapsed poles lying on the ground near the ash stain. One small piece of red ochre and a red chert flake were observed on the surface, but apparently not mapped or collected. During excavation, the eroded remains of a hearth were uncovered in Test Pit 1, about 1.30 m to the northwest of the juniper stump. The hearth shape is irregular, due to erosion of the charcoal/ash stain, but measurements indicate it was probably a shallow basin about 60 - 70 cm in diameter, and about 10 cm deep. Numerous (49) pieces of burned and unburned bone were recovered around or in the hearth. In Test Pit 2 a dense, heavy, granitic river cobble, thought to be an anvil, was found about 1.4 m north-northeast of the hearth stain at a depth of about 20 cm below the surface. A fragment of a large mammal skull, thought to be a mule deer, was recovered from a depth of 25 cm., about midway between the hearth and the anvil. A total of two square meters were excavated to a depth of 30 cm. No radiocarbon, pollen, or soil samples were taken. No analysis was done.

At Wickiup “Y”, a 6 m long north-south base line was established, and a single (1 x 1 m) test pit was placed on the west side of the line near the perimeter of the estimated area of the wickiup. This location was apparently based upon the presence of a small amorphous charcoal/ash stain on the surface. No definite support tree was mapped in, though there was a large juniper tree stump with one leaning pole and three collapsed poles lying on the ground near the small charcoal/ash stain. A mano was found on the surface about 2.3 m due east of the juniper stump. There was another large ash stain, estimated to be about 70 cm in diameter, located about 4.5 m northeast of the juniper stump with the leaning pole. During excavation of Test Pit 1, the small amorphous charcoal/ash stain on the surface revealed itself to be a small, circular, 8 cm diameter charcoal stain (post hole?). No other artifacts were encountered. The west half of the unit was excavated to a depth of 10 cm and the east half of the unit was excavated to a depth of 5 cm. The large ash stain, a probable hearth, located about 4.5 m northeast of the juniper stump, was excavated by the amateur volunteers. No notes or maps are available, although there are two B/W photographs of the group in action. As near as can be determined, a total of one square meter was excavated to a depth of 5 - 10 cm. No radiocarbon, pollen, or soil samples were taken. No analysis was done.

At Wickiup “Z”, a 6 m long north-south base line was established, and 2 adjacent test pits (each 1 x 1 m) were placed east of the line in the estimated area of the wickiup, based upon the presence of a large amorphous charcoal/ash stain on the surface. No definite support tree was mapped in, though there are 2 juniper trees and 6 collapsed poles lying on the ground in the area around the charcoal/ash stain. During

excavation, the remains of a hearth were uncovered in Test Pit 1, and the extreme western portion of Test Pit 2. The hearth is located about 1.0 m due north of the largest juniper tree. The hearth shape is roughly circular, about 60 - 70 cm in diameter, and has a shallow basin about 10 - 20 cm deep. No fire-cracked rock was associated with the hearth. Nine small bone fragments were found around the hearth. Flecks of yellow ochre were found in the northwest quadrant of Test Pit 1. Additionally, a simple profile was drawn of the west wall of Test Pit 1. A total of two square meters were excavated to a depth of 20 cm. No radiocarbon, pollen, or soil samples were taken. No analysis was done.

A petrographic analysis was conducted by David Hill in 1987 on eight sherds collected from the site surface, and from testing operations near 2 unidentified wickiups. The analysis indicated 2 different types of ceramic paste. The most frequently observed paste type contained fragments of granite rich in muscovite and biotite, while 2 sherds recovered from one of the wickiups contained fragments of muscovite-rich quartz mica schist. Micaceous granite and quartz biotite schists are both readily found along the Grand Hogback, so it is possible that the ceramics could have been produced using locally available materials (Hill, 1987, 2003). Bill Kight and Frank Rupp have both reported that a mano was recovered during the testing that had a quantity of mica adhering to one surface. It is possible that this mano may represent a tool for temper or ceramic clay processing on the site. Unfortunately, this mano could not be found within the present artifact assemblage, and it is assumed to be lost.

### **1995-1996 Operations**

On October 24, 1995, the wickiups were re-photographed by Frederick J. Athern (BLM). Each of the structural features was assigned a new feature number according to the order in which he photographed them, and a simple sketch map was produced using this new numbering system. Unfortunately, none of the wickiups were marked with permanent identification tags, and the sketch map was very relative in its accuracy.

Between the 17<sup>th</sup> and 25<sup>th</sup> of June, 1996, archaeologists Patty Walker-Buchanan, Kevin Thompson, and Dr. Dudley Gardner, conducted an archaeological field school at the site. Twelve students from Western Wyoming College (WWC) participated in the field school, along with 5 volunteers from CAS. The site was re-examined and 63 of the previously recorded wickiups were identified. Apparently unaware of the map produced in 1982, the wickiups were identified, using the feature numbers on Athern's 1995 photographs. This produced a dual numbering system for the wickiups.

Nine separate areas (Test Areas 1- 8, and SU-1) were designated for test excavations by BLM/WWC in 1996. A total of 54 (1 x 1m) units were excavated throughout the nine areas. Since all of the field school excavation records use only the 1996 feature numbers, the dual numbering system designation of the wickiups is presented here, with the 1982 number followed by the 1996 number (ie. 1982 = 2 / 44 = 1996).

Test Area 1, consists of a total of 8 (1 x 1m) excavation units which were placed about midway between Wickiup 14/31 and Wickiup 36/33, about 6 m south of Wickiup 13, in an area where several Uncompahgre Brownware sherds had been observed on the surface. These 8 units were designated Test Units 1, 1-A, 1-B, 1-C, 1-D, 1-E, 1-F, & 1-G. Test Units 1, and 1-A thru F are generally contiguous, with unit 1-G being off set diagonally to the northeast from unit 1-F. The entire configuration trends in a southwest - northeast direction, following the slope of the land, and is generally centered around a 1.5 meter high, 2 inch diameter rebar pole, which is located at the northeast corner of Unit 1. One small tertiary finishing flake and a total of 9 Uncompahgre Brownware sherds were recovered, including 2 which were later found in the screened back dirt pile from either Unit 1 or 1-A. Depth of excavation ranged from 2 to 13 cm below the surface. No radiocarbon, pollen, or soil samples were taken. Note: DARG collected another sherd from this area during the 2003 survey operations. It was located about 2.5 m south of the rebar pole. This brings the total to 10 sherds recovered from this area, which may represent an eroded and/or surface collected pot drop location.

Test Area 2 consists of a single (1 x 1 m) unit located near Wickiup 18/14, which consists of two poles, one above the other, which lean into a support tree. At the time of excavation, there were eight juniper branches, thought to be potential wickiup poles, laying on the ground about 2.0 m to the west and southwest of the bases of the two leaning poles. Test Unit 2 was placed near the center of this cluster of possible poles, and is located about 1.5 m southwest of the Wickiup 18/14 support tree. It was excavated to a depth ranging from 5.5 to 10 cm deep. Nothing was found in the excavation unit, and it is possible that the pole-like branches on the ground were not part of a structure, but were branches which had broken off the support tree. No radiocarbon, pollen, or soil samples were taken. Test Area 2 is located about 2.0 m west of Test Area 5.

Test Area 3 consists of 3 (1 x 1 m) units located at Wickiup 17/16. These three units were designated Test Units 3, 3-A, and 3-B. Test Units 3-A and 3-B are contiguous, with Unit 3 being off set diagonally to the southeast from Unit 3-A, in a stair-step 'L' configuration. The units are located about 2.5 m southwest of the support tree. There is a 1.5 meter high, 2 inch diameter rebar pole, which is located at the northeast corner of Unit 3. Three bone fragments were recovered, one of which is burned. There are 3 large river cobbles presently associated with the test area, in Unit 3. However, these cobbles were not recognized by the students as being artifacts or manuports to the site. Their original provenance is uncertain. Depth of excavation ranged from 11 to 24 cm below the surface. No radiocarbon, pollen, or soil samples were taken.

[SLIDE # 9]

Test Area 4 consists of 5 (1 x 1 m) units located at Wickiup 20/10. These 5 units were designated Test Units 4, 4-A, 4-B, 4-C, & 4-D. The test units are contiguous and form an inverted 'T' shape. They were placed along the southern perimeter and within the interior of the wickiup. There is a 1.5 meter high, 2 inch diameter rebar pole, which is located at the southwest corner of Unit 4. Excavation revealed an unwoven juniper bark mat located near the base of the support tree, on its east side. The approximately 120 x 80 cm bark mat was collected and curated at the Museum of Western Colorado. Three short pieces of twined juniper bark cord were found, as well as 5 small pieces of red ochre and a single bone fragment. About 70 - 80 cm to the north of the juniper bark mat is a hearth (Feature 2). The hearth is irregular in outline with maximum dimensions of ca. 80 cm N - S and ca. 60 cm E - W. It is a shallow basin about 7 cm deep. Small pieces of fire-cracked rock are present within the basin, but it is not a typical rock-filled hearth. The surrounding ash stains are also irregular and measure ca. 100 x 80 cm. It is assumed that the proximity of the hearth to the juniper bark mat indicates that the hearth is in an interior periphery position, possibly located near or at the entrance to the structure. The surface mapping of most of the excavation units indicates both the exact location and relative position of some of the leaning poles at Wickiup 20/10. Based upon this data and that our assumed location of the hearth near the periphery of the structure is correct, it is estimated that the wickiup dimensions were roughly elliptical and measured ca. 2.5 m N - S by 1.5 m E - W, for an estimated floor area of approximately 2.9 square meters. Depth of excavation ranged from 8 to 26 cm below the surface. Four radiocarbon samples and 2 soil samples were taken. Two of the radiocarbon samples and all the soil samples are still available for future analysis and are curated at MWC. Note: DARG combined 2 of the radiocarbon samples (CS 's 7 and 12) for analysis in 2004 and received a date of  $650 \pm 50$  BP (Beta-187085), with a calibrated intercept date of A.D.1300. Due to the high potential for an "old wood" problem, this date is probably too early as an occupation date for the wickiup.

Test Area 5 consists of 4 (1 x 1 m) units located east of, and about midway between two structural features, Wickiup 18/14 and Wickiup 18/15. Structural feature 18/14 consists of 2 poles, one above the other, which lean into a support tree. Structural feature 18/15 appears to be the collapsed remnants of a multi-pole free-standing wickiup. The 2 structural features are located approximately 4 m apart, along a roughly N - S axis. Test Area 5 was situated about 1 m east of the midpoint between the 2 structural features, in an area with surface indications of a hearth feature. The 4 units were designated Test Units 5, 5-A, 5-B, and 5-C. The test units are contiguous and form a 2 x 2 m square. There is a 1.5 meter high, 2 inch diameter rebar pole, which is located at the center of the 4 units. The excavation produced: 4 fire-cracked pieces of a granitic mano (which fit together); a large, black, granitic river cobble [which DARG observed in 2003 in a fork of the support tree at 18/14]; 88 bone fragments (13 are burned); a ceramic spall - partially

ground; 2 small pieces of ochre (red and yellow); 1 small primary flake of red chert; and a 4.4 mm (3/16") diameter lead ball, which appears to be from a shotgun load. In addition, a small obsidian flake was also recovered. It was sent to Geochemical Research Laboratory in September, 1996 for an artifact-to-source analysis by X-ray fluorescence, but was returned to the BLM/GSFO because the sample was too small, and returned to the collections.

Excavation of the hearth area (Feature 1) revealed a roughly oval shaped shallow basin which measured approximately 127 x 103 cm, and had a maximum depth of about 12 cm, with an orange-red thermal oxidation rind in the bottom of the hearth. Small pieces of fire-cracked rock were present within the basin, but it is not a typical rock-filled hearth. Most of the bone fragments mentioned above were found around the hearth, with just a few inside it. Depth of excavation ranged from 5 to 10 cm below the surface. Two radiocarbon samples and 4 soil samples were collected, and all of the samples are still available for future analysis. Note: In 2003, DARG designated these 2 structural features 18-A/14 and 18-B/15. DARG suspects that the 2 features are associated and contemporaneous, but may represent 2 different activity sets, one a habitation (18-B/15), and the other (18-A/14) a possible meat or hide drying rack.

Test Area 6 consists of a single (1 x 1 m) unit located approximately 5 m west-northwest of Wiki-up 36/32, about 2.5 m west of Test Unit 7-D, on the northwest side of a juniper tree. Its location is illustrated within the context of Test Area 7. A corner-notched projectile point fragment was collected from the surface 50 cm north of the test unit. No artifacts were recovered from the unit. Depth of excavation ranged from 16 to 33 cm below the surface. A bulk soil sample from Level I was collected and is available for analysis. A small botanical sample composed of pinyon nut shells and juniper berries was also collected, but was later discarded as non-cultural.

Test Area 7 consists of 5 (1 x 1 m) units located at Wickiup 36/32/33. The test units were placed within the periphery of Wickiup 36-A/32, about 2.5 m west of Wickiup 36-B/33. The 5 units were designated Test Units 7, 7-A, 7-B, 7-C, & 7-D. The test units are contiguous and are primarily arranged along a linear N-S alignment, except for Test Unit 7-B which abuts to the east off of Test Unit 7-A, into an area with several collapsed poles. A 2 inch diameter steel nail is located at the northwest corner of Test Unit 7. The excavations produced: 3 pieces of ochre (2 red, 1 tan); 3 shell disk beads; 2 of a yellow glass seed bead; 1 possible juniper berry seed bead; 1 utilized flake of mottled brown chert; 1 secondary flake of dark brown chert; and 3 large mammal bone fragments. A large charcoal/ash stain (Feature 4) was found in Test Unit 7-A. The eastern portion of the hearth was excavated and measured 80 cm N-S and 70+ cm E-W, with the charcoal/ash stain reaching a depth of about 2 cm. It may be the eroded remnants of a surface hearth, as no basin could be discerned. Depth of excavation across the units ranged from 11 to 19 cm below the surface. Two radiocarbon samples and 1 soil sample were collected from Feature 4, and are available for future analysis. Another 2 radiocarbon samples collected from Test Unit 7-C could not be found in the collections. It is assumed they were discarded. Relative cross-dating, based upon the single yellow glass seed bead would indicate a date range of between A.D. 1840 - 1881 (Baker, 2003). Note: DARG believes that Wickiup 36 is composed of 2 structural features, representing different activity sets. The 2 structural features are located approximately 2.0 to 2.5 m apart, on a roughly E-W axis of alignment. DARG designated one structure as 36-A and the other as 36-B. Wickiup 36-A is interpreted as a collapsed free-standing wickiup with an interior hearth (Feature 4), while 36-B, is a single pole structural feature leaning into a juniper tree. There is a 2 inch diameter steel nail which is located at the northwest corner of Test Unit 7, which serves as the marker for Wickiup 36-A.

Test Area 8 consists of 3 (1 x 1 m) units located at Wickiup 2/44. The most prominent feature of Wickiup 2/44 is a horizontal cross beam about 3 m long, which stretches between 2 support trees, along a roughly ESE-WNW axis of alignment. This cross beam is about 1.60 m above the ground and would be ideal for hanging and gut-cleaning large game. The test units were placed below and to the south of the eastern half of the cross beam, and were designated Test Units 8, 8-A, & 8-B. They are contiguous and arranged in a linear fashion along a N-S alignment. There is a 1.5 meter high, 2 inch diameter rebar pole, which is located at the northwest corner of Test Unit 8. The excavations produced 11 large mammal bone

fragments, a couple of which exhibit green breaks from breakage to extract the marrow, and 1 granitic shatter flake. The amorphous remains of a hearth (Feature 5) were found in Test Unit 8-A. The hearth measures approximately 70 cm N - S by 50 cm E - W, and has a shallow basin about 8 - 10 cm deep, though the excavators appear to have had a hard time defining it. Depth of excavation across the units ranged from 7 to 23 cm below the surface. Five radiocarbon samples, 1 charred wood sample, and 3 soil samples were taken. Four radiocarbon samples and 2 bulk soil samples are still available for future analysis. Note: In 2003, DARG submitted a charred wood sample from Feature 5 for analysis. The results indicated the wood to be juniper. One of the soil samples from Feature 5 was also submitted for macrofloral analysis, but yielded no charred remains indicative of plant processing activities. Also submitted was a radiocarbon sample from Feature 5. The analysis produced a conventional radiocarbon age of  $350 \pm 50$  BP [Beta-187086], with 3 calibrated intercept dates at Cal A.D. 1510, Cal A.D. 1600, and Cal A.D. 1620, with a 2 Sigma calibrated result of Cal A.D. 1440 to 1650.

[SLIDE # 10]

Test Area SU-1 (Shovel Unit-1) consists of 24 (1 x 1 m) units located primarily south and west of the rebar marker at Wickiup 26/21. A large 5 x 5 square meter block area was laid out in a series of contiguous 1 x 1 m square units designated by a standard numeral/directional co-ordinate grid system, starting at the southwest corner of the excavation block with 100N/100E. The perimeter extends to 105N/100E, 105N/105E, and 100N/105E in a clockwise direction around the excavation block. The Wickiup 26/21 rebar is located at 105N/105E. There is no centralized datum (000N/000E) and 100N/100E is an arbitrary point relative only to the southwest corner of the block excavation (pc. Thompson, 2004). Each of the units were identified by a unit datum and a vertical control point (VCP) located at the northeast corner of the unit. A pair of secondary vertical control points were established on nails one meter above the ground surface in a juniper tree and are located at positions 102.90N/102.17E and 102.22N/102.07E, respectively. An additional offset excavation unit 106N/104E was later added to the north end of the designated 5 x 5 square meter block area. Excavation units 105N/101E and 104N/101E were left unexcavated. Depth of excavation across the units ranged from 3 to 18 cm below the surface. The excavations produced: 2 small pieces of ochre (1 red/brown, 1 light brown); 6 small tertiary retouch flakes; 1 Desert Side-notched projectile point; and 72 bone fragments (22 burned). An oval shaped hearth (Feature 3) measuring 72 cm x 61 cm, with a shallow basin about 12 cm deep, was found in unit 105N/104E. Small pieces of fire-cracked rock were present within the basin, but it is not a typical rock-filled hearth. All of the bone fragments were found within a one meter radius of the center of the hearth. Three radiocarbon samples and 2 bulk soil samples were taken, and are available for future analysis.

### **2003-2004 DARG Operations**

The first item that DARG wished to confirm was Bill Knights' 1988 verbal report to Doug Scott (1988:50) that 5GF308 was the "Old Squaws Camp" noted by F.V. Hayden in 1874. Hayden reported the site as being occupied by a Ute family who tended a small garden and herded a few cattle. However, after a careful reading of the entire Hayden reference, we believe that 5GF308 was not the encampment noted by Hayden. The following is a series of relevant excerpts from Haydens' passage on the Grand Hogback. Key elements of the Hayden passage have been underlined to highlight their more significant aspects.

"The following day we moved to the south in the direction of Grand River, continuing our work along the western border of Marvine and Ladd's district of 1874 and connecting our topography with theirs. The route travelled (sic) was a broad and well-worn Indian trail which led through a continuous valley at the eastern base of a line of hogback hills, which extend from White River to and across the Grand in an uninterrupted chain, forming a topographical feature so remarkable that we have named it the "Grand Hogback Range." This Hogback Range is broken three times by mountain streams flowing down against it from the east, and once it is broken by a narrow pass through which at present but little water finds its way.

All of these breaks or gaps are walled by high and rugged canon sides, but the steepest and by far the most picturesque is the third\* from the north. A very considerable stream pours through this gateway, and although its flow

on either side of the gap is comparatively gentle, it rushes through the canon pass with all the roar and thunder of a mountain torrent, adding in no small degree to the grandeur of the scenery. This canon, although short, is one of the most picturesque in all this portion of Colorado. At the head of the canon the trail forks, and one branch, passing through, leads down over low terraces or along the side of the stream, through a broad sterile valley, to the Grand River. This valley, from its thick carpeting of prickly-pears and other low-growing cacti, has been named "Cactus Valley." ...The left-hand branch of the trail continues southward on the east side of the hogbacks, to fork again some six miles farther on, one branch leading through the already mentioned nearly dry pass to Cactus Valley, while the main trail keeps on down the valley without interruption to the Grand. [\*Based upon our knowledge of the area, and his description, we suspect Hayden meant the second gap, or Rifle Gap/Rifle Creek, given the description of it that follows.]

On the east side of the hogbacks and nearly opposite the dry pass, just referred to, a single family of White River Utes has made its home, having occupied for many years the same sheltered nook. The family consists of some ten or fifteen members, and the settlement is known at the agency as the "Old Squaws Camp," from the energetic old Indian woman who seems to be its leading spirit. There is most excellent hunting in the immediate vicinity of the camp, and from the location the winter weather experienced must be mild. This family cultivates a small patch of ground, and possesses a herd of 50 or 75 head of cattle and an equally large herd of ponies. Although these people are still housed in the traditional tepee or wick-e-up, they seem to have virtually withdrawn of their own accord from the nomadic life pursued by most of the tribe." (Hayden, 1874:351-352).

Based upon our knowledge of the area, and Haydens maps, DARG believes that the "continuous valley at the eastern base of a line of hogback hills" refers to Flag Creek in the areas of Rio Blanco County Road 13, and Garfield County Road 252. Traveling along that route, there are 3 principle mountain streams which breach the Grand Hogback from the east: 1) Piceance Creek; 2) Rifle Creek; and 3) Elk Creek, at New Castle. The only "nearly dry pass to Cactus Valley" is found at Harvey Gap, which is presently intermittent in its flow. Thus, DARG concluded that the site noted by Hayden, located on the east side of the Grand Hogback and nearly opposite the dry pass which opens into Cactus Valley, is near Harvey Gap. This would place Haydens "Old Squaws Camp" in the vicinity of what is currently Harvey Gap Reservoir, an area which contains several sheltered nooks. There is no "sheltered nook" at the location of 5GF308, which is almost mid-way between Rifle Gap and Harvey Gap, on the west side of the Grand Hogback. Finally, the Grass Valley area is a far better place to cultivate a small patch of ground and pasture a herd of 100 to 150 head of livestock than at 5GF308. However, it is possible that some members of the "Old Squaws Camp" could have used 5GF308 as a temporary, seasonal hunting camp.

### Recording and Mapping

To sort out the problems created by the dual numbering systems mentioned earlier, DARG created a Table of Concordance, which may be found in the final report. However, in some cases no photographs were available, or we were unable to identify the wickiup in the 1995 photographs and correlate it with the earlier 1982 or 1985 photographs. In other cases, the wickiup had been destroyed or damaged during the 1985/1989 vandalism incidents. In cases where no comparative photo-documentation was available, a number was assigned according to the criteria presented in the Methodology section.

Altogether, we identified 74 existing structural features, plus the 6 which had been destroyed by vandalism, for a combined total of 80 structural features on the site. The existing structural features are composed of 15 single pole features, 9 paired pole features, 44 multi-pole lean-to structural features, and 7 multi-pole free-standing structural features. Based upon the available notes and data, the 6 destroyed structural features were Wickiups 3, 49, 50, 53, 54, and 56. A Table of Concordance between the wickiup designations from 1982, 1985-86, 1995-96, and 2004 can be found in Figure 1 of the final report.

### Newly Identified Structural Features

Four new structural features were identified by DARG during the 2003-2004 resurvey and mapping of the site, and were assigned numbers 60, 61, 62, and 63. Number 60 is a single-pole structural feature, numbers 61 and 62 are collapsed multi-pole free-standing wickiups, and number 63 is a paired-poles

structural feature.

Previously Collected Artifacts and Samples

A brief summary of the identified or previously collected artifacts and samples is presented below. A full accounting of the specimens may be found in the full report.

**Table 1. Summary of Previously Identified or Collected Artifacts and Samples.**

Quantity	Description	Comments
1	Anvil - Dense Granitic River Cobble	Specimen may have been used to break up long bones for marrow and bone grease.
5	Beads - 3 shell, 1 juniper seed, 1 yellow glass seed bead fragment	Test Area 7, Wickiup 36-A.
478	Bone Fragments - 322 unburned, 156 burned	See Table 1, Emslie, 1983, Appendix C.
46	Ceramics - 43 body sherds, 3 rim sherds	44 are Uncompahgre Brownware-plain, 2 are corrugated gray ware.
1	Chopper/Scraper - Large Primary Flake - Quartzite	Specimen may have been used as a butchering tool or in hide preparation.
5	Fire-Cracked Rock	May be pieces of decomposing bedrock.
1	Hammerstones - Small river cobble	Suitable for percussion retouch flaking.
3	Juniper Bark Matting	Wickiup 4, Feature 3; Wickiup 3, Feature 4; Wickiup 20.
3	Juniper Bark - twisted	Wickiup 20.
1	Lead Ball/Shot - 3/16" (4.4mm) diameter	Shotgun load - buckshot
10	Lithic Debitage - 1 primary, 2 secondary, 7 tertiary-retouch	1 siltstone, 1 red chert, 1 orthoquartzite, 7 light/dark brown chert. May be local from Wasatch or Mesa Verde Formations.
3	Lithic Projectile Points - 1 corner-notched dart point midsection; 1 Rosegate, 1 Desert side-notched.	Rosegate point was photographed, but not collected.
2	Mano Fragments - 1 sandstone; 1 granitic (4 pieces fit together)	
1	Metal Projectile Point - serrated stem with leaf shaped blade	Slightly rusted and corroded.
1	Obsidian Flake	Too small for analysis. See Hughes, 1996, Appendix C.
15	Ochre - Red, brown, tan, yellow	Most are very small fragments. May be local from decomposing Mesa Verde Formation in Hogback.
1	Polishing Stone - small river cobble	Small area of polish on distal side.
1	Utilized Flake	

22	Charcoal Samples	5 Analyzed: Beta - 85828; 187084; 187085--(2); 187086. See Appendix C.
2	Dendrochronological samples	1 Analyzed: UA-TRL-Com-2; 1 inadequate. See Robinson, 1983 - Appendix C.
7	Macrobotanical samples	Results inconclusive. See Van Ness, 1983; and Puseman, 2004 - Appendix C.
6	Petrographic Samples - Ceramics	See Hill, 1987. Appendix C.
3	Pollen Samples	Results inconclusive. See Weber & Doerr, 1983 - Appendix C.
13	Soil Samples - Bulk	Available for future analysis.

#### Collected Artifacts - 2003-2004 (not included in Table 1, above)

One Uncompahgre Brownware sherd was collected from the vicinity of the 1996 Test Area 1, during the DARG 2003 survey operations. This brings the total to 10 sherds recovered from this area, which may represent an eroded and/or surface collected pot drop location located approximately 20 m north of Wickiup 2. Patterned lithic tools collected include: 1) a Desert Side-notched projectile point of mottled grey and white chert, from the extreme southeastern portion of the site; 2) a small, stemmed, projectile point and a small projectile point tip, both of light brown chert. They are both of a style and size typical of the Late Prehistoric Era or the Protohistoric Era, and were found within 12 cm of each other about 8 m west-northwest of Wickiup 7) the base and partial midsection of a large Stage 2 biface made of opaque chalcedony located west of Wickiup 39; and 4) a large biface/knife midsection of Dakota orthoquartzite located at the extreme western edge of the site.

#### Additional Artifacts - 2003-2004 (non-collected)

During the resurvey of the site a number of previously un-recorded artifacts were identified and mapped, but not collected. These include: 13 river cobble hand stones or anvils which may have been used in breaking long bones for marrow, or in hide preparation; 14 large primary flake choppers/scrapers/or butchering tools; 7 ground stone mano or mano fragments, and 1 utilized flake. In addition, a modern steel leg trap was found that had the lower leg bones of a coyote still clamped between the jaws of the trap.

#### Newly Identified Thermal Features

In mapping the site and recording the structural features, 29 new thermal features were identified. Twenty-one of the thermal features have been identified as hearths, and 8 have been identified as fire-cracked rock clusters. Nineteen of the hearths have been identified as aboriginal and 2 are modern. One of the modern hearths is located at Wickiup 56 and is about 3 m northwest of the tagged steel nail. It was created during the 1989 vandalism incident. The other modern hearth is located at Wickiup 44 and is about 1 m southeast of the support tree. It contains the remnants of a Styrofoam plate from packaged meat, imbedded in the hearth.

#### New Ancillary Studies

A total of 3 additional radiocarbon samples, plus 1 macrofloral sample and 1 charred wood sample were analyzed with funds provided by the BLM/GSFO. The radiocarbon dates are included in Table 2.

One radiocarbon sample was from a hearth (Feature 5) at Wickiup 3. This 1982 sample was analyzed in 2004 and returned a conventional date of  $490 \pm 70$  BP [Beta-187084], with a  $^{13}\text{C}/^{12}\text{C}$  ratio of -21.0 ‰, and a series of three calibrated intercept dates of {Cal AD 1310 to 1370, Cal AD 1380 to 1510, and

Cal AD 1600 to 1620} (Cal AD 1430). Another radiocarbon sample was from Test Area 4, located at Wickiup 20/10. Two of the 1996 samples {CS 7 & 12} were combined and submitted for analysis in 2004 and returned a conventional date of 650±50 BP [Beta-187085], with a 13C/12C ratio of -21.7 o/oo, and a calibrated intercept date of Cal AD 1270 to 1410 (Cal A.D.1300). The third radiocarbon sample was from a hearth (Feature 5) at Wickiup 2. This 1996 sample was analyzed in 2004 and returned a conventional date of 350±50 BP [Beta-187086], with a 13C/12C ratio of -21.0 o/oo, and a calibrated intercept date of Cal AD 1440 to 1650 {Cal AD 1510, Cal AD 1600, Cal AD 1620}.

The macrofloral analysis was performed on a portion of the fill from a hearth (Feature 5) at Wickiup 2. It yielded no charred remains indicative of plant processing activities. The absence of charred seeds and other charred plant remains suggested that this feature might have been used during the late winter, spring, or early summer months when seed and fruits were not yet available for exploitation. It was also suggested that the feature might yield pollen and/or starch evidence for the use of plant parts such as roots and greens that are available during those seasons, or that the hearth was not used for processing plant resources. Identification of charcoal fragments and a charred wood sample from the hearth indicated that local juniper wood was burned as fuel (Puseman, 2004:3).

## Summary and Discussion

An increasing volume of literature on wickiups in Colorado has developed over the years. Those references found to be most useful for our purposes include: Baker (1991, 1996, 2003); Baker and Sandburg (1993); Buckles (1971); Conner (1988, 2000); Gordon et al (1983); Greubal (2001); Greubal and Cater (2001); Huscher and Huscher (1939); O'Neil and Baker (1992); Scott (1988); Slessman et al (2004); Smith (1974); and Terry and Gilchrist (1988). Sanfilippo (1998) provides the most comprehensive overview and photographic documentation available for west-central Colorado. The information presented below is a brief descriptive summarization of the available data at 5GF308, and a discussion of the relationship(s) of that data to a set of basic research issues involving the structural features, thermal features, settlement pattern and seasonality, subsistence, technology, chronology, and site structure.

### Structural Features [SLIDE # 11]

During the 2003-2004 DARG operations, a total of 80 structural features were identified within a site area of approximately 19.8 acres. They are composed of 44 multi-pole lean-to structural features, 7 multi-pole free-standing structural features, 15 single pole structural features, and 9 paired pole structural features.

\$ Multi-pole lean-to structural features are present at Wickiups 1, 2, 3, 4, 5, 7, 10, 11, 12, 13, 15, 16-A, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31-A, 32, 35, 37, 39, 40, 41, 43, 45-A, 46, 47, 48-A, 52, 57, 58, 64, 66, 67, "T", "X", and "Z". [SLIDE # 12]

\$ Multi-pole free-standing structural features are present at Wickiups 16-C, 18-B, 36-A, 55, 59, 61, and 62. [SLIDE # 13]

\$ Paired pole structural features are present at Wickiups 6-A, 8, 18-A, 27, 34, 44, 63, 65, and "Y".

\$ Single pole structural features are present at numbers 6-B, 9, 14, 16-B, 19, 31-B, 33, 36-B, 38, 42, 45-B, 48-B, 51, 60, and "S". [SLIDE # 14]

Axe cut poles were found at 5 of the structural features, four of them were in multi-pole lean-to structures at Wickiups 29, 45-A, 48-A, and 67, and axe cuts were found on a tree trunk pole at free-standing structure Wickiup 62.

The Huschers (1939:13, 92,93) and Scott (1988:45) note that 2 basic structural styles predominate: the free-standing style; and the supported or lean-to style. Scott's description of the free-standing style is fairly generic, the structure being composed of 8 to 20 cut or gathered poles, randomly selected, of uneven size and length. They are laid up to form a cone with the pole butts resting on the ground surface or pushed

slightly into the ground. Occasionally stones may partially or completely ring the poles either to support the poles or to act as weights for a hide covering. Coverings may have been brush, boughs, hides, or any combination of those. The wickiups may vary in size from 1 to 2 m in diameter to over 6 m in diameter, with the smaller ones having less formalized construction methods. Some structures have unprepared dirt floors while others may have had juniper bark scattered over the floor or even a prepared juniper bark mat floor covering. They may have interior or exterior hearths, or no hearth at all. As often as not the hearth was located outside the structure, as were the activity areas.

Smith (1974:34-37) provides greater detail describing free-standing wickiups, and notes that the basic structure of brush shelters were composed of 4 poles tied together at the top with additional poles then laid up to complete the conical framework. The number of poles used varied with the size of the structure. Three horizontal "strips" or cross braces were then tied to the framework to stabilize the structure and to provide additional support for attachment of the covering. The vegetative covering was variable, dependant upon the environment and what was available at the time. When the houses were made of juniper, the branches were not trimmed off the poles. The poles were laid up, covered with juniper brush, and juniper bark was poked both horizontally and vertically under the branches, both inside and outside, so that it covered the structure to keep the wind out. Doorways were often left open, though coverings were also used. Doorway placement was variable and could be on the leeward side of the structure, though an eastern orientation was preferable. The size of the structure was determined by the length of time it was to be occupied, and presumably, by the number of occupants. If it was to be used for only a few days the structure was small and not carefully made. On the other hand, a winter shelter was much larger and very carefully made. It was about 15 feet in diameter and 10 to 15 feet high, big enough to sleep 10 or 12 people. They often left an opening at the top as a smoke hole for a central hearth. The preferred fuel type was reported as pine rather than juniper. Sometimes the floor was covered with juniper bark, cattails or sage brush except for the area around the central firepit. Shredded juniper bark, cattails, or other soft plant material was often used for bedding, in conjunction with rabbit skin blankets or buffalo hides with the hair left on.

At 5GF308, seven free-standing structural features were identified which generally conform to the descriptive parameters outlined by Scott and Smith. The best examples which could be generated from the survey data are Wickiups 55 and 59 which both exhibit the collapsed remnants of a conical shape with a full or partial radiating pole pattern from a central point. In 1996, test excavations were carried out on or near 2 other free-standing structures, Wickiups 18-B and 36-A. Unfortunately, only 4 - 5 square meters were excavated on each of these structures, and there is very little data available on the size, construction, or doorway orientation of these structures. An interior hearth was identified at Wickiup 36-A and an exterior hearth was identified outside of Wickiup 18-B. Excavation data generated at the Schmidt Site (Greubal and Cater, 2001) and at the Simpson Wickiup Site (Gruebal, 2001) indicated that external hearths were placed opposite the entryway and from 2 - 3 m from the center of the structure, while internal hearths were placed off center, on the periphery of the structures, near the entryway. Based upon this data, our preliminary interpretations indicate that Feature 1 at Wickiup 18-B is an exterior hearth located about 3 m to the northeast of the actual structure, indicating a possible northeast entryway, while Feature 4 at Wickiup 36-A appears to be an interior hearth located near the center of the structure. However, it should be noted that comparisons with the excavation data at the Simpson and Schmidt sites are tenuous due to the small areas excavated at 5GF308.

The vast majority (44) of the structural features identified at 5GF308 are multi-pole lean-to wickiups. As noted previously, there is little ethnographic data available regarding the construction of these lean-to structural features. These structures are presumably made up of 4 to 10 irregularly shaped and variably sized branches or limbs which have been cut or gathered. These "poles" are laid up against and around one side of a standing tree, rarely encompassing more than one-half of the tree. The door is usually to the northeast. Presumably, the structures were then covered with brush, hide, or both, and rarely have an interior hearth.

Currently, the best archaeological data comes from Greubal's (2001:24-94 to 24-97) work at Structure 2 on the Simpson Wickiup Site (5SM2425). This collapsed lean-to wickiup consisted of 10 juniper poles, with 1 upright pole and 9 collapsed poles situated beneath a large living juniper tree. The upright pole consisted of the trunk of a small juniper, leaning into a branch of the tree, with 5 small juniper branches set

upright against it, that appeared to represent in-situ structural elements. Five of the 9 collapsed poles consisted of entire trunks of small juniper trimmed of branches, the basal diameter ranging from 15 - 20 cm in diameter and 2.7 to 3.4 m long. One of these fallen poles was forked. The interior floor dimensions are estimated at 3.5 m N - S by 4.0 m E - W, with 11 square meters of floor space. It is estimated that when intact, the structure had at least 2 m of head room beneath the support branch. The interior hearth was located off center in the western half of the northeast quadrant of the floor. An exterior hearth was located about 2.5 m to the northeast. Juniper bark matting arranged in parallel strips and measuring approximately 57 cm by 52 cm was found in the northwest quadrant of the structure, southwest of the support tree. A northern or northeastern entrance is posited for the structure. Reed (et. al., 2001:41-161) provides a good general description of the characteristics of six Ute habitation structures excavated on the project.

The structural descriptions presented above would adequately cover most of the 44 multi-pole lean-to structures at 5GF308. Based on our survey results and the limited excavation data available, nineteen (43 %) of the multi-pole lean-to structures have hearths associated with them. Seven (16 %) were judged as having interior hearths, nine (20 %) were judged as having exterior hearths, and three (7%) were judged as having both an interior and exterior hearth. It would seem that interior hearths are not as rare as hypothesized by Scott (1988), and may help to fine tune interpretations of seasonality.

Excavation or testing on several multi-pole lean-to structures at 5GF308 was done in 1982, 1986, and 1996, and involved Wickiups 1, 2, 3, 4, 17, 20, 26, "X", "Y", and "Z". Wickiups 2, 17, "X", "Y", and "Z" had minimal testing conducted, and although Wickiup 26 was almost completely excavated, and appears to have had an interior hearth, insufficient data on the size and floor plan of the structure was recorded for it to be useful in this analysis. The best data comes from Wickiups 1, 3, 4, and 20.

Wickiup 1 consists of 10 poles, 6 standing and 4 collapsed, built onto the west side of the juniper support tree utilizing an unbroken limb and the trunk. The poles ranged from 2.5 to 3 m in length. One forked pole and 1 uprooted tree were incorporated into the structure. All the pole ends were broken off. The height of the structure is estimated at 1.6 m. The floor plan was roughly circular, estimated to be about 3 m in diameter, and encompassed an area of about 7.5 square meters. The floor appears to be unprepared. There was no internal hearth, but an external hearth was present about 2.5 m southwest of the structure, which may indicate a southwest entryway.

Wickiup 3 consisted of 9 poles, 5 standing and 4 collapsed, built onto the southwest side of the juniper support tree, utilizing an unbroken limb and the trunk. Data concerning the pole lengths, the presence of forked poles or uprooted incorporated trees, or the status of the pole ends were not recorded. The height of the structure was estimated a 1.12 m. The floor plan was roughly circular, estimated to be about 4 m in diameter, and enclosed an area of about 12.5 square meters. The floor appeared to be unprepared, though there was a juniper bark mat measuring approximately 170 cm by 90 cm located south of the support tree beneath the support limb. An internal hearth was present, located in the eastern half of the southwestern quadrant of the floor. A southwestern entryway is hypothesized. A mano fragment was present on the exterior at the southeastern side of the structure and may indicate an activity area in that location.

Wickiup 4 consisted of 6 poles, 3 standing and 3 collapsed, built onto the eastern side of the juniper support tree, utilizing just the trunk of the tree. Data concerning the pole lengths, the presence of forked poles or uprooted incorporated trees, the status of the pole ends or the height of the structure were not recorded. The floor plan was roughly circular, estimated to be about 3.5 m in diameter, and encompassed an area of about 9.6 square meters. The floor appeared to have been unprepared, though there was a juniper bark mat measuring approximately 130 cm by 75 cm located to the north-northeast of the support tree. An internal hearth was present, located to the east of the support tree and juniper bark mat. An eastern entryway is hypothesized.

Wickiup 20 consists of 8 poles, 3 standing and 5 collapsed, built onto the eastern side of the juniper support tree, utilizing an unbroken limb and trunk of the tree. Pole lengths range from 2 to 4 meters. No forked posts are present, but 1 uprooted tree was incorporated into the structure. The height of the structure is

estimated to be 110 + cm. The floor plan is elliptical measuring about 2.5 m N - S and 1.5 m E - W, and encompasses an area of about 2.9 square meters. The floor appears to have been unprepared, though there was a juniper bark mat measuring approximately 120 cm by 85 cm located just to the east of the support tree. An internal peripheral hearth is located 1.3 m to the northeast of the support tree, 80 cm north-northeast of the juniper bark mat. A northeastern entry way is hypothesized.

If, as Smith (1974: 34-36) indicates, the diameter (and floor area) of the structures is relative to the length of time occupied and/or the size of group, and the estimated floor areas available from the 4 excavated wickiups at 5GF308 ranges from 2.9 square meters at Wickiup 20 to 12.5 square meters at Wickiup 3, then based upon the present data set, we hypothesize that the multi-pole structural features at 5GF308 functioned as both short term habitations for small nuclear family groups and as longer duration habitations for larger extended family groups. Given the present data set, seasonality is difficult to establish, but the larger wickiups, 3 and 4, with their interior hearths, may have served as winter habitations for 2 extended family groups.

The function of the single pole and paired pole structural features is problematic. They may be all that remains of earlier short term habitation structures, or they may have served in some other activity set such as hide working poles, meat drying racks, simple sun shades, collapsed storage platforms, or perhaps even menstrual huts.

Smith (1974:80-81 ) notes that single poles leaned into trees were often used as fleshing or drying poles for deer hides. For fleshing, a notched cannon bone from a deer or elk was used, and the hide was hung with the head end over a pole leaned against a tree. The flesh was removed first and then the hide was turned over for the removal of the hair. The hide was then washed in water to remove the loose debris and then soaked overnight, usually in a hole dug in the earth and lined with rawhide. After the soaking, the hide was rinsed in clean water and wrung out. This could be done by one woman hanging the hide (with the head up) over a pole leaned against a tree, inserting a stick into a fold at the bottom of the hide, and twisting the stick clockwise to wring out the water. This soaking and drying process would be repeated again after brains had been rubbed into the hide. Another pole drying process was instigated after the hide was completely stretched and ready for smoking. Buffalo and elk hides were staked out on the ground while the flesh and hair were removed. Smith's White River band and Uncompahgre band informants said tanning was always done by women.

To the authors knowledge, there is presently no archaeological data available on these single pole structural features. However, testable hypotheses can be generated from Smith's ethnographic and other archaeological data. First, hide scraping tools may be present in the vicinity of the single pole structural features, and second, pits dug into the soil for washing and soaking the hides should also be located nearby. If data concerning the distance of exterior hearth features from the habitation structures is any guide (cf. Gruebal 2001, Gruebal and Cater 2001), then the pits for the washing and soaking of the hides may also be within a 2 - 4 m radius of the single pole structural features. External hearth features associated with habitation structures identified during survey and excavations at 5GF308 have distances ranging from 2 to 5.5 m, with 82 % falling within a 4 m radius. Also at 5GF308, large quartzite primary flake chopper/scrapper tools were found within a 4 m radius associated with single pole structural features 6-B, 19, and 48-B. One horizontal single pole structural feature, 31-B, could be a meat drying rack, but at only a meter above the ground, that seems a good way to lose your meat to a camp dog or coyote. However, working with multiple hides at the same time could result in the creation of paired pole structural features, like the one at structural feature 18B.

The paired pole features could also represent the collapsed remains of small structural features such as meat drying racks, simple sun shades, temporary storage platforms, or perhaps even menstrual huts. Smith (1974:146) notes that in the Uintah Band, the winter menstrual hut was made of 2 forked cedar (juniper) poles interlocked together at the top, the intervening spaces filled in with other cedars with the foliage left on, and the inside lined with cedar boughs laced together to keep out the cold. At 5GF308, there is only 1 paired pole structural feature, Wickiup 27, that consists of 2 forked juniper poles. One pole is standing and the other has collapsed. No thermal features or artifacts were observed in association, and the structures function is

presently indeterminate. Although Baker (1996, 2003) makes a good case that menstrual huts were probably present on some Ute sites, his proposed methodology for demonstrating that some of the smaller structures (2 m in diameter) may have served as menstrual huts is far too weak to make an accurate determination of this specialized function. This is especially true in light of Smiths (1974:147) reporting that menstrual huts could be from 8 to 12 feet in diameter. Furthermore, Baker (2003:20) suggests that the menstrual huts may be tethered to the primary residence by a distance of 20 m to 60 m away. In a multi-component site as large, dense, and complex as 5GF308 the determination of a relationship based upon tethering distance between the primary residence and the dependency structure would be highly conjectural, even with *extremely* tight chronological controls to determine contemporaneity.

### Thermal Features [SLIDE # 15]

During the testings and excavations at 5GF308, a total of 11 thermal features were investigated, many of which contained small pieces of fire-cracked or thermally reddened rock, but which could not be classified as rock-filled hearths. These thermal features are either circular or oval in shape with a scooped out shallow basin. The circular hearths tend to cluster between 60 - 70 cm in diameter (N=5) with one larger hearth measuring 92 - 95 cm in diameter. Basin depths range from 8 - 12 cm. The oval shaped hearths (N= 5) measure 50 x 70 cm, 60 x 80 cm, 70 x 80 cm, with one large hearth measuring 103 x 127 cm, and another estimated at 100 x 120 cm, at Wickiup 1. Six of the hearths showed evidence of thermal oxidation. Five of the thermal features are interior hearths, 2 are exterior hearths, and 2 appear to be exterior ash dumps. These hearths were often associated with pieces of burned and unburned bone which had been broken for the extraction of marrow or smashed for the making of bone grease. No determinations could be made on the thermal features at Wickiups "X", "Y", and "Z". Analysis of charred wood and charcoal indicated that juniper was the primary fuel used in the hearths.

During the 2003-2004 survey and mapping procedures, an additional 29 new thermal features were identified. Eight are fire-cracked rock clusters and 21 are hearths. Two of the hearths were identified as modern, one at Wickiup 56 and one at Wickiup 44. Four of the 19 aboriginal hearths are considered to be internal hearths associated with a habitation structure, and 10 are considered to be external hearths associated with a habitation structure. Though all of the hearths contained small pieces of fire-cracked or thermally reddened rock, none were classified as rock-filled hearths. Five of the thermal features are considered to be intermural hearths not associated with a habitation structure. Only one of the fire-cracked rock clusters was evaluated as an intermural thermal feature. Size estimates range from 60 to 70 cm in diameter for the new interior hearths, and 100 to 110 cm in diameter for new exterior hearths. No dimensional data was collected for the intermural thermal features.

### Settlement Pattern

Models used to predict the general locations of archaeological sites in this region of western Colorado have suggested the importance of several geographic and environmental variables (Burgess, et al, 1980; Lutz, et al, 1979). In general, they have pointed to strong correlations between site locations and/or site types and vegetational communities, elevation, distance to water, and topographic setting such as site slope and aspect. A study by O'Neil (1993:241) of the Grand Junction region showed a strong correlation between open camp site elevation and temperature inversions, with the highest frequency of the camps occurring in the pinyon-juniper zone above the top of the cold air inversion. Temperature inversions can occur in the valleys during the winter months with the strongest inversions occurring from mid-December through January. The cold air gets trapped in the valleys, with a layer of warmer air above it, where air temperatures can be 30\_ F warmer than in the valleys. This warm air layer can be several hundred feet thick. The frequency of these temperature inversions is dynamic and highly variable on a yearly basis, dependant on snow and cloud cover. These camps also showed a strong tendency to locate adjacent to elk and mule deer winter ranges.

Sanfillippo's (1998:366-368) data on wickiups in Colorado indicates that the highest frequency (35%) of this site type occurs between 6234 - 6561 feet in elevation. Seventy-five percent of the sites have a known permanent water source within 2.2 km. Ninety-nine percent of the wickiup locations are on elevated land

forms with a high degree of terrain visibility for viewing game, approaching people, ability to maximize or minimize breezes, and “because cold air sinks”. All of the wickiup sites occurred on slopes of < 30°, with 76 % occurring on slopes of 1-8°, and 2-9° being the most common slope for 33 % of the structures. Her data on site aspect indicated that any direction other than north is preferred based upon a practical combination of solar radiation and wind direction.

5GF308 fits within most of the parameters outlined by Sanfillippo. It is located on an elevated land form at the base of the Grand Hogback, in the juniper-pinyon forest, at an elevation of 6320 feet (1926 m). A high degree of terrain visibility is available from near the east, north, and west edges of the site. During the winter of 2003-2004, the top of the cold air layer occurred at an elevation of about 6000 feet (USGS/NWS, 2004) placing the site in the warmer air zone. The site also has a south to southwestern aspect with a site slope of about 5° on the south half of the site, and maximum of 9° on the north end of site, thus increasing the amount of solar radiation. The major difference between Sanfillippo’s data and 5GF308 is the distance to permanent water, 3.32 km for 5GF308, which is a kilometer more than 77 % of the sites in her study. Furthermore, the site is also located in the elk and mule deer winter ranges, which is probably one of the more important factors affecting the site location.

### Subsistence

The subsistence data generated from 5GF308 indicates that there was a heavy dietary reliance on fauna. More than 478 pieces of broken bone were recovered. The bone is usually large to medium sized mammal long bone fragments, with a few small mammal bone fragments present. Most of the bone has been broken for the extraction of marrow or smashed for the making of bone grease, and is often found associated with the hearth features. Taxa identified include: Odocoileus hemionus; Canis latrans; Lepus sp.; Sylvilagus sp.; and Artiodactyla. There are still some large well preserved specimens from 1996 which have yet to be analyzed, and given their large size, could be Elk, or possibly Bison.

Two macrobotanical studies, and 1 pollen study have been conducted on samples from 5GF308. A pollen analysis of 2 samples taken from Wickiups 3 and 4 was considered inconclusive as the 10 taxa identified currently occur in the vicinity of the site. The first macrobotanical analysis was also on 2 samples from Wickiups 3 and 4, produced a total of 160 complete seeds and 260 incomplete seeds. None of the seeds were charred. Taxa identified include: Juniperus sp.; Pinus edulis; Chenopodium sp.; Oryzopsis hymenoides; Descurania sp.; Opuntia sp.; and Cleome sp. The results were considered inconclusive as the identified seeds were collected near the surface, in excellent condition, and currently occur in the vicinity of the site. Twenty-one very small bone fragments were also present, 12 of which were charred. The second macrobotanical analysis was performed on a portion of the fill from a hearth (Feature 5) at Wickiup 2. It also yielded no charred remains indicative of plant processing activities. The absence of charred seeds and other charred plant remains suggested that this feature might have been used during the late winter, spring, or early summer months when seeds and fruits were not yet available for exploitation. It was also suggested that the feature might yield pollen and/or starch evidence for the use of plant parts such as roots and greens that are available during those seasons, or that the hearth was not used for processing plant resources.

Similar results indicating a heavy dietary reliance on fauna were obtained at the Simpson Wickiup Site (Greubel, 2001) and at the Schmidt Site (Greubel and Cater, 2001), though two hearths from Component 5 at the Simpson Site produced small quantities of charred goosefoot seeds, suggesting a minor use of this food source.

### Technology [SLIDES 16, 17, 18, 19, 20, 21, 22]

The technological artifact assemblage identified during the previous and contemporary work at 5GF308 includes: 14 large river cobbles; 15 large primary flake expediency tools that may be multipurpose choppers and scrapers; 9 mano fragments; 1 small river cobble hammer-stone; 1 small river cobble polishing stone; 4 biface fragments; 6 projectile points, composed of 5 lithic points and 1 metal point; 1 utilized flake;

and 10 pieces of debitage composed of 1 primary flake, 2 secondary flakes, and 7 tertiary retouch flakes. Also present were 45 sherds of Uncompahgre Brownware - Plain and 2 sherds of corrugated gray ware.

The lithic tools at 5GF308 are made of materials that are not common in the local formations, and are composed of red and brown cherts, chalcedony, and Dakota Orthoquartzite. The absence of debitage from the earlier stages of tool manufacture could indicate that the occupants were arriving with an already prepared tool kit, or that they were relying on metal tools obtained through post-contact trade, or both. The presence of a metal projectile point supports this proposition and would place at least part of the occupation of the site in the latter part of the Antero Phase. The only exception to this appears to be the aforementioned river cobbles and the large primary flake chopper/scrapper tools, which were struck from cobble cores. These river cobbles are manuports, not native to the depositional environment of the site. They show subtle indications of use as tools, either as hammerstones or anvils, for the breaking of bone and extraction of the marrow, or for the smashing of the bones for processing into bone grease. The aforementioned high frequency of bone fragments, both burned and unburned, supports this hypothesis. Greubel and Cater (2001) also report the presence of stream cobbles at the Schmidt Site. These cobbles were determined to be multifunctional for both bone reduction and lithic reduction. However, they also report a significantly higher presence of lithic debitage, biface fragments, and projectile points there, as well as at the Simpson Wickiup Site (Gruebel, 2001). Reed (et.al. 2001:41-155-156) provides a summary on Ute technology involving flaked stone, ground stone, and the use of metal axes.

Though surface collection at 5GF308 could account for the absence of bifaces and projectile points, collectors generally do not collect debitage, and there is no evidence of collectors piles at 5GF308. Sampling error due to the limited number of tested and excavated number of wickiups is also apparently not a factor. One of the first things noticed by all the investigators during the previous and contemporary surveys of the site is the absence of lithic debitage on the surface.

Ceramics at 5GF308 consist of 45 sherds of Uncompahgre Brown Ware - Plain and 2 sherds of corrugated gray ware. Three of the sherds are rim sherds. A petrographic analysis on 8 sherds collected from the site surface indicated 2 different types of ceramic paste. The most frequently observed paste type contained fragments of granite rich in muscovite and biotite, while 2 sherds recovered from one of the wickiups contained fragments of a muscovite-rich quartz mica schist. Micaceous granite and quartz biotite schists are both readily found along the Grand Hogback, so it is possible that the ceramics could have been produced using locally available materials. It was reported that a mano was recovered during the 1986 testing operations that had a quantity of mica adhering to one surface. It is possible that this mano may represent a tool for temper or ceramic clay processing on the site. Unfortunately, this mano could not be found within the present artifact assemblage, and is assumed to be lost.

There is currently an INAA study being performed by Sunday Eiselt, a graduate student at the University of Michigan. As part of her PhD dissertation on Micaceous Apache pottery, she is also examining micaceous Ute pottery and has examined a sherd collected from 5GF308. The sherd was collected from Wickiup 00, which we have not been able to identify. The sherd indicated a source near Picuris Pueblo in New Mexico and may represent either transported clay or a vessel. The data will be published in the future upon completion of her dissertation.

Reed (et.al. 2001:41-151-153 and 41-156-161) provides a comprehensive discussion of Uncompahgre Brownware in terms of ceramic technology as an indicator of Ute mobility, typology, thermoluminescence dating, local production, and temporal trends.

The 2 small pieces of corrugated gray ware found at 5GF308 may represent a trade item, or they could be aboriginally curated from sojourns to the southwestern part of Colorado. No analysis has been performed on these sherds and future work may provide some important insights.

Three pieces of twisted juniper bark and 3 juniper bark mats have been recovered at 5GF308. The three juniper bark mats consist of unmodified bark strips which appear to have been randomly piled together to form part of a floor cover or sleeping mat. The 3 pieces of twisted juniper bark are a loose "S" twist and only

5 - 8 cm long. They were found with the juniper bark mat at Wickiup 20. [SLIDES # 23, 24, 25]

### Chronology

The dated components and cross-datable artifacts from site 5GF308 are presented below in Tables 2 and 2.1, respectively. It should be noted that the radiocarbon dates are problematical due to the “old wood” problem brought about through the use of juniper as a fuel source.

**Table 2. Summary of Dated Components**

<b>Component</b>	<b>Date Source</b>	<b>Date(s)</b>	<b>Comment</b>
Wickiup 2	C-14: Beta-187086	350±50 BP. Cal Intercept: AD 1510, 1600, 1620	Juniper fuel_old wood Date(s) too early
Wickiup 3	C-14: Beta-187084	490±70 BP. Cal Intercept: AD 1430	Probably too early
Wickiup 4	C-14: Beta-85828 Tree Ring-Juniper pole: UA-TRL-COM-2	400±40 BP. Cal Intercept: AD 1470  1813+vv	Tree ring date indicates after AD 1813. C-14 date is 343+ yrs. too early due to “old wood” problem
Wickiup 20	C-14: Beta-187085	650±50 BP. Cal Intercept: AD 1300	Probably too early
Wickiup 36-A	Glass Seed Bead	1840 - 1881	Relative Cross date

**Table 2.1 Summary of Relative Cross Datable Artifacts.**

<b>Artifact(s)</b>	<b>Relative Cross Date</b>	<b>Comment</b>
Glass Seed Bead	AD 1840 - 1881	Baker, 2003
Metal Projectile Point	AD 1820 - 1880	p.c. Horn, 2004
Uncompahgre Brown Ware	AD 1020 - 1881	Reed et al, 2001: 41-161
Desert Side-notched Projectile Points	AD 1200 - 1700	Reed & Metcalf, 1999
Rosegate Projectile Points	650 BC - AD 1000	Reed & Metcalf, 1999
Corrugated Grayware	AD 1000 - 1300	Brunswick et al, 1995

Based upon the above data, 5GF308 is a multicomponent site that may have been occupied as early as A.D.1000. The photo-documentation of a Rosegate point on the site by Bill Kight, and the presence of 2 small body sherds of corrugated gray ware could indicate a late Formative Era, Aspen Tradition, occupation of the site. Furthermore, recent data compiled by Reed (et.al., 2001:41-154 and 161) on thermoluminescence dated sherds of Uncompahgre Brown Ware would also support the possibility of such an early date, with the statistical mode occurring between A.D.1400 and 1650. However, he also recognizes that such a small sample size (N=16) is too small to make any concrete assertions.

The dendrochronology date of 1813 +vv from Wickiup 4 is probably a much more reliable indicator for 5GF308. As noted in Table 2, the difference between the radiocarbon calibrated intercept date and the dendrochronology date at Wickiup 4 is approximately 343 years. If we arbitrarily add 350 years to correct for the “old wood” problem to the other radiocarbon calibrated intercept dates, a much later suite of dates at

A.D.1650, 1780, and 1860 could be inferred. As shaky as that proposition is, if we accept that “old wood” is still suitable to burn as fuel after 350 many years, we can also reverse that same time interval and subtract it from the present, which results in a date of approximately A.D.1650. That implies that the remnants of a juniper pole and bough structure from that long ago would still be in existence, and this might be a far more reasonable estimate for the earliest occupation at 5GF308.

Evidence for a much later occupation at 5GF308 comes from the presence of the metal projectile point, the partial glass seed bead, and the presence of a few axe cut poles, all of which argue for a post A.D.1820 occupation. Axe cut poles were found at five of the structural features. Four of them were at multi-pole lean-to structures at Wickiups 29, 45-A, 48-A, and 67, and axe cuts were found on a tree trunk used as a support pole at free-standing structure Wickiup 62. Dendrochronological dates obtained from the axe cut poles at these wickiups could help to clarify their dates of occupation. Furthermore, the low volume of lithic debitage on the site could indicate three possibilities: 1) the occupants are arriving with an already prepared lithic tool kit, or 2) the occupants are reliant upon metal tools that are post contact after 1820, or 3) both of the preceding. A small 3/16" (4.4 mm) lead ball from a shotgun load was recovered, but it is too ambiguous to determine if it is historical, or a modern intrusion to the site.

The dating of the occupational event of a given structure is extremely difficult, especially in regards to a large multi-structure site such as 5GF308. The “old wood” problem applies not only to radiocarbon dates from hearths, but also to dendrochronological dates on support poles with broken off pole ends, where ‘old wood’ in the form of available downed or dead juniper branches, or even branches scavenged from an earlier structure, may have been incorporated into the new structure as support poles. Also, in a complex site such as 5GF308, the tree ring dating of a particular structure through the use of nearby juniper trees with the bark stripped off does not necessarily indicate that the bark from that tree was used in that particular structure. There is simply no way to tell which bark stripping event is associated with the construction event on any given structure. Another chronological problem, as Gruebal (2001) points out from his work at the Simpson Wickiup site, is that Ute Antero Phase components look a lot like Ute Canalla Phase components in archaeological contexts, because the Antero Phase was defined primarily on the basis of historical, not archaeological, data.

#### Site Structure [SLIDE # 26]

Site structure can provide insight into social organization, duration of site occupation, and sometimes ethnic affiliation. It involves the accurate mapping of the spatial distribution of cultural features, artifacts, and ecofacts within a site. However, human actions such as trampling, scuffing, and scavenging for materials suitable for further use, as well as cleaning of activity areas, may substantially affect the distribution of items. Unless accounted for, these actions can confound attempts to interpret prehistoric or historic activity areas and lifeways, especially if post occupational damage has occurred through natural erosion or illicit artifact collection and vandalism.

This is especially true for a complex multicomponent site such as 5GF308 with 80 structural features and at least 40 thermal features, where the objective identification of contemporaneity among and between the structures and thermal features is highly problematic, and there is a high probability of undocumented surface collection and documented vandalism impacts. Until better absolute dating technologies can be developed and applied this problem will remain unsolved. Consequently, an intuitive approach may be all that is available at the present.

As noted previously, this intuitive approach was used during the recording of the structural features when alpha-numeric designations were applied at structures thought to be contemporaneous. This occurred at structural features: 6-A, B; 16-A, B, C; 18-A, B; 31-A, B; 36-A, B; 45-A, B; and 48-A, B. An examination of the site map provides all kinds of opportunities for this kind of intuitive association. A number of clusters ranging from 2 to 8 or more structures in a group can be readily created. However, this is like watching fireflies in the dark, as groupings come and go depending on where you look. However, if Smiths (1974) ethnographic data on the use of single poles as hide preparation activity areas can be demonstrated

archaeologically, then affiliations between single-pole structural features and multi-pole structural features may occur at structural features: 51 and 52; 13 and 14; 35 and "S"; 41 and 42; 19 and 20 including the chopper/scraper tools nearby; and possibly 64 and 65 and the tool cluster northeast of these structures. A contemporary occupancy relationship between structures 66 and 67 is not postulated because the condition of the wood in the two structures is so different that structure 67 appears to older than 66. Furthermore, given the isolated nature of these two structures, and their commanding view over the site and the surrounding area, they were intuitively evaluated as sentry posts.

In conclusion, the preliminary data from 5GF309 indicates that the site is a multi-component, late fall to early spring campsite or residential base, centered around the exploitation and preparation of faunal resources, and occupied by small microbands of 1, 2, or possibly 3 nuclear and/or extended families. Absolute dates for the occupations are problematical, but the best estimates are post A.D.1820, with earlier occupations back to A.D.1650, and possibly as early as A.D. 1000.

## References

- Armstrong, Harley J.  
1992 Personal Communication regarding cryptocrystalline lithic materials observed during paleontological surveys within the Bureau of Land Management, Grand Junction District, Colorado.
- Baker, Steven G.  
1991 *Ephemeral Archaeology on the Mountain of the Sorrel Deer*. BLM-Colorado Cultural Resources Series No. 32. Bureau of Land Management, Denver.  
  
1996 *Numic Archaeology on the Douglas Creek Arch, Rio Blanco County, Colorado: Ute Rancherias and The Broken Blade Wickiup Village (5RB3182)*. Chandler Douglas Arch Series Report No. 80. Centuries Research, Inc. Montrose, Colorado.  
  
2003 *Historic Ute Archaeology: Interpreting the Last Hour Wickiup (5RB3236)*. Southwestern Lore 69 (4). Colorado Archaeological Society, Denver.
- Baker, Steven G. and Monte Sanburg  
1993 Third Annual Executive Summary and Management Report, Chandler and Associates' Douglas Creek Arch Cultural Resource Management Program. Chandler Douglas Arch Series Report No. 70. Centuries Research, Inc. Montrose, Colorado.
- Buckles, William G.  
1971 *The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado*. Ph.D. dissertation, Department of Anthropology, University of Colorado. University Microfilms, Ann Arbor.
- Burgess, Robert J. with Kenneth L. Kvamme, Paul R. Nickens, Alan D. Reed, and Gordon C. Tucker, Jr.  
1980 Class II Cultural Resource Inventory of the Glenwood Springs Resource Area, Grand Junction District, Colorado. Nickens and Associates, Montrose, CO. Ms. on file at the Bureau of Land Management, Glenwood Springs Field Office.
- Cassells, E. Steve  
1997 *The Archaeology of Colorado*. Revised Ed. Johnson Books, Boulder, CO.
- Conner, Carl E.  
1988 Archaeological Investigations at 5EA433. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp. 190-205. CCPA Occasional Papers No. 1. Colorado Council of Professional Archaeologists, Denver.  
  
2000 Report of the Evaluative Test Excavations at Site 5RB451 in Rio Blanco County, Colorado. Ms. on file, Grand River Institute, Grand Junction, Colorado.
- Dean, Jeffery S.; Robert C. Euler; George J. Gumerman; Fred Plog; Richard H. Hevly; and Thor Karlstrom, N. V.  
1985 *Human Behavior, Demography and Paleoenvironment on the Colorado Plateau*. American Antiquity 50(3):537-554.
- Emslie, Steve  
1983 Analysis of Faunal Materials from Site AR-87 [5GF308] - Table 1. Fauna Identified at Site AR-87. Center for Western Studies, Inc., Flagstaff, AZ.

- Euler, Robert C., George J. Gumerman, Thor N. V. Karlstrom, Jeffrey S. Dean, and Richard H. Hevly  
1979 *The Colorado Plateaus: Cultural Dynamics and Paleoenvironment*. Science 205  
(4411):1089-1101.
- Gordon, Kinzie E. and Kris J. Kranzush, Donna J. Knox, Victoria E. Keen, and Craig A. Englemann  
1983 *A Cultural Resources Inventory of Texas - Missouri - Evacuation Creeks  
Study Area, Rio Blanco County, Colorado*. Bureau of Land Management Colorado,  
Cultural Resources Series No. 15. Bureau of Land Management, Denver.
- Greubel, Rand A.  
2001 Investigations at the Simpson Wickiup Site (5SM2425). Vol. 4, Chapter 22,  
In *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project,  
Western Colorado and Northwestern New Mexico*. Alpine Archaeological  
Consultants, Inc., Montrose, Colorado.
- Greubel, Rand A. and John D. Cater  
2001 Investigations at the Schmidt Site (5MN4253). Vol. 3, Chapter 21, In *The  
Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project,  
Western Colorado and Northwestern New Mexico*. Alpine Archaeological  
Consultants, Inc., Montrose, Colorado.
- Hayden, Ferdinand V.  
1874 *United States Geological Survey of the Territories, Annual Reports, 1<sup>st</sup> - 12<sup>th</sup>  
(1867 - 1878)*. Volume 8, 1874, Topographic Report on the White River District  
(Grand Hogback), pp 351 - 352. U.S. Government Printing Office, Washington, D.C.
- Hill, David V.  
1987 *Petrographic Analysis of Selected Ceramics from 5GF308 (Squaws Camp)*.  
Ms. on file at the Bureau of Land Management, Glenwood Springs, CO.  
  
2003 *Ceramic Raw Materials Used by Historic Native Peoples of Northwestern  
New Mexico and Western Colorado*. Paper submitted to Colorado Archaeology,  
Colorado Council of Professional Archaeologists/Colorado Archaeological Society.  
In Press.
- Horn, Jonathon C.  
2004 Personal Communication regarding the dating of metal projectile points.
- Hughes, Richard E.  
1996 Letter Report to Patty Walker Buchanan, Area Archaeologist, Bureau of Land  
Management, Glenwood Springs Resource Area, regarding the aborted attempt by  
XRF to analyze an obsidian specimen from 5GF308. Geochemical Research  
Laboratory, Letter Report 96-74.
- Husband, Michael B.  
1984 *Colorado Plateau Country Historic Context*. Colorado Historical Society,

Denver.

Huscher, Betty Holmes, and Harold A. Huscher

1939 Field Notes for 1939. Ms on file, Department of Anthropology, Denver Museum of Nature and Science, Denver, Colorado.

Kight, William H. Jr.

1985 Rifle Wikiup Village, Site AR-05-07-087; 5GF308: Field Notes and Observations on Site Damage. United States Department of Interior, Bureau of Land Management, Glenwood Springs Resource Area. Ms. on file at BLM/GSFO and at OAHF, Denver.

Lutz, Bruce J., with William J. Hunt, Jr. and Cheryl Muceus

1979 *A Cultural Resource Management Survey within the Eagle Planning Unit, Colorado. Office of Public and Contract Archaeology, Vol. 1, No. 1.* The Office of Public and Contract Archaeology, University of Northern Colorado. Prepared for the Bureau of Land Management, Grand Junction District. Ms. on file at the Bureau of Land Management, Glenwood Springs Field Office.

Nickens, Paul R. (editor)

1988 *Archaeology of the Eastern Ute: A Symposium.* CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver.

O'Neil, Brian

1993 *The Archaeology of the Grand Junction Resource Area: Crossroads to the Colorado Plateau and the Southern Rocky Mountains. A Class I Overview.* Unpublished manuscript on file at the Bureau of Land Management Grand Junction Field Office.

O'Neil, Brian and Steven G. Baker

1992 *Second Operating Year Executive Summary and Management Report for Chandler and Associates' Southwest Rangeland Area of Undertaking, Rio Blanco County, Colorado.* Chandler Douglas Creek Arch Series Report No. 51. Centuries Research, Inc., Montrose Colorado.

Puseman, Kathryn

2004 Macrofloral Analysis at the Rifle Wikiup Village, Site 5GF308, Western Colorado. Paleo Research Institute Technical Report 04-10. Golden, CO.

Reed, Alan D., and Michael D. Metcalf

1999 Colorado Prehistory: A Context for the Northern Colorado River Basin. Colorado Council of Professional Archaeologists, Denver.

Reed, Alan D., and Rand A. Greubel, Stephen M. Kalasz, Jonathon C. Horn, John D. Cater, and Kimberly Redman

2001 Synthesis of Project Data, Vol. 7, Chapter 41, In *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico.* Alpine Archaeological Consultants, Inc., Montrose, Colorado.

Robinson, William J.

1983 Letter Report to Paul Williams, Area Archaeologist, Bureau of Land Management, Glenwood Springs Resource Area, regarding the results of two tree-ring samples from the Rifle Hogback Wickiup Village. University of Arizona, Laboratory of Tree-Ring Research, Tucson, Arizona.

Sanfilippo, Joanne

1998 Ute Wikiups or Navajo Forked-Stick Hogans: Determining Ethnicity Through Architecture in the Archaeological Record. Unpublished Master's thesis, Department of Anthropology, Northern Arizona University, Flagstaff. Ms on file at Bureau of Land Management, Glenwood Springs.

Scott, Douglas D.

1988 Conical Timbered Lodges in Colorado or Wikiups in the Woods. In *Archaeology of the Eastern Ute: A Symposium*. Edited by Paul R. Nickens, pp 45 - 53. CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver.

Slessman, Scott A. and Todd Kohler, Heather Neail, and Scott Phillips

2004 *Archaeological Investigations at Nucla Camp (5MN6274), Montrose County, Colorado*. SWCA Environmental Consultants, Broomfield, Colorado.

Smith, Anne M.

1974 *Ethnography of the Northern Utes*. Papers in Anthropology No. 17. Museum of New Mexico Press, Albuquerque.

Smith, P. David

1986 Ouray: Chief of the Utes. Wayfinder Press, Ouray, Colorado.

Stewart, Omer C.

1973 *Ethnography of the Eastern Ute*. Ms. on file, Department of Anthropology, University of Colorado, Boulder.

Terry, Reed T., and Cynthia Wood Gilchrist

1988 The Huscher Photographs of Colorado Ute Sites. In *Archaeology of the Eastern Ute: A Symposium*. Edited by Paul R. Nickens, pp 45 - 53. CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver.

Thompson, Kevin

2003 Personal Communications concerning activities at 5GF308, 1996.

U.S.D.A. Soil Conservation Service, Colorado

1985 Soil Survey of the Rifle Area, Colorado.

U.S.D.I. Bureau of Land Management

1979 Foothill Juniper Ecological Site Description. MLRA 48, May 11, 1979.

U.S.G.S. National Weather Service

2004 Personal Communication - National Weather Service Office, Grand Junction, Colorado.

Van Ness, Margaret

1983 *Flotation Analysis of Two Wikiups in Central Colorado [5GF308]*. M. A. Van Ness Consulting. Denver, CO.

Walker-Buchanan, Patty

2003 Personal Communications concerning activities at 5GF308, 1995-96.

Weber, Steven A. and Karin Doerr

1983 *Pollen Analysis of Three Samples Collected from Site AR-87 [5GF308]*. Center for Western Studies, Inc., Flagstaff AZ.

Williams, Paul R.

2003 Personal Communications concerning activities at 5GF308, 1982-83.

Young, Robert G., and Joann W. Young

1977 Colorado West, Land of Geology and Wildflowers. Wheelwright Press, Ltd.

[SLIDE # 27]