

# **Project Completion Report**

## **Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)**

**Project Title:** ARCHEOLOGICAL DATA RECOVERY REPORTS PRE-CONTACT  
ARCHEOLOGICAL SITES 48YE116, 48YE357, & 48YE406

**Project Code:** UWY-104, P09AC00095

**Type of Project:** RESEARCH

**Funding Agency:** National Park Service/FHWA

**Partner University:** University of Wyoming

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**End Date of Project:** December 31, 2012

**Funding Amount:** \$99,948.00

**Project Summary:** Report restricted. The report is on file at YNP Archeology Laboratory and the Library (restricted), Heritage and Research Center, NPS Technical Information Center, The Office of the Wyoming State Archaeologist.,

**Number of students participating in this project: undergraduates, graduate students, degrees conferred.** 1 Doctoral Student, 6 Graduate Students, 3 Undergraduate Students, all from the University of Wyoming

**Lessons Learned from this project.**

The report is the results of the 2007 and 2008 data recovery excavations conducted to mitigate anticipated impacts to three National Register eligible pre-contact archaeological sites currently bisected by the alignment of the Grand Loop Road in the vicinity of Obsidian Cliff National Historic Landmark. Proposed widening of the roadway through these sites will impact them so a data recovery plan was developed and presented to the Wyoming State Historic Preservation Office to guide excavations within the 10 meter area of potential effect (APE) of the road construction. Surface collection and excavation at these sites indicate that the three locations most likely functioned as specialized activity locations –with small groups probably focused on activities including the reduction of obsidian primarily originating at the Obsidian Cliff site. These three sites were probably not occupied for long periods of time --artifacts include only lithic debitage and some stone tools. Aside from 10 small bone fragments recovered from a surface lithic concentration at 48YE116, no faunal material was recovered. No hearth or spatial features were encountered during excavation. Although no radiocarbon dates were produced from these excavations, two Late Archaic hafted bifaces or points were recovered from 48YE406 and one Late PaleoIndian Lovell constricted point from 48YE357, suggesting site occupations within the Late Archaic and Late Paleoindian culture periods.

**48YE116** is located approximately ½ kilometer from the southern boundary of Obsidian Cliff National Historic Landmark at an elevation of around 7400 feet .The site area is comprised of late Pleistocene, Pinedale age and Holocene fan gravels derived from alluvium found along intermittent streams. Vegetation primarily consists of a lodgepole pine forest that burned in 1988 and is regenerating with a dense growth of 2-5 meter high trees with some grasses. The site was initially recorded in 1995 by the Office of the Wyoming State Archaeologist. At initial recording the quantity of obsidian debitage present at the site, along with the presence of broken bifaces, cores, dense concentrations of debitage, and the close proximity of Obsidian Cliff suggested that the site functioned as a lithic workshop where large quantities of obsidian was fashioned into bifaces and other implements.

The 2007 data recovery started with 147 shovel tests excavated at 5 meter intervals parallel to and on either side of the present road designed to investigate the potential for buried cultural deposits within the 10 meter APE that extended outward on both sides of the present road. Only half of the roadside shovel tests recovered cultural materials and none of the shovel tests contained more than ten artifacts. A total of 358 flakes, three bifaces, two retouched flakes, two utilized flakes and 52 edge-damaged flakes were recovered from the shovel testing. All of the artifacts were obsidian and all the bifaces but one were broken in later stages of production.

Following the shovel tests two 1 meter by 1 meter excavation units were placed in the APE at locations that indicated soil deposition and high artifact counts. In addition to the excavation, several of the original surface concentrations were relocated (now buried under lodgepole pine duff), mapped, and two were collected. Lithic concentrations 5A and 9A were both about 1-2 meters in diameter and yielded more than 10,000 flakes, 14 bifaces, 20 retouched flakes, 31 utilized flakes, and 8 edge damaged flakes. Ten unidentifiable bone fragments were also recovered but there is no clear cultural association to the lithic reduction activities. Nearly all of the lithic concentration cultural materials were obsidian except for one chert utilized flake and seven quartzite flakes. Lithic concentration 5A contained considerably more debitage and used

flakes. Lithic concentration 9A contained a higher number of and percentage of bifaces. All of the bifaces were fragments, broken in the later stages of reduction. The presence of a few expedient tools indicates some domestic activities were also taking place at the lithic reduction site. The major portion of this site has not been excavated and thus, remains eligible for the National Register with the APE not contributing to the sites eligibility.

**48YE406** is a large prehistoric site that sits on the hill and slopes rising above the Gibbon River at elevation ranging from 7460 to 7560 feet above sea level. Part of the site is hydrothermal, siliceous sinter along the lower stretch of an unnamed drainage while the rest of the site area is late Pleistocene, Pinedale age till. The vegetation is lodgepole pine growth filling in areas burned in 1988 with some sparse grasses. The site sediments are shallow gravelly silts and sands with glacial till geologic deposits and the slope of the site is highly variable. The large site was first recorded by Montana State University in Missoula during the 1958-59 field seasons work in Yellowstone National Park. Subsequent work at the site recovered 2,106 flakes and 7 tools. The site was determined eligible for the National Register and due to the current alignment of the Grand Loop Road bisecting the western portion of the site, a data recovery plan was developed and approved by the Wyoming State Historic Preservation Office.

The 2007 data recovery excavations began with 197 shovel tests at 5 meter intervals parallel to and on either side of the present road designed to investigate the potential for cultural deposits within the 10 meter wide area of potential effect (APE) of the proposed widening of the road. Only 36 of the shovel tests contained cultural materials and only 6 of the shovel tests recovered over 10 artifacts. A total of 245 flakes, a stage 3 chert biface, a utilized flake, and three edge-damaged flakes were recovered. All but the biface and 8 flakes were obsidian

Eighteen 1 meter by 1 meter test units were excavated where high frequencies of cultural materials occurred on the surface or in the shovel tests. A slightly wider range of tools and debitage were recovered from the excavation units. Obsidian was the dominant material but a few local and non-local cherts were also present. The idea of the site function as a reoccurring base camp is not supported due to the lack of faunal materials or other spatial features. Although no radiocarbon dates resulted from the investigations, two probable Late Archaic period points were found in excavated contexts implying a Late Archaic occupation (or more likely multiple occupations) of the location. A probable Late Prehistoric point tip and an Early Archaic point base suggest occupations during these time periods as well. However, it was not possible to clearly associate any of these occupations with clear stratigraphic levels. The proximity of the site to the Gibbon River may have also been an influence in the occupation of this particular site area. The coarse sands and gravels making up the lower levels of the stratigraphy indicate a high possibility of slopewash having affected the integrity of the cultural materials. The lack of discreet buried cultural levels indicates that the portion of 48YE406 within the APE has little integrity. As a result, the APE is determined non-contributing to the site significance.

**48YE357** is located south of Obsidian Cliff and occupies the area between Obsidian Cliff and Apollinaris Springs. It is a large prehistoric lithic scatter related to the procurement and

reduction of obsidian and a quarry site for obsidian cobbles and nodules within the glacial gravels. The large size of the site immediately indicates that the cultural materials accumulated as a result of multiple, palimpsest occupations, although the lack of temporally diagnostic artifacts prevents an assessment of when these occupations occurred.

The 2008 investigations followed from the development of a data recovery plan that was accepted by the Wyoming State Historic Preservation Office. First step was the excavation of a series of shovel tests on either side of the road to identify the depth of cultural materials across the site and where the highest potential for buried cultural materials occurred. Afterwards additional 1 meter by 1 meter test units were excavated. A total of 290 shovel tests were excavated at 5 meter intervals on the west side of the road and at 10 meter intervals on the east side of the road. Due to the terrain, road widening would occur mainly on the west side of the road. 189 of the shovel tests contained cultural materials. A total of 4,168 flakes, two hafted bifaces, 22 bifaces, 23 retouched flakes, 22 utilized flakes, 31 edge damaged flakes, and eight cores were recovered from the shovel tests. All but five flakes were obsidian. One obsidian hafted biface consisted of a midsection and tip –its size is comparable to Archaic age projectile points but further temporal classification was not possible. The other hafted biface is very similar to a Paleoindian point illustrated several times by George Frison in *Prehistoric Hunters of the High Plains* (1991) and also in the 2007 publication on Medicine Lodge Creek (Lovell Constricted). The recovery of cores indicates that some core reduction was conducted at the site, which should be expected. Although in terms of actual numbers, biface reduction appears to have been the preferred reduction technique within the shovel test area.

Following the shovel tests, seven 1 meter by 1 meter test units were excavated in a relatively flat area in an opening in the thick forest adjacent to the roadway. The excavation units occurred where the shovel testing indicated that soil deposition and high artifact counts were present. Large glacial boulders and lodgepole pine and deadfall restricted the areas that could be investigated. The seven excavation units recovered 118,392 pieces of debitage, one hafted biface broken at the notches but suggestive of a Late Archaic form, 133 bifaces, mostly broken in late stages of manufacture, 104 retouched flakes, 201 utilized flakes and 18 cores. No features or dateable carbon were recovered from the excavation units. The artifacts recovered primarily consist of large numbers of obsidian flakes. The highest artifact counts in the southern two units occurred in the deeper levels 8-9, while the next three units to the north have the highest counts in the upper levels. The lack of discreet buried cultural levels indicates that the APE has little integrity, although the remainder of the site is considered eligible for the National Register.