

## **Description of Property**

Travelers Rest is located on the south bank of Lolo Creek, within the eastern terminus of the Lolo Trail National Historic Landmark. The site encompasses a former ranch, which includes a main residence, several barns, and associated outbuildings. There are two basic landforms contained in the site, an upper terrace where the main residence still sits and most of the agricultural activities at the site took place, and the lower terrace, which, for the most part, was too wet for agricultural activity. The site is bounded by a riparian zone to the north, that has changed little since the encampment by the Corps of Discovery on September 9 – 11, 1805 and June 30 – July 3, 1806. Lolo Peak and the entrance to the Lolo Creek canyon dominate the landscape to the south and west, presenting natural features that have also not significantly changed in the intervening two hundred years. The exception is the disappearance of a channel of Lolo Creek which appeared on an 1806 expedition map. In latter years, subdivisions and agricultural practices impacted the area to a minor degree.

The exact location of Travelers Rest NHL has not been previously verified. Based on imprecise published data of the 1970s and no field investigation, the late Dr. Merle Wells drew the NHL boundaries in a manner large enough to, “hopefully capture the site.” (See Figure 1) This current NHL nomination is proposing a new boundary for Travelers Rest and deleting the existing NHL boundary. Verification of the location of the Lewis and Clark campsite is now supported by multiple lines of evidence. These include the journals of the captains and members of the Corps of Discovery, with astronomical observations, and descriptions of courses, distances, and landmarks pointing to this location; the known presence of a Native American campsite; the discovery of the von Steuben pattern of encampment; evidence of fire hearths that date from the proper time period and that follow von Steuben’s directives as to spacing distances; the presence of a latrine laced with mercury that is also located according to von Steuben’s pattern of encampment; and, artifacts including a blue trade bead, melted lead, and a tombac button. The fire hearths and artifacts were all located within 20 cm of the surface, with one hearth including the melted lead and the blue trade bead. The artifacts, soil samples, and charcoal samples are currently housed at the Travelers Rest State Park, Lolo, Montana. The tombac button, recovered on private property, has been returned to the landowner.

The investigation into the location of Travelers Rest is not intended to glorify the celebration of the Corps of Discovery nor is it intended to disparage the Native American experience with the Corps of Discovery. It is merely intended to more precisely locate Travelers Rest National Historic Landmark.

## **EVALUATION OF INTEGRITY**

Travelers Rest NHL retains a high degree of integrity of location, design, setting, feeling, and association. The combined aspects of location, setting, feeling, and association greatly enhance the historical sense of the Lewis and Clark Expedition. The location, along with the complementary setting, strongly evokes the historical sense of the Corps of Discovery’s encampment along the banks of Lolo Creek. The setting, within the

eastern terminus of the Lolo Trail and along the periphery of the Bitterroot Valley retains its historic character. The aspects of feeling and association are retained through the combined presence of the physical features that dominate the area. A visit to the banks of Lolo Creek powerfully conveys the historical setting, allowing the visitor to vividly share the experience of the Corps of Discovery's encampment.

The property has a high degree of archaeological integrity. The aspect of design is present through the physical layout of the campsite. The basis of the military aspect that shaped the Corps of Discovery is found in *Regulations and the Order and Discipline of the Troops of the United States*, written by Baron Frederick William von Steuben. This manual, commonly referred to as the "Blue Book" was the military's standard guide from the Revolutionary War until the War of 1812 and was known and adhered to by Lewis and Clark and members of the expedition. The layout or plan of the campsite, near a source of water with equally spaced fire hearths and a latrine 300 feet from the rear of the camp is still intact and has the potential to address nationally significant research questions about the daily activities of the Corps of Discovery that do not appear in the historical record. These potential research questions could be applied to sites along the entire length of the Lewis and Clark Trail.

#### DESCRIPTION OF CONTRIBUTING AND NONCONTRIBUTING RESOURCES

The Travelers Rest site is the one contributing resource within the property and is described thoroughly within the text of this document.

There are thirteen noncontributing resources within the property. Six resources are located on private property to the west of the lower terrace of the investigation area. These six noncontributing resources include four mobile homes, one rental house, and one storage shed. The remaining noncontributing resources are located on the upper terrace of the project area. These seven noncontributing resources consist of the main house, one garage, two storage sheds, one small barn, one large barn, and the driveway with circular turn that serves as the center of the original ranch property. (See Figure 2)

Dan Rice constructed the original portion of the main house, the east end of the existing building, in 1896 to 1898. The existing building has been remodeled several times and is currently being used for the Travelers Rest State Park office. The storage shed, located west of the main house between the house and the garage, was originally a milk house constructed before the 1920s. Both the garage, west of the storage shed, and equipment barn, south of the garage, were already on the property when purchased by Pat and Ernie Deschamps in 1967. The garage is currently used as the visitor information center. The one access road structure to this area runs north from Mormon Creek Road towards the main house ending with an "L" shaped curve to the west toward the equipment barn and garage, which encircles a grassy area containing a large deciduous cottonwood tree. This road is still used as the main access to the State Park. The historic barn was constructed in 1924 or 1925 by Peter Thompson and Guy Newhouse.

West of the access road and the cluster of buildings and within the upper terrace is an

open field area used for agricultural purposes during the majority of the property's Euro-American occupation history. Vegetation in this area has been highly impacted by non-native elements. A single coniferous Ponderosa pine is centrally located on the slope between the bottomland and the benchland west of the building cluster. The open aspect of the bottomland area whose native vegetation has been slightly less impacted by historic use of the area for grazing is broken by riparian vegetation beginning along the 1806 creek channel and increasing in association with the current Lolo Creek corridor to the north. (See Figures 3 - 6)

## VALIDATION AND VERIFICATION OF TRAVELERS REST

The following information presenting the data and conclusions used to verify the location of Travelers Rest is condensed from the recent interdisciplinary investigation (Hall et al 2003). Travelers Rest's location is verified through multiple lines of evidence, including two previous investigations, the journals of the captains and members of the Corps of Discovery, the military nature of the expedition, the von Steuben pattern of encampment, fire hearths that date from the proper time period, a latrine laced with mercury, and melted lead, a blue trade bead, and a tombac button. The locations of the fire hearths and the latrine follow the distances prescribed by von Steuben. The combination of each of the multiple lines of evidence provides the necessary preponderance of evidence to locate Travelers Rest.

## PREVIOUS INVESTIGATIONS

Three previous investigations served as the impetus for the most recent multidisciplinary investigation into the location of Travelers Rest. Two simultaneous and independent studies pointed to a location upstream from the current recordation of Travelers Rest. Mr. Robert Bergantino, Montana Tech, Butte, Montana, produced an exhaustive analysis of the journals in an effort to locate Travelers Rest, "An Evaluation of Original Lewis and Clark Information to Determine the Location of Travelers Rest Camp." (Bergantino 1998). Bergantino concluded that the journals kept by the captains and members of the Corps of Discovery provide evidence of the location of Travelers Rest that disproves the current recordation of the resource. Bergantino utilized the expeditions original journals, survey data and maps together with U.S. Government Land Office plats surveyed in 1870, 1872, and 1879, U.S. Geological Survey maps prepared in 1907, 1964, and U.S. Geological Survey aerial photographs taken in 1966 and 1972.

According to Bergantino, Clark's survey data for September 9, 1805 reveals the expedition arrived at Lolo Creek while following an Indian Road (Bergantino 1998, 2). Fixing the location of the Indian Road provides information on the location of Travelers Rest while refuting the current recorded location of Travelers Rest. Clark's map of the Bitterroot Valley depicts the Indian road west of the Bitterroot River and upstream from the confluence of the river and Lolo Creek. (See Figure 7) A map produced by Isaac Steven's Pacific Railroad Survey in 1855 places the Indian Road in the same location. In addition, Gustav Sohon, an artist with the Stevens Survey, produced a painting of the Lolo Creek area in which the Indian Road is depicted at that same location (Hall et al

2003, 75). (See Figure 8) Upon leaving Travelers Rest on July 3, 1806, Lewis recorded courses and distances that indicate that he proceeded down the creek approximately one half mile in order to ford the creek, a fact that Bergantino notes "should permanently refute the notion that the camp was at or very near the mouth of Lolo Creek" (Bergantino 1998, 6). Bergantino also notes that Clarks map of Lewis's return to White Bear Island depicts Lewis crossing Lolo Creek in the location of the Indian Road (Bergantino 1998, 7). Bergantino asserts with a claim of 95% accuracy that the location of Travelers Rest is west and upstream of the Indian Road. (See Figure 9)

It is important to note that Bergantino does not directly address the 1970s recordation of Travelers Rest NHL by Dr. Merle Wells. He does, however, state that "the mistaken notion that Travelers Rest campsite was at the mouth of Lolo Creek probably comes from someone's reading the Biddle or Biddle-Coues edition of the journals or Gass's journal without taking into account the other expedition-derived information" (Bergantino 1998, 5). It should be noted that the "other expedition-derived information" that Bergantino discusses were not available to Dr. Merle Wells during his initial recording of Travelers Rest. This type of information has only recently been widely disseminated through authors such as John Logan Allen, Stephen Ambrose, and Gary Moulton.

Bergantino's work was one of two concurrent investigations that served as the basis for the most recent interdisciplinary investigation into the location of Travelers Rest. The second investigation featured an analysis of aerial infrared photographs taken on a flight line above Lolo Creek from its confluence with the Bitterroot River to a point three miles upstream. The resulting analysis argued that the Corps of Discovery, following a Native American guide on a Native American trail, would have likely encamped at or adjacent to a Native American campsite. The aerial infrared photographs revealed the presence of anomalies suggestive of Native American campsite in the same location identified by Bergantino (Hall 1997, 12). (See Figure 9)

The third investigation, a limited-scope data recovery conducted immediately project prior to private property subdivision, produced a tombac button. The presence of the tombac button could be explained by a number of explanations for the presence of the button, including the possibility of a Native American association, association with the Corps of Discovery, or association with the historical development of the property. Due to the extremely limited nature and time constraints of that investigation, the research design for the most recent investigation noted that the area where the button was recovered was considered a high priority for remote sensing and historical archaeological testing.

The most recent interdisciplinary study into the location of Travelers Rest included geoarchaeological investigations, which included observations and descriptions of site geomorphology, stratigraphy, vegetation-landform relationships, and soil development. The resulting analysis identified three landforms that comprise the Travelers Rest area. The first and oldest at several thousand years of age, is a large terrace on the south side of the site designated QS-1 which is comprised of alluvial fill formed during an earlier aggradational phase of Lolo Creek. The age of the QS-1 landform is supported by,

among other observations, the stratigraphy and soil development. The lower terrace is comprised of two landforms, the T-0 and T-1 landforms. The T-0 landform comprises the lower terrace area that is the location of Travelers Rest. This landform gradually grades into the older T-1 landform to the west of the T-0 landform. The stratigraphy, soil development, and sediments indicate that the T-0 landform is recent in origin, forming within the last 200 - 300 years (Hall et al 2003, 75). The geoarchaeological analysis at Travelers Rest serves to remove most of Montana's considerable prehistory as a possible source for any features or artifacts recovered from the lower terrace.

## HISTORICAL EXPLORATIONS AND EARLY SETTLEMENT

To this day the only specific historical references to the location of the Travelers Rest campsite are found in the journals of Lewis and Clark, John Ordway, and Joseph Whitehouse, sources that Robert Bergantino used in his 1998 study. Bergantino noted that Meriwether Lewis traversed one half mile down Lolo Creek to the Native American trail and forded Lolo Creek before turning north (Bergantino 1998, 5). Lewis wrote in his journals that the expedition... "forded travelers rest C. 1/2 a mile below our camp,..." (Moulton 1993, 8:85) This information, unavailable to Dr. Wells and earlier investigations at Travelers Rest, indicates the campsite could not be located at the confluence of Lolo Creek and the Bitterroot River as currently recorded.

Records of subsequent explorers and travelers through the area, including those of David Thompson, John Work, Robert Owen, John Mullan, John Strachan, and the U.S. Department of the Interior surveys of 1899 and 1904 either fail to mention Travelers Rest or mention it only generally in passing. In spite of intense competition between the Hudson's Bay Company and American fur traders, it appears that neither used the Lolo Trail as a major travel route, preferring instead to use the river routes along the Clark Fork and Bitterroot Valleys. The one exception was John Work's Hudson's Bay Company Snake River Brigade, which passed through the Lolo Creek drainage in 1831 enroute to the Snake River. Work did not, however, comment on the Corps of Discovery or Travelers Rest.

Two decades later, Isaac Stevens, governor of Washington Territory, led a survey of possible routes for a transcontinental railroad across the Rockies. The Stevens Expedition traversed the Lolo Creek drainage in the fall of 1854 and later provided indirect proof of the campsite location through Gustav Sohon's landscape painting of the Lolo Creek area "Entrance to the Bitter Root Mountains, By the Lou Lou Fork." Looking west, the painting depicts the Native American road described by Meriwether Lewis, Sohon's placement of the alignment of the road matches the location mapped by Clark. Lewis' description of traveling down Lolo Creek to the Native American trail - the very trail mapped by Clark and painted by Sohon - indicates that that camp is not at the confluence of Lolo Creek and the Bitterroot River as currently recorded. (See Figure 1)

## HISTORICAL DEVELOPMENT OF THE SITE PROPERTY

The property where the Travelers Rest site is located has historically been used for farming, stock-raising, and residences and is now partially owned by the State of Montana for preservation as a historic site and development as a state historic site park. Two parcels of private land within the proposed NHL boundary to the west are not currently included in the historic state park. Documented land use started with Christopher Rennix, who began residing on the property in 1881, proved up his homestead entry by 1888, and filed the first water right on the property in 1885. By 1886 he had constructed a one-story wood dwelling, two granaries with a wagon shed between them, a log stable, a chicken house, a root cellar, corrals, an irrigation ditch, rail fence, and had planted 12 fruit trees, all of which no longer exist. Dan Rice probably constructed the present residence between 1896 and 1898, and the buildings immediately west of the residence were constructed after 1920. All of these buildings and features constructed by Rennix and Rice are located on the upper terrace and outside the survey grid zones. The historic barn located on the upper terrace as constructed between 1924 and 1925. Most of the bench and those parts of the lower terrace, which were not marshy after draining, were historically plowed and used to grow hay. For example, Grid #57, where the central fire hearth is located, has not been plowed, but Grid #61, where the second fire hearth is located, has been plowed. Interviews with Roy Van Ostrand, a long time former property owner, revealed that Mr. Van Ostrand did not plow the lower terrace area due to the wet soils fearing that his tractor would get stuck in the mud (Van Ostrand, personal communication, April 11, 2001).

The area around the project site began experiencing a transition from residential and farming to strictly residential use in the 1950s. Roy Van Ostrand subdivided the land in the S½ SE ¼, section 34, T 12N, R 20W as the Van Ostrand Addition in August 1957; the project area constitutes lots 1, 2, and 14 at the east end of the subdivision. Farming and stock-raising ceased in 1963, when John and Shirley Shively purchased the property, and were not resumed.

Since the 1970s, the Lolo area has developed rapidly as a bedroom community to the city of Missoula. The Lolo Land Use Plan of 1978 called for the area from the project area west to be zoned R2, two units per acre residential, and did not mention the Travelers Rest site. Recently, trailer park development to the west of the site and residential development on a hill overlooking the site to the south have encroached upon the site integrity. However, the Lolo Regional Plan of 2002 recommended that the area in which the Travelers Rest site is located be zoned residential with one dwelling unit per acre. This triggered a renewed planning effort, with the goal of making Travelers Rest an integral part of the Lolo Community Development Plan and to ready the community for the Lewis and Clark Bicentennial. As the result of an anonymous buyer, the state now owns the majority of the property on which the site is located. At present, property located within the proposed National Historic Landmark boundary is zoned Park-OS and Residential--one dwelling unit per five acres and one dwelling unit per 10 acres. The State and the Lolo Community are in the process of developing the property as a state-owned historic park.

## NATIVE AMERICAN RESOURCES

Locating a Native American resource on the south banks of Lolo Creek, through the aerial infra red photographs and through interviews with local landowners and tribal elders, in the vicinity of Travelers Rest serves as one of the multiple lines of evidence verifying the location of the campsite. Tribal elders acknowledged the location of a Native American site along the south bank of Lolo Creek. An open dialogue with the Confederated Salish and Kootenai Tribal Historic Preservation Office during the investigation acknowledged the need to limit intrusion into the Native American resource while searching for evidence of the Corps of Discovery. The historical archaeological excavations, the aerial infra red photographs, magnetometer investigation, interviews with the local landowners, and the journals of Lewis and Clark provide strong evidence of an extensive and ancient Native American occupation site. The excavation efforts located one complete stone tool, a chert drill which was located at a lower level than the central fire hearth and nearly 5 meters to the northwest of the hearth; three partial projectile points from different excavation units at various levels below the hearth feature and three to seven meters in distance, and a scatter of flakes comprised of various material types. The closest flakes to the hearth were located approximately 20 centimeters below the hearth feature. No artifacts were located on the surface of the lower or upper terrace, despite intensive searching that occurred by archaeologists during the pedestrian transects and while on hands and knees during the remote sensing investigations. Carbon 14 dates from the hearth located on private property directly west of the state park reveal that the fire is about 1,000 years old. The hearth was located at a greater depth than the other two fire hearths and it is also located in the vicinity of where the landform begins to grade from a younger landform, about 200 to 300 years old, into a more ancient landform. The materials related to the Native American use of the area are all located on the west half of the lower terrace and increase in numbers proceeding west.

The aerial infrared photographs, taken in 1997 and in 2000, revealed a linear array of anomalies suggestive of tipi rings, the great majority of which are located on the Maurer property about 2000 feet west of the Travelers Rest site. Both sets of infrared photographs failed to locate any anomalies suggestive of tipi rings on the lower terrace of the current state park. The magnetometer investigation on Mr. Steiger's property, located about 1000 feet west of the site, found magnetic anomalies in the same position as the anomalies from the aerial infra red photographs.

The Deschamps family had indicated that, while they had never seen or recovered any Native American artifacts from their property, the previous owners had a substantial collection. However, when interviewed, Mr. Roy Van Ostrand, the previous property owner, denied seeing or recovering any artifacts from the property. Mr. Van Ostrand also mentioned that he had never seen Native Americans in or around Lolo Creek. However, he did state that he was aware of several neighbors who had been collecting artifacts from their property (Van Ostrand, 2001). During a meeting with Stan Norgard, a property owner at the confluence of Lolo Creek and Mormon Creek west of the site, Mr. Norgard and Dan Hall discussed an impressive collection of artifacts that Mr. Norgard had collected over a forty year period from his property, mainly from his garden and strawberry beds. The artifacts discovered included hammerstones, basalt pestles,

triangular side-notched and corner-notched projectile points, and a complete Hanna point. According to Mr. Norgard, fire-cracked rock and flakes are scattered across his property. Mr. Norgard also pointed to locations between his property and Mr. Steiger's property where other individuals have found artifacts over the years.

In conclusion, the presence of an extensive and ancient Native American occupation site to the west of the current state park is confirmed by the abundance of artifacts found by landowners for decades, conversations with tribal elders, the anomalies located in the aerial infra red photographs which coincide with the anomalies located by the magnetometer, and the journals of the Corps of Discovery. The presence of the Native American site is inferred from Joseph Whitehouse's journal entry from September 10, 1805 before leaving Travelers Rest, "So we go the road he knows" (Moulton 1997, 11:309). The presence of the Native American resource provides one of the multiple lines of evidence locating Travelers Rest.

## THE MILITARY NATURE OF THE EXPEDITION

This part of the nomination addresses the military nature of the exploration, including the Corps of Discovery's probable possession and use of Frederick William Baron von Steuben's *Regulations and Discipline of the Troops of the United States*, otherwise referred to as the Baron and the Articles of War, also known as the Blue Book (Ambrose 1996, 42; Beckham 2003, 29; Jackson 1981, 134). The Regulations, which included von Steuben's articles for the configuration and measurements of a military campsite, were used in conjunction with the various means of remote sensing and excavation to predict the encampment location, arrangement, and spacing in the project area. Von Steuben's regulations represent one of the multiple lines of evidence that verifies the location of the Travelers Rest.

The military nature of the expedition arose from the need to provide structure and discipline to a group of men of disparate backgrounds to help ensure the expedition's chance of success. Lewis and Clark were familiar with the regulations written by von Steuben and each believed it was important to utilize and enforce them on the expedition to maintain a disciplined, efficient, and well-organized camp. Lewis' first posting was as an officer of the regular army to the Second Sub-legion under General Anthony Wayne, and Lewis was present when the tribes of the Ohio agreed to the Terms of the Treaty of Greenville. Later, he transferred to the First U.S. Infantry Regiment and, in 1799, became a lieutenant in the army and serving as paymaster, a position which provided him with considerable information about the army and its personnel (Ambrose 1996, 38-49).

William Clark joined the Kentucky militia in 1789 and then transferred to the regular army, where he became a lieutenant and spent time spying on the Spanish on the upper reaches of the Mississippi. In 1795, he was placed in charge of a select group of riflemen at Fort Greenville in Ohio, where he met Lewis. During that time, Lewis was under Clark's command, and the two men grew to know and respect one another and to correspond afterwards. By 1795, Clark had been in the army for six years and had fought in the Battle of Fallen Timbers under Anthony Wayne (Ambrose 1996, 46; Lavender

1988, 55-57.).

Lewis and Clark insisted on military personnel in the Corps of Discovery because of their concern about discipline. Even though Lewis and Clark had wide latitude in recruiting men for the expedition and trained, and drilled them rigorously, they encountered numerous discipline problems before embarking up the Missouri. Several incidents occurred during the winter of 1803-1804 at Camp Wood, which required Lewis and Clark's prompt disciplinary action (Ambrose 1996, 127-130). Lewis and Clark were, in short, "army men going by the book," which was "a collection of dicta and proscriptions" commonly referred to as the "Rules and Articles of War." Except for the French "civilian" boatman and some recruits from Kentucky who might not have known army routines, the core of the expedition was familiar with these articles and knew that "military discipline was not suspended when a detachment marched out of a garrison and took to the trail." During the expedition, Lewis and Clark built three forts large and durable enough to house and to protect a company of men during three winters. The forts were military posts that were governed by routines established by regulation and tradition, and the Lewis and Clark men were subject to these regulations, which often included a section from the rules and articles of war. Although some rules had to be adapted when the expedition was moving, the men "were soldiers still in the terminology of their daily assignments and in the performance expected by their captains" (Jackson 1981, 164-165).

#### BARON FREDERICK WILLIAM AUGUSTUS VON STEUBEN AND THE VON STEUBEN PATTERN OF ENCAMPMENT

In listing literature taken on the expedition, Lewis and Clark scholar Donald Jackson believes that "no doubt the expedition carried at least one medical treatise and the current edition of the rules and articles of war" (Jackson 1981, 134). A more recent work on the literature of the expedition contends "because of its organization as a military expedition, it is...likely that the Corps of Discovery carried the *Regulations of the Order and Discipline of the Troop...the Articles of War [1794]*" (Beckham 2003, 29). The British had originally published rules of conduct for navy personnel in the mid 1600s and revised them in 1749 and 1757. Parliament published in 1778, the "Rules and Articles for the better government of Our horse and Foot Guards, and all other Our Forces in Our Kingdoms of Great Britain and Ireland, Dominions beyond the Sea, and Foreign Parts," otherwise known as the "Articles of War." The articles contained 27 sections of rules on a variety of topics, including mutiny, quarters, and the administration of justice (Beckham 2003, 29).

Baron Frederick William von Steuben prepared the *Regulations for the Order and Discipline of the Troops of the United States* at Valley Forge in 1778 at George Washington's request to provide military training for a Continental Army low in morale, supplies, equipment, and training. Von Steuben was born in Magdeburg, Prussia, to a military family and served in the Prussian army from 1746 to 1763, having attained the rank of captain. From then to 1775, he served as the court chamberlain to the Prince of Hohenzollern-Hechingen, picking up the title of Baron along the way. He left that post

under clouded circumstances, fell into debt, and was receptive to an offer by Benjamin Franklin in 1777 to come to America to assist the Continental Army, an offer he readily accepted, given his circumstances (Steuben 1985, n.p.).

George Washington, an able leader but not a trained soldier was in desperate need of the help of a staff officer to assist in molding the Continental Army into an effective fighting unit and fighting war. Von Steuben's "high professional reputation, an impressive Prussian military bearing, and colorful personality" had a profound effect on the disorganized, rag-tag army. By the spring of 1779, Washington promoted him to the rank of major general for quickly transforming the army into an effective fighting force and for writing the regulations for order and discipline in installments in the process. Some have called the transformation of the Continental Army under von Steuben "perhaps the most remarkable achievement in rapid military training in the history of the world" (Steuben 1985, n. p.; Whitridge 1976, 430).

After arriving at Valley Forge, von Steuben was initially appalled by the lack of a uniform set of drill instructions and by the lack of a central government to enforce them. At that time, the continental army consisted of detachments from the thirteen colonies, with each detachment following its own model,. The troops resisted change and clung to these models, generally adapted from French, English, and Prussian models (Whitridge 1976, 432-433). Faced with the need to convert a motley assortment of soldiers using their own familiar systems of drill and maneuver into an effective fighting force in about two months, von Steuben adapted the Prussian system to fit the immediate situation. He did so by confining it to "absolute essentials" such as reducing the commands in the manual of arms to ten and prescribing "an easy, natural step half-way between the old and quick times." The Baron focused most of his efforts on training the troops to quickly loading and fire, the use of the bayonet, and on the precise execution of essential foot movements (Bill 1955, 39).

Although officers used a variety of manuals before 1815, the "most significant by far" was von Steuben's "Blue Book" (Skelton 1992, 38). Congress adopted the manual in March 1779 and printed it for issue to the army (Armstrong 1976, 62; Beckham 2003, 30). For decades, it continued to serve as the army's standard guide for military tactics and basic military administration until the War of 1812. Seventy editions of the book were published, one of which was taken on the expedition by Lewis and Clark. The "Blue Book" effectively simplified the highly structural movements characteristic of eighteenth century warfare and included rules for conducting marches, organizing camps and maintaining camp sanitation. It also included a section on the fundamental duties of each military rank (Skelton 1992, 38). Lewis and Clark had their own copies dating back to their service under General Anthony Wayne in the mid 1790s. Wayne had been a firm believer in the "Blue Book," and "placed it in the hands of every company officer and saw they used it" when he established the Light Corps of the Army in 1779 (Boyd 1929, 149; Weigley 1967, 93). Clark had served under Wayne in the Battle of Fallen Timbers in 1794 (McGrane 1914, 418), and Lewis had served under him in the Second Sub-Legion in 1795 (Ambrose 1996, 45).

The Lewis and Clark journals contain two references to the presence of the Articles of War, one by inference and the other by direct reference. On March 30, 1804 at Camp Dubois on Wood River, Clark initiated a court martial of a man stealing expedition supplies and stated that he (Clark) read the orders on the Parade that evening. It is most likely that he was referring to von Steuben's manual. The most precise reference to the Articles of War occurred on May 17, 1804, when John Ordway, in referring to the court-martial of John Collins, stated:

The Court are of the opinion that the Prisnair is Guilty of charges alleged against him it being the breach of rules & articles of War and do Sentence him to receive fifty lashes on his naked back (Beckham 2003, 30).

Though there is no existing reference about how Lewis and Clark set up encampments, it is highly probable that, given their long-time familiarity with the "Blue Book" and the fact that it was universally available, that they would have applied the order of encampment prescribed by von Steuben. Although the size of the expedition of 30 persons that embarked westward from the Mandan villages in 1805 was the size of a platoon and von Steuben's manual layout was for a larger contingency of men such as a single regiment or a regiment organized into two battalions, it seems reasonable to assume that Lewis and Clark used a similar but simplified configuration for encampments on the expedition, especially when camping at one spot over a day or two.

Von Steuben's camp layout for a regiment of one battalion consisted of horizontal, symmetrical linear arrangements, with wagons and horses in the first row, the sutler at a single point between the wagons, and the next row consisting of evenly spaced kitchens, with the sutler's tents being located between the kitchens. The kitchens were to be dug behind their respective companies forty feet from the field officers' tents. The field officers tent were to be in one line, thirty feet in front of the line officers, with the colonel's tent opposite the center, the lieutenant colonel's tent to the right, and the major's tent on the left. The surgeon, quartermaster, and paymaster encamped in one line alternating between the field officers, with the front of their tents in line to the rear of the field officers' tents, with the surgeon on the right, the paymaster on the left, and the quartermaster in the center (Steuben 1985, 75-79). (See Figure 10)

The captain and junior officers' tents were one line, twenty feet from the rear of the men's tents, with the captains in the right wing opposite the right of their respective companies, the junior officers opposite the left, and the contrary in the left wing. The tents of the non-commissioned officers were to be pitched in two ranks with an interval of six paces between the ranks and two feet between each tent. The tents of the noncommissioned officers were in the front rank on the right of their companies in the right wing and on the left wing of the battalion. Nine feet distance was allowed for each tent with its interval twenty feet in the core of the battalion for the adjutant (Steuben 1985, 75-79).

The camp guards were to be three hundred paces in front of the first line and the same distance in the rear of the second line. The quarter guard was to be forty feet from the wagons, opposite the interval between the two battalions who furnish it. The sinks

(latrines) of the first line were to be three hundred feet in the front and those of the second line the same distance to the rear of the camp (Steuben 1985, 75-79). Von Steuben's measurements for the location of the latrines was key to interpreting the evidence found at the study area. While the Blue Book does not specify construction details of latrines, it does address the precise placement of this feature.

The core of the expedition expected to continue the journey west after the Mandan winter in 1805 was composed of two captains (Lewis and Clark), three sergeants, Charles Floyd, (who was replaced by Patrick Gass after Floyd died on August 20, 1804), John Ordway, and Nathaniel Pryor, the privates, York, and the interpreter Drouillard. The main detachment was, in turn, divided into three squads under the command of Floyd-Gass, Ordway, and Pryor (Ambrose 1996, 131). At the outset of the trip up the Missouri, each group prepared its own meals (Clarke 1970, 32). This procedure likely continued throughout the remainder of the expedition.

One of von Steuben's greatest concerns was about camp cleanliness. In the chapter entitled "Reviews," von Steuben clearly states that for the commandant of the regiment the:

preservation of the soldiers health should be his first and greatest care; and that depends in the great measure on the cleanliness and manner of living, he must have a watchful eye over the officers of companies, that they pay the necessary attention to their men in those respects (Steuben 1985, 125).

In a separate chapter entitled "Necessary Regulations for preserving Order and Cleanliness in the Camp", von Steuben states that:

When the regiment enters the camp, the field officers must take care that the encampment is pitched regularly; that the sinks [latrines] and kitchens are immediately dug in the proper places; and that no tents are pitched in any part of the camp contrary to the order prescribed (Steuben 1985, 81).

Every day, an officer was to see that the tents were kept clean, that no bones or filth were to be in or near them, and that officers were not to eat in them except in bad weather. All dirt was to be "immediately removed, moved, and either burnt or buried" (Steuben 1985, 82-83). The quartermaster had to be:

answerable that the parade and environs of the encampment are kept clean; that the sinks [latrines] are filled up, and new ones dug every four days, and oftener in warm weather; and if any horse or animal dies near the regiment, he must cause it to be carried at least half a mile from camp, and buried.

The place where cattle are killed must be at least fifty paces in the rear of the wagons; and the entrails and other filth immediately buried; for which the commissaries are to be answerable.

The quarter-master general must take care that all dead animals, and every other nuisance in the environs of the camp, be removed (Steuben 1985, 83-84).

Steven Allie, Director of the Frontier Army Museum at Fort Leavenworth, Kansas, believes that Lewis and Clark would have conformed to the von Steuben camp configuration as much as possible or would have noted significant departures from it. Since there is no known reference in the journals to camp layout, it would seem logical to assume the Lewis and Clark adapted their campsites to the von Steuben layout. Allie believes that the expedition would have carried a “common tent” used by Lewis and Clark and eight linen lean-tos used by the sergeants and privates in a line facing the common tent, which, Allie believes, was the only real tent taken on the expedition. Since the expedition was organized into three squads, it is reasonable to assume that this line may have been arranged into three groups. Although it is not known exactly how the common tent and lean-tos were arranged because the platoon-sized expedition was about one-twentieth the size of the regiment von Steuben used as a model, it probably would have conformed in other ways to the von Steuben pattern, including placement of the latrine, a kitchen area, general work areas (the latter probably located in front of the tent and lean-tos), the location of areas where food animals were slaughtered, and the location of the guards. Allie believes that the common tent would have contained Lewis and Clark and some equipment. He believes that the tent was made of sailcloth, that it was 6 feet 10 inches tall, 10 feet 10 inches long at the ridge, and 8 feet, 6 inches wide. Allie estimates that the lean-tos were 5 feet wide and 10 feet long and could have been hooked together for a doublewide effect (Allie 2001).

Elements of the von Steuben pattern should be discernable at Travelers Rest through a combination of features that are spatially and systematically organized according to the specifications in the “Blue Book.” These features include a central kitchen fire hearth located near a water source, a fire that also would have served as the work place for Shield’s gun repair activities, and a second fire located at a distance of forty feet that would have served as the “common tent.” The second fire hearth would have been flanked by two additional fire hearths arrayed in a linear fashion, consisting of the three groups described above. Unpublished reports from the investigations of the Portage Site at Great Falls indicate that these fires hearths may have been spaced twenty to thirty feet apart. Additional features from the von Steuben pattern would indicate two guards, with the first located three hundred paces from the rear of the camp; a location where food animals were slaughtered at a distance of fifty paces from the rear of the camp; and a latrine three hundred feet from the rear of the camp.

## REMOTE SENSING INVESTIGATION

The investigation into the correct location of Travelers Rest utilized a series of remote sensing investigations, including magnetometer, electromagnetic conductivity, and metal detectors. The remote sensing investigations were designed to locate anomalies in the near-surface soils that could be related to the Corps of Discovery’s encampment along the banks of Lolo Creek and that would reflect the utilization of the “Blue Book”. The entire results of the remote sensing investigations are presented in the report describing

the multidisciplinary investigation (Hall et al 2003).

## Magnetometer

The remote sensing investigation for Travelers Rest began with data collection using a dual-sensor magnetometer (i.e., gradiometer). The investigation used a Geometrics G-858 cesium gradiometer with dual cesium sensors vertically aligned to allow the instrument to operate in a gradiometer mode, which allowed for minimizing possible solar and diurnal effects and for providing greater resolution of subsurface features. The magnetometer investigation revealed a large number of anomalies that were identified during the development of the research design and were theorized to have been associated with the Corps of Discovery. The research design identified about 60 anomalies warranting some sort of investigation, either through excavation units or shovel probes.

Three anomalies are located in Grids #57, 58, and 59 and are in and along the abandoned stream channel that cuts across the lower terrace. The anomaly located in Grid #058 is a trash deposit of recent origin. The deposit includes metal pipes, barbed wire, tin cans, wood, ceramic, and other types of debris. The anomalies are located on surface T-0, a flood plain that is likely Historic Period in age. The research design theorized that the two anomalies located on either side of the recent trash area might represent activities from the Corps of Discovery or from the recent agricultural activities that have occurred in the area for the past 80 years. The anomaly in Grid #57 is of a scale unlike any other anomaly located during the remote sensing investigation. (See Figure 11) As noted, it has been theorized that gun repair should have occurred close to water; a fire used to heat metal would have burned longer and hotter than a fire used to cook food or a fire used by Native Americans for a sweat lodge. The remnant thermal magnetization should leave a signal unlike any other anomaly. In addition, the anomaly should be associated with metal if the anomaly is the fire hearth from the gun repair. The metal detector sweeps indicate the area contains barbed wire, tin, aluminum, brass, lead, two rod-like metal objects, and unidentifiable metal objects. The barbed wire, tin, and aluminum are probably related to the trash deposit that is located about eight meters to the northwest. The anomaly located in Grid #059 does not have any metal associated with it. It is possible that this is another remnant thermal magnetization, a fire hearth. Again, food preparation from the Corps of Discovery should have occurred relatively close to a water source.

## Electromagnetic Conductivity

The geophysical investigations, using an electromagnetic (EM) induction meter, the Geonics EM 31, started on May 3, 2001. Based on the preliminary results of the magnetometer, a number of the grids were selected for additional probing with the EM 31. The original methodology called for the EM 31 to operate in tandem with the magnetometer, collecting data from selected grids following the magnetometer across mowed pastureland and portions of a subdivision. The presence of overhead power lines, telephone lines, and cable television lines in the subdivision provided too much static

interference for the operation of the EM31 on the west end of the project area. As a result, the EM 31 was arbitrarily sent to the east end of the project area to collect data in Grid #037 and to progress to the west until the joint survey could resume at a different location.

The data collected in Grid #037, a serendipitous tale in every sense of the word, indicated the presence of a shallow, subsurface anomaly. The quadrature portion of the signal revealed a significant contrast in the apparent ground conductivity of the soils. Theories for the possible origin of the anomaly included that the soil feature might be associated with an abandoned channel from Lolo Creek, with the trenches dug during the Nez Perce flight through the area in 1877 and the subsequent episode of Fort Fizzle, with some past agricultural activity, or with the presence of the Corps of Discovery's latrine.

Receiving reports that Chief Joseph was headed towards Missoula during his epic flight from reservation confinement, soldiers from Fort Missoula constructed fortified positions in an effort to halt the Nez Perce advance. These fortifications, primarily shallow trenches serving as foxholes, proved ultimately futile as Chief Joseph merely side-stepped the military. The site of the fortifications became known as Fort Fizzle and it is located over 10 miles upstream from the site location. A number of the fortifications have been filled in over the years. It can be concluded therefore, that the anomaly is not associated with Fort Fizzle and the flight of the Nez Perce since the EM 31 depicts excavation and deposition of a different substrate and also because of the great distances between the two resources.

The trending of the anomaly is a north-south direction instead of the east-west direction of the creek chutes provides additional evidence that it was not associated with Lolo Creek. A material other than Lolo Creek gravels was deposited into the trench resulting in a contrast of soils (Bevan 1998). The remaining theories for the origin of the soil feature include the possibility of association with the historical ranching, historical mining or association with the Corps of Discovery. This anomaly was targeted for geochemical analysis to prove the existence of the latrine. The results of the mercury vaporizer analysis are presented below.

## Metal Detectors

Metal detectors were used on four separate occasions during the investigation. Members of the Travelers Rest Chapter of the Lewis and Clark Trail Heritage Foundation, assisted and supervised by professional archaeologists, conducted the metal detector sweeps. The investigation used three different models of White's metal detectors, which were set in differing modes of discernment to assess the potential source of the signal, such as nails, brass, and copper, which are often discernible by the metal detector's changes in intensity or tone. Traverses were followed on a north-south axis across each grid. Pin flags were used to mark the source of the signal located by passing the sensor north-south and then east-west to fix the location of the metal object; pin flags were then dropped on the signal's location. The first metal detector sweep of the project area occurred in the

summer of 2001 to investigate dipolar anomalies located during the magnetometer investigation. The sources of the signals were flagged and compared to the magnetometer results to assist with the pre-excavation analysis of the data presented in the research design (Hall 2002, 9). No signals were excavated during the first sweep.

The second metal detector sweep occurred in August, 2002 and covered a broad area around the trench-like anomaly located in Grid #037. The purpose of the second sweep by metal detectors was to determine if the soil feature could be associated with the historical development of the property. Every signal from the area was carefully located and then the object was retrieved to determine if the soil-feature and associated mercury concentrations might possibly be related to deposition of household debris. Eight metallic artifacts were located within twenty meters of the latrine; all eight artifacts were recent in origin and included barbed wire fence staples and portion of a sprinkler head. The lack of metallic artifacts in or around the feature helped to disprove the theory that the feature was associated with household trash disposal. In addition, the historical research revealed that the septic systems and outhouses from the ranch and the barns associated with the ranching were all located on the upper terrace at a considerable distance from the soil feature, a distance approaching 800 feet for the barns. This great distance, combined with a lack of artifacts to support an association with historical ranching denies a possible historical ranching origin for the soil feature.

The third and fourth sweeps of the metal detectors occurred at the end of the excavation in late August and early September 2002. The third metal detector sweep focused on the excavation units from Grid #057, which had revealed the presence of a fire hearth and a sample of lead shaped like a puddle. The third sweep intended to ensure the location and collection of any other samples of lead or metallic objects in or around the fire hearth. Three additional lead objects were removed from the units, all of which were less than 10 cm of exposure.

The fourth sweep occurred across the possible area of the actual encampment and within the abandoned stream channel directly to the north. The journal entries from Lewis and Clark indicate that during the return visit to Travelers Rest in 1806, John Shields spent the better part of two days repairing guns. During part of the gunsmithing, Shields shortened the barrels from two of the guns which were then presented to the Nez Perce who had lead the Corps across the Lolo Trail. The fourth sweep was conducted to locate any gun parts or gun barrels in or around the creek bed or the adjacent stream terrace. Signals that appeared to indicate a long, metallic object were marked with a pin-flag and then investigated with a trowel, but this method failed to locate any evidence of the gun barrels.

## MERCURY VAPORIZER ANALYSIS

Mercury vaporizer analysis attempted to locate the latrine, or sink as referred to by von

Steuben, and represents one of the most significant of the multiple lines of evidence utilized to validate and to verify the location of the campsite. The Corps of Discovery used Dr. Benjamin Rush's medicinal pills known as "thunderclappers" as a medical treatment throughout the journey. These pills contained a high percentage, approximately 60%, of mercury. Therefore, the human waste deposited near Lolo Creek is expected to have high levels of mercury, which should have remained relatively in-situ with lesser amounts of mercury vapors migrating laterally through unconsolidated materials. The mercury would have remained relatively in-situ because of the chalcophilic nature of mercury to form strong chemical bonds with sulfur, which is located in organic soils. Locating the sink would provide strong evidence of the campsite location.

Mercury analysis conducted at Fort Clatsop, the expedition's far-western camp on the south side of the Columbia River, attempted to locate the latrines as part of the on-going archaeological study attempting to determine the site of the original fort (Kiers and Stein 2000, 1). Magnetometer surveys identified several anomalies that were identified as potential privies. Eighteen soil samples were collected and processed through a series of chemical analyses to search for anomalous mercury values. However, the mercury levels found at Clatsop do not appear to have any correlation with any feature or depth and appear to be randomly scattered across the landform, perhaps as a result of industrial contamination (Kiers and Stein 2000, 15). Conversations with one of the principal investigators from this study at Fort Clatsop revealed that past agricultural activities and industrial contamination might be hindering the search for the latrines (Stein, 2003).

The report from the investigations at Fort Clatsop remarks that:

The Corps of Discovery was a military expedition. As such, the members of the expedition were likely following military procedures. Since military protocol at the time dictated that privies be dug 90 paces from the fort, the discovery of a privy could potentially narrow the area of interest to archaeologists looking for remains of the fort itself (Kiers and Stein 2000, 6).

The report does not cite the source for the 90-pace measurement, which does not compare with the 300-foot measurement dictated by Baron von Steuben. Conversations with other researchers about whether or not mercury analysis has been or is being conducted at any other Lewis and Clark sites were inconclusive.

Mercury contamination of streams from mercury amalgamation and cyanide recovery process mills associated with Montana's hard rock mining history was wide spread across the state, but the hard rock mining that occurred in the Lolo Creek drainage was small-scale prospecting. A review of the publications of the Montana Bureau of Mines and Geology and of the U.S. Geological Survey revealed one stamp mill in the Lolo Creek drainage. Mercury contamination from mercury amalgamation milling processes is not the source of the mercury located during this investigation.

Placer miners used mercury to separate gold from the encapsulating hard-rock matrix and such mining did occur across scattered claims in several tributaries of Lolo Creek. The

electromagnetic investigation revealed an anomaly that demonstrated a marked contrast in soil conductivity, indicating that a different material had been placed into the soil. Placer miners would have simply recovered the mercury and gold leaving the country rock, a process that would not produce the anomaly located by the electromagnetic investigation.

The soil feature is located on a terrace of Lolo Creek, a relatively young landform about 200 to 300 years old with Chamokane (Cb) soils, which developed over moderately stratified sandy loam alluvium parent material, 10 to 30 inches thick above loose sand and gravel of mixed origin, deposited or re-sorted during recent geological time. The soils are of too recent an origin to demonstrate a high level of distinction between horizons. The Cb soil type occurs in areas of 0 to 2 percent slope and, unless smoothed or leveled, displays a microrelief that is irregularly undulating. The normal range in depth to loose sand and gravel is 20 to 36 inches, although this depth can vary considerably (Bourne 1951: 4).

The von Steuben pattern of encampment is the second line of evidence supporting the theory that a latrine is located here. The anomaly located by the remote sensing is 300 feet from where the camp would be as determined by the location of the hearth features in Grid #057 and Grid #061, which is the distance prescribed by Baron von Steuben. Again, the fact that Von Steuben's book rigidly lays out the camp with prescribed distances between men of differing rank and between men and certain activities, such as cooking, waste disposal, and latrines, the latter to be 300 feet from the first line of tents was a consideration in the manner of proceeding during the investigation (Steuben 1985). It is important also to reiterate that von Steuben does not provide specifications for construction of the fires and latrines, only the distances between the features.

Remote sensing investigations at Valley Forge National Historical Park were conducted from 1977 to 1979 in an effort to locate evidence of the Continental Army's encampment of 1777 - 1778. The investigation revealed modern disturbance of the site as a result of three Boy Scout Jamborees held at the park. In spite of the modern disturbances, the investigation located features associated with several huts and an offal pit associated with the Continental Army. The investigation, unfortunately, did not consider Baron von Steuben and the military style of encampment prescribed by the Blue Book (Parrington 1979, 201).

At the Travelers Rest site, mercury vaporizer data collection occurred simultaneously with the excavations. Daniel Hall and Skip Higgins, in consultation with Dr. Nancy Hinman, professor of geochemistry in the Geology Department at the University of Montana, developed the sampling strategy. The excavation units centered on the subsurface soil feature located by the EM 31. The excavations progressed in 10-cm levels, and materials were screened using quarter-inch and eighth-inch screens. The ends and the center of the soil feature were targeted for the three excavation units. Measuring from the nearest survey control point, Excavation Unit (EU) 37-01 was placed over the center of the soil feature, EU 37-02 was placed over the north end of the soil feature, and EU 37-03 was placed over the south end of the soil feature. In order to address concerns

raised before beginning excavation, EU 37-02 initially was opened as a 1-meter by ½-meter unit to reduce or minimize any potential impact to Native American resources. After attaining depth and realizing that the soil feature located in EU 37-01 had been missed, the unit was expanded to a full meter square, and the north end of the feature was located. (See Figures 12 and 13)

The feature located during the excavation exhibited various width, thickness, and depth. (See Figure 14) The top of the soil feature was located between 22 and 25 centimeters below surface (cmbs); the width varied from 25 to 30 cm, the bottom of the soil feature was located between 35 to 50 cmbs. From end to end, the soil feature measured 15 feet 3 inches long. The subsurface soil feature was comprised of well-sorted, fine-grained, tightly cemented, light-to-dark grey organic matrix surrounded by poorly sorted, loosely consolidated, tan-to-buff-to-brown-colored, sand-to-cobble-sized matrix from the Lolo Creek gravels. Munsell colors for the soil feature were GLEY 1 3/N, very dark grey, and the surrounding soil matrix was 7.5 YR 3/2, dark brown.

The latrine feature discovered during the excavations compares favorably with other latrines excavated across Montana. Excavations at the Marysville and Garnet mining camps revealed soil features with a lithologic correlation, specifically with regard to moisture content, particle size, soil color, degree of sorting, compaction, and contrast with surrounding country rock (Hall 1994, 47; Hall et al 2003, 97). Discussions with National Park Service archaeologists from Fort Clatsop indicate a similar lithologic correlation with the exception of moisture content. Latrine features excavated in the Pacific Northwest tend to exhibit banding or alternate bedding of soils with differing moisture levels, a feature probably related to differing environmental moisture conditions (Robert Cromwell, personal communication, September 9, 2004). The lithology and stratigraphic contrast of the soil feature strongly supports the theory that the soil feature is a latrine.

A total of 214 in-situ and ex-situ samples were analyzed for mercury vapor with the MVA during this investigation. (See Figure 15) Three different sample types were collected during the investigation: excavation samples, shovel probe samples, and surficial samples. (See Figures 16, 17, 18)

A total of 156 samples, including 125 in-situ samples, 19 ex-situ screened soil samples, and 12 ex-situ unscreened soil samples, were analyzed from the three excavation units. Of the 125 in-situ samples analyzed, four samples had detectable mercury vapor at concentrations ranging from 0.003 mg/m<sup>3</sup> to 0.005 mg/m<sup>3</sup>. Two of the 19 ex-situ screened soil samples had detectable mercury vapor at concentrations ranging from 0.003 mg/m<sup>3</sup> to 0.014 mg/m<sup>3</sup>. Of the 12 ex-situ unscreened soil samples, three contained detectable levels of mercury vapor at concentrations ranging from 0.003 mg/m<sup>3</sup> to 0.004 mg/m<sup>3</sup>. In summary, nine samples from the excavation units contained detectable levels of mercury vapor with concentrations ranging from 0.003 mg/m<sup>3</sup> to 0.014 mg/m<sup>3</sup>. The mean and standard deviation for the in-situ samples were 0.000 mg/m<sup>3</sup> and 0.001 mg/m<sup>3</sup>, respectively. The mean and standard deviation of the ex-situ screened soil samples were 0.001 mg/m<sup>3</sup> and 0.003 mg/m<sup>3</sup>, respectively. The mean and standard deviation for the

ex-situ unscreened soil samples were 0.001 mg/m<sup>3</sup> and 0.002 mg/m<sup>3</sup>, respectively.

A total of 16 surficial samples were collected from the 0 to 10-cm depth interval at 12 sample locations. These samples were collected at a distance from the soil feature from locations across the landform in Grid #037 and beyond. Of the 16 surficial samples, 12 were in-situ samples and 4 were ex-situ samples. No detectable concentrations of mercury vapor were present in any of the samples. The mean and standard deviation for both in-situ and ex-situ samples were all 0.000 mg/m<sup>3</sup>.

The MVA was used to analyze 42 samples from 15 shovel probe sample locations. Shovel probe samples were collected in proximity and at a distance and at the same depth and below depth as the soil feature. Of the 42 samples, 12 were in-situ and 30 were ex-situ. No detectable concentrations of mercury vapor were present in the in-situ samples. Eighteen of the 30 ex-situ samples analyzed had detectable concentrations of mercury vapor, ranging from 0.003 mg/m<sup>3</sup> to 0.012 mg/m<sup>3</sup>. The mean and standard deviation of the in-situ samples were both 0.000 mg/m<sup>3</sup>, and the mean and standard deviation of the ex-situ samples were both 0.004 mg/m<sup>3</sup>.

The two background locations include SP549 and SP510. The background samples include samples SP549-01 (50 cm), SP549-01 (60 cm), SP510-01 (50 cm), and SP510-01 (60 cm), which were collected at a distance greater than 30 meters from the latrine excavation units. No mercury vapor was detected in any of the background samples. Sample SP510-01 (60 cm) also was submitted to Energy Laboratories in Billings, Montana, for total mercury analysis and was found to contain non-detectable [less than 0.1 milligrams per kilogram (mg/kg)] amounts of mercury. Background mercury vapor at the Travelers Rest Historic Site is considered to be 0.000 mg/m<sup>3</sup> and less than 0.1 mg/kg.

## HISTORICAL ARCHAEOLOGICAL TESTING

Upon completion of the remote sensing investigation and the baseline historical research, a research design was prepared that stated, among other items, research objectives, hypothesis, and test excavation methods. The research design reviewed the results of the remote sensing investigation and the historical research and identified sixty anomalies which merited some level of investigation. The research design (Hall 2002, 21-23) developed the standardized historical archaeological excavation methodology for this investigation and was reviewed by the Montana State Historic Preservation Office, the National Park Service, the National Trust for Historic Preservation, Missoula County, and the Confederated Salish and Kootenai Tribal Historic Preservation Office.

Excavation efforts centered primarily on the anomalies located during the remote sensing investigations. The excavation units were placed in order to determine the source of the anomaly; placement of units was determined by measuring from the survey stakes placed during the creation of the grid system that covered the entire project area. The mid-point of the magnetic high and magnetic low from the magnetometer investigation served as the location of the excavation units. The focus of the excavation effort was to determine

if the pattern of encampment prescribed by Baron von Steuben is discernible in the historical archaeological record.

### Central Magnetic Anomalies

The results of select excavation units are presented below, full results are presented in the report for the multidisciplinary investigation (Hall et al 2003).

The excavation in Grid #057 centered on a large anomaly located by the magnetometer investigation. This anomaly could potentially represent remnant thermal magnetization from a large, short-lived fire and could possibly be the location of the expedition's central or kitchen fire. It was theorized that food preparation and gun repair activities would have required an intense fire located near a water source. Concerns were raised that a recent trash deposit about five meters to the east of the possible location of the fire hearth might extend under the surface, possibly interbedding with the hearth. To address this concern, the methodology included opening units from the southwest and progressing to the northeast to locate the source of the anomaly at its southern edge while simultaneously helping to discern any possible stratigraphy. Excavation Unit (EU) 57-01 was located near the southern expression of the large anomaly; EU 57-02 was located one meter north and one meter east of EU 57-01; EU 57-03 was located one meter north and one meter east of EU 57-02; EU 57-04 was located one meter north and one meter east of EU 57-03. After completing these excavation units and recognizing that the source of the magnetic anomaly had not been located, the excavation approach was altered to open up units directly over the magnetic anomaly to better identify the source. EU 57-05 and EU 57-06 were opened in response to the reassessment of the strategy to investigate the magnetic anomalies.

This approach failed to produce evidence of the source of the strong magnetic anomaly in the near-surface soils. The excavations did, however, reveal that the recent trash deposit was not associated with the source of the anomaly. A short memo describing the approach and results was submitted to Steve DeVore, NPS Midwest Archaeological Research Center, and Stan Wilmuth, Montana State Archaeologist. Discussions with both archaeologists concluded that the hearth may have been relatively small and may be located between the opened excavation units. A small, intact fire hearth was subsequently located in EU 57-07 north extension. (See Figures 19 and 20)

Standard excavation methodology was adopted for all units except where noted, with the northwest corner used as datum unless stated otherwise. Arbitrary 10-centimeter levels were used with even levels being screened with quarter-inch screen and odd levels with eighth-inch screen. The majority of the units had no evidence of bioturbation but when evidence was found it was noted. The units were tagged and backfilled upon completion. No lithics were collected. Any lithics encountered were returned to their appropriate unit before backfilling.

Between August 8, and August 28, 2002, excavation units (EU) were opened in Grid #057 beginning with the primary numbered units and progressing to include extensions in

response to the reassessment of the strategy to investigate the magnetic anomaly. These included: EU 57-01 through EU 57-07, with units 57-01, 57-03, 57-05, and 57-07 having associated extensions. A small, intact fire hearth was subsequently located in EU 57-07 north extension.

EU 57-07, north extension, was opened August 23, 2002 and was excavated to Level V with testing to 95 cmbs. No artifacts were recovered in level I or level II. Level I is described as having subrounded, rounded, and angular pebble gravel and fine sand. Level II had moderately-to-well-sorted quartz. Levels I and II were excavated as one unit in order to efficiently investigate the charcoal lens encountered in 57-07. The top of level III revealed the continuation of the charcoal lens of EU 57-07 and produced significant amounts of charcoal and FCR. The charcoal lens measures 40 cm in diameter and has variable thickness, ranging from 3 to 7 cm. The excavation of EU 57-07, north extension, ceased at level III by August 28, 2002; however it was continued on September 3, 2002 after excavating EU 57-07, northwest extension. Level III subsequently produced bone fragments, a microflake, and a maxi ball base. The maxi ball was incomplete with an appearance of having been smashed, possibly the result of hitting something. Level IV produced charcoal, FCR, a bone fragment, and one chert shatter flake. Level V produced more charcoal and a bone fragment.

#### Outlying Magnetic Anomalies

Excavation Unit 61-01 is located within Grid #061 and centered over a dipolar anomaly located during the magnetometer investigation and identified as one possible location that could provide information on von Steuben's pattern of encampment. The center of the dipolar anomaly was established by measuring from Grid #061 corner survey stakes and referencing the data printout that incorporated the grid format. This center was marked with a wood stake, and a one-meter by one-meter excavation unit was staked and roped with the wood stake at its center.

EU 61-01 was opened on August 6, 2002, and was excavated to 40 cmbs. The soils consisted of small-to-medium, subangular-to-subround, moderately sorted granites, quartzite, and Belt rock, and the soil colors ranged from a gray-brown silty, sandy soil to dark grayish brown. Lighter sandier soil was noted at 23 cmbs. The Munsell soil colors noted were 10/YR 3/2 at 10 cmbs and 10/YR 4/2 at 30 cmbs. During excavation, FCR was encountered throughout the unit with the greatest concentration between 10 to 30 cmbs. The FCR was not in any apparent hearth arrangement and appeared to have been scattered. Charcoal staining and flakes were also present but not in any significant locality or concentration. Other artifacts included one square and two wire nails and one lithic waste flake between 0 to 10 cmbs. Eight lithic waste flakes were encountered, three of which were micro flakes. One lithic projectile point tip was also noted. All the lithics were chert. One small mammal bone was located between 20 to 30 cmbs.

Because the hearth feature had not been fully delineated, the unit was expanded to the south and east. A significant amount of FCR and charcoal were present, with the majority found in the south extension. The numerous FCR and the increased presence of

charcoal in EU 61-01, south, provided further evidence of a plow-zone-disturbed hearth feature in the vicinity of the anomaly. The lack of FCR and charcoal in EU 61-01, east, indicated that the feature did not extend eastward.

Upon completion of these excavation units, it was determined that the extent of the disturbed hearth feature, primarily located in EU 61-01, south extension, had been located. It was then decided to further excavate a quadrant of the south extension to determine if there were parts of the hearth feature present that had not been disturbed. This unit centered on the point where the four other units met. A few FCR and tiny charcoal flakes were present within the plow-zone to 16 cmbs. The presence of FCR continued to decrease, as did the flakes of charcoal to 20 cmbs. It was determined that no further information could be gained from these units at that time and excavation efforts halted.

#### Tombac Button Location

The remote sensing investigations failed to locate any anomalies within ten meters of the location of the site where the tombac button was recovered. Figure 21 shows generalized locations of the tombac button, the fire hearths, and the latrine. Excavation Unit 49-01 is located within Grid #049 on private property west of the current state park. The excavation unit was placed in the area where the tombac button was recovered and the unit was opened on August 2, 2002.

The soil of EU 49-01 is blocky and granular with a notable absence of gravel or pebbles. Level I, in the root zone, produced a lead fragment in well-sorted, silty soil. Level II produced charcoal, a probable deer tooth, and a portion of bone. The soil of level II is 2.5 YR 4/2 weak red dry or 5 YR 2.5 wet. A soil discoloration was noted in the northeast corner of the unit and described as very light yellow-gray with darker brown and charcoal. Level III was a culturally sterile level; however, two soil samples were taken from this level and worm activity was noted at this level. The soil is described as 3-mm to 6-mm chunks of soil, with a reduction of charcoal and an increase in clays. The charcoal had disappeared by level II, and there was still an absence of rocks. The soil is described as 10YR 6/2 light brownish gray dry and 7.5 YR 4/2 brown wet. At this point, a shovel probe was executed to investigate the soil composition. At 40 to 50 cmbs there was a soil change noted, a dark gray, well-sorted silt with some sand. Munsell soil colors were 10 R 4/1 dark reddish gray dry or 2.5 Y 2/1 very dark gray wet. The shovel probe revealed a continued increase in sand with iron oxide rusting. No charcoal or cultural material was present.

EU 49-02 is adjacent to EU 49-01 and it was excavated to level II, 10 to 20 cmbs. The unit was extended south with the designation EU 49-02, south. EU 49-02 had no charcoal or cultural material present. EU 49-02, south extension, produced only small portions of bone. No charcoal or cultural material was present. The presence of the tombac button discovered here during the metal detector survey indicates a historic presence; however, there is no evidence of prehistoric human activity. The tombac button is identified as of the type manufactured between 1750 and 1812. There was no

further evidence of human activity, historic, or prehistoric, discovered within these excavation units.

## LABORATORY AND ARTIFACT ANALYSIS

The multidisciplinary investigation conducted a series of laboratory and artifact analysis, and the reader is directed to that study for a complete presentation of the data and results. The analyses included magnetic susceptibility, carbon 14 analysis, lead isotope analysis, and analysis of two artifacts; a blue trade bead and a tombac button. The magnetic susceptibility analysis was conducted to determine if the fire hearth and associated fire cracked rock was the source of the extremely large and intense magnetic anomaly located along the abandoned 1806 Lolo Creek channel. Carbon 14 analysis was utilized on three fire hearths located in the excavation efforts in an attempt to place these features into a temporal framework. The report for this investigation acknowledges the parameters of C 14 analysis on historic resources, however, it is worth repeating that while there may be limitations to C14 data from historic resources, the data should not be ignored. The lead isotope analysis was conducted to determine if a link could be established between a lead artifact and lead provided to the Corps of Discovery. Two artifacts, a blue bead and a tombac button, were analyzed to determine if they were from the proper time period to have been associated with the Corps of Discovery.

### Magnetic Susceptibility Analysis

The magnetometer investigation revealed the presence of a large, approximately eight meters east-west, anomaly in Grid #057 along the banks of the 1806 Lolo Creek stream channel. The historical archaeological excavations exposed a small fire hearth, less than one-meter width, in Grid #057. Magnetic susceptibility analysis was conducted to determine if the small hearth could be the source of the large anomaly. Objects with high metal content (e.g. iron-rich minerals) have high magnetic susceptibility, and as a result, they show up as anomalies in magnetic surveys. A profile of magnetic susceptibility values across the magnetic anomaly might correlate with the shape of the magnetic anomaly. This could explain the cause of the magnetic anomaly, and the composition of the rocks measured would be immaterial. Measuring the magnitude of difference in magnetic susceptibility between fire-cracked rock (FCR) and stones collected from the same depth, but not used in a fire ring (henceforth called “control samples”), can show the degree to which this background susceptibility affects the shape of the profile.

The magnetic susceptibility experiments ran for the investigation into the location of Travelers Rest reveal a large contrast between FCR samples and control sample susceptibilities (Hall et al, 2003; 177). The results of these analyses strongly suggest that the FCR located adjacent to the fire hearth caused the magnetic anomaly. Magnetic susceptibility measurements of the FCR plotted versus relative distance show low values separated by a peak caused by elevated values. This profile strongly resembles the profile of the magnetic anomaly from A-A, which shows the magnetic anomaly plotted in nanoTeslas (nT). The control samples displayed low magnetic susceptibility and do not

exhibit large susceptibility values that would contribute much to the overall profile exhibited by the FCR samples.

The correlation of profile shapes suggests a link between the susceptibility and anomaly. There is a marked difference in susceptibility between sample readings and the control readings, primarily between those in the region of the peak. It is important to note that the samples represented in the region of the peak are those samples that are nearest the fire hearth. Sample 0 was collected immediately adjacent to the charcoal lens.

The data suggest that susceptibility is a function of the sample's location or proximity to the charcoal lens uncovered during the excavation. The focus in the analysis is the shape of the profile and not the composition of the samples. The shape of the susceptibility profile, although dictated by readings generated relative to composition, ultimately compares the anomaly and susceptibility, making composition immaterial for this analysis.

The high magnetic susceptibility values from the FCR samples provide evidence supporting the theory that fire-cracked rocks and the relatively small fire hearth located during the excavation are the cause of the anomaly. This theory is stronger than evidence supporting the suggestion that the anomaly is caused by another source at the site.

#### Radiocarbon Dating

Accelerator Mass Spectrometry (AMS) radiocarbon dating techniques were utilized on three charcoal samples recovered from three different hearth features located during excavations to document the association of the located features to the historic context of the site. A complete discussion of radiocarbon dating techniques and the limitations for historic sites can be found in the report describing the complete investigation into Travelers Rest (Hall et al 2003, 179). Due to unforeseen budget constraints, two laboratories were used for AMS analysis. There is evidence that the Lewis and Clark expedition followed military protocol when constructing their campsites, even those that were used for a short period of time. These hearth features were radiocarbon dated to see if they were consistent with the time period of the expedition and to confirm the pattern of encampment prescribed by von Steuben.

Stafford Research Laboratories provided the following data for Sample No. 342:

Measured,  $\delta^{13}\text{C}$  corrected  $\text{C}14$  age in radiocarbon years:

Sample Number SR-6371 Traveler's Rest 20-27 cm. No. 342.

130 $\pm$ 35 RC YR. (CAMS-94876)  $\delta^{13}\text{C}$  = -25.7‰ (PDB)

Calendar Corrected Age Ranges for 130 $\pm$ 35 RC YR.

1 sigma (68.2% probability) 1670-1950 CAL AD

2 sigma (95.4% probability) 1670-1960 CAL AD

3 sigma (99.7% probability) 1660-1960 CAL AD

Sample 342 came from EU 57-07, north extension, between 20 to 27 centimeters below surface, and weighed 0.048 ounces. The fire hearth is located adjacent to the 1806 Lolo

Creek channel mapped by Clark. The C14 results from this sample are excellent, considering the relatively recent age of the site and the difficulties inherent with younger C14 dates. Although the calendar-corrected ages indicate the date falls somewhere within the last 300 years, the results of 130+/-35 deducted from 1950 puts the age of the fire hearth at 1820 with a range of 1785 and 1855, well within the time frame of the Lewis and Clark expedition. The presence of the melted lead, recovered from the same level as the hearth feature, indicates the feature was of Euro-American origin, since Euro American traders during this time period traded lead balls for fur pelts and not the technology to melt lead and mold balls.

The NSF Arizona AMS Laboratory provided the following data for Sample No. 381:  
Date no. AA-53820 Sample: 381 EU 61-01 S. ext. 10-20cmbs  
Radiocarbon Age 179+/-38 YR. BP  
C13 = -24.0" per mil  
Calibrated Age 1663-1948 AD (1 sigma, 68% confidence)  
1650-1950 AD (2 sigma, 95% confidence)

Sample 381 came from EU 61-01, south extension, between 10 to 20 centimeters below surface, and weighed 1.168 ounces. The fire hearth is located directly south of the 1806 Lolo Creek channel and in a linear arrangement with the fire hearth described above. The data from this sample indicates an age younger than 300 years. The results of 179+/-38 deducted from 1950 puts the age at 1771 with a range between 1733 and 1809, which places the fire hearth within the time frame of the Lewis and Clark expedition. This hearth feature, along with the hearth feature noted by sample number 342, combined with the latrine feature found at the site, all fit the pattern of encampment prescribed by von Steuben at the time of the Lewis and Clark expedition.

Although this sample came from a plow-zone, the facts that the area had limited exposure to that type of disturbance, that the fire-cracked rock and charcoal were still found in association at a consistent stratigraphy, that the feature fits the pattern of encampment prescribed by von Steuben, and that the radiocarbon date places the feature within the time frame of the expedition, all tend to weigh in favor of associating this hearth feature from EU 61-01, south extension, with that of EU 57-07, north extension, where sample 342 came from, and associating both with the Lewis and Clark expedition. In addition, the age range for this sample of AD 1771+/-38, would indicate the hearth is too old to be associated with any known fur trappers or explorers in the area other than Lewis and Clark, with the possible exception of the Stevens Survey. However, the "Blue Book" was thoroughly rewritten in 1812, therefore it is highly improbable that the Stevens Survey would produce camp features and measurements that match the features and measurements provided by von Steuben.

The NSF Arizona AMS Laboratory provided the following data for Sample No. 28:  
Date no. AA-53819 Sample: 28 EU 53-04 50-60cmbs  
Radiocarbon Age 998+/-39 YR. BP  
C13 = -24.9" per mil  
Calibrated Age 1001-1145 AD (1 sigma, 68% confidence)

981-1157AD (2 sigma, 95% confidence)

Sample 28 came from EU 53-04, between 50 to 60 centimeters below surface, and weighed 1.094 ounces. These results place the age of this sample at AD 952 with a range between AD 913 to AD 991, indicating that this feature is prehistoric in origin. This excavation unit exhibited an indefinite A – B soil horizon with the hearth feature located just above the indefinite horizon. None of the units excavated to the east of this area of the site displayed any suggestion of an A – B horizon, which confirms the geoarchaeological analysis that the lower terrace gradually grades into an older landform from the younger landform located to the east.

### Lead Isotope Analysis

Historical archaeological excavations produced a hearth feature with an associated lead artifact, Artifact #324. (See Figure 22) Additional excavation units produced six lead artifacts, including a portion of lead ball; a rounded, smoothed and bored piece of lead (Artifact #322); and additional portions of melted lead. Artifact #324 was chosen for testing due to its clear association with a distinct hearth feature. Artifact #324 was described in the field as a hardened pool of melted lead. It is of a roughly oval shape, measuring 2 3/8 by 1 5/8 by 1/4 inch and weighing 1.933 ounces. It was found in level II, 10 to 20 cmbs in EU 57-01, west extension. Other artifacts recovered from this level of EU 57-01, west extension include charcoal, curved glass and artifact #319, the blue bead, identified as being consistent with blue trade beads popular in the Northwest at the turn of the nineteenth century. Artifacts recovered in level III, immediately below level II, include chert reduction flakes and mammal bones. Nearby extensions revealed a hearth feature identified by the presence of an intact lens of charcoal with considerable occurrences, FCR, and burned artifacts. EU 57-07, north extension, located to the east of EU57-01, produced a charcoal sample from 20 cmbs, in association with a hearth feature that was subsequently radiocarbon dated with a result of AD 1820+/-35.

The lead isotope analysis consisted of determining the ratio of lead isotopes present in the sample and plotting the ratios in two and three dimensions. Similarities in position correlate to the ratios derived from the lead isotope data. A correlation of the signature of Artifact #324 to ore samples taken from Olive Hill, Kentucky, is readily apparent. Additional observations of the data include that most of the closely related signatures occur in the Eastern United States and in England. The only ores with similar signatures west of the Mississippi include a sample from Utah and two from British Columbia. Therefore, it can be stated that the lead artifact sample has a lead isotope signature similar to lead isotope signatures from ore samples retrieved near Olive Hill, Kentucky. (See Figure 23)

Investigations at Fort Clatsop recently uncovered a piece of lead. The analyzed lead is described as “a piece of lead, flattened on one side and rounded on the other that is suspected to be a musket ball” (Rasmussen 1997). The lead was sourced to Southeast Missouri, specifically the Buick Mine by Ronald Farquhar of the Geophysics Division of the Department of Physics, University of Toronto. Farquhar however is hesitant to

“pinpoint” the Buick mine as a source. (Farquhar 1997). According to a website featuring the Buick Mine, it was discovered in 1960 and began operations in 1969 (Aber 2002). Further research and analysis of the lead musket ball would be beneficial to understand the lead isotope data. To date, no formal report of the analysis of the data has been produced.

Conversations were held with National Park Service archaeologists involved with the investigation which uncovered the lead musket ball. The NPS had lead isotope analysis conducted on the artifact and the results came back indicating a possible source in Missouri. According to Mr. Jim Thompson "the data is difficult to compare" with other lead artifacts recovered from historic sites and that "there are serious questions about the origin of this artifact". The data from the artifact "is completely different" than data collected elsewhere. It does not compare even remotely with data from other artifacts recovered at historic sites (Jim Thompson, personal communication, September 23, 2004)

In order to compare the lead isotope data from the Fort Clatsop musket ball and the Travelers Rest melted lead artifact, the lead isotope ratios are again plotted in two and three dimensions. The comparison is presented in the illustrations attached to this nomination form. (See Figure 24)

Historical research was conducted in an attempt to determine the source of the lead which the United States government provided to Meriwether Lewis. Lewis obtained 400 pounds of sheet lead from the Office of Public Stores, the precursor to the Quartermaster General. Lewis took the lead to George Ludlum, a Philadelphia plumber, who fashioned the sheet lead into 52 casks which were filled with black powder. A search of the National Archives in Washington, D.C., in Record Group 92, Records of the Office of the Quartermaster General (COQMG) for possible letters, journals, bank books, reports, invoices, notes, receipts, or any other information concerning the purchase of the lead did not reveal further documentation regarding the source of the lead provided to Meriwether Lewis by the Office of Public Stores in Philadelphia.

Because of an apparent gap in records discovered in the search, the archivist at the National Archives surmised that it is likely the records being sought were destroyed by the British in the War of 1812. It is possible that records no longer exist in the National Archives concerning the origin and purchase of the lead by the Office of Public Stores to supply the expedition.

The lead isotope analysis and associated research failed to provide a link between the Corps of Discovery and the lead located at Travelers Rest. This does not, however, render the analysis irrelevant. The lead isotope analysis clearly demonstrates that the lead is of North American origin and not European or British origin. This refutes the possibility that the artifact and the associated fire hearth is associated with John Work's Hudson's Bay Company Snake River Brigade which passed through Lolo Creek in 1831. If the artifact were associated with the Hudson's Bay Company it should be of European or British origin. It should be repeated that the Hudson's Bay Company and American fur traders as well as the local traders in the Montana Territory traded lead balls for fur pelts

and not the tools to melt lead and mould balls.

#### Blue Trade Bead, Artifact #319

A single small blue bead was recovered from EU 57-01, west extension, level II, 10 to 20 centimeters below surface (cmbs). A fire hearth feature was identified in this unit by the presence and provenience of FCR and charcoal. The bead was cataloged, given artifact #319, and photographed. The opaque bead has a diameter of 7 millimeters (mm) and is 6 mm long with a bore of about 1 mm. The dull surface shows some wear and possible charring. (See Figure 25)

Artifact #319 is a simple bead, easily described, using the modified Kidd and Kidd system employed by Lester Ross for the Fort Vancouver bead assemblage (Ross 1990, 33). The classification system recognizes material and manufacturing technology, style, and type, style variations, and size (Ross 1990, 33). The bead is most likely classified as “W1b-stp/tl/ops/1-2,” or a simple wire-wound, monochrome, undecorated, spherical, opaque, blue bead. It falls within the range of short to long, with short being 3.1-6.3 mm x 2.6-6.4 mm, and long being 8.5-10.4 mm x 7.3 x 9.5 mm (Ross 1990, 47).

It was difficult to identify the bead as wound. Bubbles are significant in determining whether the bead was drawn or wound during the manufacturing process. Drawn beads have elongated bubbles produced during manufacture, while wound beads have elongated bubbles that “spin” around the axis or hole of the bead (Sprague 1985, 90, 93). The bead was examined under a Bausch and Lomb microscope at 7 power with the assistance of Dr. Thomas A. Foor, Anthropology Department, at the University of Montana. No bubbles were visible to determine their characteristics. The bead is classified as wound because it shows a “projection” at the hole of the bead consistent with wound beads (Sprague 1985, 89).

The microscope helped to determine an absence of color disintegration, while at the same time showing evidence of wear and charring. Striations were present at the bores consistent with the bead having been strung on a small cord or string. Lewis noted that beads were strung together on strands and were traded by lengths of strands (Moulton 1998, 5:187). This method of handling and storage would be consistent with the striations found at the bores of the blue bead. Further investigation of the bead might provide a more precise determination of material, manufacture, and wear processes.

According to Ross, this classification represents one of the most common beads used by the Pacific Fur Company, the Northwest Fur Company, and the Hudson’s Bay Company. Ross also states that this classification might represent the blue beads that Meriwether Lewis purchased for the exploration of the Louisiana Purchase (Ross 1990, 48). Some believe the beads of this classification might have been imported from the Canton region of China (Ross 1990, 48). Regardless, the bead is consistent with those beads described by the Lewis and Clark expedition and those procured and traded in the early nineteenth century fur trade era.

The journals of the Lewis and Clark expedition document the importance of the small blue bead in the Northwest. Lewis, when encountering suspicious Shoshone women, held out strings of beads to soothe their fears (Moulton 1998, 5:69-70). After recovering from the harrowing trip crossing the Bitterroot Mountains to the Weippe Prairie, the hungry Corps members traded beads for fish and roots despite their intolerance for both (Moulton 1998, 5:246). As the journey progressed, the members of the expedition learned the value that the natives placed on the small, round beads and came to realize that blue beads purchased more food than other color beads, of which were rejected altogether (Moulton 1998, 5:120-23).

The blue bead artifact is consistent with the beads brought by Euro-Americans exploring the Northwest and by those who established fur trade relations with Native Americans on the Missouri and Columbia Rivers and their drainages in the late eighteenth and early nineteenth century. The bead was found at the same level and in close proximity to melted lead Artifact #329, adjacent to a fire hearth feature, C14 dating of this hearth feature provided a date of AD 1820  $\pm$  35 years. The associated two artifacts and fire hearth strongly support the theory that the campfire has a Euro-American origin. The bead is consistent with journal descriptions of blue beads that Lewis and Clark brought on their journey and found to be a valuable asset facilitating trade and friendly relations with Native Americans. The blue bead represents one of the multiple lines of evidence verifying the location of Travelers Rest.

#### Tombac Button

In October, 1998, a tombac button was recovered during a cursory examination of an adjacent property, before property subdivision and construction of a trailer park and septic system. The property owner agreed to delay construction for two weeks to allow for a crude data recovery project. A grid system was established across the property to assist with mapping. Metal detector sweeps of the project area followed standard methodology, the metal detector operator and an assistant located signal sources, pin flags marked the signal location, the entire property was traversed, the entire collection of pin flags was mapped, and then the source of the signal was verified. The button was recovered from a depth of five inches and the location of the artifact was staked and mapped. The artifact has been returned to the property owner. (See Figure 26 for an image of the artifact and Figure 21 for generalized location of the button and other features)

The literature on buttons is comprehensive and allows for a few observations about the artifact. The metal button is stylistically referred to as a “tombac” button. The backside of the button has a conical shank, a feature that is unmistakable and seldom found on any other type of button. Tombac buttons were manufactured from 1760 to 1812 in either New Jersey or Virginia (Luscomb 1967, 72; Olson 1963, 4). Moulds that could produce six or eight buttons in a single pour easily produced these buttons. This ease of manufacture made these buttons a popular choice for individuals and the U.S. military. Identification of the tombac style is relatively easy. The difficulty, however, is determining how the button arrived on the banks of Lolo Creek.

There are several theories as to the origin of the button. The aerial infrared photographs taken on two occasions revealed the presence of anomalies that suggest tipi rings. Buttons were popular trade goods with Native Americans, and recovering trade goods from a Native American site should be expected. The area has a relatively early historic occupation, however, the time period for historic settlement may be too far removed from the time the button was manufactured. The button also dates from the proper time period associated with the Corps of Discovery. In addition, the use of this style of button by the U.S. military and the fact that the Corps of Discovery was a military expedition also lends support to the theory that it is related to Lewis and Clark. Unfortunately, there are no known examples of clothing or buttons from the Lewis and Clark expedition that have been verified. The final theory for the presence of the button is that someone may have lost this artifact shortly before it was recovered.

The historical research indicates that the button is too old to have been associated with the 1880s historical settlement of Lolo Creek, a time well after the button's manufacture period. The magnetic survey and the historical archaeological excavation specifically targeted the area where the tombac button was recovered in Grid #049. No anomalies were located by the magnetic survey around the button's location or within Grid #049. The excavation effort placed three excavation units in and around the area of the button's original location, EU 49-01, EU 49-02 and EU 49-02, south extension, with EU 49-02 centered over the button's original location. These three excavation units failed to locate any information that could suggest a connection with prehistoric or protohistoric occupation of the area. The absence of any association with Native Americans indicates that the button was not likely a Native American trade good. If the button is not associated with the historical settlement of Lolo Creek or with the Native Americans, it is more likely an artifact associated with the Corps of Discovery. The tombac button represents one of the multiple lines of evidence verifying the location of Travelers Rest.