

AREVA Enrichment Services LLC  
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Enclosure 1

**Report of Archaeological Data Recovery at 10BV246:  
the John Leopard Homestead, Bonneville County, Idaho**

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**Submitted to**

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***WCRM***

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***WESTERN CULTURAL RESOURCE MANAGEMENT, INC.***

**Archaeological Data Recovery at 10BV246:  
the John Leopard Homestead, Bonneville County, Idaho**

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## CHAPTER 1. INTRODUCTION

### 1.1 BACKGROUND

AREVA Enrichment Services LLC (AES) is currently preparing an application to the U.S. Nuclear Regulatory Commission (NRC) to construct and operate a gas centrifuge uranium enrichment plant in Bonneville County, Idaho (Figure 1). Previous cultural resources inventories by Western Cultural Resource Management, Inc. (WCRM) on behalf of AES documented 11 archaeological sites and 17 isolated finds within the property (Ringhoff et al 2008). Seven sites (MW003, MW006, MW007, MW009, MW011, MW013, and MW014) were determined not eligible and prehistoric components of three sites (MW002, MW012, and MW015) were subjected to additional field investigations in 2009 to collect obsidian artifacts. Site 10BV246 (MW004), however, was determined eligible for inclusion in the National Register of Historic Places (NRHP) under Criteria a and d by NRC (pursuant to 36 CFR part 60.4). 10BV246 is multiple component site comprised of a circa 1890 to 1930 historic homestead and a sparse prehistoric (obsidian) lithic scatter (Ringhoff et al 2008); homestead patent records indicate that the patent holder was John Leopard, who occupied the property in 1916 and patented it in 1919. The Idaho State Historic Preservation Office (SHPO) concurred with the determinations of eligibility in a letter dated September 29, 2009.

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Since resources within the eastern portion of 10BV246 may be impacted by future facilities construction, it was determined during consultations between NRC and SHPO that the effects to the site's eligibility must be mitigated by data recovery. This effort was to consist of archaeological fieldwork and intensive archival research. WCRM prepared the required mitigation plan in January 2010 (Ringhoff and Stoner 2010) and conducted fieldwork between October 5, and November 8, 2010 with a field crew of seven supervisors and technicians. Three previously documented features (Features 1, 7 and 8) within the eastern locus of the site were manually excavated during this effort. In addition, five obsidian biface fragments were also collected; these will be discussed in a separate report. Archival research was initiated in July 2010 and was completed in May 2011.

The mitigation measures described herein were designed to obtain representative surface and subsurface data and broad historic/archival data in order to address research questions identified in Ringhoff and Stoner (2010). These measures achieve required mitigation as negotiated between NRC and SHPO. The project also assures that NRC can fulfill their legal obligations as lead federal agency under 36 CFR 800.

### 1.2 PROJECT AREA DEFINITION

The Area of Potential Effects (APE) for the project has been defined as 4,200 acres and includes all project components, an approximate 1,000 foot buffer around the components, and a 250 foot buffer along two access roads. This is located in Bonneville County on the northeastern edge of the Snake River Plain in southeastern Idaho. U.S. Highway 20 is immediately to the south; this also provides access to the property. The current project area is defined as site 10BV246 and is plotted within Township 3 North, Range 34 East, Section 14 on the Kettle Butte USGS 7.5 minute quadrangle in the northwestern portion of the APE (Figure 2). Site UTM coordinates are Zone 12, 384392 East, 4826875 North (NAD 27).





Figure 1. Project location.



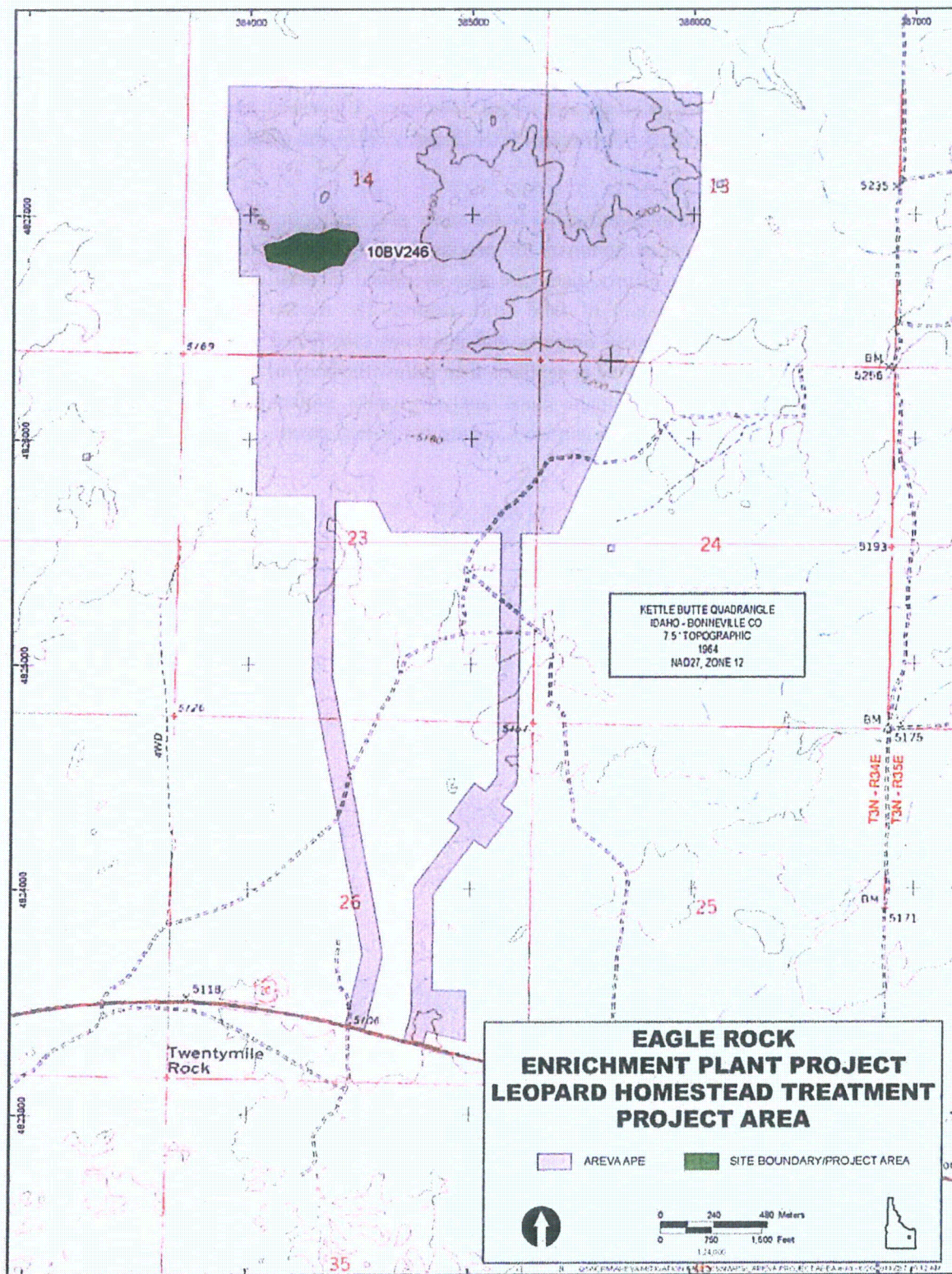


Figure 2. Project Area.

As currently proposed, the project would disturb about 592 acres of the proposed site, including 10BV246. Facilities would include access roads, parking lots, administration buildings, storage pads, water catchment basins, enrichment buildings and support structures. If licensed, construction would start in late 2011 and continue through 2018. Operations would begin in 2014 and continue through 2041.

### **1.3 ORGANIZATION**

This report is organized to provide an introduction to the study area, including an environmental setting and historic background, and detailed summary of proposed (and implemented) field and archival methods used during data recovery efforts; these are also described in detail in Ringhoff and Stoner (2010). This is followed by a summary of field work results. The report then concludes with an assessment of the applicability of research domains and questions established in Ringhoff and Stoner, (2010) and an overall project synthesis. Five appendices then follow the body of the report; these provide an updated site record, a copy of sub-consultant faunal analyses results, project photos, Black and White negative contact sheets and indices, and the complete Leopard homestead patent.



## CHAPTER 2. ENVIRONMENTAL AND HISTORIC BACKGROUND

The following environmental and cultural background is based upon a combination of current research and previously prepared materials in Ringhoff et al (2008); Ringhoff and Stoner (2010); and the Idaho National Laboratory Cultural Resource Management Plan (INLCRMP) (INEEL 2004). The INLCRMP has proved to be of particular value for both background development and framing the project historic context. The document was the result of a decade of work by archaeologists at the facility neighboring the AES APE immediately to the west. Since it includes a historic thematic background for the Idaho National Laboratory (INL) at the regional level, WCRM used the 2004 document as the contextual basis for its Class III study background after review of the plan's contents to assure applicability and this was carried over to the research design to provide baseline information upon which methods and research domains have been based. Readers are referred to Ringhoff et al (2008), Ringhoff and Stoner (2010), and INEEL (2004) for additional detail.

### 2.1 ENVIRONMENTAL SETTING

The proposed project is located on private lands in Bonneville County on the northeastern edge of the Snake River Plain in southeastern Idaho. The lands north, east and south of the site include a mix of private, state, and federal parcels. The Department of Energy's INL eastern boundary is about one mile west of the proposed site. The closest facility on the INL property is the Materials and Fuels Complex (MFC) located approximately 10 miles west of the proposed property boundary. U.S. Highway 20 is immediately to the south of the APE.

#### 2.1.1 Physiography

The proposed project is located within the Intermountain Semi-Desert Province (McNab and Bailey 1995). This is part of a large topographic depression, the Snake River Plain, which is approximately 31 to 62 miles wide (INEEL 2004:11); the project area is specifically located in the eastern portion of the plain. The Snake River Plain is a crescent shaped area bounded on three sides by mountain ranges. It extends across much of southern Idaho and covers about 15,600 square miles.

Topography in the vicinity of 10BV246 is a continuation of the general topography in the AES project area documented in Ringhoff et al (2008). This is characterized by a gently rolling plain with four buttes scattered around the central part of the ESRP, including Big Southern Butte, Middle Butte, East Butte, and Menan Butte (NRCS 2008a). Slopes within the AES project area range from 1 to 1.5 %, with the site being along a ridgeline trending down to the Snake River Plain. The site elevation is 5,198 ft.

#### 2.1.2 Climate

The climate within the project area is considered to be semiarid high desert. Rainfall averages approximately ten inches/year, and snowfall averages approximately 35 inches/year. The highest amounts of precipitation (1.2 to 1.4 inches/month) fall in May and June; however, evaporation and transpiration rates are high (NCRS 2008a).

#### 2.1.3 Geology and Soils

10BV246 is located in the eastern portion of Snake River Plain geologic province. The geology of the Snake River Plain is dominated by extensive volcanism that has deposited a thick sequence of Tertiary age rhyolitic and basaltic rocks, ranging up to 5000 feet thick; basaltic lava flows are exposed in various locations throughout the project area. Geological units include the following: the Snake River Group



(basalts with interbeds of sediments); the Yellowstone Group and Plateau Rhyolite (silicic volcanics); the Upper Idaho Group olivine basalts; the Starlight formation, Salt Lake formation, and Walcott Tuff (combination of sediments, basalt, and tuffs); the Lower Idaho Group (olivine flood basalts and interlayers of silicic volcanics and sediments); and Idavada Volcanics.

Soil cover in the vicinity ranges from non-existent to tens of meters in areas of wind-blown loess, lacustrine deposits, and alluvial fill (NRCS 2008b:3-9). The majority of the AREVA APE is semiarid steppe overlain by eolian soils that partially cover Quaternary olivine basaltic lava flows (NRCS 2008b). Soils within the AREVA APE typically consist of deep silt loams and are commonly used for agricultural development, as rangeland, and as wildlife habitats (NRCS 2008b). 10BV246 site soils are characterized by soft, light tan clayey silt with some volcanic inclusions; volcanic outcrops are exposed at the surface within the northern portion of the site.

#### **2.1.4 Hydrology**

The nearest major water source (the Snake River) is located approximately 20 miles to the east of 10BV246. There are no perennial or seasonal water sources within the site and past water capture focused upon collection of runoff in cisterns. A few intermittent drainages are located near the northeastern corner and southeastern edge of the overall AREVA APE but these have been obscured by more recent agricultural activities. Another (more distinct) drainage is present in the southwestern corner of the property as well (Ringhoff et al 2008). None of the drainages, however, are within 10BV246.

#### **2.1.5 Flora**

10BV246 is located in an area of native rangeland, disturbed native rangeland, and irrigated agricultural fields. Portions of the AREVA APE, including 10BV246 are used for seasonal grazing. Overall, the site vegetation is characterized by Bluegrass and Bunchgrass cover, with lesser quantities of forbs and low shrubs (Plates 1 and 2). Shrubs included rabbitbrush and sagebrush. According to NRCS (2008c) the native community is classified as sagebrush steppe, with big sagebrush as the dominant shrub species.

#### **2.1.6 Fauna**

Mammals typically found in the sagebrush steppe community include pygmy rabbit, black-tailed jackrabbit, mountain cottontail, Townsend's ground squirrel, Least chipmunk, Ord's kangaroo rat, Great Basin pocket mouse, western harvest mouse, deer mouse, badger, coyote, pronghorn, and elk. Birds include the mourning dove, greater sage grouse, northern harrier, European starling, horned lark, killdeer, sage thrasher, rough-legged hawk, and American kestrel. Reptiles are represented by the western rattlesnake, gopher snake, short-horned lizard, and sagebrush lizard (NRCS 2008c). Few animals, other than livestock, were noted during WCRM's various investigations at 10BV246 (Plate 2).

#### **2.1.7 Built Environment**

The eastern portion of 10BV246 was originally documented as including one dugout depression, one possible privy depression, one cistern, two rock piles, and three roads; these were collectively defined as in Locus 1. A second locus (Locus 2) near the site's western edge includes a historic cistern and a large depression. The site has been subject to livestock overgrazing during the 20<sup>th</sup> century. Other buildings and structures in the larger AREVA APE include two modern metal roofed potato sheds and four grain bins as well as dirt roads and fences (Ringhoff et al. 2008).





Plate 1. General Overview of 10BV246 showing general vegetation cover.



Plate 2. Livestock grazing within 10BV246.



## 2.2 HISTORIC SETTING

### 2.2.1 Prehistoric Overview

Human occupation of the eastern Snake River Plain by hunter-gatherers began at least 12,000 years ago. These occupations have been documented through systematic archaeological investigations beginning in the late 1950s with the excavation of sites like Wilson Butte Cave (Gruhn 1961, 1965) southwest of the AREVA APE. Other major excavations include the Birch Creek sites and Veratic and Bison Rockshelters to the north and Wasden site and Owl Cave approximately 2.4 km (1.5 mi) to the northeast (Swanson 1972; Butler 1986; Miller 1982, 1990). In addition, more than 30 years of intensive surveys, testing, and excavation have taken place within the INL) which is located immediately adjacent this project to the east (Reed et al. 1987a; Ringe 1995; Miller 1995). These studies have provided data for the development of regional chronological sequences (Butler 1986; Franzen 1981; Swanson 1972) which are divided into three major periods: Early, Middle and Late Prehistoric.

Since the results of obsidian artifact sourcing for artifacts found within 10BV246 is presented under a separate cover, a detailed prehistoric context will not be presented here. The detailed prehistoric culture history narrative for the vicinity of 10BV246 can be found in Stoner (2011). WCRM prepared that report as a companion volume to this study as part of the agreed to treatments. Readers are directed to that study for further information on the area's prehistory and Native American inhabitants.

### 2.2.2 Historic Overview

#### 2.2.2.1 Native American

Southern Idaho and northern Nevada were the locations of three American Indian tribes at the time of European contact. The tribes included the Newe, now known as the Shoshone, the Numa, now known as the Paiute, and the Bannock, a group of Northern Paiutes (Liljeblad 1957; U.S.D.I. Bureau of Land Management 2008). Within and adjacent to the AREVA APE, the Shoshone (also Shoshoni) and Bannock were the primary inhabitants (INEEL 2004). They occupied overlapping regions as a result of tribal relationships, climatic conditions, and available resources. This fluid lifestyle continued until the introduction of the horse in the mid-1700s as a result of Spanish contact. With the integration of the horse into their lifestyle, more formalized bands developed.

Increased mobility during the historic period resulted in the exploitation of a broader geographic area. Villages generally were situated within close proximity to waterways, but were not occupied year round. Pursuit of seasonal resources required that the Shoshone and Bannock remain mobile during the warmer months. Larger summer groups split into smaller winter groups. Big game hunting took place in the late summer and early autumn. These tribes remained relatively undisturbed by the trappers, traders, miners, and emigrants until gold discoveries and settlement of the area in the 1860s by Euroamericans (INEEL 2004; Liljeblad 1957). As a result of this influx, the tribes were forced onto reservations.

Although historic Native American occupations were certainly common along the Snake River, and throughout the region, evidence of occupation within 10BV246 is limited to a series of obsidian surface artifacts. For a more detailed discussion of the historic tribes within the AREVA APE see the Idaho National Laboratory study (INEEL 2004) immediately adjacent to the APE.



### ***2.2.2.2 Euroamerican***

The following brief overview of Euroamerican occupation is presented to establish essential background for 19<sup>th</sup> and 20<sup>th</sup> century settlement of the vicinity of 10BV246. This is provided as a baseline for discussions and data presented later in the results and conclusions sections of this report.

#### **Early Mormon/Pioneer Settlement**

Settlement in the region began during the 1850s and continued sporadically into the early 20<sup>th</sup> century. The Mormon Church sent the first groups of pioneers into the region during the 1850s (Coates et al 1994). In contrast to other pioneer populations of the 19<sup>th</sup> century, the Mormon settlers entered the region as a group and organized their farming in a communal manner relying on and supporting each other through the established Church framework centered in Salt Lake City. These early settlers established subsistence farms with surplus produce sold for cash to buy the things they could not grow or make themselves. The subsistence farming pattern continued until the 1880s when improved transportation made commercial farming more feasible. From that point forward, farming and ranching focused more and more on crops and livestock for market sales.

#### **Territorial Period and Early Statehood**

Prior to becoming its own territory and later state, Idaho was part of the Oregon Territory after the United States' and British conflicting claims to the lands were peacefully resolved. Oregon statehood in 1849 put modern Idaho, and the other lands not part of the new state, into Washington Territory. Between then and the establishment of the Territory of Idaho on July 4, 1863, parts of modern Idaho were included in the Washington and Dakota Territories. In 1863 Idaho Territory included present-day Idaho, Montana and most of Wyoming. Two years later the government relocated the capital from Lewiston to Boise. From that point in time until 1890 the modern boundaries of Idaho evolved as Wyoming, parts of Washington, Montana, and the Dakotas were carved from the territory. On July 3, 1890 Idaho became the forty-third state (Hill 2011).

#### **Late 19<sup>th</sup> Century Ranching**

The 19<sup>th</sup> century pioneers of modern Bonneville County faced a land that had been described a generation earlier by Washington Irving as defying cultivation. During the late 1860s settlers began to arrive in small numbers, but by the 1870s more and more families and individuals came to the Snake River Plain and settled. Recognizing the natural aridity of the region they soon built irrigation systems following the Utah model because of their Mormon heritage. The capital needed to construct the canals and water works, the markets offered by mining camps to the north in Montana and elsewhere in Idaho, and the presence of the Utah Northern and Oregon Short Line railroads all encouraged the farmers on the ditches, and the ranchers on the lands away from the irrigation canals, to focus their production on things that could be sold rather than just what they needed to survive (Otteson 2005: 18-21).

#### **Water Access**

During the late 19<sup>th</sup> century, securing adequate water supplies became a critical problem for the farmers and ranchers of the Snake River Plain. As Miller (1995:2-20) observed, the paucity of water slowed settlement and resulted in most homesteading occurring along the rivers of southeastern Idaho. Federal authorities recognized the water issue and in a series of three laws tried to provide for private, then state, and finally federal investment in water projects. These laws included:



- Desert Land Act (1877). On March 3, 1877, Congress passed the Desert Land Act to encourage and promote the economic development of the arid and semi-arid public lands of the Western United States. Through the Act, individuals could apply for a desert-land entry to reclaim, irrigate, and cultivate arid and semi-arid public lands.
- Carey Land Act (1894). Sponsored by Sen. Joseph M. Carey of Wyoming, the act allowed Western states to gain title to desert lands in the public domain provided the lands were irrigated. Settlers could buy up to 160 acres supplied with water by an irrigation project at 50¢ per acre plus the cost of water rights.
- Newlands Reclamation Act (1902). Rep. Francis G. Newlands of Nevada sponsored this bill extend federal assistance to farmers and ranchers who sought to settle the arid lands of the West. The law established the Reclamation Service (now the Bureau of Reclamation) and set up a self-perpetuating funding system so the federal government would plan, construct and manage irrigation projects that had on-going support from the fees paid by the water users (Miller 1995: 2-20-21).

Unfortunately, this area did not benefit as much from such water projects as was expected.

### **20<sup>th</sup> Century Homesteading**

Water policies discussed in the preceding section spurred further settlement in the region at the start of the 20<sup>th</sup> century, and by the later 1910s settlers began to successfully claim and patent lands in (and around) the AES APE. Review of General Land Office (GLO) records for homesteading and land patenting in the study area, which includes 10BV246, found that settlers received patents to the majority of the lands in the AES study area between 1919 and 1922. As will be demonstrated in Chapter 3, John Leopard received his patent in October of 1919. The last patents in the vicinity were issued in January of 1955 (GLO 2008).

These early 20<sup>th</sup> century settlers, including Leopard, practiced dryland farming and ranching as they waited for irrigation projects to be built to supply their water needs. These water projects, however, never came to pass because Congressional funding could not be secured. As a result, they were forced to rely on groundwater from wells and the limited run-off from natural precipitation for their water (Idaho Department of Water Resources files, Eastern Regional Office, Idaho Falls, ID, various dates). As farmers and ranchers continued to struggle, the remainder of the 20<sup>th</sup> century witnessed land consolidations as successful owners put together larger and larger holdings (Metsker 1940; Land Title Co. 1976). This included the consolidation of 10BV246, most likely during the early 1920s.



## CHAPTER 3. PREVIOUS RESEARCH

This chapter will discuss various previous research associated with 10BV246 and the greater AES APE. This research has included several elements dating to the original inventory in 2008. These include:

- Site file reviews with Idaho SHPO and the Bureau of Land Management (BLM)
- General Land Office Patent and Plat review
- WCRM's inventory of the AES APE in 2008
- WCRM's recordation and testing of 10BV246 in 2008 and 2009

Each of these will be summarized below.

### 3.1 SITE FILE REVIEW

Previous research associated with 10BV246 was conducted by WCRM staff and Idaho SHPO in 2008 as part of the original inventory for the AES project. The initial literature search was conducted by Glenda King, of the Idaho SHPO on May 16, 2008 for the proposed project APE and a one mile buffer surrounding it. In addition, files and records of the BLM Upper Snake Field Office in Idaho Falls were reviewed by Tom Lennon and Ed Stoner of WCRM on May 27, 2008. At this time, it was determined that a further review of the GLO records was necessary. Steve Mehls of WCRM reviewed the GLO records on-line on May 28, 2008 and checked the BLM records on-site in Idaho Falls on May 29, 2008.

The site file reviews documented five cultural resources projects have been conducted within the 1.6 km (1mi) buffer surrounding the proposed project (Table 1). These projects recorded four sites in the immediate vicinity, including: 10BV30, 10BV31, 10BV32, and 10BV47. These NRHP eligible sites include three cave sites: Owl Cave (10BV30), Coyote Cave (10BV31), and Dry Cat Cave (10BV32), all part of the Wasden Cave Complex. The cave sites consist of rock shelters with associated lithic materials and mammoth and bison bones. Site 10BV47 is a lithic scatter that included a fluted point.

Although not specifically applicable for this data recovery effort, they will be discussed in the companion study of lithic artifact sourcing from the 10BV246 site area. Three additional sites (10BV83, 10BV84, and 10BV87) are also located within the one mile buffer but have not been formally identified or documented in a survey report. No forms or additional information were available from the Idaho SHPO.

Table 1. Previous cultural resources projects in the vicinity of 10BV246.

| <i>Title</i>  | <i>Summary Results</i>  |
|---|---|
| <i>A Cultural Resources Inventory of the Perimeter Boundary, Grazing Boundary, and 1984 Project Areas, Idaho National Engineering Laboratory, Southeastern Idaho (Miller 1985)</i>  | This 1984 study covered 7,037 acres and documented 86 sites (80 prehistoric, three historic, three multi-component). Of these, no sites are within the one-mile project APE buffer. |
| <i>Annual Review of Archaeological Investigations on the Idaho National Engineering Laboratory: 1986 (Reed et al. 1987b)</i> This is a supplement to <i>Archaeological Investigations on the Idaho National Engineering Laboratory 1984-1985 (Reed et al. 1986)</i> | This 1986 study covered 8,985 acres and documented 139 sites (121 prehistoric, 18 historic). Of these, no sites are within the one-mile project buffer.                             |
| <i>U.S. Department of Interior, Idaho Falls District Bureau of Land Management, Archaeological and Historical Survey Report, Steven Croft Temporary</i>   | This 1990 study covered 30 acres; no cultural resources were documented.  |



| <i>Title</i>  | <i>Summary Results</i>  |
|---|---|
| <i>Use Permit I-27485 (Hill 1990)</i>   |   |
| <i>Archaeological Clearance Survey for Ten Proposed Seismic Stations Sites for the EG&amp;G Dynamic Crustal Processes Unit – HKG-02-91 (Gilbert 1991)</i> | This 1991 study covered over 20 acres (the dimensions of access roads for Seismic Stations GBI and HWSI are not given). No new cultural resources were documented; however, one previously recorded resource, the Kettle Butte Site (10BV29) was avoided. |
| <i>Determination of Significance and Effect Prepared for the Natural Resource Conservation Service, Stephen Croft Project, NRCS-05-5600 (Vrem 2005)</i>   | This 2005 study inventoried an undocumented number of hectares in an effort to protect four previously recorded sites (10BV30, 10BV31, 10BV32, and 10BV47).   |

### 3.2 GENERAL LAND OFFICE DATA

Review of GLO records for homesteading and land patenting found that settlers received patents to the majority of the lands in the vicinity between 1919 and 1922. The first patents were issued to Robert and Reed Collet and Ray and Max Weaver in June of 1919; 320 acres, including 10BV246 was patented to John Leopard in October 1919 (Figure 3). Residents took advantage of the Homestead Act to receive title to the lands and generally they claimed 320 acres, the limit under the law they used. Analysis of the GLO 1917 plat also found that much of the area already had road connections to the larger region (Figure 4).

### 3.3 WCRM 2008 INVENTORY

WCRM conducted the Class III pedestrian survey of the proposed AES APE in 2008. Newly recorded resources included 11 sites and 17 isolated finds. Sites consisted of three prehistoric, four historic, and four multi-component (Table 2). Most sites (and all isolated finds) were defined as surface manifestations during survey and were recommended not eligible for inclusion in the NRHP. Based on evaluative testing the prehistoric components of sites MW002, MW012, and MW015 were confirmed to be either restricted to the surface or otherwise lacking in subsurface potential. These sites were considered to be unlikely to yield additional data, and were recommended not eligible for inclusion in the NRHP. This historic component of site 10BV246 (the John Leopard Homestead), however, was recommended eligible under Criterion a and d for its association with early 20<sup>th</sup> century homesteading. The NRC agreed with the above eligibility recommendations and determined 10BV246 eligible for inclusion in the NRHP. The SHPO concurred with the determination of eligibility for 10BV246 and other sites in a letter dated September 29, 2009.



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Pur. Mon. 8  
Test. Fees 8

ORIGINAL PAYMENT

Act 6-17-10  
Act 6-6-12  
TOP

Department of the Interior

United States Land Office Blackfoot, Idaho

Serial No. 050226  
Receipt No. 2117594 - 2294379

Final Certificate.

H. O. H. S. Homestead.

Patent to contain reservation according to proviso to the act of Aug. 30, 1890

June 21, 1919, 19

It is hereby certified that, pursuant to the provisions of Section 2291, Revised Statutes of the United States,

John A. Leopard,

Idaho Falls, Idaho

has made payment in full for

1/2

Section 14

Township 3 North, Range 34 East, Boise Meridian, Idaho, containing 320 acres.

Now, therefore, be it known that, on presentation of this Certificate to the COMMISSIONER OF THE GENERAL LAND OFFICE, the said John A. Leopard

shall be entitled to receive a Patent for the land above described if all then be found regular.

*J. J. [Signature]*, Register.

NOTE.—A duplicate of this Certificate is issued to the claimant as notice of the acceptance of the proof and payment, and of the allowance of the entry by the Register and Receiver. The original is forwarded to the General Land Office, with the entry papers, for approval by the Commissioner of the General Land Office and issuance of patent. The duplicate copy forwarded to the claimant should be held until notice of issuance of patent is received. In all correspondence concerning the entry in connection with which this Certificate issued, refer to the NAME OF THE LAND OFFICE and the SERIAL NUMBER noted hereon.

Posted Aug 7 1919 in Vol. 57, p. 142, by W. L. B., Div. "O."

APPROVED AUG 27 1919

By *[Signature]*, Division

PAY NO. 71785  
OCT 8 1919

Figure 3. John Leopard 1919 Patent Record.



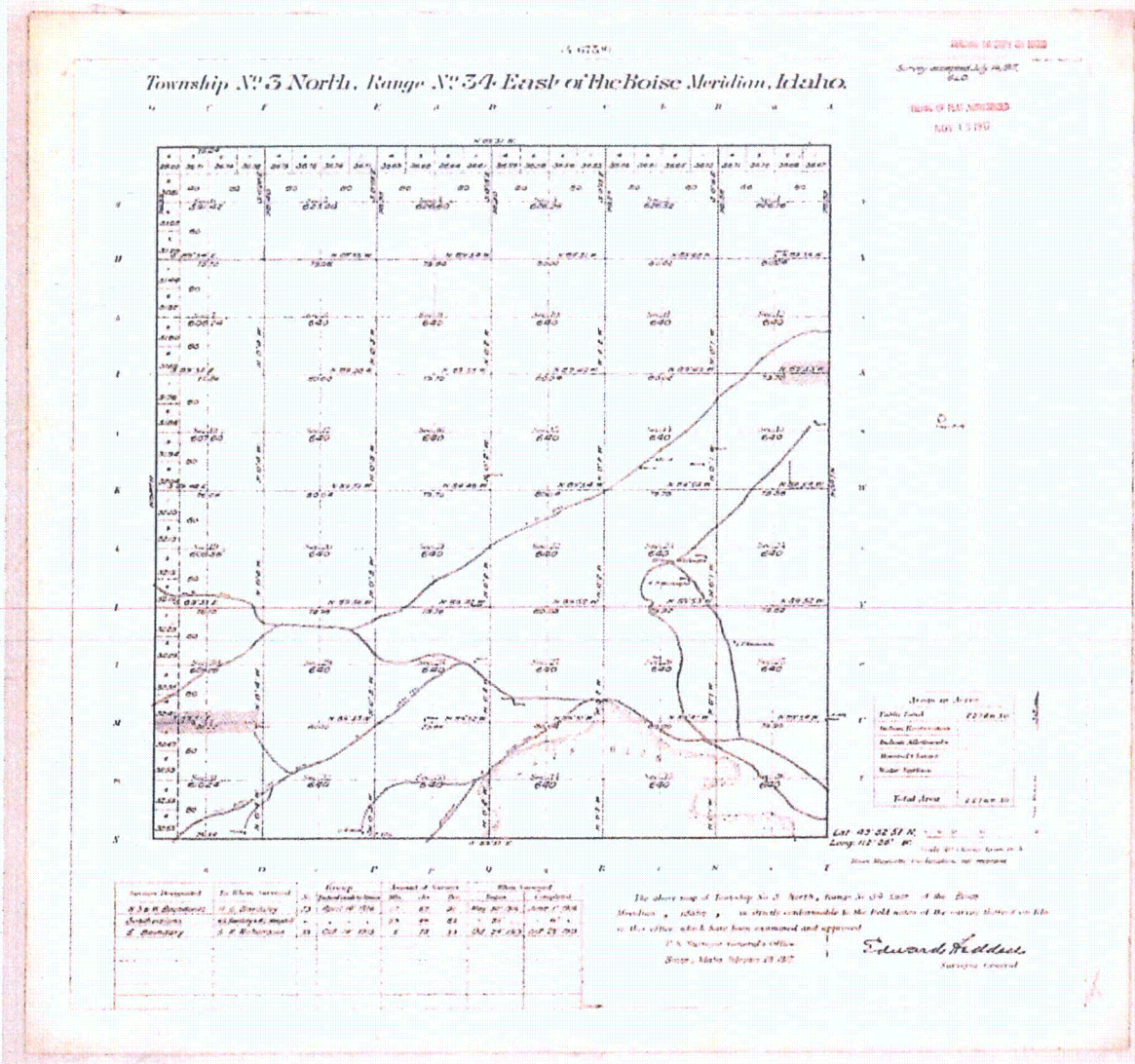


Figure 4. 1917 GLO Plat of the project vicinity.



Table 2. Summary data for sites documented during the 2008 WCRM inventory.

| Site Number     | Site Type       | Description  | Eligibility  | Comments   |
|-----------------|-----------------|--|--------------|--|
| MW002           | Multi-Component | Prehistoric lithic and historic trash surface scatters.            | Not eligible | Five test probes yielded one obsidian flake each within the first 10cm below the surface, and one probe recovered one flake within the first 20cm below the surface.   |
| MW003           | Historic        | Surface historic trash scatter.                                    | Not eligible |  |
| 10BV246 (MW004) | Multi-Component | John Leopard Homestead and isolated prehistoric surface artifacts. | Eligible     |  |
| MW006           | Multi-Component | Surface historic trash scatter and prehistoric scraper.            | Not eligible |  |
| MW007           | Multi-Component |  | Not eligible |  |
| MW009           | Historic        | Surface historic trash scatter.                                    | Not eligible |  |
| MW011           | Prehistoric     | Two surface projectile points.                                     | Not eligible |  |
| MW012           | Prehistoric     | Surface lithic scatter with rock feature.                          | Not eligible | Evaluative testing documented one white chert flake from the upper 10 cm of the deposit outside of Feature 1 and four flakes within the feature. One chert flake was recovered from the surface, two obsidian flakes were present in Level 2 (10-20cmbs), and one obsidian flake was present in Level 3 (20-30cmbs). No charcoal, staining, or fire-cracked rocks were noted in the Feature. |
| MW013           | Historic        | Surface historic trash scatter and associated rock feature.        | Not eligible |  |
| MW014           | Historic        | Surface historic trash scatter and two-track road.                 | Not eligible |  |
| MW015           | Prehistoric     | Surface lithic artifact associated with a small rock wall feature. | Not eligible | All probes were excavated to 20 cm below the present ground surface and no artifacts were recovered.   |

### 3.4 SITE 10BV246

Site 10BV246, the subject of this report, was originally documented by Ringhoff et al (2008) as noted above. This 1,365 feet by 650 feet multi-component site consisted of a historic homestead occupation and a sparse prehistoric lithic scatter. Sediment in the site area is light tan to light brown clayey silt with some volcanic gravel inclusions, plus volcanic outcrops along a ridgeline. Vegetation includes low sagebrush, rabbitbrush, native grasses, and forbs. Overall, 10BV246 was documented to be in good condition, with limited impacts from rodent disturbance, agricultural activity, cattle grazing, and possible looting.

#### 3.4.1 Resource Definition

The historic component of the site contained two loci – the homestead (Locus 1) and a ranching activity area (Locus 2), some 656 feet apart (Figure 5). Locus 1 was situated atop a low north/south-trending ridge and down its gently east-trending slopes, on the Snake River Plain. Locus 2 was identified on a gentle west-trending slope on the Snake River Plain.

##### Locus 1

The Locus 1 historic component, as originally recorded, consisted of nine features (one dugout depression, one possible privy depression, one cistern, one trash concentration, two rock piles, and three roads) and a scatter of historic domestic trash. The sparse artifact assemblage included hole-in-cap, venthole, and sanitary cans; bottle glass; stoneware crockery; white improved earthenware; a graniteware coffeepot; a shell button; baking and frying pans; lumber fragments; and shoe sole fragments. Nine diagnostic historic artifacts were present and the overall assemblage suggested a date range of 1890-1930. Historic research showed that this site was patented by John Leopard in 1919 and there was no evidence to confirm if anyone else occupied it before Leopard. A prehistoric component within Locus 1 contained four artifacts: two obsidian Stage III biface (probable projectile point) fragments and two flakes.

##### Feature Descriptions

Feature 1 was defined a large depression measuring approximately 17 feet east/west x 13 feet north/south x 2.6 feet deep, dug into the gentle east slope of a low north/south-trending ridge, near the top. This was originally identified as a possible a dugout-type dwelling. A few small fragments of milled lumber were scattered about nearby, as well as amethyst, colorless, and aqua bottle glass; hole-in-cap, upright pocket tobacco, kerosene, meat, and lard cans; pieces of a large stoneware crock; an enamelware coffee pot; an enamelware pan handle; a pie tin; wire nails; and a shell button. Feature 8 was identified about 20 feet down slope. There are no remnants of an above-ground structure was present. A large animal burrow was also noted at the feature's west end.

Feature 2 is a cistern consisting of a concrete-lined, irregular (roughly circular) hole measuring approximately 45 inches in diameter, at the bottom of a larger excavated depression measuring approximately 6.5 feet x 13 feet x 3.3 feet deep. There was standing water in the feature, as well as washed-in sediment and five collapsed pieces of lumber (three boards measuring 5/14" x 1 1/2" and two smaller fragments) that were probably a cover. Two of the boards contained large wire nails. Eight more lumber fragments are scattered outside the feature. The cistern's depth is unknown but appeared to be fairly shallow. Twelve fragments of a stoneware crock were nearby; most of the fragments were body sherds, with one partial conical top sherd and two base sherds.



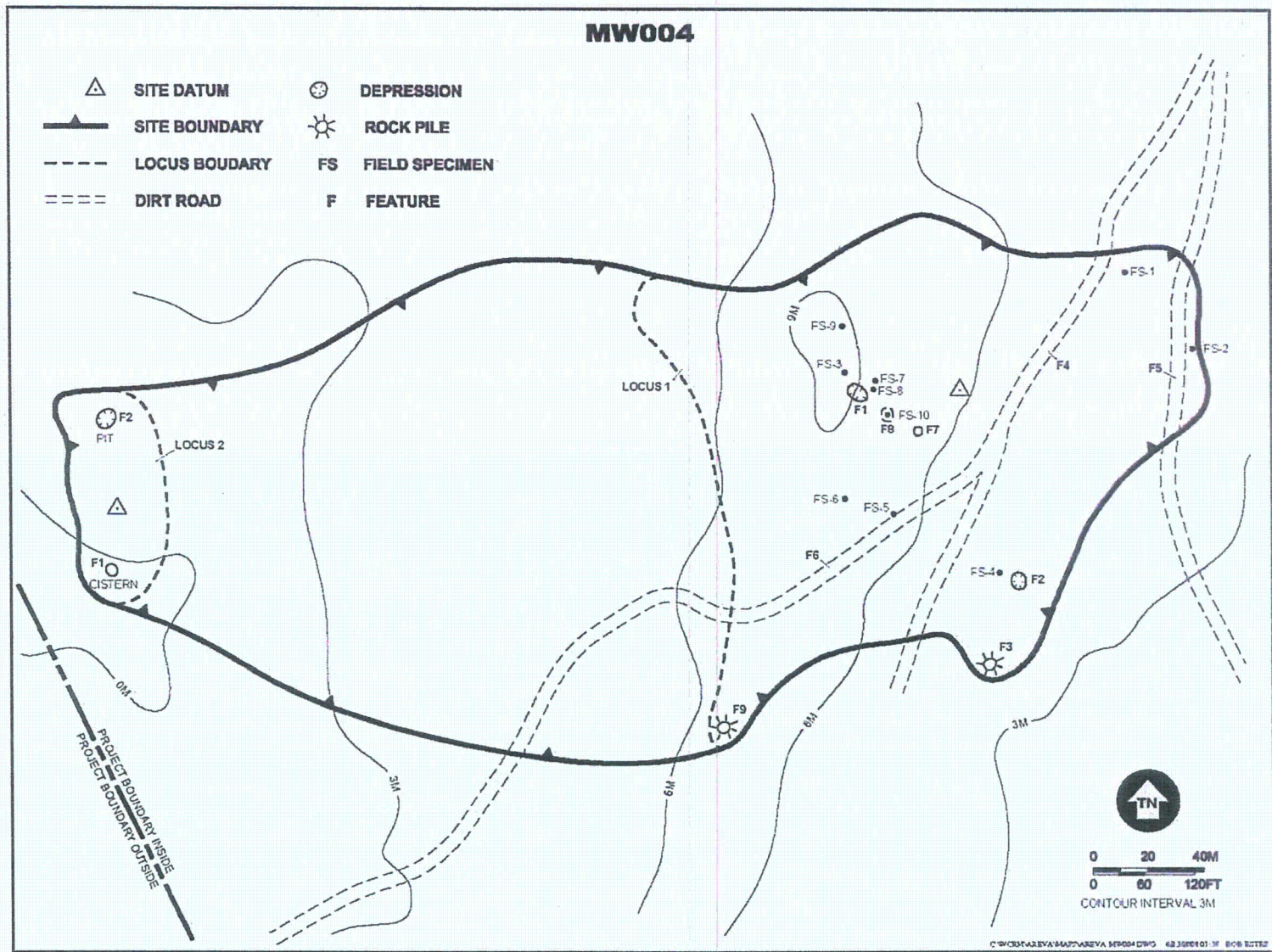


Figure 5. Original site map of 10BV246 (MW004).



Feature 3 is a rock pile measuring approximately 6.5 x 6.5 x 0.7 feet high and containing 150+ volcanic cobbles and small boulders. It was thought to be the result of field-clearing activity and had a small amount of sediment mixed.

Feature 4 is a faint, roughly north/south-trending two-track road running through the site. It was defined as approximately 8 feet wide and was not deeply rutted; its lack of sagebrush suggests it was bladed or chained at some point but there are no push piles or berms. This connects several cleared pastures of indeterminate age and at least two branches (Features 5 and 6) connect to it as well. The route of this road through the site roughly aligns with the route of a historic road shown on the 1917 General Land Office plat of Township 3N Range 34E (GLO 1917) (see Figure 4).

Feature 5 is a faint, roughly north/south-trending two-track road which branches off of and parallels Feature 4. It is approximately 6.5 feet wide and is not deeply rutted. Like Features 4 and 6, its lack of sagebrush suggested blading or chaining but no berms or push piles were present.

Feature 6 is a two-track road which curves southwest/west from the Feature 4 road in the southern portion of the site. It is faint, not deeply rutted, and approximately 6.5 feet wide. The relative lack of sagebrush in its route suggested possible blading or chaining, but no push piles or berms were present. The route of this road through the site roughly aligns with the route of a historic road shown on the 1917 General Land Office plat of Township 3N Range 34E (GLO 1917).

Feature 7 is a small depression in a highly rodent-disturbed area. This was originally defined as a privy hole predating the burrowing activity. It measured approximately 3 x 3.3 x 1.3 feet deep. No artifacts or lumber fragments were noted.

Feature 8 is a historic refuse concentration measuring approximately 10 feet in diameter, located about 20 feet down slope from Feature 1. At the time of recordation, approximately 102 cans and can fragments: 16 venthole, 15 hole-in-cap, 62 indeterminate type, three lard pails, one lard pail fragment, and five external friction lids/lid fragments were noted. All of the cans are crushed and badly deteriorated, so exact measurements were impossible. Most of the cans, however, appeared to be single-serving food or evaporated milk cans, with the exception of lard pails and approximately five multiple-serving cans. Where visible, most can openings are knife X-cut; double knife-slit/punch openings are visible on some of the venthole cans. The feature also contained approximately 30 small fragments of unidentified white bodied earthenware, probably all from one vessel, and six fragments of sun-colored amethyst glass. The only other artifact noted in the concentration was a twisted/coiled length of heavy-gauge, nonferrous metal wire.

Feature 9 is a rock pile measuring approximately 6.5 x 10 x 2 feet, containing 200+ volcanic cobbles and small boulders with white coloration. They are somewhat intermixed with sediment and the feature appeared to be similar to modern field clearing piles. This feature was, therefore, considered to be possibly modern.

## **Locus 2**

Locus 2 contains a historic cistern, large depression, and very sparse scatter of historic trash covering 262 by 115 feet. Artifacts include a lug handle bucket, a graniteware wash basin, and scattered dimensioned lumber; all of them are located immediately adjacent to the cistern.



### **Feature Descriptions**

Feature 1 is a cistern consisting of an opening about 4.3 feet in diameter, set nearly flush with the ground surface in a cleared area. The structure is concrete-lined and it expands or “bells” into a wider diameter about 2.6 feet down; its depth is unknown and it contained standing water at the time of recordation. The feature’s lining, which varies in thickness from about 3 cm to 8 cm, is cracked and some pieces have fallen off. The hole’s top diameter is lined with small volcanic boulders stacked 1- 2 courses high and the lining has been poured/placed atop them and on their interiors to form a reinforced ring. The cistern is covered with the deteriorating remnants of a wooden lid: four 1 1/2” x 5 1/2” boards are set lengthwise and upright in notches in the cement and 7 boards (9 3/4” x 5/8” x 59 1/2” and fragments thereof) lie atop them. All of the lumber has wire nails protruding from it.

A covered box sluice is set into a notch at the top of the cistern’s east wall; it is made of boards nailed together with wire nails and measures approximately 8 1/2” x 5 1/2” x 53”. The original length of the sluice is unknown, and no path or additional remnants were found upslope. Several pieces of dimensional lumber are scattered around the cistern, mostly to the northeast.

Feature 2 is a large depression, possibly a stock pond, that measures 21 feet north/south x 24.25 feet east/west, with a depth of 1.8 feet on the east side sloping to 2 feet on the west side. Overburden from the excavation is present around the entire circumference of the pit.

### **3.4.2 Eligibility Recommendation**

Based upon the available evidence, the prehistoric component of the site appeared to be a surface manifestation of limited information potential; this component was recommended not eligible for inclusion in the NRHP. The Locus 1 historic component, the John Leopard homestead, was recommended as eligible under Criterion a as an example of early 20<sup>th</sup> century homesteading activities. Between 1905 and 1920, as the result of proposed irrigation projects, homesteads proliferated across the Snake River Plains, including the lands that today are part of the proposed AES APE. Research regarding John Leopard uncovered nothing to merit consideration of the component as eligible under Criterion b, and the lack of architectural resources precluded recommending the component eligible under Criterion c. Artifacts and features recorded at the site, however, suggested it could retain data regarding the lifeways, trade patterns and networks, and socioeconomic development of the region during the early 20<sup>th</sup> century. Pin flag probed soil depths also suggested a possible subsurface component. As a result of these factors, this component of the site was recommended eligible under Criterion d. NRC agreed with the above eligibility recommendation and determined the site eligible to the NRHP under Criteria a and d. The SHPO concurred with the determination of eligibility in a letter dated September 29, 2009

### **3.4.3 Applicable Historic Context Statement(s)**

The adjacent INLCRMP (INEEL 2004) identified one context for Euroamerican activities in the region for the period before the government established the installation in 1942. Within that context, the study listed ten themes relevant to the region. Those themes include: early exploration and discovery, trapping and trading, the Oregon Trail, mining, cattle and sheep drives, transportation, Native American relations, settlement, irrigation, and ranching. In 1995 Susanne Miller developed the ten themes in a final draft cultural resource management plan for the INL; later, these were adapted for the 2004 INLCRMP (INEEL 2004 Appendix F: 206). WCRM adopted the settlement and ranching themes for the intensive-level survey and has continued their use into this study. Given the emphasis on historic farming and grazing in and near the AREVA APE and its close proximity to INL, a historic context statement was developed for the AES project during the writing of the original inventory report. The emphasis of this statement was "Homesteading and Agricultural Settlement, 1910-1960." Based upon the data available at the start of the current data recovery effort, this context was retained for the project. This will be explored in Chapters 5 through 7 of this report.



## CHAPTER 4. RESEARCH DESIGN AND IMPLEMENTED PROJECT METHODOLOGY

The following chapter summarizes the treatment plan for the treatment of site 10BV246, as agreed to during consultations between NRC and SHPO. This chapter will first discuss pertinent research topics established in Ringhoff and Stoner (2010). It will then define project methods and finally establish how the plan was implemented and what, if any, modifications were made to the methodology during the course of the investigations.

### 4.1 PROPOSED RESEARCH DESIGN

The following research design was developed in 2009 and finalized in January of 2010 to mitigate the effects of the proposed AES project on the NRHP eligibility of 10BV246. This plan was primarily prepared to address 10BV246 but included a requirement to collect a series of prehistoric artifacts for the AES APE noted during the original Class III inventory. The plan also represents a collaborative effort for which Idaho SHPO State Archaeologist Dr. Kenneth Reid, provided assistance and direction. The plan has been summarized and synthesized for the purposes of this document. Readers are directed to the Class III survey and treatment plan for additional details (see Ringhoff et al. 2008 and Ringhoff and Stoner 2010).

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#### 4.1.1 Prehistoric Resources

A total of 11 bifacial obsidian artifacts were identified in the overall AES APE during Ringhoff et al (2008). Of these artifacts, two were recorded within 10BV246. After consultations between NRC and SHPO, it was agreed that all these artifacts would be collected for further analysis during data recovery efforts at 10BV246.

Prehistoric research design and associated themes were adapted from the INLCRMP (INEEL 2004). Given the nature of the prehistoric resources in the AREVA APE (sparse and surficial, with obsidian common), the most relevant themes are Chronology and Lithic Procurement. Obsidian can be sourced through x-ray fluorescence and dated by means of hydration techniques. Interpretation of chronological data from obsidian artifacts can then provide information on the time periods during which an area was utilized prehistorically. It is possible that the acquisition of the various unique types of obsidian from its sources may also coincide with the pursuit of other resources and could reflect the seasonal use of such resources by prehistoric peoples. This is in addition to establishing general patterns of lithic procurement in the AREVA APE. Based upon the expected data set of 11 artifacts, the following research questions were proposed:

1. What are the dates associated with the manufacture and use of the bifacial obsidian artifacts in the AREVA APE?
2. What are the sources of obsidian exploited by the prehistoric occupants of the AREVA APE?
3. What do the ages and sources of the obsidian artifacts tell us about lithic procurement patterns over time in the AREVA APE, and how do these patterns compare to others in the region?

#### Data requirements

In order to answer the above research questions, obsidian artifacts within the APE would need to be relocated and then be geologically sourced. In addition, five diagnostic projectile points that had already been sourced would be dated through hydration analysis.



#### 4.1.2 Historic Resources

As noted previously, the historic context for this project was defined as Homesteading and Agricultural Settlement on the Snake River Plain, 1910-1960. Most of the region's ranching and farming activity began in the mid to late 19<sup>th</sup> century, when Mormon colonists entered the area to attempt dry land farming and small-scale ranching. Water supply limitations within the region, led to many of the homesteads of the late 19<sup>th</sup> century being abandoned or consolidated into larger corporate ranching entities.

Anyone successful at individual homesteading by the 1910s and 1920s would have had to be individually hardy and/or backed by outside support; those who ran a small ranch or farm through the Great Depression faced even greater hardship. Many of the current ranchers and farmers on the Snake River Plain belong to the Church of Jesus Christ of Latter Day Saints (LDS), and are part of a long-established pattern of Mormon settlement in the area. Indeed, the earliest European American settlers of the area were typically members of dispersed Mormon colonies, and may have had financial as well as spiritual backing from the LDS church. As Mehls and Mehls (1988) point out, cooperative colonies like those of Mormon settlements were instrumental in the settling of the West, in direct contrast to the romantic idea of the rugged individualist (Mehls and Mehls 1988:10 in Church and Clark 2007:280). Mormon ideology is reflected in land use and the built environment, as seen in the symmetrical plans of Mormon townsites; it may be that the landscapes of rural agricultural occupations on the Snake River Plain may also reflect the cultural values of LDS church members.

It should also be stressed that although homesteads across the West that did not result in functioning farms and ranches are often seen as having failed, many may have never meant to be permanent. As in other arid and semiarid parts of the West, it was common for homesteaders to sell out to larger ranching operations after proving up their homesteads. In these cases, settlers saw the land as a commodity which would provide a return, not as a home (Church 2002 in Church and Clark 2007:260-261). Whether they intended to stay on a small parcel or consolidate their land, the homesteaders of the early 20<sup>th</sup> century were key to the development of agricultural endeavors in the region.

Archaeologically, 10BV246 appeared to be a small homestead which was occupied for a relatively short period of time; it was unknown whether it was a farm or a ranch, and given its timeframe and size, it is equally likely that it was a small ranch growing feed crops or a small farm raising animals for meat and milk. Aside from associated water storage features and a possible privy, there are no surface indicators of outbuildings or extensive feature systems including fields, pastures, and the like. Locus 1 included a possible residential component centered around a dugout which may have been a domicile, but little was known about the occupants. All appearances pointed to a single household, possibly a family unit. Examining the floor area of Feature 1, as well as evidence for additions and modifications, and the related artifact assemblage was expected to help explain who lived there and under what conditions. It was unknown, however, whether the homestead was intended to be a permanent occupation or as a temporary time and labor investment for eventual selling to a larger ranching outfit. In short, there were many questions to ask about site 10BV246 but (as when the plan was prepared) little data regarding what the investigations might actually answer.

The INLCRMP (INEEL 2004 Appendix E:193, 196) provides a very abbreviated research design for historic resources, posing only three research questions relevant to Euroamerican occupations of the region:



1. "How much did these early white settlers rely on mail-order for their necessities and how much was available in the local environment?"
2. "How valuable were iron and steel tools and glass containers?"
3. "What is the nature of Mormon colonization in the upper Snake River Basin?"

The above research questions are obviously narrow and material-focused, and are more applicable to earlier Euroamerican settlement patterns than to the patterns of circa 1920. We, therefore, expanded on the above to propose the following four interrelated problem areas/Research Domains; drawing on additional information on homesteading and agricultural settlement as addressed in sources including Hardesty 1994, Stein 1990, Church and Clark 2007, Buckles 1993a and 1993b, Church 2002, Charles et al. 2004, and Mehls and Mehls 1988. These include:

1. Temporal Association
2. Site/Feature Function
3. Site Demographics
4. Sociocultural Affiliation and Interactions

The ability to answer questions within these Research Domains, however, would be logically guided by the nature (and extent) of the data recovered.

#### ***Research Domain A Temporal Association***

Clarifying the temporal association is just as important for a recent historic site as earlier historic and prehistoric sites. In fact, it can be essential to considering (and exploring) definitive site questions rather than speculative ones since tying a site down temporally can open numerous avenues of detailed historic research. Posited temporal related questions included:

*What was the time period of 10BV246's occupation or occupations? Does the artifact assemblage reflect any patterns that can be tied to larger known patterns in the region, from economic rises and falls to climate changes? Does the archaeological and historical evidence suggest that this was a "failed" homestead as opposed to a consciously temporary investment of time and labor designed to consolidate multiple parcels? Is there a connection between this site's occupation and legislation postdating the 1862 Homestead Act, like the 1894 Desert Land Act, the 1909 Enlarged Homestead Act, or the 1916 Stock Raising Homestead Act?*

#### **Data Expectations**

WCRM expected that temporally diagnostic artifacts will be found at the site that would show variations through time and that these variations might reflect larger patterns such as drought years and economic cycles. It was also expected that correlations between the archival data and the archaeological record would be drawn to address much of this question. General Land Office records will specify which laws were used to patent the land and this data can be combined with the information from county records obtained for Research Domain C (discussed below) to evaluate whether the site constituted a "failed homestead" or was associated with other land use strategies. The possibility of a failed homestead could then be further addressed if the artifact assemblage suggests a downward trend in the use of certain expensive goods and a growing reliance on home processed foods and use of lower value goods are observed.



### ***Research Domain B Site/Feature Function***

One of the essential Research Domains to address was how the site functioned and (specifically) what was the function of Feature 1? The ability to address this subject would greatly influence the extent to which any other questions could be addressed. Some specific questions for consideration included:

*Was the Feature 1 dugout a domicile? If so, does it appear to have been temporary, for occupation while a bigger house was constructed elsewhere? Was there a superstructure, suggesting later use as a cellar? What can we discern about the design, construction techniques, and materials used in the dugout feature?*

### **Data Expectations**

The portion of 10BV246 to be treated archaeologically was expected to contain artifacts that could define what type of buildings or structures were once extant at the site. It was also hoped that it would contain artifacts related to domestic life and subsistence that can help define the function of the dugout. In addition, WCRM expected that the General Land Office files and county records would provide verbal snapshots of the Locus at specific times in the past that can be used to help interpret the archaeological record and define the function of the dugout within the site and how that function may have changed over time.

### ***Research Domain C Demographics of 10BV246***

A series of related questions were proposed for 10BV246 to examine the nature of the site and its place in the rural southern Idaho community. These included:

*Who lived at Locus 1 of 10BV246? Was this a single household, and if so, what was its demographic makeup? Does the archaeological and historical evidence suggest multiple occupations over time? What was the relationship between the occupants of 10BV246 and other settlers in the larger rural community of the region?*

### **Data Expectations**

The portion of the site to be treated archaeologically was expected to have the potential to contain artifacts that could define demographic, domestic life, and subsistence practices at the Locus. Typically, such resources can include everyday materials such as bottles and unique artifacts such as tin cans taken apart and reused for other purposes from building siding to lanterns. These can help clarify domestic activities and socio-economic status of the site's residents to help build substantive (hard evidence) pictures of peoples' lives. In addition, WCRM expected that the General Land Office files would provide verbal snapshots of the property at specific times in the past that can be used to help interpret the archaeological record. County records can also offer similar types of data from different times. Finally, it was hoped that manuscript census, LDS church records and museum data would help determine the demographics of the household over time and also identify other individuals to research to ascertain their associations with the site at specific times. For instance, did Leopard have a hired hand, was the helper single or part of another family, and was the helper part of Leopard's extended family? Any newspaper accounts, even obituaries, will also be useful in understanding the demographics of the site's occupants. Finally the secondary sources (published studies) will help address the comparative part of the research question.

### ***Research Domain D Sociocultural Affiliation and Interactions***

Through a combination of data from the three preceding Research Domains investigations, it can often be possible to explore the nature of social relationships and how they can influence the success of pioneering (whether of previous centuries or the 20<sup>th</sup> century). The following were proposed based upon the assumption that the site would yield extensive data to address both basic and more sophisticated questions:

*Is group identity with the LDS church discernable in the artifacts, features, and landscape of 10BV246's Locus 1? Does the historical evidence suggest that the site's occupants were members of the LDS church? How does this household compare to larger patterns in the Snake River Plain, in terms of Mormon settlement from the 1850s to the present?*

### **Data Expectations**

The portion of the site to be treated archaeologically was expected to have the potential to contain artifacts that could define domestic, recreational, and/or gender-based practices. Typically, such resources can include everyday materials such as bottles and unique artifacts such as religious icons or materials reused for other purposes. These can help clarify domestic and subsistence/economic activities at the site, which can help build substantive (hard evidence) pictures of peoples' lives. Based on the archaeological resources it may be possible to develop an artifact based image of the markers of Mormon settlers, or when evaluated in combination with archival research, further defined such markers. WCRM expected that LDS church records and those held by the Museum of Idaho would contain information about the residents of the site. It was also hoped that a comparative picture of Mormon settlements in southern Idaho could possibly be developed from the artifact assemblage at 10BV246. Local informants were anticipated to provide further information regarding local behaviors and customs that could more precisely inform both archival and archaeological data.

## **4.2 IMPLEMENTATION METHODOLOGY**

The following section will define the various methods used to implement the treatment plan summarized above. A variety of mitigative treatments, including field studies, historic research, and post-field data analyses were completed during the effort. The project historian and other members of the WCRM's staff researched historic archives and spoke with informants to gain an understanding of the initial homesteading and settlement patterns of the AES study area and subsequent land uses. WCRM used this information to address the issues identified in the four Research Domains developed for this study. The data also helped develop further, refined research topics, especially in the realm of comparative studies with other parts of southeastern Idaho and the West. Field treatments consisted of mapping and photographing the site and features, updating the surface artifact inventory and feature descriptions, and excavating three features. After completion of field efforts, artifactual data were analyzed and tabulated in order to better define functional, temporal, and cultural associations of resources within 10BV246. Specific details regarding these methods are defined below.

### **4.2.1 Documentary/Archival Research**

The documentary and archival research was completed by or under the direction of the Project Historian. The distinction between documentary and archival sources and research is made in an effort to avoid



confusion in the discussion of primary and secondary sources. Experience indicates that specialists from different disciplines treat different types of data as either secondary or primary.

Researchers made every effort to limit the amount of photocopying during the investigations. The "note card" served as the first analysis and refinement of the raw data into a meaningful contribution toward understanding the cultural resources. When it was more time effective to make photocopies, such as the maps or index pages of company records, copies were made. It cannot be stressed enough, however, that the goal of the documentary and archival research portion of the project was not simply to "vacuum" in raw information. Rather, the work gleaned the useful information from the historic record and then began to work it into a meaningful contribution to the overall project. The links between the research efforts and the various research questions were reviewed in the previous chapter and will not be repeated here for the sake of brevity.

Two principles guided the archival task. The first was a continual questioning of the source - is it reliable, can it be corroborated by other sources and, what is its bias? The second principle was to have the researchers always on the lookout for another piece of evidence, and from those, build a history in as judicious and unbiased a way as possible. As can be seen from this short discussion, every effort was made to assure that the notes and other materials were compiled to meet the highest professional standards as explained in works such as *The Modern Researcher* (Barzun and Graff, 1977).

#### **4.2.2 Oral History**

WCRM oral history investigations were conducted by the Project Historian using commonly accepted professional standards. Every feasible effort was also made to corroborate the testimony through (or from) other sources; generally this was successful. WCRM did not make tapes or formal transcripts of the communications. Sources included: Elder and Sister Higley and Elder and Sister Hillman at the Temple Visitors Center in Idaho Falls and local history authority Mr. Van Campbell, also in Idaho Falls.

#### **4.2.3 Field Investigations**

Field investigations included a number of tasks designed to maximize the recovery of data from the site and assure data integrity. These tasks included: mapping, site photography, Class III+ intensive documentation of surface artifacts associated with Feature 8, prehistoric surface artifact collection and historic surface artifact sampling, manual excavations, analysis, reporting, and curation.

##### **4.2.3.1 Mapping**

Prior to mapping the site, WCRM archaeologists walked over the site to relocate and mark features using pin flags. Once the features were flagged, a total station transit was placed on the main site datum. One archaeologist trained in the use of the total station used the transit and attached data collector to shoot each point to be mapped. Another archaeologist or archaeological technician held the prism on the spots to be mapped. The boundaries of features were mapped with enough points to approximate the size and shape of each feature.

A primary datum and north/south and east/west baselines for the site were established and tied to cadastral survey points in the area. Subdatums were necessary in order to efficiently map the entire site. Each subdatum was labeled with a specific designation representing its location within the site. All excavation units were mapped in, and designated by a unit number.



#### ***4.2.3.2 Photography***

Color digital photographs and 35 mm SLR black and white film photographs were taken of Features 1, 2, 7, and 8 of Locus 1 and of Features 10, 11, 12, and 13 which were discovered while mapping the site with the total station transit to illustrate their sizes, construction methods (for Feature 1), and materials. All photographs include a scale and a description on photo logs including their subjects, orientation, and location. The black and white film was archivally processed and archival-quality contact sheets of the negatives were made following National Park Service standards. The digital photographs are stored within the WCRM server in Reno, Nevada and are also stored on CDs. WCRM met the photographic standards of the Idaho SHPO for archaeological and historic sites.

#### ***4.2.3.3 Class III+ Documentation***

Class III+ documentation entailed the intensive surface recording of the Feature 8 refuse concentration. A meter grid was set up of sufficient size to cover the 3 m diameter concentration. The artifacts within the feature were counted, categorized, and described in accordance with their grid position. This provides a comprehensive account of the contents of the refuse dump and a representative sample of the artifacts in the larger, sparser scatter across the site. It has enabled us to characterize Feature 8 in terms of density, artifact function and date range.

#### ***4.2.3.4 Surface Artifact Collection***

Five obsidian projectile point fragments were collected from the APE in October 2008 and subjected to XRF analysis per the request of the Idaho SHPO. Following the SHPO lead, we recommended collection of the rest of the known obsidian bifacial artifacts in the APE for more sourcing and obsidian hydration studies. The artifacts were relocated using GPS units and site sketch maps. The following artifacts were to be collected:

- 1 obsidian projectile point midsection in MW002
- 2 obsidian Stage III biface fragments in 10BV246
- 1 obsidian projectile point midsection in MW007
- 5 obsidian generic biface fragments and 1 obsidian Stage II biface fragment in MW012
- 1 obsidian projectile point midsection: IF04
- 1 obsidian biface fragment: IF14
- 1 obsidian biface: IF18

The SHPO also recommended surface sampling of the Feature 8 refuse concentration, in order to collect artifacts that may have additional educational and interpretive value (for use in a public interpretive exhibit). After Class III+ recording and test excavation of the feature, a representative sample of artifacts was collected. As described above, WCRM also collected a representative sample of surface artifacts from across the site. The sample was chosen based on which artifacts best represent the nature of the site and living patterns in the region.

#### **4.2.3.5 Excavations**

Excavation of 10BV246 utilized a series of 41 1 m x 1 m excavation units. Individuals were assigned to dig and to record notes for separate one meter squares. The initial six excavation units were numbered one through six from grid west to east. Skipping over the unit numbers assigned to other features at the site, the subsequent units for the expanded excavation were numbered 20 through 41. Not all the units were excavated. Provenience of artifacts within each unit designation was always the coordinates of the southwest corner, measured from the site datum. Crew chiefs, besides noting special characteristics of individual squares, kept more general notes on the excavations including those on spatial distribution of any finds. Separate excavation record forms were used by individual excavators for each level of a one meter square.

Prior to excavation, individual excavators began by recording the surface characteristics of their squares. Whenever possible, the mapping of units was done at a 1:10 scale. On the surface map the excavator recorded exact elevations of all four corners. Subsequent maps of lower levels contain the elevation of the southwest corner for that level. Excavation then began with careful troweling to judge the density and nature of cultural material. Excavation levels were subsequently completed in 10 cm levels. The purpose of using arbitrary levels of 10 cm centimeter thickness is to control the vertical provenience of cultural material, which is not plotted with three dimensional coordinates to the nearest cm. Depths of levels were frequently checked with line levels and meter tapes. Contours of natural and cultural layers were recorded on excavation record maps. It was assumed that all subsurface features and stratified remains would be completely excavated per standard archaeological procedures. For example, if a feature (regardless of its size) extended into other units, those units and enough units around it to determine the nature of the activities associated with the feature were excavated.

Within a given level, artifacts and other cultural remains were carefully exposed if possible with dental picks and brushes. At the end of each level, diagnostic field specimens and ancillary field specimens (non artifactual cultural materials) were mapped on excavation records and their proveniences recorded. A line level tied to a unit datum and a metric tape was used for taking the elevations of these specimens. Their X and Y coordinates were recorded to the nearest centimeter using metric tapes extended from the south and west edges of individual meter squares. Strings set between grid pins together with plumb bobs, if necessary, were used in these cases. As an example, a one meter square whose southwest corner has coordinates of 0N/0E contains an artifact lying 25 cm north of the southern edge of the unit and 30 cm east of the western edge, the X-Y coordinates of the artifact would, therefore, be 0.25N/0.30E. Such artifacts with individual proveniences will be depicted on the map for that level. Once provenience data were recorded for the specimens of a given level, the artifacts were collected.

Excavations of a given area proceeded with care that vertical walls were maintained with volumetric control. Any roots encountered were clipped, not pulled. The crew chief was responsible for seeing that significant features and occupational surfaces were photographed. The field supervisor, in coordination with the project manager, and crew chief were responsible for checking excavation forms and sample labels for completeness and accuracy in the field after individual levels of meter units were completed. Notes on the total transit work and instrument heights were recorded by the field supervisor and the crew chief.



Following the completion of excavation to sterile levels, the south and west walls (or if need be, two other contiguous walls) were lightly troweled from top to bottom in preparation for the drawing of profiles. The crew chief was responsible for ensuring that these drawings were drafted correctly and that photographs were taken.

#### ***4.2.3.5.1 Collection During Excavation***

Diagnostic historic artifacts also known as field specimens (FS) were placed individually in strong paper envelopes or plastic boxes as cases warrant. Non-diagnostic artifacts were bagged together as lot finds for individual levels in a given square. Collection containers included small paper coin envelopes, plastic ziploc bags, plastic boxes containing foam core dividers, brown paper "lunch sacks," and full sized grocery bags, depending on the size and condition of the artifact. The containers were labeled with provenience and other information: site number, feature number, unit number, north and east coordinates of the find (for FSS), elevation relative to datum, date, excavator's initials, brief artifactual description, and field specimen (FS) number. Each one meter square had its own series of continuous FS numbers beginning with the first level and ending with the completion of the excavation. Indelible marking pens were used.

Some ancillary field specimens (AFS) or non-artifactual materials (such as shell, bone, and macrobotanical remains) required special collection procedures. They were packaged with labels containing the same information as field specimens. A separate set of continuous numbers beginning with the first level and ending with the completion of excavation was kept for AFS numbers. Small unidentifiable bones were collected together for a given level of an individual square unit being assigned a single AFS number. They were packed in cotton and sturdy vials or boxes. Larger identifiable bones, macrobotanical remains, etc. were provenienced, assigned separate AFS numbers, and protectively packaged as before. All provenienced AFS numbers were depicted on the excavation record map for each level.

#### ***4.2.3.5.2 Feature Excavation***

Feature 1 was originally slated for six 1 m x 1 m excavation units. Because the wooden floor exposed in these units during excavation extended far beyond the initial six units which were set up in a linear fashion, exposing the entire floor of the Feature 1 structure required the excavation of 28 one square meter units. These units (and the feature) were excavated in their entirety once the wooden floor was discovered. Munsell soil colors and soil textures were recorded both within the feature itself and to its immediate exterior. When excavating features, several modifications in recording the provenience of associated artifacts were warranted. Those materials collected in a given one meter square straddling a feature (i.e., a dugout) must be distinguished as being on the inside or outside of the feature.

#### ***4.2.3.5.3 Unexpected Discoveries***

WCRM anticipated additional artifacts or features might be discovered during treatment. The discovery of a wooden floor in the dugout constituted such a discovery and WCRM consulted with AES, the NRC and SHPO on how best to proceed.

### **4.2.4 Data Analysis**

Analysis of the features and artifacts recorded during data recovery was designed to contribute to answering this project's research questions. Functional attributes were assigned to historic artifacts in



order to categorize them by class and examine their role in activities at the site. Information on the social patterns of the site was gathered from examination of the artifacts and research into the site's history.

Spatial analysis of the features in relation to the site often has the potential to contribute to understanding of the relationships between different activity areas. Efforts were made to conduct such analyses during the current effort. Likewise, analysis of the site in relation to the rest of the region has helped us explore how it was spatially, economically, and socially related to the larger community. Examination of artifact distribution patterns within the site has the potential to help us understand occupations and activities.

As the largest quantity of material culture remains, other than nails, was fauna, specialized analyses were also completed. All fauna were submitted to the environmental lab of Archaeological Consulting Services, Ltd. (ACS) in Tempe, Arizona. Identifications were then made using the ACS comparative specimen collection, as well as published reference materials in their reference library. For purposes of the analysis, the frequency of each taxon was counted using number of identifiable specimens (NISP). In some cases, limited available comparative material for some taxa permitted only general identifications. In other cases, fragmented bones could be classified only to genus, family, or a more general category. In addition to counts of NISP, minimum number of elements (MNE) was recorded to more accurately analyze fragmentation.

The sourcing and hydration analyses of the prehistoric artifacts will be conducted by Dr. Richard Hughes. The results will be discussed in a separate report.

#### **4.2.5 Report Preparation**

WCRM authors prepared this report detailing the results of the John Leopard Homestead Site treatment program in a format consistent with State of Idaho and U.S. Department of the Interior standards. The report includes a brief historic narrative and other background information developed by the writing team. They also addressed the project's Research Domains from the data gathered during the research/field work portion of the project and developed recommendations for investigations by future researchers of Idaho homesteads.

#### **4.2.6 Curation**

All artifacts and residues recovered from AES-owned property will be returned to the land owner once analyses and report writing are complete. The SHPO recommends that a representative sample of artifacts from site 10BV246 be collected and made available for public display. Any collections and/or display of artifacts collected will be subject to permission by the land owner.

#### **4.2.7 Visitor Center Display**

As per the project consultations between NRC and SHPO, a public display will be prepared after completion of the project. The scope and content of the display will be developed after review of this data recovery report.