

Save America's Treasures  
Heritage Inscriptions  
Second Interim Report, December 1, 2006

Award Number: ST-00-05-0007-05

Awarded Institution Name: Montana State University - Billings

First Interim Report: June 1, 2006

Second Interim Report: December 1, 2006

Period Covered by the Report: June 1, 2006 to November 30, 2006

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## **Performance Description**

### **a. What is the purpose of the project?**

The purpose of this project is to create a digital collection of historic signatures, dates and artwork spanning the time period from the 1800's to the present. The data is being organized into a searchable database and supplemented with physical reproductions obtained from non-contact three-dimensional scanning technology.

The project also includes the identification and appropriate documentation of previously undocumented sites through the Montana State Historic Preservation Office.

### **b. What activities or services have been carried out with project funds to support the purpose of the project? *If the project schedule has not been met, explain why and describe the steps being taken to return the project to its proposed schedule of completion.***

#### **Field Surveying Activities**

The end of the first report time period brought us into the heart of the summer field season. During that time, outings to sites in Montana, Wyoming and South Dakota provided a great deal of data to be processed. The data includes field notes, digital images, GPS data and three-dimensional scan files.

Some site visits were conducted alongside Bureau of Land Management and Custer National Forest archaeologists. These important relationships result in an important bidirectional exchange of information. Some of our field volunteers were also able to attend archaeology field survey training at the Cave Hills of South Dakota. These training sessions include a safety emphasis which is important as core field volunteers often lead less experienced survey personnel in remote locations.



Documenting a face carved into the sandstone in the Cave Hills of South Dakota

During the late summer and early fall, field conditions deteriorated into dangerously dry conditions. From late July to early November fieldwork was suspended for the safety of students and volunteers. During that period, fires of historic proportions raged throughout the northern plains, particularly Montana. While fieldwork was suspended, it provided an opportunity to organize data files and process site forms.

Cold weather has arrived in the region, fire danger is low, conditions are ideal and field surveying activities have resumed.

### Technological Activities

As independent technologies, the three-dimensional scanner and three-dimensional printer are relatively easy to use, however, a great deal of data processing has to occur between the act of scanning an inscription and printing a polymer representation. Exploring and documenting the processes involved include three-dimensional point cloud file editing, direct and indirect file translation, raster/vector interaction, and conversion into data products that will be useful as archived.

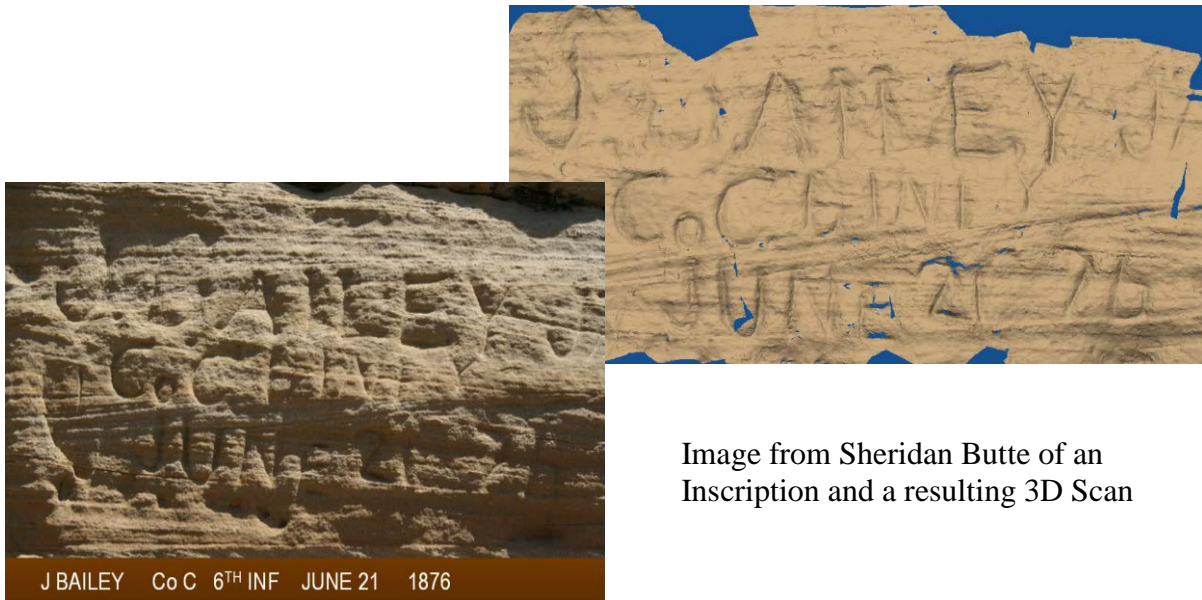


Image from Sheridan Butte of an  
Inscription and a resulting 3D Scan

A great deal of time has been spent documenting these processes so that volunteers are able to interact with the technologies productively. Demonstration of these technologies has also been provided to historic, archaeological and industrial groups (ref. presentation list).

Our first polymer models have been successfully produced and position us to utilize outside sources for full-sized models in the spring of 2007. Funding for the production of select inscriptions is provided in the grant.

Field radio, Global Positioning System (GPS), Surveying and Digital Imaging Technologies are functioning normally.

Together, all technologies are functioning at optimal performance and interlock to comprise the digital coverage originally proposed.

#### Collaboration and Consultation

While ongoing activities generate a constant dialog about the project, specific activities occurred that are relevant to the successful completion of the grant.

In July, Tim Urbaniak met with Dr. John Greer and Mavis Greer of Cheyenne, Wyoming. They own and operate a Cultural Resource Management (CRM) firm that is renowned for their excellent work documenting rock art sites on the northern plains. Since many of the native sites contain historic inscriptions, access to their records and their assistance directing us to significant inscriptions is a valuable resource. Their willingness to collaborate and allow access to their files is a great benefit to the project.

Two separate meetings were held this fall with members of the grant committee regarding the progress of the project.

The first meeting was held at the Montana State University – Billings Library in the Special Collections Area. The meeting was attended by Halcyon LaPoint – Custer National Forest Archaeologist, Mike Bergstrom – Custer National Forest Archaeologist, Eileen Wright – MSU-Billings Library (Special Collections), Tom Rust and Tim Urbaniak – MSU-Billings Faculty.

The primary topic of the meeting was the transition of our existing records into a useable and accessible format. This step is especially critical as the path that we take for archiving and displaying these resources will be added to for years to come.

The second meeting took place in Helena, Montana at the State Historic Preservation Office and was attended by Tim Urbaniak – principle investigator, Dr. Mark Baumler – State Historic Preservation Officer, Dr. Stan Wilmouth – Montana State Archaeologist and Damon Murdo – Cultural Records Manager. This discussion covered the processes of formally accessing state records, the process for submitting new sites for official record, and a general update of the status of the project.

#### **c. What are the outputs of the project activities or services to support the purpose of the project? Explain what documentation is used to report the outputs.**

We continue to receive requests to present to groups regarding the scope of the project and the technologies used. During this reporting period we have

- Presented to the local Billings, Montana Rotary organization

- Presented a seminar at the fall meeting of the Montana Historical Society

- Presented at the Fall 2006 Plains Anthropological Society Conference in Topeka, KS (PowerPoint presentations from these occasions are on file.)

We currently have an abundance of raw data, which is a significant project resource. The current files are organized by folder, structure and reference. The current step is to transition the information into a usable, interactive format. This process is a main focus for

the next stage of the project and reporting for the next quarter will contain samples of these output structures.

**d. What are the outcomes of the project activities or services to support the purpose of the project? Explain what documentation is used to report the outcomes.**

A significant outcome of the grant is the linkages being established between agencies and institutions involved in the archiving of cultural material. Being able to contribute to the official historical record is a noteworthy outcome. Documentation of this outcome is in the form of official site forms.

Another result is that awareness of the importance and recognized significance of these inscriptions is growing. The primary documentation for these contacts is email communication.

An outcome that continues to be of great importance and significance to the University is to engage students and the public. This last summer we had students in the Honors Program participate in the project through site documentation. For three upcoming days in December, the campus History Club has organized members to assist with field surveying. Contributions of time from students and volunteers are being documented and show a significant contribution to the project.

Incorporating the technologies used for the project into the curriculum is also an outcome of the grant. Interaction with the 3D Scanner and the 3D Printer has contributed to the quality and expertise of our graduates, which will ultimately contribute to the professionalism of the regional workforce. Polymer models and academic documentation serve as evidence of this interaction.

**e. Report other results of the project activities.**

The interest in the inscriptions and the interest in the technological aspects of the project are not always connected. Some historians have no interest in the technology, and some interested in the technology have no interest in the history, but it can be said that all that encounter the project find some – if not all – aspects of it exciting and interesting.

Reaction to the project has contributed to the role of MSU-Billings as a research institution and has positively positioned us as a regional heritage and technology resource.

**f. Additional comments/anecdotal information.**

We are already receiving inquiries from research historians and archaeologists anxious to peruse our records for information relevant to their work.

Many site leads and property invitations also continue. In general, people are willing to share stories about the stone inscriptions.

Winter is actually easier for field surveying – no rattlesnakes!

### **3. Certification**

In submitting this report, I certify that all of the information is true and correct to the best of my knowledge.

Name and title of the person submitting the report and date of submission:

Tim Urbaniak      Archaeology Field Team Director      11-29-06