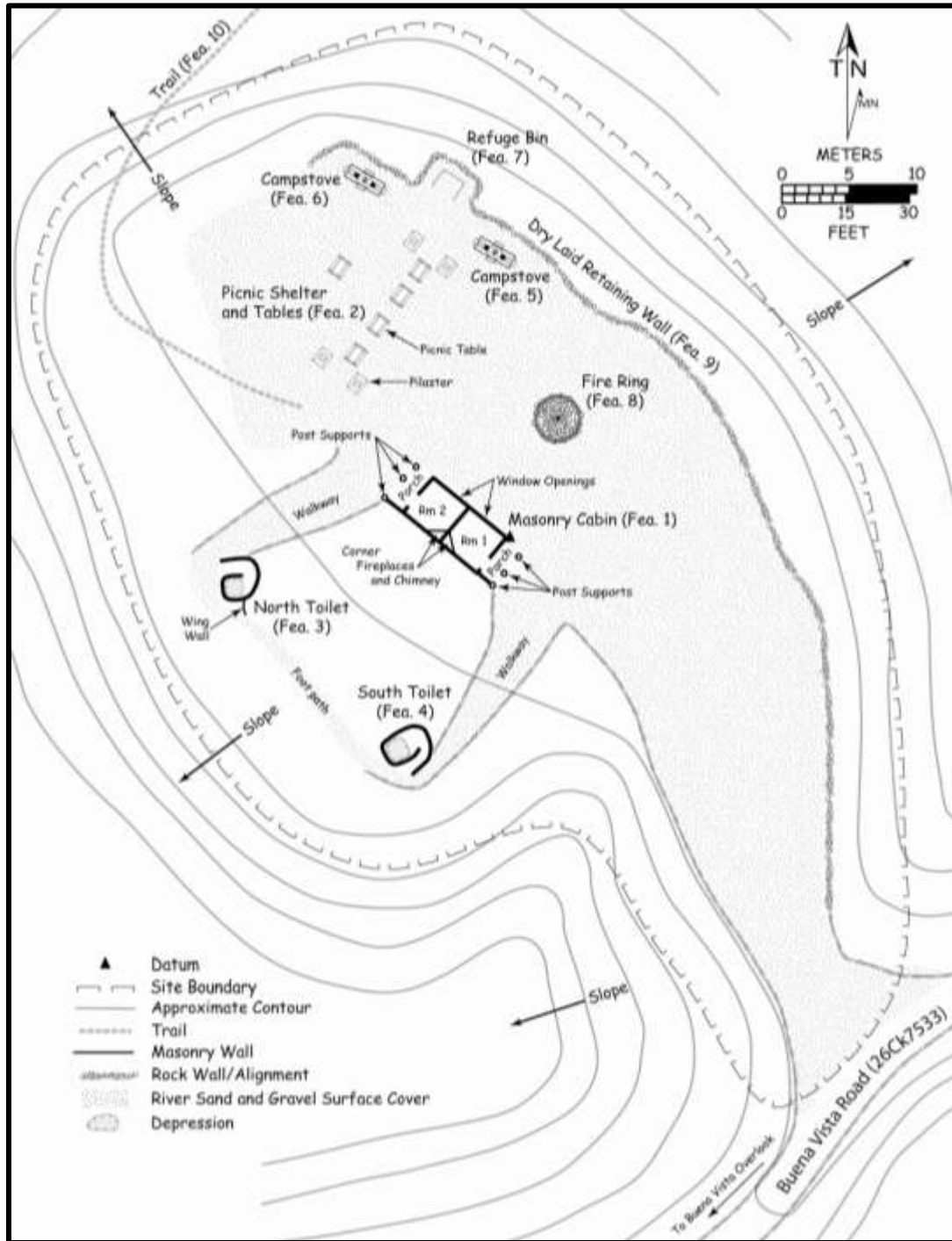


NEVADA ARCHAEOLOGIST

VOLUME 25, 2012

HISTORIC ARCHAEOLOGY IN THE DESERT WEST



NEVADA ARCHAEOLOGICAL ASSOCIATION



Nevada Archaeological Association

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The purpose of the NAA is to preserve Nevada's antiquities, encourage the study of archaeology, and to educate the public to the aims of archaeological research. Members and chapters of the NAA shall:

1. Uphold the purpose and intent of the NAA.
2. Adhere to all antiquities laws.
3. Seek the advice, consent, and assistance of professionals in archaeology and/or history in dealing with artifacts, sites, and other materials relating to antiquities.
4. Assist professionals and educators in accomplishing the objectives of the NAA.
5. Be a personal envoy of the NAA and responsible for conducting themselves in a manner so as to protect the integrity of artifacts, sites, or other materials.

Cover

Site map of the Buena Vista Campground (26CK8648), constructed by the CCC in 1935. Photo courtesy of Christopher Harper, HRA, Inc.



Table of Contents

Editors' Corner

Geoffrey M. Smith iii

Macrobotanical Floatation and Dietary Analysis of Privy Deposits from Historic Virginia City, Nevada

Stephen Holm and Anthony Taylor..... 1

Understanding Personal Hygiene Artifacts as Indicators of Identity from the Joint Courts Complex Project, Tucson, Arizona

Ashley Morton 15

The Archaeology of 20th-Century Foodways in Sulphur, Nevada

Sean McMurry 23

Looking Good in the Black Rock Desert: The Archaeology of Cosmetics in Sulphur, Nevada

Chelsea N. Banks 37

Danger! Unsafe Mine: A View from the Outside

William G. White 49

The CCC and the Buena Vista Campground

Christopher T. Harper (with contributions by Gregory Seymour)..... 53

An Archaeologist's Field Guide for Identifying World War II and Cold War Era Military Food Cans

Jeffrey Wedding, Alex L. Heindl, and David C. Smee 77

Editor's Corner

Geoff Smith

What started on an *ad hoc* basis is apparently now a fulltime gig. For some strange reason, I find great pleasure in hunting down misplaced commas, adjusting margins, changing font sizes, and harassing authors. Therefore, when the NAA approached me and subtly hinted that they were looking for a fulltime editor for the *Nevada Archaeologist*, I jumped at the chance. Why not? It was, after all, under my editorship that both the 2007 and 2011 volumes were (a little) tardy.

But that's all in the past: my home remodeling is complete and I am finished with graduate school – sort of. Now, I am tasked with bringing in subsequent volumes of the *Nevada Archaeologist* on time and the Board of Directors has determined that Nevada Day constitutes “on time.” For the foreseeable future, you will have one more thing to look forward to each autumn: kids going back to school, a reprieve from the summer heat, college football, Halloween superstores, snow in the mountains, and now the *Nevada Archaeologist*.

Like last year, my job was largely done when I signed up to edit Volume 25. Jeff Wedding and Sue Edwards had six papers already in hand with another one close to being complete. The origin of those papers is as follows: at the 2008 Great Basin Anthropological Conference (GBAC) in Portland, a purely historical archaeology symposium was assembled with great interest and participation and a commitment was made to ensure its regular occurrence at future GBAC meetings. That session was simply titled “Historical Archaeology in the Great Basin and Beyond”, and was organized by William G. White and Jeffrey R. Wedding. An encore symposium in 2010 occurred in Layton entitled “Historical Archaeology in the Great Basin and

Beyond (2.0)”, and Susan R. Edwards joined White and Wedding in organizing the affair. Like the 2008 session, the 2010 session explored a great diversity of historic-period sites, material culture, and research topics from within the Great Basin and the greater West, but a majority was tied to the Silver State. Contributed papers included traditional historical archaeology studies of 19th and early-20th Century locales and mid- to late-20th Century subjects of the emerging field of contemporary archaeology. The fall 2010 NAA board meeting was held in conjunction with the GBAC, as many of the board members were in attendance. At that time, the symposium organizers, constituting a NAA general member and two board members, offered to collect the papers from their session for a future volume of the *Nevada Archaeologist*. As Volume 25 is nearing completion, “Historical Archaeology in the Great Basin and Beyond (3.0)” has been accepted for the 2012 GBAC at South Lake Tahoe, a good indication that the interest and participation of four years ago is still present and likely to continue for many conferences to come.

Beyond simply focusing on historic archaeology in the Desert West, there are a few common threads throughout this volume. First, there are toilets: pictures of toilets (Harper); studies of sediment from toilet pits (Holm and Taylor); and things one might lose in toilets (Morton). As a prehistoric archaeologist looking in from the outside, I must ask the obvious question: why the potty fixation? Second, there is the isolation: tales of young men from back East making the Nevada Wilderness a little less isolated and a little more accessible to the public (read: building toilets) during one of the nation's most chal-

lenging periods (Harper); gastronomic isolation in remote locations and people's efforts to overcome it (McMurry, Wedding et al.); and making damn sure they looked good while doing it (Banks). Third, there is identity: individuals making conscious decisions as consumers to present themselves in a certain way and archaeologists seeing through those facades and identifying who people really were (Banks, Morton, McMurry). Finally, there is of course, mining: past efforts to extract precious resources from the landscape, and how those efforts continue to pose challenges to archaeologists (White). Remember, as is the case with mines and toilets: stay out and stay alive!

I hope you enjoy the latest edition of the *Nevada Archaeologist* and that it reminds you of all that is great about the Desert West. We are fortunate to live in a part of the country that has a rich and storied past – much of which is often overlooked by visitors. Get out there this year if you can and visit someplace you have never been. When you get back, you'll find yet another volume of the *Nevada Archaeologist* waiting for you in the mailbox.

GMS

Summer Lake, Oregon August 23, 2012

Macrobotanical Floatation and Dietary Analysis of Privy Deposits from Historic Virginia City, Nevada

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*Over the last few decades, scholars have gathered extensive ethnobotanical and dietary data from archaeological contexts. Though sources are common, particularly in the American West, they often do not provide sufficient consideration of preserved botanical elements, but rather focus on faunal analysis and literary accounts. With these considerations, archeological investigations were carried out in 2010 in an area of Virginia City, Nevada, designated Cornish Row (26-ST-413). Sediments collected from privy deposits were subjected to macrobotanical analysis, which yielded five botanic genera, including two anthropogenic species: blackberry (*Rubus* sp.) and common grapevine (*Vitis vinifera*). Here we present the findings and associated implications of using macrobotanical analysis to more fully understand late 19th century diets in western Nevada.*

In 2010, the University of Nevada, Reno (UNR) conducted excavations in an area of Virginia City, Nevada, known as Cornish Row (26-ST-413) in an effort to better understand the social and domestic conditions of the area's inhabitants. Here we focus on the analysis of dietary data recovered from privy sediments. Sediments were subjected to macrobotanical analysis to address several questions: (1) do the sediments exhibit sufficient evidence to classify the source unit 50/51N90E Feature 5 as a privy; (2) did local cultivation or importation of food resources serve as the major origin model for the arrival of food into Virginia City; (3) if imports are present, where did these foods originate from; and (4) what inferences can be made about the diet of the residents of Cornish Row?

VIRGINIA CITY HISTORY

Accounts of the history of Virginia City and the Comstock Mining District proliferate (De Quille

1876 [1983]; James 1998; Lord 1883 [1959]; Smith 1998; Zanjani 2006). Virginia City was founded in 1859 by James "Old Virginny" Finney, John Bishop, Alexander Henderson, John Young, and Henry "Pancake" Comstock amongst others, who laid claim to one of the richest and most storied silver and gold ore bodies in the West. Placer gold was found at the mouth of Gold Canyon located west of Dayton, Nevada by 1850, creating a minor gold rush (Zanjani 2006:11). The location of the great Comstock Lode proved elusive for almost a decade as the gravels of Gold Canyon were washed and processed several times over, working down to bedrock (Zanjani 2006:83). For the next few years, prospectors and miners made their way up Gold Canyon to Mount Davidson in search of the source of the placer deposits. In June of 1859, the Comstock Lode was struck and Virginia City was born (James 1998:9). Virginia City quickly grew as the mines expanded; by 1875 the population of Virginia City and Gold Hill reached over 25,000 (James 1998:37). With

this prosperity a slew of famous men and women made Virginia City their home, including Irish businessman John Mackay, soiled-dove Julie Bulette, and the ever-famous Samuel Clemens. Between 1860 and 1880, approximately \$305,779,612.48 of gold and silver bullion was mined (Lord 1883:417). Using the average gold to silver ratio of 42.54 to 57.46 (Lord 1888:418), it is possible to calculate the ounces of gold and silver mined from the Comstock: 6,293,113 and 136,202,299, respectively. When those troy ounces of gold and silver are converted to modern prices (U.S. exchange October 31, 2011), a total of \$15,527,772,492.21 worth of gold and silver were mined in the area. By 1875, the town began to feel the stress of economic decline. The next bonanza never arrived and the city was devastated by the great fire of 1875. Many left Virginia City for other destinations including Butte, Montana and Silver City, Idaho.

CORNISH MINING BACKGROUND

Cornwall is the southernmost county of Britain and home to the “Cousin Jacks and Jennys”, the name given to Cornish emigrant miners. With its rocky terrain, Cornwall produced some of the best hard rock metalliferous miners in the world. The region sits atop large copper and tin deposits (Payton 2002) and is home to one of the few remaining Brythonic populations. The Cornish connection with mining was first forged around 3,000 years ago when Celtic tribes settled the region and brought metalsmithing to Cornwall (Magninhi 2007:2). Tin ore was originally found in stream channels using simple placer mining techniques. As these deposits were depleted, hard rock mining developed, utilizing small shallow shafts which were carved into the hillsides. Familiarity with hard rock extraction techniques led Cornish miners to become renowned in the United Kingdom, and later

worldwide, for their knowledge and efficiency (Deacon and Schwartz 2007; Payton 2005).

Beginning around 1830, the Cornish mining industry experienced sharp declines which continued through the early 1900s, which put over one-third of the miners out of work (Baines 2003:157; Burt 2003:669). A mass exodus known as the Cornish Diaspora ensued, and far-flung Cornish miners began practicing their trade throughout the Anglophone-world including Australia, New Zealand, South Africa, and the United States (Payton 2005).

It is unknown when the first Cornish miners arrived on the Comstock, though it is likely that they were present in the region shortly after the development of the district in 1859. The Cornish held many positions within the mines of Virginia City including managers, engineers, and miners. Some made their fortunes, remitting wages to their family back in Cornwall, while others succumbed to the dangers of underground mining (Magee and Thompson 2006). By 1864, there were Cornish in management positions, exemplified by individuals employed by the Uncle Sam Mine (James 1994:42). The Cornish weathered the booms and busts inherent in hard rock mining, traveling between mining districts, always finding jobs reserved for another “Cousin Jack” while others settled down and started families. No matter where the Cornish ended up, they often formed enclaves. In *Across the Plains*, Robert Lewis Stevenson (1909:59-60, quoted in Deacon and Schwartz 2007:6) describes:

“a knot of Cornish miners who kept grimly to themselves, one reading the New Testament all day long through steel spectacles, the rest discussing privately the secrets of their old-world, mysterious race... a division of races, older and more original than Babel, keeps this

close, esoteric family apart from neighboring Englishmen. Not even a Red Indian seems more foreign in my eyes.”

One such enclave was located along Howard Street in Virginia City and came to be known as Cornish Row.

VIRGINIA CITY ARCHAEOLOGY

The University of Nevada, Reno has conducted archaeology in Virginia City for many years and has produced numerous academic works, beginning when Eugene Hattori (1975) explored a Paiute encampment on the periphery of Virginia City. Since then, numerous cultural resource management (CRM) and academic projects have been carried out including: (1) the Barbary Coast (Heffner 2009); (2) the Boston Saloon (Dixon 2003); (3) the Hibernia Brewery (Hardesty et al. 1996); (4) Maguire’s Opera House (Holm 2009); (5) O’Brien and Costello’s Saloon and Shooting Gallery (Hardesty et al. 1996); (7) the Old Corner Bar (Dixon 1999); (8) Piper’s Opera House (Memmott 2004); and (9) Yeong Wo Mercantile (Axsom 2009). Past research has largely focused on commercial establishments, with the notable exceptions of Hattori (1975), Schablitsky (2002), and Thompson (1992) and none of these projects focused on the Cornish presence in Virginia City.

In the summer of 2010, UNR, in partnership with the Nevada State Historic Preservation Office (SHPO), conducted a five-week field school in Virginia City. Excavations took place along the slopes of Mount Davidson on historic South Howard Street, colloquially known as Cornish Row (26-ST-413), within the boundaries of the Comstock Historic District. Research was restricted to extant dry-laid rock house platforms (Figure 1) and cursory testing downslope (east) to test for compact and fragmented assemblages.

Today, South Howard Street is obscured in many places due to creep, erosion, and vegetation encroachment.

Units were placed along a Cartesian grid with an arbitrary center of 100N/100E located at the site datum. Two distinct platforms were discovered during survey and both were tested. The lower platform was tested and determined to reflect an industrial complex and was thus less useful to this study. The second platform, however, hinted at a residential area and was further investigated.

A total of three possible privies were also located and tested. Privies are of particular interest to archaeologists because they provide unique depositional contexts. Unconsolidated refuse within a privy provides an artifact trap and a good preservation environment for perishable remains. Two of the suspected privies were later redesignated as other feature types, but the third, unit 50/51N/90E Feature 5, warranted additional testing.

Unit 50/51N/90E Feature 5 began as a circular depression approximately 1 m in diameter with a depth of 7-10 cm. This later expanded into a 2-x-1 m unit with no balk separating the units. A pit feature was particularly noticeable in profile stratigraphy. Artifacts recovered include a crucifix, an axe head, gun fragments, copious bone, and leather fragments. Noticeably absent was a dark brown/black organic coloration often associated with privy deposits.

Four research questions guided sampling at Cornish Row: (1) did the sediments exhibit sufficient evidence to classify the source unit 50/51N/90E Feature 5 as a privy; (2) did local cultivation or importation of food resources serve as the major origin model for the arrival of food stuffs into Virginia City; (3) if imports were present, where did those goods originate; and (4) what inferences can be made about the diet of Cornish Row residents? The methods utilized to address these questions are outlined below.



Figure 1. Dry-laid house platform and South Howard Street in foreground.

METHODS

Three soil samples were taken from the privy for further analysis: (1) Sample 1 (Unit 51N/91E Level 1H catalog #0025 60 cmbd); (2) Sample 2 (Catalog #0023 Unit 50N/91E level 2E 80 cmbd); and (3) Sample 3 (Catalog #0024 Unit 50N/91E Floor 138 cmbd). Macrobotanical analysis was conducted to determine whether floral remains had survived and to consider possible dietary implications.

Archaeological flotation was used to remove light density organics from their sounding sediment matrix. This process entails the addition of a liquid – typically water – to separate particles of varying densities into discrete portions. These portions are commonly termed light fraction or “flot” for those particles that float, and

heavy fraction for constituents that remain submerged within the settling tank (Figure 2). Sediment samples were processed utilizing a scaled flotation method similar to that used by Williams (1973).

The light fraction was separated into uniform particle size groupings (1, 2, and 5 mm) using netted nested screens, and then sorted and identified under 10x and 20x magnification with an Olympus SZ40 dissecting scope. Remains ≥ 2 mm were sorted in their entirety. Remains measuring ≤ 1 mm were separated into sub-samples of 25% of the total by weight and sorted. These methods follow those outlined by Pearsall (2000).

Seeds were identified to taxonomic genus and species where possible by consulting a private reference collection and photographic re-

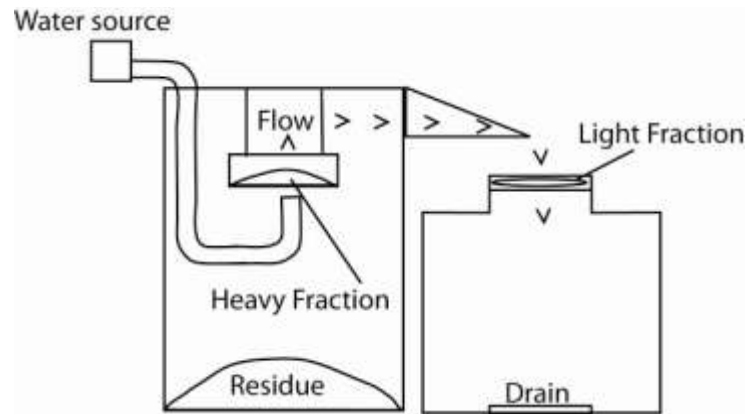


Figure 2. Diagram of the flotation process.

sources (Delorit 2007; USDA, NRCS 2011). Seed density was calculated using an ordinal scale of rare (1-3), moderate (4-7), abundant (8-25), and dense (26-50) seeds per sample. Charcoal concentrations (percentage of total flot sample by weight) were estimated to reveal vertical distribution of charred organics.

RESULTS

Sample 1 contained the most diverse botanical assemblage including two potentially anthropogenic species: wild buckwheat (*Eriogonum* sp.) and blackberry (*Rubus* sp.). Though varied, all recovered taxa in Sample 1 exhibited low densities. Several ambient species, representative of local ecology rather than human utilization, were noted: sagebrush (*Artemisia tridentata*), cheatgrass (*Bromus tectorum*), and an unidentified rose (*Rosaceae* sp.). Sagebrush and rose likely reflect the local vegetation community that grew near the privy. The cheatgrass specimens may suggest some vertical movement of modern plants; however, this species may have permeated the local ecology during the original deposition event. The first recorded examples of cheatgrass in the Great Basin date to the late 19th and the beginning of the 20th century: it was present in Provo, Utah in 1894; in Elko, Nevada

in 1905; and in Reno, Nevada in 1906 (Billings 1990; Knapp 1996). Charcoal fragments contributed 4% to the total weight of the flotation sample.

Sample 2 contained a large abundance of rootlets and unidentified wood fragments. Eight common grapevine (*Vitis vinifera*) seeds or pips were the only identified taxon. The seeds recovered from Sample 2 were highly degraded and show no signs of charring. Charcoal accounted for 11% of total weight of the flotation sample.

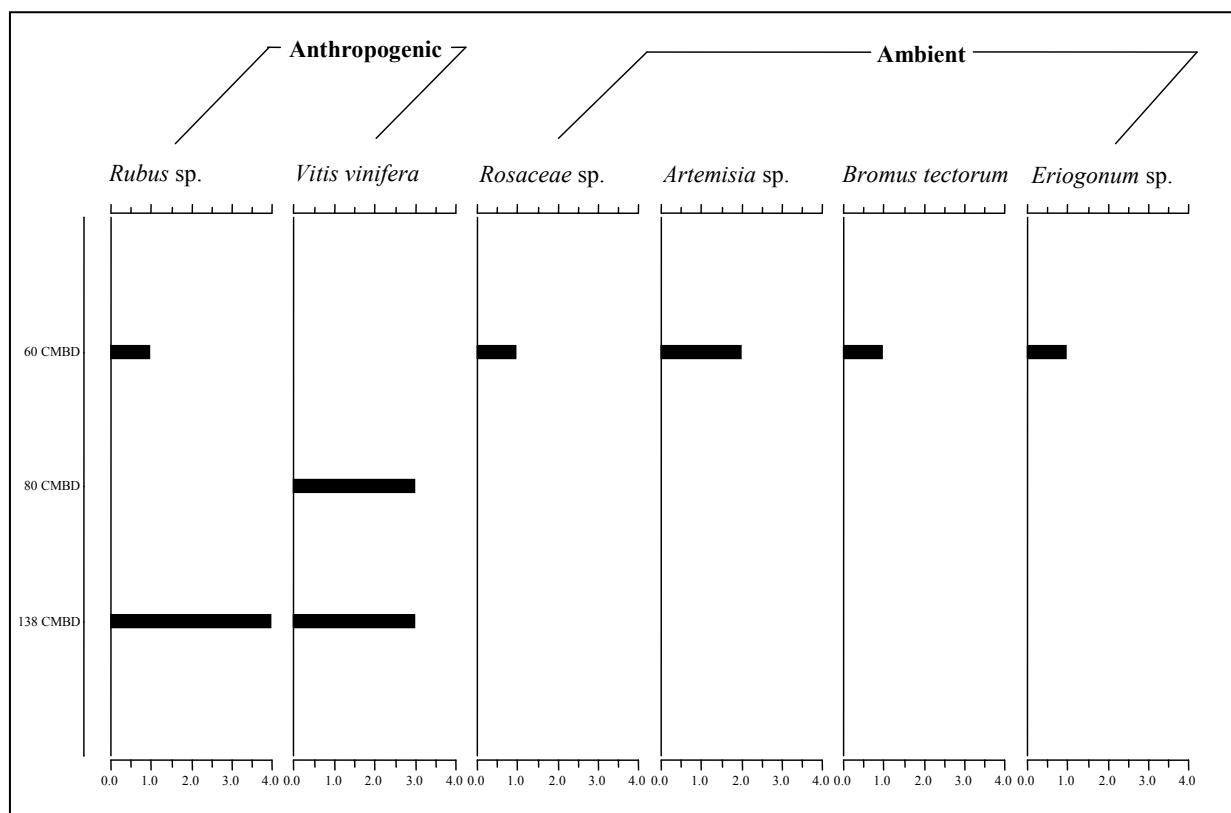
Sample 3 held the largest concentration of blackberry seeds recovered from the privy feature. Also present were 13 common grapevine (*Vitis vinifera*) pips. Neither the blackberry seeds nor the grape pips showed evidence of charring; however, grape pips were coated in a dark residue. Many rootlets and unidentified wood fragments were also present in the sample. Charcoal fragments made up 30% of the total weight (see Table 1 and Figure 3 for a summary of these results).

DISCUSSION

With the results presented above, we consider the questions outlined earlier in the paper:

Table 1. Species Abundance in Samples from Cornish Row.

Sample	Rootlets	Unknown Fiber	TAXA					
			<i>Artemisia</i> sp.	<i>Bromus tectorum</i>	<i>Eriogonum</i> sp.	<i>Rosaceae</i> sp.	<i>Rubus</i> sp.	<i>Vitis vinifera</i>
1	Present	Present	Moderate	Rare	Rare	Rare	Rare	Not Present
2	Present	Present	Not Present	Not Present	Not Present	Not Present	Not Present	Abundant
3	Present	Present	Not Present	Not Present	Not Present	Not Present	Dense	Abundant

**Figure 3. Summary of flotation results.**

(1) Does the sediment exhibit sufficient evidence to classify the source unit 50/51N/90E Feature 5 a privy?

One of the primary goals of this paper was to determine if 50/51N/90E Feature 5 was indeed a privy. It did not exhibit *all* characteristics commonly associated with privy deposits. For example, dark sediment, indicating high organic

levels typical of privies, was not present. Rather, the deposit displayed a matrix of coarse moderate yellowish brown (Munsell 10YR 5/4) sand. The apparent lack of concentrated organics is likely tied to increased porosity inherent in the gravel-rich sediment into which Feature 5 is embedded. Increased percolation through these sediments may have displaced most of the original organic signature.

Conversely, the macrobotanical remains suggest that the feature is, in fact, a privy. The botanical assemblage from Sample 1, for example, contains both naturally occurring and anthropogenic taxa. These include wild buckwheat, blackberry, sagebrush, cheatgrass, and an unidentified rose. Two of these taxa – blackberries and grapes – can be directly tied to historic human diet.

Ethnographically, sagebrush seeds were consumed though ingestion of foliage can be toxic when consumed in excess (Weeden and David 1996). Several wild buckwheat species were used as foodstuffs in the Great Basin, including *Eriogonum fasciculatum* and *Eriogonum michx* (Bean 1974), though these are typically associated with proto-historic Native American diet. No evidence of prehistoric or proto-historic Native American populations was recovered at the site; therefore, the buckwheat seeds found are likely also ambient. The cheatgrass intrusion has a possible explanation: cheatgrass is abundant on site and as Virginia City is known for high winds in the afternoon (Twain 2011:242), it is possible that the cheatgrass was blown into the unit and some of the sample became contaminated with modern materials. Blackberries (Figure 4), as reviewed by Reinhard (1994, 2009), are ubiquitous in privy deposits and a way to identify night soil.

Implications of the common grapevine's (Figure 5) presence in Feature 5 are discussed in greater detail below; however, they are taken with blackberry to help positively identify the feature as a privy.

(2) Do macrobotanical remains reflect local cultivation or importation?

Addressing foodstuff importation requires knowledge of the local ecology as well as acknowledging how those environs were modified. Here, local is defined as the area of Dayton, Silver City, Gold Hill, Virginia City, and the im-

mediate vicinity. These areas are located within the montane zone and foothills of the Virginia Range. This area would normally be dominated by pinion-juniper woodlands (Grayson 2011) but much of the nearby woodlands were harvested for mine timbers and fuel (James 1998). Additionally, the area is highly prone to fire damage (Tingley and Purkey 2005), exemplified by several major burning events which nearly destroyed the settlement. Episodic burning and intense logging foster the development of steep mountainsides with shallow ground cover that hinders soil formation and increase moisture runoff. These conditions resulted in a dry relatively treeless landscape within the town leading to a rise in fuel prices, including both timber and less substantial fuels (e.g., mountain mahogany [*Cercocarpus ledifolius*] and sagebrush [*Artemisia tridentata*]) (Yeung 2003). With this small sample size we are unable to determine whether the fruits were imported or locally produced, but note that due to the unfavorable growing landscape found around Virginia City, cultivation of grapes and blackberries would likely have been difficult.



Figure 4. Scanning electron microscope (SEM) image of a blackberry seed (*Rubus* sp.).

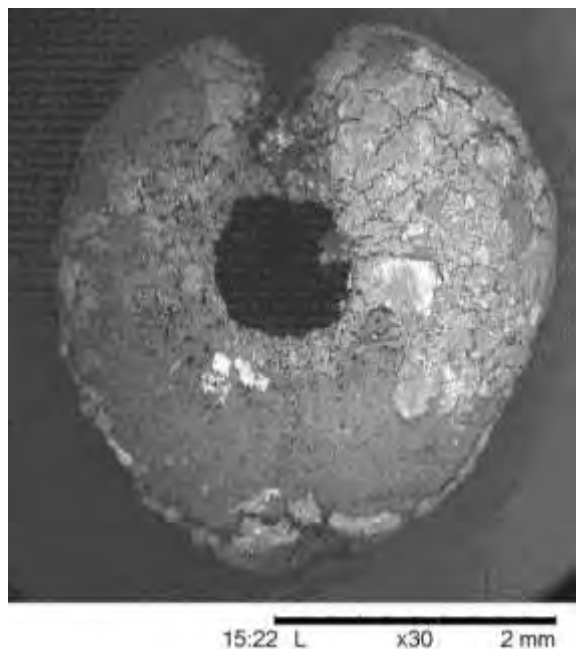


Figure 5. SEM image of recovered *Vitis vinifera*. Note: distal beak is fragmented and missing.

(3) *If there are imported taxa, what are their likely origins?*

Historically, gardens were present within Virginia City (James 1998:183). These gardens, particularly Chinese gardens, were able to overcome local arid conditions through ingenious water conservation methods and proved productive. Vegetables were sold to hotels, saloons, and private homes (Mangingini 2001:126-127). Local gardens provided miners and their families with a much more diverse diet than might be first expected.

Expanding beyond the Comstock, there are many choices of food production centers. Elliot Lord (1883:368) notes:

“Choice cattle, fatted on the succulent grasses of the Truckee Meadows, are slaughtered for their tables. Fresh vegetables from the valley of Carson are brought daily in their season to

the mines. Venison from the Sierrian foothills, plump wild-fowl from the California estuaries, and fish, which twenty-four hours before had been swimming in sea or river, can be seen in profusion on the market stands of Virginia City. Strawberries, apricots, pears, peaches, grapes, apples, figs, and all other products of the luxuriant gardens and vineyards which are the boast of the Pacific seaboard cover the counters of the open stalls in luscious heaps.”

Lord (1883) illustrates the variety of fresh local goods imported into Virginia City. The Truckee Meadows and Carson Valley were both suitable for cattle grazing and fruit and vegetable cultivation. Davis (1913:287-288) mentions that as early as the 1850s, area gardens supplied fruits and vegetables for immigrants and miners alike. Goods imported into Virginia City included strawberries, apricots, pears, peaches, grapes, apples, and figs. Lord (1883) mentions that the Pacific Seaboard was a perfect location for grapevine cultivation, or viticulture. One interesting source for local fruit items may have been an eccentric hermit, Laurent Bennyton, who skulked around the Virginia Range, eventually settling down and creating a “horticultural oasis” where he grew apples, pears, peaches, apricots, almonds, and grapes (Davis 1918:649). These types of small farms likely contributed greatly to the local fruit and vegetable marketplace of historic Virginia City and must be considered when exploring the origins of fruit and vegetable importation.

One must also consider the possibility of importation of grapes and blackberries from the industrial Northeast. By 1870, the Virginia and Truckee Railway connected Virginia City and Carson City to the Central Pacific Railroad,

which connected remote frontier cities like Virginia City to the industrial centers of the Northeast. Hardesty's (1998) "islands" model examines this type of interconnectivity within the capitalist world system. Virginia City served as an "island", geographically isolated yet connected via railway to the larger industrial system. Through the rail, purchasing options abounded. Lord (1883:370) details 1880s food prices in Virginia City, noting an eastern origin of many foods sold in Virginia City including lard, pork, salt, and cheeses. Eastern produce likely arrived dried or preserved. Blackberries are notoriously hard to transport fresh, but can be made into preserves and jams. Grapes can be dehydrated (raisins), transported, and stored with little spoilage as well and may account for Lord's catch-all category of dried fruit. It is unknown whether the grapes and blackberries deposited in the privy were jams, dehydrated, or fresh at the time of consumption.

Various grape species and cultivars can indicate opposing transportation models. Two wild grape forms exhibit morphologies similar to the seeds recovered from Feature 5: canyon grape (*Vitis arizonica*) and California grape (*Vitis californica*). Canyon grape is found throughout much of the greater Southwest from Nevada to Texas, though it is somewhat concentrated in the Mojave Desert. Vines typically grow near springs, in riparian areas, and in canyon bottoms. Ethnographic accounts relate that Native American groups utilized canyon grapes as a supplemental food source (Buskirk 1986; Weber et al. 1985) and even went so far as to use the species as a cash crop, selling grapes to settlers as they entered the deserts of southern Nevada (Bye 1972; Rhode 2002). California grape is quite common in northern California and southern Oregon. The rootstock is resilient in arid conditions and often crossed with domestic cultivars (Bioletti 1902; Krochmal and Grierson 1961). Like other wild vines, California grape was used as food by Native Americans (Bocek

1984; Chestnut 1902; Goodrich and Lawson 1980; Schenck and Gifford 1952) and was available to Euro-American settlers. The fruit is edible but is smaller and somewhat tart compared to commercial cultivars (Weeden and David 1996).

An alternative model would suggest that these remains are representative of common grapevine (*Vitis vinifera*). This species is a Mediterranean native dating to the earliest days of domestication. Common grapevine first reached the Sierra Nevada Mountains with Spanish colonization of California, lending the common nomenclature associated with this variety as the "mission" grape. The species thrived in the fertile Pacific coastal valleys afforded by the Californian interior, but cannot easily tolerate the arid conditions of northern Nevada, at least in large scale viniculture.

Morphological comparison was used to determine phenotypic association of the recovered grape pips to cultivar (Figure 6). The representation of the specimens collected (see Figure 5) from Feature 5 exhibit two slightly protruding lobes on either side of the central notch, a circular dorsal chalaza, and an elongated beak (~1 to 1.5 mm). These characteristics are not indicative of *V. arizonica* or *V. californica*; both of these species display relatively little projection from the central notch, elongated chalaza located near the center of the dorsal aspect of the pip, and a squat beak (Figure 7). Cultivars of *V. vinifera* can exhibit a wide range of morphological characteristics; these include the traits displayed by the pips recovered from Feature 5.

(4) What can be said about the botanical dietary component of those living in Cornish Row?

Not surprisingly, the data from this study elucidate a greater understanding of diet breadth than a traditional dietary analysis allows even though the research is exploratory in nature and the sample size is small. They affirm a diet incorpo-

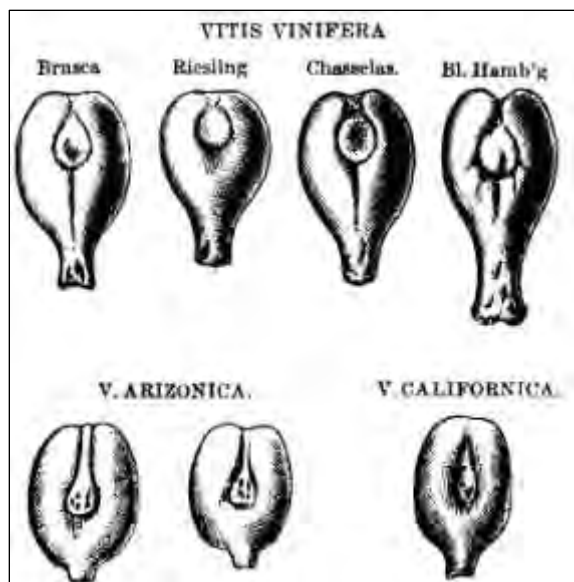


Figure 6. Diagram of cultivars of *Vitis vinifera* adapted from (Engelmann 1883:7).

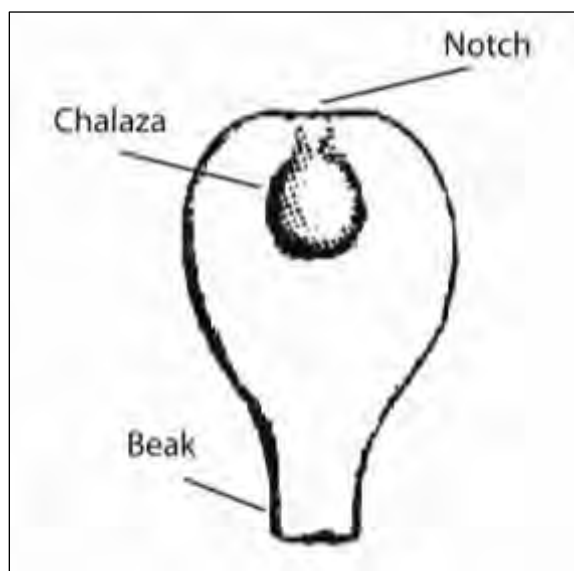


Figure 7. Morphological characteristics of grape pips adapted from (Engelmann 1883:7).

rating both table grapes or seeded raisins and blackberries, which were fresh or preserved. More night soils should be excavated and floated to get a better idea of the range of dietary breadth of fruits and possibly vegetables con-

sumed. Narrower temporal spans of usage should also be examined to view the changing availability of goods in Virginia City. These ideas can also be expanded to other areas of Nevada and the American West: what fresh products were available in Aurora, Rabbit Hole, or Goldfield compared to larger cities like Reno and San Francisco? Where did these products come from and what choices were available to residents? Our three samples serve as a proof of concept for the flotation of historic night soils and for the types of data available that would not be otherwise.

CONCLUSION

While geologic data provided no substantial evidence consistent with a privy deposit, the archaeological and macrobotanical data offer an alternative interpretation. The presence of blackberry and common grapevine indicates probable deposition by human agents as both taxa are commonly associated with historic privies (Bain 2001; Reinhard 1994, 2009). The inclusion of common grapevine within the assemblage may suggest importation of fresh fruits, perhaps from the Carson Valley or the western Sierra Nevada. Overall, the botanical remains imply a complex diet incorporating domesticated fruits eaten by those living within Virginia City and Cornish Row.

The inclusion of this macrobotanical data set contributes to a better understanding of life in Cornish Row and offers a unique glimpse into the dietary complexity that existed in 19th century Virginia City. These remains also allude to Virginia City's involvement in the larger world market, with connections both local and transcontinental, reflecting its active involvement in the capitalist market. With additional sampling from privies and other uniquely sealed contexts, the relationship between subsistence and the mining landscape can be better understood be-

tween subsistence and the mining landscape can be better understood.

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Understanding Personal Hygiene Artifacts as Indicators of Identity from the Joint Courts Complex Project Tucson, Arizona

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Personal hygiene as exhibited in household material culture at the turn of the 20th century demonstrates a general increase in awareness regarding health and sanitation. The extent to which people maintained a sense of cleanliness can be readily seen in such artifacts as combs, toothbrushes, and douches/irrigators, but the ways these artifacts defined an individual through the practice of hygiene has rarely been explored. This paper interprets artifacts of a private nature and suggests how they can be applied to definitions of identity, using hygiene products collected from early 20th-century privy contexts in one urban neighborhood. Differences in gender/sex as well as other identity markers such as ethnicity, status, and class are explored.

At the turn of the 20th century, personal hygiene was on the fast track, being integrated into all spectrums of American society, that is urban and rural, wealthy and poor, and citizens and immigrants. Personal hygiene is the act of cleansing and grooming oneself for the benefit of health. Objects such as combs, razors, toothbrushes, and douches/irrigators aid the act of personal hygiene. Small finds like hygiene artifacts often do not get extensive research due to financial and/or time constraints. When interpreting the material culture recovered from sites, archaeologists have a tendency to focus on display goods such as tableware and jewelry rather than non-display goods like hygiene items. Yet research (e.g., Deagan 2002; Deetz 1996; Smith 1999, 2007; White and Beaudry 2009) has shown the incredible potential for understanding past people through “small things” and non-display goods. Of particular importance is their use in identity studies. As a category of material culture and personal artifacts, hygiene artifacts carry great promise in exploring individual lives, especially gender and/or sex, ethnicity, status, and class. Even more significant is the glimpse

that these non-display goods can provide into private behaviors, ultimately leading to an individual or group’s hidden identity. This article is a study of hygiene artifacts recovered from an ethnically and economically mixed early 20th-century urban neighborhood as part of the Joint Courts Complex Archaeological Data Recovery Project in Tucson, Arizona, and how they are relevant to concepts of identity. Data presented here incorporates the identification and quantity of recovered hygiene artifacts, what contexts they came from, and the trends observed. It also includes a review of two current discussions about identity, “reflexive” and “emulation versus rejection”. Integrating the aforementioned theoretical and empirical elements, the article concludes by addressing how all of this relates to the residents of the early 20th-century neighborhood.

BACKGROUND

In 2006, Statistical Research, Inc., in association with Pima County, Arizona, ran excavations

(known as the Joint Courts Complex Project) at a multi-component site that had prehistoric, cemetery, and post-cemetery aspects in Tucson. The post-cemetery component, which is the focus of this paper, included a residential and commercial occupation. It is from the residential occupation, dating from the 1890s to the 1940s, that the material culture examined here was recovered. Thirty-nine features were analyzed including trash pits, trash deposits, stairwells, privy pits, cesspits, and basements.

In 1880, the arrival of the railroad changed the landscape of Tucson and brought with it goods that were once difficult to obtain or previously unavailable. Of particular importance were the mass-produced goods that would lead to the increased availability and diversity of consumer goods and the development of mail-order merchandising. Many hygiene products at the turn of the 20th century were accessible through mail-order catalogs such as Sears, and Roebuck Co. and Butler's Brothers. The railroad also introduced progressive ideas that promoted public sanitation and personal cleanliness. Publicly, urban governments were organizing to set up the infrastructure of clean water, sewerage lines, and indoor plumbing. In turn, the latter two promoted personal hygiene and provided safer,

cleaner spaces for the disposal of bodily waste and washing and grooming.

DATA

A total of 303 whole and fragmented hygiene artifacts were recovered from post-cemetery contexts at the Joint Courts Complex project area (Table 1). Hygiene artifacts are broken down into two categories: grooming and cleanliness. Artifacts designated as grooming consist of plastic, rubber and bone dressing combs and hair brushes, as well as metal straight and safety razors. Combs in this collection are called "dressing combs", a term used in early 20th-century Sears, and Roebuck catalogs to differentiate combs that are run through hair and those worn in the hair. Cleanliness objects are made up of bone toothbrushes and plastic, rubber, metal, and glass douche-related products such as tubing, fountain syringes, and hardware for bags. Cosmetic and beauty-related artifacts are not included in this discussion. While they certainly are considered part of the grooming category, the focus of this article is primarily on those objects representative of cleanliness.

Table 1. Total Hygiene Artifact Counts.

Hygiene Artifact Counts	Count	MNI	Percentage
<i>Grooming</i>			
Dressing combs/brushes	41	-	14%
Razors	12	-	4%
<i>Hygienic Beauty/Cosmetic</i>	55	-	18%
<i>Cleanliness</i>			
Toothbrush-related products	8	-	3%
Toothbrushes	21	-	7%
Douche-related tubing/hardware ¹	155	166	54.79%
(Douche) fountain syringe nozzles	11	-	-
Total	303	166	100%

¹ The MNI and percentage of douche-related tubing/hardware includes the (douche) fountain syringe nozzle count.

Grooming items were primarily recovered from cesspit and privy pit contexts. Dressing combs and brushes predominately came from privies of middle stratigraphic layers. One privy in particular, Feature 650, yielded the bulk of the dressing combs and brushes. At least four households can be considered contributors to its trash between the privy use dates of 1900 and 1924. The property associated with the privy was a rental and its known occupants were part of lower economic classes and included a Euroamerican carpenter, a grocer, a Hispanic carpenter, and a general laborer of unknown ethnicity.

The majority of razors observed was the safety kind and mostly came from cesspits in lower stratigraphic layers. This suggests that early male residents were more likely to have used these razors than later residents. A cesspit designated Feature 3042 produced the majority of the razors in the collection. This pit was connected to another, Feature 3040, by a tunnel. Cesspit 3040 is known to have drained into Cesspit 3042, which was a significantly deeper feature. Some of the occupants that contributed to Cesspit 3040's trash are considered to have also added to Cesspit 3042's trash. Three Euroamerican households made up of middle to high income levels, such as a railway conductor for Southern Pacific who also was a proprietor to a men's club or drinking establishment, and a rancher turned politician, are linked to the trash in this pit.

Cleanliness items also largely came from cesspit contexts. Toothbrushes were found mainly in Cesspit 3042, the feature that held many of the razors discussed above, and carries the same class and ethnic trends; those of Euroamerican men and women of middle to high economic ranking. Toothbrushes were observed mostly in lower stratigraphic layers, indicating earlier residents were likely using these than the later occupants.

As would be expected, douche-related items

were primarily recovered from the cess- and privy pits at the site. Douching would typically have taken place in an outhouse where privacy was most required to perform such a task. However, these items were also observed in unexpected features like stairwells and a basement. Their presence in such features suggests that privy and cesspit features were razed and dumped into basements after abandonment or that miscellaneous trash on or near the surface was deposited into basements when the land was leveled. It appears most of the douche-related items were recovered from upper stratigraphic layers, indicating that later residents were more likely to have used them than earlier occupants. Cesspit 3040 contributed over half of the douche-related items from the project area. This cesspit was used by occupants from 1891 to 1937. During the time that the cesspit was in use, over 10 households occupied at separate times can be linked to the trash found in that feature. Known residents include Euroamerican and Mexican-American men and women with varying levels of income. Known occupants using this cesspit included a prominent wealthy gambler and saloon-keeper turned restaurateur, a bank employee, a Southern Pacific Railroad switchman, a cashier, a clerk, a truck driver, a boarding house manager, and a former Tucson mayor. While the list of residents is mostly men, who could have used the urethral and/or anal douches, it is assumed that their female family members also used some of the douching artifacts (Figures 1-3).

DISCUSSION

The residential period of the neighborhood (1890s-1940s) was a time of heightened personal hygiene and housekeeping. In Western society, the concept of being clean was not adopted or really made available to all classes until the early 20th century (Hoy 1985). It no longer was a

luxury or upper-class indulgence. At a time when indoor plumbing was not yet widely available to all, many if not most Americans practiced personal hygiene in one way or another, whether it was the act of bathing, brushing teeth, combing hair, shaving, or douching.



Figure 1. Rubber vaginal (douche) fountain syringe nozzle from Feature 3040.



Figure 2. Rubber urethral (douche) fountain syringe nozzle from Feature 3040.

Generations have now come to learn the consequences of being clean. For the sake of survival, one's health is crucial. By the turn of the 20th century, cleanliness had been instilled with such fervor that identification began to take shape among people. The attitude that not only was it important to be clean for the sake of one's

health, but also for pride, respect, virtue, nationalism, and moral superiority, became prevalent. No one publicly supported this more than Edward Bok, Editor of the *Ladies Home Journal* from 1899 to 1919. Bok is quoted as saying:

“The man who makes a point of keeping himself clean, and whose clothes look neat, no matter how moderate of cost they may be, works better, feels better, and is in every sense a better business man than his fellow worker who is disregarding of both his body and dress, or either. He works at a distinct advantage. The external man unquestionably influences the internal man (Hoy 1995:92).”



Figure 3. Rubber rectal (douche) fountain syringe nozzle from Feature 22355.

Defined in psychology textbooks, identity is “an internal process which one defines and integrates various aspects of the self” (Deaux 2000:222-225). Smith (2007:413) defines reflexive identity as “the identity that people project to themselves and that contains elements of self-awareness or self-construction that are not wholly public.” An individual may have many identities that may or may not be ex-

pressed publicly. Three identities are recognized in public and private realms: (1) an identity constructed and perceived by self; (2) an identity perceived by self and others; and (3) an identity constructed and perceived by others (Smith 2007:415). Social psychologists have seen people distinguish their public projections of themselves from their private projections of themselves. Public projections are explained as a “role” played by the individual, while private projections are an “identity”, meaning the self constructs a particular role they want to display to others while maintaining a “truer” self within.

Emulation and rejection are also constructed parts of a perceived self. Emulation and rejection can be used to elevate the perception of oneself socially and economically. Social psychologists, archaeologists, and anthropologists have observed that people of lower socioeconomic class emulate higher classes and *vice versa*, while rejection has been seen as a way to control situations like “material conditions” (Bell 2002; Bettie 2000).

Monica Smith (1999, 2007) and other archaeologists have applied material culture research to the concept of reflexive identity and non-display goods. The same has been done for the concept of emulative and resistant behaviors. It is well known that people use objects to create self perceptions and create perceptions observed by others. Hygiene artifacts offer a peek into people’s hidden reflexive identity, that of their perceptions of and how they achieved being clean. The residents of the post-cemetery residential neighborhood in the Joint Courts Complex Project Area used hygiene artifacts, obviously demonstrating a neighborhood concerned about cleanliness. The variety of hygiene items recovered indicates the different ways that hygiene was available in early 20th-century Tucson. While predominately a Euroamerican neighborhood, the presence of other ethnicities like Hispanics and Mexican-Americans, plus the presence of hygiene artifacts throughout the

project area, show that personal hygiene was not culturally-specific. The same can be said for class.

A lack of literature on the cultural relevance of toothbrushes, dressing combs, hairbrushes, and razors makes it difficult to discuss these personal objects, but Christopher Oldstone-Moore’s (2010) recent paper on the cultural interpretations of shaving, facial hair, and masculinity in 20th-century Britain and the United States is an important contribution. Oldstone-Moore (personal communication 2011) has explained how the connection between hygiene and shaving in Western society was a 20th-century phenomenon due to microbial theory and that reporting periodicals began to publish studies of germs deposited by men’s beards and mustaches onto women. Advertisements bolster these interpretations. In reviewing vintage advertisements and catalogs (e.g., Sears, Roebuck, and Co., Butler Brothers), hairbrushes were seen being used by attractive young women with long voluminous and luxurious looking hair or sleeked back into perfectly coifed hairdos. Dapper, clean shaven “ladies men,” were often characterized in razor advertisements with eye-catching lines like “Ladies Prefer...” Women and men living in the Tucson neighborhood undoubtedly kept such imagery in mind when making the choice to purchase such goods.

Douching, no longer as widely practiced as it once was, has been an important component for helping better understand cleanliness. Specific types of douches (e.g., vaginal, urethral, and rectal) can indicate gender/sex, though it should not be assumed that the presence of any one of these reflects use only by a woman or a man. Availability and appearances easily play a role in the purchase of such goods. Douching was propagated as a prophylactic and for the treatment of venereal disease (Sullivan 1986:87). Margaret Sanger (1917:6-9), one of the most recognized advocates of women’s health, recommended douching right after “the

sexual act.” In her book *Family Limitations* (Sanger 1917:2), she fervently states:

“Of course, it is troublesome to get up and douche, it is also a nuisance to have to trouble about the date of the menstrual period. It seems inartistic and sordid to insert a pessary or a suppository in anticipation of the sexual act. But it is far more sordid to find yourself several years later burdened down by half a dozen unwanted children, helpless, starved, shoddily clothed, dragging at your skirt, yourself a dragged out shadow of the woman you once were.”

In a conversation with my 75-year-old maternal grandmother, she recalls as a young girl seeing a hot water bag complete with fountain syringes hung on a peg on the back of her aunt and uncle’s bathroom door. My grandmother admits that she and her mother never cared for douching, but that her mother-in-law swore up and down by its properties as a contraceptive” (Florine Good, personal communication 2011).

CONCLUSION

Archaeologists often do not have the time or money to research artifacts that are “small finds”. This paper has shown that an ethnically and economically mixed neighborhood in early 20th century Tucson, Arizona, took part in hygiene trends popular of the time across America. Toothbrushes, dressing combs, hairbrushes, razors, and douche-related items helped the residents of the neighborhood achieve not just well-being but private reflexive and public identities. Further research recommendations include site comparisons within Tucson, within Arizona, and

across the country. Ethnographic and anthropological studies in the practices of American shaving, hair combing, tooth brushing, and douching are also needed, since they are few and hard to find.

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The Archaeology of 20th-Century Foodways in Sulphur, Nevada

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This paper explores one aspect of life for 20th-century residents of Sulphur, a former mining and railroad town in northwest Nevada. Archaeological research at Sulphur in 2009 and 2010 yielded exciting initial data about past residents' foodways, or the actions, materials, and thoughts that affect and reflect people's ingestion of food. Archaeologists have long recognized the importance of foodways and the critical role that food plays in shaping identity, but this aspect of the 20th century has received relatively little attention. Because foodways are such an intimate, important part of everyday life, investigating foodways at Sulphur has the potential to provide excellent insight into the lives of 20th-century residents of the American West.

Sulphur, a now-abandoned townsite located in Humboldt County in northwestern Nevada, was once a bustling locale that served as a railroad stop, sulfur mining area, and gathering point for families of miners, ranchers, and utility line workers (Figure 1). Archaeological fieldwork in 2009 and 2010 investigated several aspects of the town's primary occupation period of 1909-1959. One aspect of the past, residents' foodways – the actions, materials, and thoughts that affected and reflected people's ingestion of food – is the focus here. An extensive historical record, including photographs, newspaper articles, government documents, and oral histories, complemented data from material remains recorded during intensive archaeological survey, allowing detailed examination of the foodways of Sulphur residents.

Although not universal, scholars have recognized that the study of foodways may be organized by analyzing five steps in the foodways process: (1) production; (2) distribution; (3) preparation; (4) consumption; and (5) disposal (Goody 1982:37; McIntosh 1996:61; Powers and Powers 1984). Production includes growing or obtaining foodways goods, bringing them to a central location, and preparing them for distribu-

tion. The distribution stage incorporates resource allocation and purchase. Preparation refers to preparing foods for the next step of consumption, or eating. Disposal involves how food products and materials used to transport, store, and prepare foods are discarded. Each of these stages leaves physical remains, making this conception of foodways ideal for an archaeological investigation.

Using this five-stepped approach to study foodways at Sulphur resulted in the examination of material expressions of different parts of the foodways process and, simultaneously, the critical recognition that each step was part of a larger process. Analyzing residents' foodways in this way enabled the formation of a detailed understanding of the role of foodways in a remote Nevada town during the first half of the 20th century.

THE SULPHUR HISTORICAL ARCHAEOLOGICAL PROJECT

The initial attraction for European Americans to the Sulphur area was rich sulfur deposits. In the 19th century, sulfur was a valuable mineral

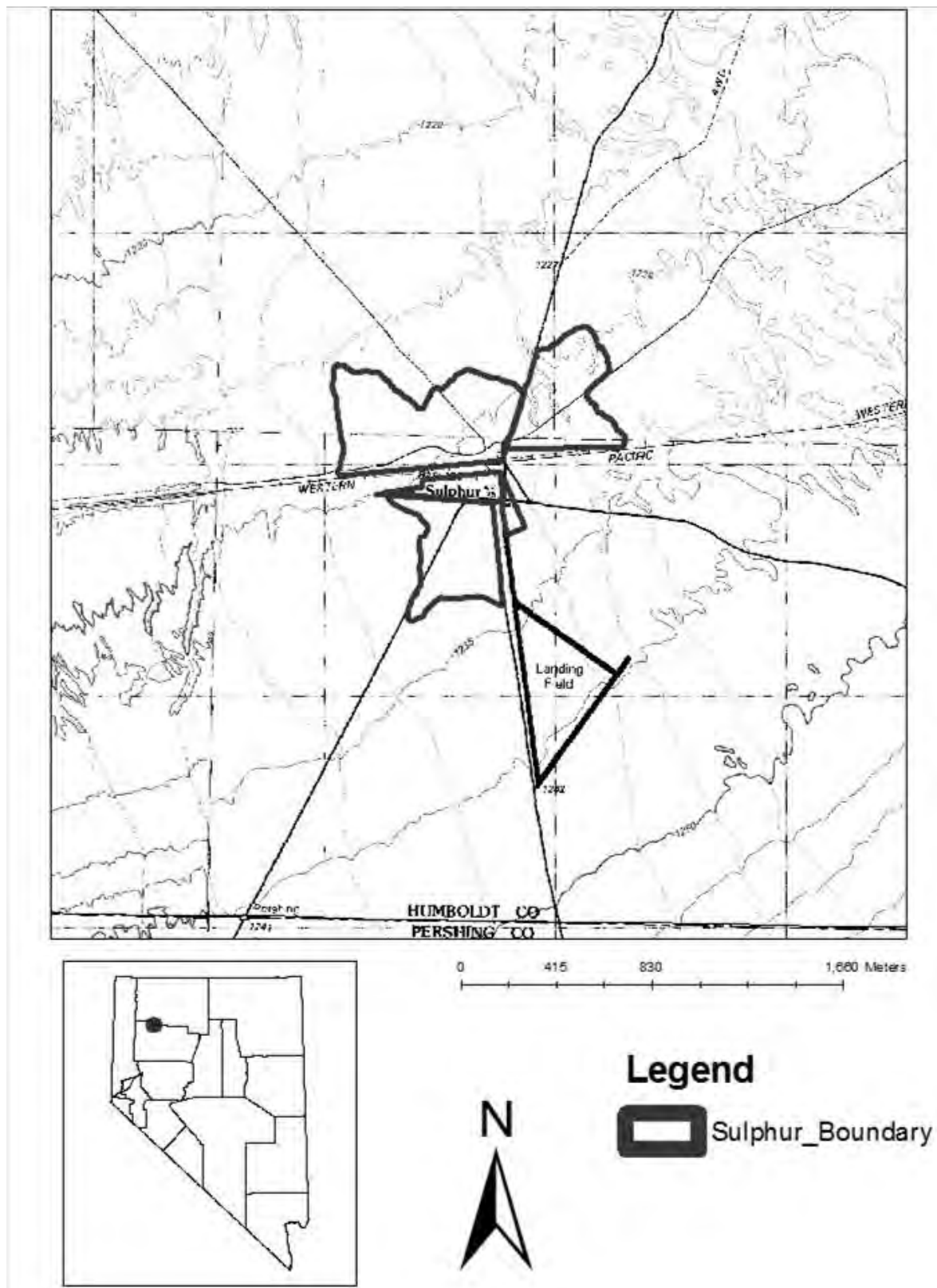


Figure 1. Location of the Sulphur, Nevada townsite.

produced to make sulfuric acid (used mainly as an extractive in industrial processes), for making paper, and in agricultural applications as a fungicide. The population in the area expanded in response to that demand, creating a boom. Originally, populations concentrated around the mines, but when the Western Pacific Railroad completed a line through the area in 1909, the main settlement shifted to the Sulphur townsite, located on the valley floor approximately four miles (6.4 km) northwest of the mines. Despite a harsh environment, limited access to water and electricity, and relative isolation, the Sulphur townsite, hereafter referred to as “Sulphur,” eventually boasted a hotel, bar, depot, cattle loading area, gas station, general store, school, post office, and permanent dwellings all built for the inhabitation of year-round residents. The town was largely abandoned by the 1970s, although sporadic occupation of the standing structures by recreational miners and visitors occurred into the 1990s. Today, despite the fact that no standing structures remain at Sulphur, intact dugouts, cellars, and innumerable trash scatters provide rich and tangible traces of the area’s past.

Archaeological research at Sulphur included archaeological survey and limited test excavations in 2009-2010. The complex, 169-acre site of Sulphur contained 115 features, all of which were preliminarily recorded with digital photographs and GPS points. Thirty features were recorded in detail using standardized forms, GPS, digital photos, and compass-and-tape drawings, and provided data for this paper (Figure 2). Drawing on work by previous foodways researchers, archaeological data from Sulphur was combined with information from historical research, oral histories, and spatial analysis to investigate the foodways process used by Sulphur residents.

HISTORY OF ANTHROPOLOGICAL FOODWAYS RESEARCH

There is no question that food is a daily concern for all people, and yet anthropologists, sociologists, and historians did not devote significant attention to the study of foodways until relatively recently (Barthes 1979:167; Conlin 1986:ix; Inness 2001:4; McIntosh 1996:1). Anthropologists first showed interest in people’s relationships with food in the late 19th century (Mintz and DuBois 2002:100), but the term “foodways” did not appear in anthropological and sociological literature until the 1940s (Camp 1989:24). Around that time, anthropologists began to analyze the thoughts and behaviors associated with food (e.g., Mead 1964; Richards 1939, 2004 [1932]). Since then, researchers in many different disciplines have contributed to the theoretical orientation surrounding anthropological interpretations of foodways including sociologists, folklorists, economists, geographers, historians, home economists, nutritionists, and psychologists (Inness 2001:6).

By the 1960s, structural anthropologists like Lévi-Strauss (1963a, 1963b, 1966, 1969, 1978) and Douglas (1973, 1984) examined food and eating to understand their social implications. Food research gained further popularity within anthropology during the 1980s, when anthropologists began to focus on human agency and individuality and researchers studying foodways increasingly recognized the highly contextual, variable nature of foodways (e.g., Goody 1982). Also in the 1980s, materialistic analyses provided valuable insight into the relationship between food behaviors and biology (e.g., Harris and Ross 1987), while other researchers argued for increased focus on cultural and social aspects of food (Appadurai 1981:494; Farb and Armelagos 1980; see also McIntosh 1996:4). By the 1990s, the study of food was “one of the growth areas within academia” (Gosden 1999:1) and it became relatively common for researchers

to investigate the links between biological and cultural aspects of eating and foodways (Gosden and Head 1999:234). In the 2000s, anthropologists still disagreed over the best approach and focus for foodways studies (as pointed out in McIntosh 1996:36), but the varied interests in this resulted in increased numbers and varieties of studies. Most contemporary anthropologists

who study people's relationship with food adopt a broad definition of foodways that includes some references to the economic, political, personal, and biological behaviors associated with food production, distribution, preparation, consumption, and disposal (Goody 1982:37; McIntosh 1996:61; Powers and Powers 1984).

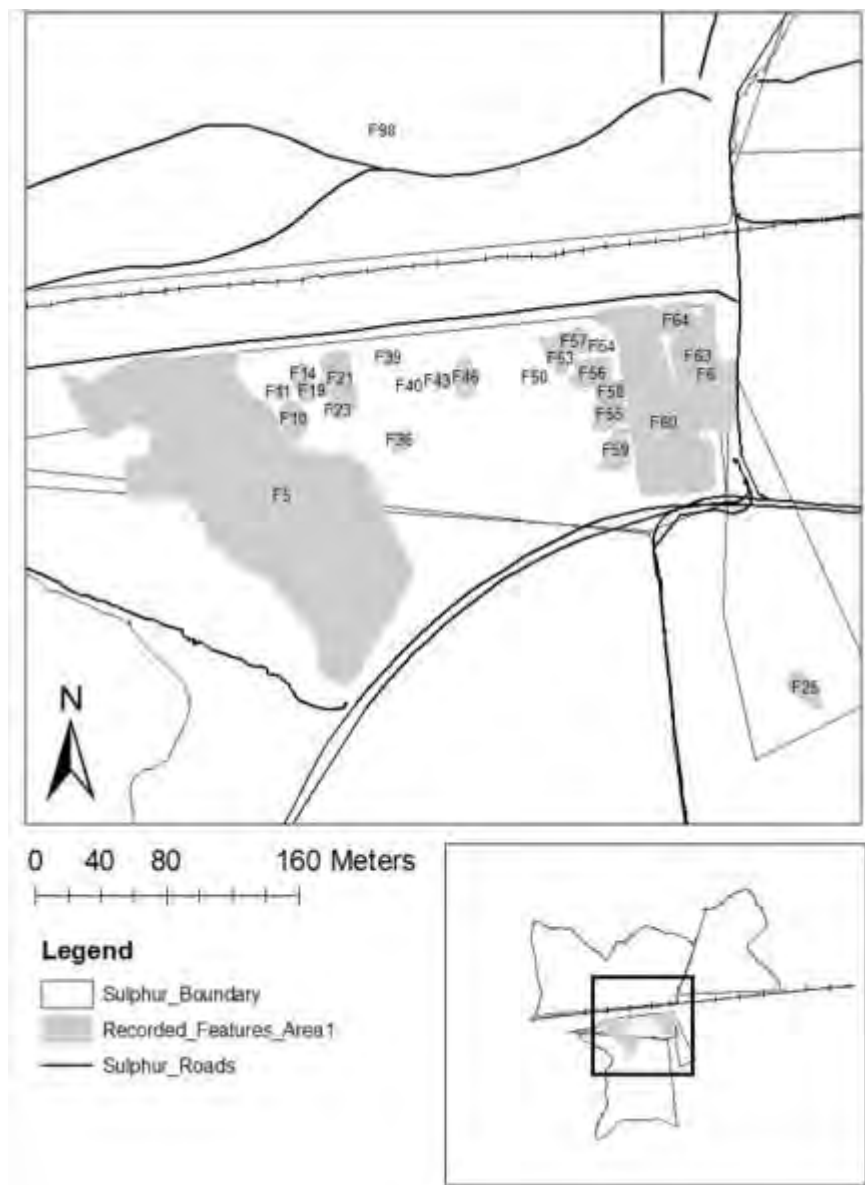


Figure 2. Features recorded in detail at Sulphur, Nevada.

FOODWAYS ARTIFACTS IN SULPHUR'S FEATURES

The investigation of Sulphur's foodways builds on previous work by foodways researchers to examine archaeological data recovered during 2009-2010 fieldwork. This paper focuses specifically on survey data from the 30 features recovered in detail. Table 1 presents a description of these features and a tabulation of the foodways artifacts recovered from them. The table lists the number of foodways artifacts associated with each step in the foodways process recovered from each feature, and also includes a total number of foodways artifacts. The classification scheme used to analyze Sulphur's foodways artifacts is presented in Table 2. Because each artifact was allowed to be classified into multiple categories, the "total foodways artifacts" column in Table 1 is often less than the sum of the foodways artifacts associated with each step in the foodways process. Foods that could be used to create other foods but could also be consumed by themselves, such as syrup, were assigned to both the preparation and the consumption categories. Crockery, large bowls, and plain, identifiable tableware pieces may have been used for both preparation and consumption, and were listed in both categories. Cut and burned faunal remains were also included in both the preparation and consumption categories. Digestion aids such as laxatives and stomach medicines were included in with consumption and disposal artifacts.

To facilitate comparison of features, the number of food artifacts per square meter was calculated by dividing the total number of food artifacts by the feature's area. The final column in Table 1 indicates how each feature ranked in terms of the ratio of food artifacts per square meter, with a rank of "1" being the greatest and "30" being the least. Food artifacts per square meter was an effective meas-

ure of comparison across the site, but some caution was warranted. Feature 61 (concrete foundation), for example, contained only one food artifact, but because of the feature's small size, this feature ranked as the fourth highest food artifacts by area.

On the other hand, Feature 5 (trash scatter) contained the most foodways artifacts assigned to all but the production category, but the large size of the feature meant that it ranked as the 25th highest artifact-to-size ratio. Another problem with the ranking system was that proximity to roads negatively affected the number and preservation of artifacts at features. During fieldwork, we noted that features close to roads were prone to illegal artifact collection, shooting, and off-road vehicle traffic. The proximity to roads likely explains the low foodways artifact counts recovered from two trash scatters, Features 5 and 6.

Regardless of these problems, the ranking system revealed interesting trends. Trash scatters were sometimes very informative about foodways behaviors. These features contained discarded items, often related to foodways, which were unlikely to be reused later or removed when a person left the area. Feature 98, a concentrated, partially-buried deposit of a relatively recent time period located on the less-disturbed northern side of the railroad tracks, contained, by far, the highest number of artifacts related to foodways.

Dugouts and depressions also contained a relatively large amount of artifacts related to foodways. The number of artifacts in and around dugouts probably reflected foodways activities, such as preparation (including food storage) and consumption. Depressions may have been privies or trash dumps, both of which correlate to disposal activities. Other, non-human factors also affected artifact concentrations, particularly inside dugouts and depressions. Gravity and fluvial activity likely caused materials to accumulate inside these

features. Dugouts and depressions, which usually had some buried context, also had much better artifact preservation than at other features. Both of these site formation processes likely inflated the evidence of foodways activities at dugouts and depression features.

Another interesting trend revealed during analysis was visible in the production and disposal columns of Table 1. Very few features contained artifacts related to these two processes. While it may initially appear that that there was a dearth of information about production and disposal, further reflection suggested that for production and disposal, individual artifacts were not very informative. A larger scale of analysis revealed more information about these activities, however. Structural landscape features such as chicken coops were more indicative of production than most other material remains. Similarly, features such as trash scatters and privies represented disposal better than individual artifacts. The absence of evidence relating to production and disposal demonstrated that each step in the foodways process was represented differently, and emphasized that using multiple scales of analysis was vital to a study of foodways.

The general trends highlighted by the information contained in Table 1 provide some information about the nature of Sulphur's foodways, but examining the expression of the individual steps in the foodways process better illuminates this aspect of Sulphur's history. The remainder of this paper focuses on the archaeological and historical information about food production, distribution, preparation, consumption, and disposal in Sulphur.

Production

Data that provided information about food production at Sulphur included evidence of

animal husbandry and hunting. Evidence suggests that Sulphur residents raised animals to consume, especially chickens (*Gallus domesticus*) and cattle (*Bos taurus*). The presence of two possible chicken coops (seen in Features 21 and 25) provides archaeological evidence for food production. Oral history interviews provided further evidence of poultry-raising (Dan Crofoot, personal communication 2011; Doris Venable, personal communication 2011). There is also evidence that residents of the area in and around Sulphur raised cattle, and it seems likely that at least some of the beef was consumed within the townsite of Sulphur.

Sulphur residents also produced food by capturing wild animals. Hunting was an important activity for both survival and recreation, as indicated by oral histories, historic photographs, and material remains. The challenging years of the Great Depression placed increased pressure on residents to obtain wild-caught foods. One former resident indicated that her family ate venison, taking advantage of the mule deer (*Odocoileus hemionus*) that inhabited the hills near Sulphur, and the family also hunted other game that her father shot with an "old shotgun" (Doris Venable, personal communication 2011).

Most food that was consumed in Sulphur was produced offsite, however. Maker's marks on glass bottles and tin cans indicated that food was produced and packaged around the United States and in international locations. Since most food was brought into Sulphur rather than being produced within the town, it was not surprising that the production stage of the foodways process was poorly represented in the archaeological and documentary records.

Distribution

For Sulphur residents, distribution primarily

involved product shipping and purchasing. Food shipping was an important part of food distribution at Sulphur. The proximity of the railroad to the town made shipping goods to Sulphur easy and convenient (Doris Venable, personal communication 2011). Artifacts recovered during archaeological survey indicated that Sacramento and San Francisco, California and Salt Lake City, Utah, all located on the railroad, were major shipping centers. All types of goods could be ordered from these

and other cities via mail-order catalogs, letters, and (later) phone calls. Despite the importance of larger cities for distribution of goods to Sulphur, Lovelock and Winnemucca, as the closest retail resources, provided the majority of goods. The town's proximity to the railroad, and therefore the rest of the nation, meant that residents had access to a very wide range of goods (Sydney Petersen, personal communication 2011; Doris Venable, personal communication 2011).

Table 1. Quantity of Surface Foodways Artifacts Present at Recorded Features.

Feature #	Feature Type	# Prod.	# Dist.	# Prep.	# Cons.	# Disp.	Total # of Food Artifacts	Feature Size (m ²)	# of Food Artifacts/m ²	Rank
5	Trash scatter	1	78	28	67	8	126	18,407	0.0068	25
6	Trash scatter	-	6	1	2	1	9	2,114	0.0043	27
10	Series of depressions	-	12	6	7	-	18	486	0.0370	17
11	Dugout	1	2	2	4	1	5	70	0.0706	9
14	Series of depressions	-	-	2	7	-	7	268	0.0261	20
19	Dugout	1	-	3	5	-	5	66	0.0758	8
20	Airstrip	-	-	-	-	-	-	2,268	-	29
21	Building	1	9	5	19	-	23	464	0.0496	14
23	Series of depressions	-	2	4	4	1	8	120	0.0667	11
25	Building	1	2	2	2	1	5	264	0.0190	21
36	Architectural debris	-	-	-	4	-	4	217	0.0184	22
39	Dugout	-	1	-	5	-	5	80	0.0625	12
40	Dugout	-	-	1	1	-	1	26	0.0391	16
43	Dugout	-	2	2	3	-	4	41	0.0979	5
46	Building	-	1	1	8	-	10	282	0.0355	18
50	Dugout	-	5	3	1	-	6	50	0.1195	3
51	Trash scatter	-	6	-	6	1	11	142	0.0777	7
52	Dugout	-	3	1	5	-	7	103	0.0680	10
53	Building foundation	-	9	3	10	3	18	136	0.1327	2
54	Building foundation	-	3	1	1	-	3	32	0.0952	6
55	Building foundation	-	-	2	3	-	5	341	0.0147	23
56	Processing area	-	8	1	10	2	14	420	0.0333	19
57	Trash scatter	-	3	5	11	-	16	289	0.0554	13
58	Trash scatter	-	5	4	5	-	12	287	0.0424	15
59	Building	-	1	-	2	-	3	380	0.0079	24
60	Shooting area	-	5	1	4	-	8	4,420	0.0018	28
61	Concrete foundation	-	-	-	1	-	1	9	0.1168	4
63	Building foundation	-	-	-	-	-	-	22	-	30
64	Cisterns	-	2	2	3	-	3	515	0.0058	26
98	Trash scatter	-	23	10	26	3	46	36	1.2778	1

Table 2. Classification System for Sulphur's Foodways Artifacts.

Food Function 1	Food Function 2	Examples of Included Material Remains
Production	Animal Husbandry	Animal feed, domesticated faunal remains, structures associated with ranching and raising animals
	Hunting	Ammunition, wild faunal remains
Distribution	Shipping	Shipping receipts, store advertisements, maker's marks on cans, bottles, and glass, post office/postal delivery evidence
	Purchasing	Shipping receipts, mail-order catalog pages, concentrations of artifacts (store location), money
Preparation	Food Storage	Dugouts, pantries, shelving, canning equipment (canning jars/lids), food storage materials (aluminum foil), cans, bottles
	Food Manipulation	Crockery used to prepare food, ovens, stovepipe, flashing, cooking utensils
	Food Components (edible items not typically consumed on their own)	Spices, extracts, condiments, cocoa, flour, sugar, baking powder, cornmeal, shortening, diagnostic cans, diagnostic glass food containers
	Food Remains (evidence of how food prepared)	Cut/burned faunal remains
Consumption	Food Service	Eating utensils, servingware (plates, bowls, glasses, etc.), crockery used to serve food, pans and pots out of which food is eaten
	Food Remains (evidence of what food consumed)	Cut/burned faunal remains, diagnostic cans, diagnostic glass food containers, edible plant remains, digestion aids
Disposal	Food Excretion	Privies, digestion aids, toilets
	Trash Production	Trash scatters, trash dumps, privies, glass bottles and cans with directive about post-consumption behavior (1-Way bottles, "Federal Law forbids..." bottles, cans with recycling information), evidence of recycling

Another important part of distribution involved food purchasing. One type of purchasing took place in Sulphur at the town's general store. Sulphur contained a store that operated from at least 1909 until 1953 and was housed in at least two different buildings (*Reno Evening Gazette* 1928; *Nevada State Journal* 1955; David Valentine, personal communication 2011; Doris Venable, personal communication 2011). One feature in particular, Feature 11, contained information about goods available in the Sulphur store and purchasing behaviors in Sulphur. Feature 11 was a du-

gout made of railroad ties lined with cardboard shipping box panels used for insulation and decoration. The shipping box panels from this feature, dating between 1933 and 1935, held products that were probably purchased in the store, and suggest a few of the goods available. Feature 11 contained boxes from 19 different branded food items, all of them non-perishable. The products represented by the shipping boxes included a wide array of foods: (1) pantry staples (sugar, flour, shortening); (2) canned goods (Van Camp's Pork and Beans, Del Monte Vegetables); and (3) sweets

(Ghirardelli Chocolate, Hershey's Chocolate). Branded products from other locations were distributed at a local level and Sulphur residents had access to these foods.

Not only do the boxes from Feature 11 provide information about what was sold, but they also contain information about how goods were sold within the town. The boxes for two products in Feature 11 contained handwritten prices, giving an indication of the economic transactions that occurred in Sulphur. The box for Alber's Flapjacks (flour) reads "25¢" and the Van Camp's Pork and Beans box reads "9¢ each." Comparison of one price from Sulphur with prices listed in 1930s newspaper advertising revealed that products in Sulphur were more expensive. In 1935, Reinharts Department Store in Winnemucca listed a one-pound can of Van Camp's Pork and Beans for "3 for 19¢," or 6.3¢ each (*Humboldt Star* 1935a). That same week, Winnemucca Mercantile Company in Winnemucca sold this product for 5¢ each (*Humboldt Star* 1935b). While these advertised prices were almost certainly specials and the products were usually more expensive, there is still a significant price difference between food prices in Winnemucca and those in the Sulphur store. The comparison of these prices suggests that the cost of food in Sulphur was high, due to shipping costs as well as availability (Doris Venable, personal communication 2011). Based on these price comparisons, the cost of living in Sulphur was somewhat higher than other more densely populated areas of Nevada.

Despite the presence of a store within Sulphur, residents purchased many of their goods outside the town. Sulphur residents periodically traveled approximately 50 miles to Lovelock and Winnemucca to obtain supplies. Because going to these cities was a time-consuming and expensive trip, several residents would give orders for supplies to one

person designated to go to town (*Lovelock Review-Miner* 1938). People in Sulphur also placed orders via mail or telephone for food from larger cities like San Francisco and Sacramento and had it shipped to Sulphur.

Preparation

Preparation at Sulphur was represented by evidence of food storage, food manipulation, food components, and food remains. Food storage was a vital and significant part of preparation. Evidence of food storage came from canning equipment (e.g., jars, lids), structures used to store food (e.g., dugouts, pantries, shelving), and materials used to enclose stored food (e.g., aluminum foil). A number of features contained canning equipment, especially lids and jars. Below-ground structures like dugouts and cellars kept food cool in the summer and from freezing in the winter, and many of the seven recorded dugouts likely stored food. Most probably contained shelving at one time, and Features 11, 19, and 50 still had intact shelves where food would have been protected from the physical contamination of dirt, insects, and animals. Several features also contained remnants of aluminum foil. Glass bottles, jugs, and jars and tin cans were likely recycled to store food, although detecting this reuse archaeologically is very difficult and there was no discernible archaeological evidence (such as use-wear analysis) to support this assumption at Sulphur.

Food manipulation was another category of remains associated with food preparation. This category included crockery used to prepare food, cooking utensils, and artifacts associated with food heating (ovens, stovepipe, and flashing). Large ceramic or glass bowls were likely used to prepare or serve foods and may have served as mixing bowls or storage containers. A few cooking utensils were also

found at Sulphur, including a wire fry basket, a metal strainer, and a wire whisk, but, in general were not well represented in the archaeological assemblage. This was probably because what things did not wear out quickly were packed up and removed as populations relocated, but could also be attributed to the need to consume food efficiently and without fuss – those materials might never have been there in the first place.

Another source of information about preparation came from food components, or edible items not typically eaten on their own, and food remains, edible items that may be consumed on their own. Evidence of food components used during preparation included spices, condiments, extracts, cocoa, flour, sugar, cornmeal, oatmeal, and shortening. In general, most food remains did not contain evidence of how the food was prepared, but faunal remains were an exception. Meat was prepared in a number of ways, including by frying, stewing, roasting, and slow-cooking methods to tenderize tough meat (Dan Crofoot, personal communication 2011, Doris Venable, personal communication 2011).

Consumption

Understanding food consumption at Sulphur involved analyzing two activities: (1) food consumption; and (2) food service. Determining what foods were consumed went hand-in-hand with understanding how this food was served for consumption. Archaeological and historical evidence suggested that foods consumed at Sulphur included protein sources (e.g., meat and beans), starches (e.g., flour, cornmeal, and oatmeal), dairy items (e.g., milk, cheese, and butter), canned and fresh vegetables, fruits (canned, fresh, and dried), desserts, and alcoholic and non-alcoholic beverages. One resident indicated that she and her family ate

“a lot of [dried] beans,” canned vegetables (including tomatoes), dried fruit, and meat cuts including bacon, salted and canned meats, and salt pork. Potatoes, flour, bacon, canned beans, canned milk, coffee, lard, and onions were other important staples (Hoeper 1988:83; Doris Venable, personal communication 2011). Archaeologically-recovered cans, jars, and printed cardboard also confirmed the consumption of condiments, cereals, jellies, sweets, and beverages. Expensive meats were probably a special treat. Christmas and Thanksgiving, for example, provided opportunities for people to enjoy foods not part of the everyday diet with others (Hoeper 1988). People’s consumption of food was governed by primarily by practicality, but taste was also a factor. Cheap, reliable foods like starches probably formed a significant part of residents’ diets. Beans and canned milk provided a non-perishable protein source that was less expensive than fresh meat. Canned and fresh vegetables and fruits were a welcome addition to peoples’ diets (Doris Venable, personal communication 2011).

Food service remains were less numerous than food remains, but were still an important part of consumption. Servingwares (e.g., plates, bowls, and glasses), crockery, pots, pans, and large bowls and plates may have been used to prepare food, but also played an important role in food service. These items were typically glass or ceramic. Differentiating between an artifact’s use during preparation and use during consumption was challenging and often impossible. Some artifacts, such as milk glass Fire King Ovenware recovered at two trash scatters, served dual purposes as bakeware and serving dishes. Similarly, pots, pans, and large bowls and plates were used to prepare food and then serve it. Elaborately decorated items, like a pastel green Depression glass vessel fragment found at Feature 21 (building), were more likely to be used

solely for serving food in a more formalized setting. One of the reasons why evidence of food service was so slim was because archaeologists recovered only the small percentage that was discarded, probably because it was broken. In general, tablewares were highly valued and would have been protected and removed from the site when a resident left (Doris Venable, personal communication 2011).

Disposal

During disposal, food artifacts may have been thrown away and never used again, or they may have been reused for a different purpose. Trash production and food excretion both affected food or food remains after the desired parts have been consumed. Trash disposal at Sulphur was organized, with most trash being concentrated in distinct trash scatters used for multiple dumping episodes. Some of these trash scatters were located in depressions that might have been privies. The small number of trash scatters compared to the larger number of building that probably served as residences indicated that multiple families made use of common trash dumps (McMurry 2011; Dan Crofoot, personal communication 2011). Residents disposed of their trash in other ways besides simply dumping it; refuse was also buried and burned, and some, particularly faunal remains, might have been fed to domestic dogs or cats or left for wild fauna to consume (Doris Venable, personal communication 2011). Trash was also recycled, and used to store other food or non-food items, as architectural material, and in many other ways.

Food excretion was the second major way that food disposal occurred at Sulphur. Evidence for food excretion existed in features classified as privies and through the presence of digestive aids. Laxative use at the site was particularly informative about foodways beha-

viors. The public had recognized “the threat of „autointoxication” (self-poisoning) from uneliminated waste” since the beginning of the 20th century (Levenstein 1993:5). In the 1920s, with the skyrocketing popularity of dieting, laxative use increased significantly (Whorton 2000:102-106). Two fragments from a “Pluto Water” laxative bottle were recovered from Sulphur’s features. Pluto Water, bottled from the 1890s through the 1940s in Indiana, was a popular laxative, partly because it was aggressively advertised (Whorton 2000:126-127). Feature 11 (dugout) also contained a shipping box for Kellogg’s All-Bran Cereal, which was also marketed as a health aid for its laxative properties (Carson 1957; Kellogg 1933). Artifacts related to relieving constipation represented only a small percentage of the total artifacts recovered, but they raised important points about Sulphur’s foodways. Given the high reliance on processed non-perishable foods and a lack of ready access to high fiber foods (such as fresh fruits and vegetables), it seemed likely that Sulphur residents faced problems with constipation. The fact that some people needed aid to “dispose” of their food added a new dimension to research of this part of the foodways process.

CONCLUSION

The foodways process is an essential part of life for all humans. All people must eat to survive, and they do so through a cycle that begins with production and is followed by distribution, preparation, consumption, and, finally, disposal. By breaking the unwieldy process down into smaller parts while still acknowledging each part’s individual role as a piece of the whole, it is possible to address many of the different elements that affect and reflect people’s foodways and, at the same

time, understand the manifestation of the entire foodways process.

Combining archaeological, oral history, and historical data from Sulphur provided important information about the complexity of the town's foodways. Sulphur's relative isolation and the harshness of its environment meant that the area developed unique attributes that set the town apart from other areas, such as adaptations to cope with the lack of water and electricity. This isolation from commercial centers and amenities meant that Sulphur residents consumed mostly non-perishable foods, such as canned goods, beans, and storable starches (including flour, corn-meal, potatoes, and rice). At the same time as it was isolated, Sulphur was also part of a much larger macrocosm, vitally connected by commercial and personal tethers to a world that was becoming dramatically interdependent. The fact that most goods were brought into Sulphur rather than produced locally was indicative of Sulphur's dependence on and ties to other areas. The railroad made it particularly easy to transport goods, ideas, and people across distances great and small. Sulphur residents were undoubtedly affected by national and even international trends in foodways. Researching how and what people at Sulphur ate was obviously only one facet of this town's intricate history, but food's ties to economic and social forces as well as the necessity of securing nourishment on a daily basis made studying foodways particularly revealing about day-to-day life in remote, 20th century Nevada.

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Looking Good in the Black Rock Desert: The Archaeology of Cosmetics in Sulphur, Nevada

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Sulphur is an abandoned mining settlement in northwestern Nevada that was settled in the early 20th century. Archaeological work conducted at the site in 2009 and 2010 revealed the presence of an unusual number of beauty-related artifacts, particularly cold cream jars. These artifacts suggest a significant use of cosmetics by former residents. Cosmetics and other beauty aids represent an important marker for cultural change, particularly in the early 20th century, when changes in cosmetics use reflected changing values regarding gender and identity. Understanding the use of cosmetics in the small mining town of Sulphur provides insight into how residents responded to these changes and how they connected to the larger world.

Sulphur is an abandoned mining settlement in northwestern Nevada that was settled in the early 20th century. Archaeological work conducted at the site in 2009 and 2010 revealed the presence of an unusual number of beauty-related artifacts, particularly cold cream jars. These artifacts suggest a significant use of cosmetics by former residents. Cosmetics and other beauty aids represent an important marker for cultural change, particularly in the early 20th century, when changes in cosmetics use reflected changing values regarding gender and identity. Understanding the use of cosmetics in the small mining town of Sulphur provides insight into how residents responded to these changes and how they connected to the larger world. This paper seeks to better understand how cosmetics, as a category of artifacts, provide insight into the lives of past people. I examine the significance of cosmetics in understanding the town of Sulphur, a small mining and railroad community from the early to mid-20th century. As a single category of artifacts, cosmetics provide evidence of Sulphur's relationship with the outside world and highlight how residents reacted

to the prevailing cultural ideals of the day.

SULPHUR, NEVADA

Sulphur is located on State Route 49 between Winnemucca and Gerlach (Figure 1). It is a desolate area located along the northwestern flank of the Kamma Mountains on the eastern edge of the Black Rock Desert in a region that is flat and waterless. Yet at one time, Sulphur was a thriving community serving the local sulfur mines and railroad. The town was born when the Western Pacific railroad was built through the area in 1909 (Paher 1970:153). A station was established at Sulphur Siding (*Humboldt Star* 1909) and a town soon grew up around it. The town's growth was fueled by local mining operations and a brief 1920s oil strike, and included a store, gas station, school, and hotel, but declined after the railroad closed the station in 1952. People continued to live in the area through the 1970s, but at this time the town is entirely deserted with no standing structures left.

METHODS

Archaeological research was conducted at the site of Sulphur in 2009 and 2010. My research was part of a larger project conducted by the University of Nevada, Reno (UNR). Other aspects of the project included an exploration of foodways (McMurry 2011, also see McMurry in this volume). In this section, I summarize those elements of the project relevant to my own research in cosmetics, including survey and excavation conducted during 2009 and 2010 fieldwork.



Figure 1. Sulphur, Nevada. Photo courtesy of the Nevada Historical Society.

Initial research, survey, and excavation were conducted in 2009 as part of an archaeological field school for UNR. Although the site was surveyed in the 1980s by Brigham Young University when power lines were built across the site, the work was incomplete and resulted only in a partial map of existing features (Billat et al. 1986), making it necessary to resurvey and re-map the site. Over the course of survey, an unusual number of mentholatum jars were identified. These jars, noted in field survey, inspired this project. None of the artifacts were collected in 2009, although their presence was recorded

and photographed. Test excavations were also undertaken at the site. No cosmetics were recovered from any of the units, possibly because the units were placed in former yards or beneath floorboards where cosmetics were not used or disposed of.

Archaeological work continued in 2010, in two sessions between August 5 and August 15. The first session was devoted to survey done in 5-m transects. All cosmetic artifacts were marked with flags. Once transects were completed, flagged artifacts were photographed and mapped with a GPS. Those items with maker's marks or other diagnostic features were collected for analysis. During the second session, test excavations were conducted in the same set of features as the previous year, in a further attempt to identify the structures' function. Three additional units were excavated in Features 19, 21, and 23, the latter identified as a probable privy. No cosmetics-related artifacts were recovered from excavations.

THE RISE OF MODERN BEAUTY CULTURE

In order to understand the significance of the cosmetics-related artifacts recovered at Sulphur, their historical context must be understood. At Sulphur, the material culture category "cosmetics" refers to the creams and substances used to preserve or change the appearance of skin and hair. The presence of these items at Sulphur testifies to the community's existent, if remote, ties to a growing cosmetics industry and associated social and economic changes. The rise of the American cosmetics industry was fueled by changes in gender and beauty ideals and the rise of the mass market.

The Victorian Ideal Versus the New Woman

In the 19th century, the ideal gender system was

one of separate spheres for men and women. Men retained all involvement in the public sphere while women remained responsible for the upkeep of the home and family. Women were the moral center of the family unit. While women were strongly associated with beauty, the beauty they possessed was an "ideal beauty" centered on a natural, more spiritual plane (Banner 1983:9-10).

Natural beauty did not need cosmetics. Although discreetly used, any obvious use of cosmetics threatened a woman's reputation. Pale, natural colors were encouraged. Only prostitutes openly painted their faces and no respectable Victorian lady would use them (Angeloglou 1970:97; Corson 1972:375-380; Peiss 1998:7). As noted by cosmetics historian Vail (1947:103), "no lady might be suspected of using make-up and maintaining her position in society."

By the turn of the century, attitudes towards gender began to change. Women began to assume a more public role in society and at the same time adopt new attitudes in dress and behavior (Angeloglou 1970:119), which included a wider and more obvious use of cosmetics. No longer associated with prostitutes, cosmetics became an essential part of women's identity and self-expression (Peiss 1998:53).

A New Industry

Changing attitudes towards gender created a growing demand for new cosmetic products, fueling the rise of a national cosmetic industry. Concurrent with this new demand was the growth of industrialization and mass marketing, which allowed for new innovations in production and advertising (Peiss 1998:57-58). Innovations in cosmetics in turn affected the use and role of cosmetics in social life.

By the end of World War I, cosmetics were becoming an entrenched part of woman's identity and the American economy. Cosmetics re-

tained this growing importance during the upheavals of the Great Depression and World War II. During the Depression, cosmetics remained more affordable than luxuries like new clothes and beauty regimes were observed to boost confidence (Peiss 1998:196, 200). Furthermore, cosmetics were now tied to the new roles and expectations for women. Women worked and socialized outside the home alongside men, and with this role came a new image of women as glamorous and fashionable. As Peiss (1998:200) notes, "makeup had become an aesthetic expression woven deeply into women's daily life." The importance of cosmetics continued into World War II, where cosmetics became "vital to the war effort" in their ability to boost women's morale (Riordan 2004:50). The "made-up woman" became a symbol of American culture and values, a part of the American war effort (Peiss 1998:239).

Beauty was not confined to women, however. Cosmetic manufacturers also marketed men's beauty products through self-shaving. Unlike other beauty products, self-shaving fit the ideal of the self-made, independent man, as "the self-shaver was a self-starter" (Peiss 1998:161). Advertisers embraced the idea of independence, tying shaving to masculinity and success in the business world (Peiss 1998:161-163). This approach generated a profitable market in men's shaving accessories, which included products as diverse as shaving creams, powders, and liquids, as well as razors and bowls (Corson 1972:515; Peiss 1998:163).

COSMETICS IN SULPHUR, NEVADA

A total of 59 artifacts were collected from Sulphur. Of these, 34 could be identified as either a skin cream or hair product. The remaining 25 could not be identified as to type or brand. Additional artifacts, primarily plain milk glass fragments, were recorded but not collected. All

artifacts recorded at the site but not collected were mapped and photographed. Those artifacts that were collected can be divided into three categories: (1) skin care; (2) hair care; and (3) unidentified. I based these classifications on probable use of the products represented by each artifact.

Skin Care

The majority of items identified were classified as skin care products. The skin care category contains all artifacts associated with products involved in the care of the skin. The majority of these artifacts are fragments of milk glass jars for cold cream or lotion. An aluminum tube for hand cream and a partial cologne bottle were also recovered and included in this category. These artifacts represent a variety of brands including Pond's, Daggett & Ramsdell, Harriet Hubbard Ayer, Ingram's Milk Weed Cream, Woodbury, Jergens, and Avon. The category of skin care represents about half of the artifacts collected.

The most common items found in skin care are items related to Pond's cold cream. These artifacts include fragments from at least three milk glass Pond's jars and a jar lid. One nearly complete jar in two fragments was recovered from between two building platforms. It has the ellipsoid shape found on modern Pond's jars and the Pond's logo on the base (Figure 2). A smaller jar was also recovered elsewhere. This jar was represented by a single base and side fragment with a partial maker's mark on the base. A third jar was found in a trash scatter east of the others. It is a different shape than the other two jars. It is square and has the Pond's logo on the side rather than the bottom (Figure 3). A fourth Pond's jar was identified at the site in 2009. It was no longer present on the surface in 2010 and was not collected. It was oval and pink, contrasting the white jars. The Pond's jars have only approximate dates, as the products first ap-

peared on the market in 1910 and manufacturers replaced milk glass with plastic in the 1960s (Nikki Kimball, personal communication 2009). A Pond's tin screw-on lid was found in a trash scatter. At 2.5" across, it is about the size that would fit on the largest of the jars.

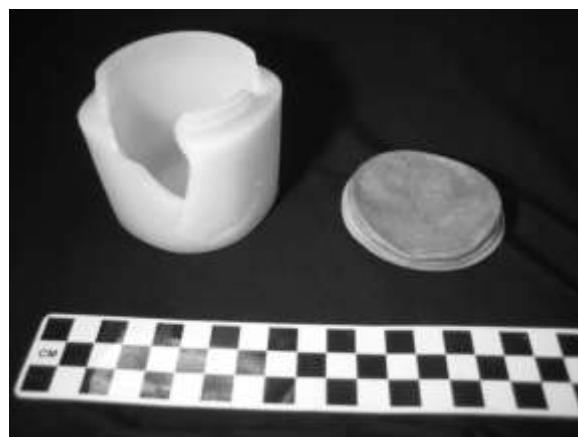


Figure 2. Pond's milk glass jar and Pond's lid.

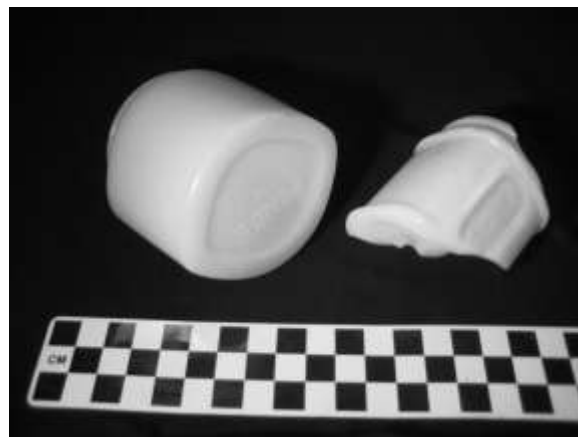


Figure 3. Pond's jar base and square Pond's jar.

Other skin care brands are represented at Sulphur. Harriet Hubbard Ayer cream is represented by a base and side fragment, 2" high, representing half of a jar (010-41-114). A maker's mark is present on the base and reads "ARRIET HUBB" (Figure 4). This mark stands

for the Harriet Hubbard Ayer Company, founded in 1907 by Vincent Benjamin Thomas as a maker of perfume and cosmetics. He took the name from an earlier female cosmetics manufacturer in the 1890s (Gontell 2005a). Being made of milk glass, the jar dates from between 1907 and the 1960s.

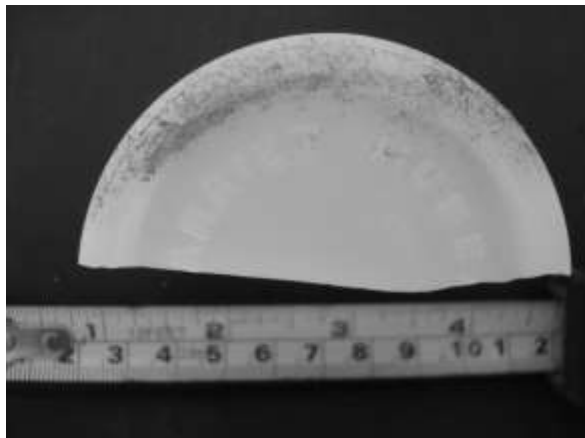


Figure 4. Harriet Hubbard Ayer jar fragment.

An early brand found at the site is Ingram's Milk Weed Cream, another brand of cold cream. Fragments from at least two separate jars were recovered at two different locations. These jars were identified by the partial maker's mark "INGRAM'S MILK WEED CREAM" on the upper part of the jar, just below the rim (Figure 5). Ingram's was a popular brand of cold cream in the 1910s and 1920s (Peiss 1998:99) and, according to U.S. patent records, the Ingram jar was first patented in 1892 (Ingram 1892).

Fragments of a Woodbury milk glass jar were recovered. This jar likely contained cold cream based on complete jars for sale on Etsy (www.etsy.com 2011). The jar is elliptic with a Greek Key design along the sides (Figure 6). Part of a maker's mark is visible on the base ("...URY") which stands for the Woodbury Soap Company, a cosmetic and soap manufacturer founded in 1870 and later purchased by the

Jergens Company (Peiss 1998:122, 136). As it is milk glass, this jar also dates to the early half of the 20th century, similar to the Pond's jars.



Figure 5. Ingram's Milk Weed Cream jar fragments.



Figure 6. Woodbury jar fragments with Greek Key design.

A colorless glass jar base for Daggett & Ramsdell was found. This base fragment has a maker's mark that identifies it as Daggett and Ramsdell's Perfect Cold Cream, a brand from the early part of the century (Gontell 2005b; Vail 1947:111-112) (Figure 7). A ferrous Palmolive lid was also found. This would have belonged to a jar of soap for bathing.

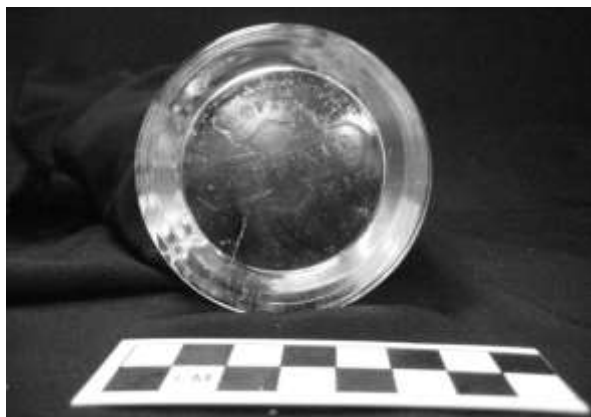


Figure 7. Daggett and Ramsdell's Perfect Cold Cream jar base.

Jergens products were found at Sulphur. The lower half of a possible cologne bottle was found. The Jergens name is visible on the base of the bottle. The bottle is likely for the Jergens Morning Glory cologne, as it is similar in shape to existing cologne bottles (www.auntjudysattic.com 2011). Another colorless glass Jergens bottle was found elsewhere. The base reads "JERGENS/ PAT PEND" and the bottle was probably a lotion or shampoo bottle. No clear dates could be established for either of these bottles (Figure 8).

One unique find was a pale purple milk glass fragment. While glass will turn purple when solarized, this fragment appears to have been purple originally. This jar fragment is unusual not only in its color, but the decoration. The jar's sides are paneled with a curtain like motif along the top and bottom. The word "Cream" in cursive is molded on the side (Figure 9). This decoration further differentiates it from other jars. Most of the glass jars have blank sides where a paper label would be attached. No date or manufacturer could be identified for this fragment.

An unusual milk glass jar was found near the clear Jergens bottle. Six fragments of this jar were recovered. It is made of milk glass painted with a light blue color. Part of the brand and

instructions are painted in white lettering (Figure 10). The writing on the fragments identifies it as hormone hand cream used to "guard against drying effects of wind, water, and detergents." The manufacturer could not be identified.



Figure 8. Jergens cologne bottle (010-41-109) and unidentified Jergens bottle.



Figure 9. Purple milk glass fragment with "Cream" embossing.



Figure 10. Blue Hormone Hand Cream jar (010-41-123).

In addition to glass jars and bottles, a tube of Avon hand cream was collected. The tube is made of aluminum with a plastic screw cap. The cap and label are a light green. Most of the label is worn away, but enough remains to identify it as a hand cream manufactured by Avon. At the bottom of the tube is a seal guaranteeing its quality by *Good Housekeeping*. The plastic cap suggests the artifact dates to around the 1960s, when plastic replaced glass and metal packaging (Figure 11).



Figure 11. Avon Hand Cream aluminum tube (010-41-154).

In addition to the various products described above, Sulphur yielded an unusual number of mentholatum jars. While mentholatum is not strictly a cosmetic, it was often used for the treatment of dry skin, similar to cold cream. Fragments from at least 13 jars were collected from Sulphur, from all over the site. Jars vary in size. Most of the jars had a maker's mark on the base that read all or part of the words "MENTHOLATUM TRADEMARK." One jar had the maker's mark on the side (Figure 12).

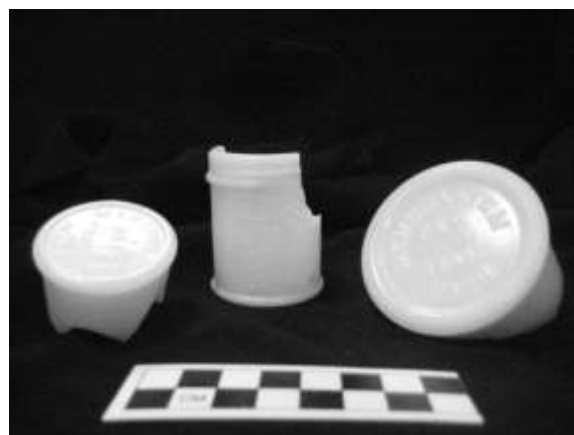


Figure 12. Mentholatum jar fragments.

Hair Care

A second category of cosmetic artifacts are items concerned with hair care. These items include shampoo, conditioner, styling gel, and shaving equipment. Several brands are represented, including Velvetouch, White Rain, Tame, Dippity-Do, Gillette, and Goody. Hair care products compose about one sixth of artifacts collected.

Shampoo was the most common hair product at Sulphur. Three bottles of Velvetouch Miracle Lather Shampoo were recovered from the site. Two of the bottles are complete and one warped from exposure to heat. They are colorless glass with a painted label. The shampoo

was manufactured by the Jewel Tea Company but there was no information available on what shampoos they manufactured. With no information on the Velvetouch brand, the bottles could not be dated (Figure 13). In 2009, a milk glass fragment labeled “Velvet” in the same cursive as on the glass bottles was found and photographed. This is possibly an early version of Velvetouch packaged in milk glass.



Figure 13. Velvetouch shampoo bottles.

Nine fragments of White Rain Lotion Shampoo were found, representing a colorless glass bottle with blue lettering and a raindrop pattern (Figure 14). One fragment reads, “BY TONI.” Toni was a company that made permanent wave kits until 1948, when it was purchased by the Gillette Company (www.fundinguniverse.com 2011). After this purchase, the company began marketing other lines of products, suggesting the bottle dates to the post-1950 period.

A complete bottle for hair conditioner was also found at Sulphur. The bottle is colorless glass with green lettering and is for Tame Crème Rinse, reading “the new invisible hair conditioner that rinses on!” The back of the bottle notes that the conditioner is “for men and children too.” This bottle is also from the Toni Compa-

ny, part of the Gillette Company (Figure 15). A final Toni product found at Sulphur is Dippity-Do, a hair gel. Five fragments, including a tin screw-on lid, were recovered. These fragments, made of clear glass, show the Dippity-Do logo and part of the instructions. This product was the extra hold setting gel. It is also labeled as a Toni Company product (Figure 16). Both products most likely date from the 1950s at the earliest. In addition, a tin lid labeled Helene Curtis was found, which likely came from an unidentified hair product (Figure 17).

In addition to hair cleaning products, a razor blade was identified and collected at Sulphur. A razor, which included the plastic case and seven blades, was recovered north of the railroad tracks. Two patent numbers, 2544410 and 3071856 were written on the blades. These patents identify this razor, a Gillette product, as dating after January 8, 1963 (Fischbein 1963; Young 1947) (Figure 18).



Figure 14. White Rain shampoo bottle fragments with label.



Figure 15. Crème Tame Rinse conditioner bottle.



Figure 16. Dippity-do jar fragments.

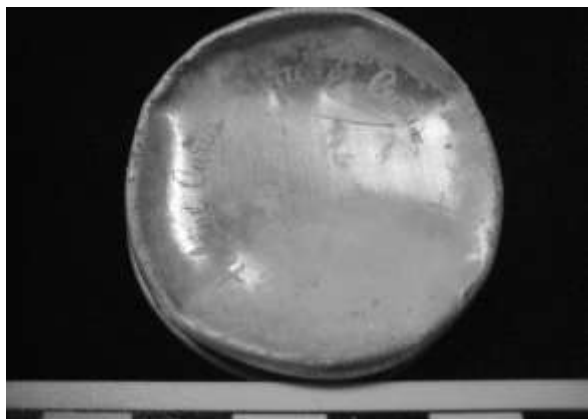


Figure 17. Helen Curtis lid.



Figure 18. Gillette razor blades.

BEAUTY CULTURE AND SULPHUR, NEVADA

The town of Sulphur was born during a period of great social change in America, particularly regarding gender roles. As discussed earlier, the early 20th century marked a shift towards a more liberal ideal of gender roles. With changes in roles came changes in beauty and image. The 19th century beauty ideal was naturalism, for both men and women. Only prostitutes wore visible makeup. As women's roles increasingly became more public, and women likewise more visible, cosmetics became permissible. Coupled with the new mass market, the new ideal of a liberated, made up woman helped launch the modern cosmetics industry. As the century progressed, cosmetics became an essential part of gender identity (Peiss 1998).

The artifacts recovered from Sulphur reflect the new attitude towards cosmetics. Founded in 1910, the town grew up at the same time as the modern beauty industry developed. While cosmetic brands existed before the 1910s, this decade marked the founding of several important brands, such as Pond's Cold Cream (Peiss 1998:99). The industry continued to grow through the 20th century, with new products and companies constantly appearing. The artifact

assemblage at Sulphur includes many of these early brands. Items such as Ingram's Milk Weed Cream and Daggett & Ramsdell's Perfect Cold Cream first appeared during the early part of the 20th century and their presence suggests that Sulphur residents probably used cosmetics from the town's earliest days. Cosmetic use is also evident for Sulphur's later years. Hair products such as Tame Crème Rinse, White Rain shampoo, and Dippity-do hair gel date to the post-1950 period, while the Gillette razor blade dates to 1963 at the earliest. Although not all artifacts could be dated, their presence at the site testifies to a continuing use of cosmetics at Sulphur. Residents at Sulphur clearly participated in the cosmetics industry.

Most cosmetics found at Sulphur were products marketed to women. These artifacts include items such as Avon Hand Cream, Daggett & Ramsdell's Perfect Cold Cream, Ingram's Milk Weed Cream, and Pond's, Woodbury, and Ayer products. Even hair care was feminized, as evidenced by newspaper advertisements. Announcements for beauty salons in the *Humboldt Star* nearly always featured the head of a woman and advertised female proprietors. Artifacts such as the Velvetouch shampoo and Dippity-Do gel were likely women's products. The cosmetics artifact assemblage at Sulphur thus reflects a largely feminine presence. Their presence follows the idea that early 20th century beauty culture was largely promoted towards women and suggests women at Sulphur took part in that culture.

Not all cosmetics recovered from Sulphur were feminine, however. The single exception to femininity at Sulphur is the Gillette razor blade dating to the 1960s. Although it dates to the latter part of Sulphur's existence, the razor illustrates two points about men and cosmetics in Sulphur. First, the razor's presence reflects the fact that for much of the 20th century, shaving products comprised most of the male-oriented beauty market. American men

eschewed cosmetics use since the 18th century (Peiss 1998:159-160). Self-shaving, which began promotion in the 20th century, became the sole exception, creating a separate masculine cosmetics market in shaving accessories (Peiss 1998:161-163). Contemporary newspaper advertising supports this idea, as the majority of advertising towards men focuses on self-shaving. The razor, as the single masculine cosmetics artifact from Sulphur, underscores the rise of masculine beauty culture. More specifically, the Gillette razor also suggests men in Sulphur followed contemporary ideas about masculinity, with little or no use of cosmetics. Even shaving appears to have been less important, with only a single razor recovered from the site. Sulphur thus exhibits an adherence to the predominant gender ideal of its time, where cosmetics were primarily used by women.

In spite of the divide between men's and women's use of cosmetics, there were gender-neutral products (i.e., products marketed towards both men and women) recovered at Sulphur. The most prominent example is the multitude of mentholatum jars that comprise the bulk of identified cosmetics recovered from Sulphur. While primarily used as a medical salve, mentholatum was also advertised as a treatment for dry, chapped skin. The salve was likely used by male and female Sulphur residents alike.

In addition to mentholatum, certain hair care artifacts were likely used by men and women. The Tame Crème Rinse conditioner bottle reads "for men and children too" on the back label. It was advertised for use by any gender.

Additional information on gender at Sulphur is implied by the artifacts that were not found. For example, makeup such as mascara, eye shadow, lipstick, and rouge are noticeably absent from the town site. These items were available to Sulphur residents as evidenced by contemporary newspapers advertising make-up for sale at Winnemucca drugstores. Also missing from Sulphur are the more expensive, high-end brands

such as Elizabeth Arden and Helena Rubinstein. Both of these brands were heavily advertised at stores such as Eagle Drug and Wayman's, particularly in the 1940s and 1950s. These cosmetics were available to Sulphur residents but are missing from the material record. One possibility these products are absent from Sulphur is that residents did not use them to the same degree as those products identified at the site.

There are multiple reasons for why Sulphur residents were not using makeup or expensive brands. One reason is that Sulphur residents could not afford the more expensive products. Many people at Sulphur and the surrounding had low incomes, particularly during the Great Depression (Venable 2006a, 2006b). Residents struggling for food and shelter would not spend money on expensive makeup and creams. The absence of these types of artifacts may also signal a more conservative approach towards gender and beauty at Sulphur. Residents may have ignored the more visible and public products such as eye makeup and rouge in favor of the more practical items such as cold cream and soap. Most items found at Sulphur were used for cleaning hair or treating dry skin, real concerns in the arid, dusty Black Rock landscape. In particular, cold creams may represent a local response to cosmetics' popularity. Cold cream both moisturizes and cleans the skin without the need for water, a valuable trait in a town where water proved scarce. Thus, Sulphur residents acknowledged and accepted cosmetics use, but used them according to their own circumstances and needs.

Finally, the absence of certain kinds of artifacts may be due to issues in preservation. Very little is left of Sulphur and most artifacts are scattered on or near the surface. Many areas have been disturbed by water runoff and vandalism. Thus, many artifacts may not have preserved. Even if they were present, some cosmetics would still remain unidentified. Many cosmetics came with paper labels and boxes, which

did not survive, leaving only blank glass jars. In addition, many perfumes and makeup, such as those advertised in newspapers, came in collectible bottles and cases, which may have been kept by residents or removed by bottle collectors when found. As such, the absence of certain types of cosmetics may reflect poor preservation rather than lack of use.

Cosmetic artifacts at Sulphur provide some insight into gender roles among the former inhabitants. They suggest that people at Sulphur followed the modern trend in gender roles, where men and women were adopting contemporary beauty ideals in their use of cosmetics. Their participation was more conservative, however. Most of the items found relate to basic hair and skin care. Those living at Sulphur were not buying expensive beauty aids, but restricting themselves to those items most affordable and useful in a rural desert town. Inhabitants at Sulphur clearly participated in this new gender system, albeit in a conservative manner.

CONCLUSION

The material culture of cosmetics at Sulphur, Nevada provides valuable evidence about how residents lived when the town was still inhabited. The presence of cosmetics demonstrates that Sulphur residents participated in and were affected by changes in the outside world. Cosmetics became more popular as gender roles shifted to encourage a more public image for women. This popularity is reflected in the presence of numerous cosmetic artifacts in what was a remote rural community. Cosmetics demonstrate that Sulphur had a place within the larger world.

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Danger! Unsafe Mine: A View from the Outside

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National Park Service

Since 1859 hard-rock miners have riddled Nevada's mountainous landscape with thousands of abandoned mine adits and shafts. Hazardous to public safety, the Bureau of Land Management and Nevada Division of Minerals has implemented a program to facilitate the permanent closure of these precious- and base-metal mining features. Over the past three years, archaeologists from Statistical Research have documented and evaluated 707 preselected hazardous mine features scheduled for closure as part of this ongoing project. This paper focuses on the results achieved so far.

In search of elusive precious- and base-metal ores during the late 19th and early 20th centuries, prospectors and miners left an enduring legacy in the history and on the landscape of Nevada. When visiting any of the state's many historical-period mining districts, one has to be careful not to unexpectedly plunge headfirst into this legacy, thus ironically becoming part of its history. We have all heard reports about some person being seriously injured or dying as a result of an accidental or intentional encounter with an abandoned mine. In Nevada alone there have been 27 life-threatening injuries and 15 deaths since 1971. There are an estimated 200,000 abandoned historical-period mines in Nevada of which 50,000 are considered a hazard to public safety, particularly those in close proximity to urban areas (Nevada Division of Minerals 2010). Abandoned mine safety hazards include: (1) reduced-oxygen or poisoned air; (2) falls down inclined or vertical shafts; (3) decayed timbers resulting in cave-ins; (4) toxic chemicals and explosives; and (5) poisonous snakes, disease-carrying rodents, and rabid bats.

Between 2007 and 2010, archaeologists

from Statistical Research, Inc. (SRI) conducted four large-scale Section 106 inventory projects focused specifically on abandoned hazardous mine features (White 2008, 2010, 2011a, 2011b). Facilitated by the Army Corps of Engineers, Los Angeles District, these inventory projects were conducted primarily on behalf of the Bureau of Land Management, but also for the National Park Service and U.S. Forest Service, in cooperation with Nevada Division of Minerals (NDOM). Project funding was provided either through the Southern Nevada Public Land Management Act or the American Recovery and Reinvestment Act.

SRI was tasked with the thorough documentation and National Register of Historic Places (NRHP) eligibility evaluation of each hazardous mine feature that was being considered for permanent closure due to public safety and land management concerns. Preselected by the land-managing agencies, the hazardous features variously included abandoned adits, vertical and steeply inclined shafts, deep open cuts, and expansive glory holes. To date, SRI has documented 832 hazardous features within 338 cultural resource sites, which are located in

28 historical-period mining districts variously situated in Clark, Humboldt, Lander, Lincoln, Pershing, and White Pine Counties.

Initially, SRI was asked to evaluate the eligibility of the mining districts as well as the individual hazardous mine features. It was soon determined that district evaluations were not possible because SRI was only looking at a few isolated mine features within each district and was asked to evaluate only those resources related to prospecting or extraction of minerals, rather than all types of properties typically found in any mining district (e.g., trash dumps, habitations, mills, etc.). By focusing only on the hazardous mine features, the projects were “outside of the box” of normal archaeological practice that generally account for all material remains and features associated with the larger mine site. An outgrowth of this methodology, however, has been the development of detailed historic contexts for each mining district that set the stage for feature evaluations. Aside from the standard secondary literature references, a diligent effort was made to use primary historical documents, some of which included early Government Land Office maps, mining claim surveys, and historical photographs and newspaper articles. This research has helped SRI to identify and provide operational details for a few otherwise-forgotten mines and to establish the spatial placement of hazardous features within historically surveyed mine claims.

Information gleaned from historical research has allowed SRI to place the hazardous features within the proper context of the larger mining districts and made evaluation of the resources easier under NRHP Criteria A and B. On rare occasions evaluation under Criterion C was made easy by the presence of standing structures (e.g., headframes, hoist houses, etc.). Under Criterion

D, SRI established a four-tier evaluation framework based on whether the site was a simple mine, a simple mine with habitation, an industrial mine, or an industrial mine with habitation or surface plant remains. Resource evaluations resulted in 64 of the 338 cultural resource sites being recommended eligible for listing in the NRHP.

As stated earlier, the focus of these inventory projects was on specific hazardous mine features as determined in advance by the BLM and NDOM. These features were most often associated with small-scale abandoned mines and seldom associated with patented claims, which are generally still owned by some responsible party. As such, most of the documented features were short-lived exploratory prospects with little evidence of any subsequent development or production – in essence, simple mines. The majority of the features were associated with hard-rock mining, while a few were associated with placer mine operations. SRI did, however, encounter small industrial mine sites with limited recorded production.

Though the area of potential effect (APE) for each hazardous feature on these projects was a 200-foot-diameter zone, efforts were made to account for, or otherwise note, additional mine-related features located immediately adjacent to each APE. This led to the recording of mine machinery and structures at small industrial mines including single-piston air compressors, hoisting cable drums, steam boilers, and drill sharpeners along with rare examples of hoist houses and worker’s quarters. In some instances, crude blacksmith forges were identified at smaller mine sites, occasionally found under spreading pinyon trees. Observed artifacts include a discarded miner’s pick, an occasional shovel blade, and ubiquitous alcohol bottle fragments and food can scatters. Stock piles of low-grade ore

appear at some isolated locations, there for the taking.

On these projects, SRI was responsible for only documenting surface remains associated with the selected hazardous mine features. The adits and shafts that SRI has recorded thus far represent a transition zone between the surface and underground workplace (Figure 1), and project work has focused solely on transition zone features. Mines are, however, like icebergs. What little is left on the surface usually represents only a small fraction of the total mine operation (Hardesty 1990). The subterranean nature of mine sites proposes a perplexing dilemma regarding whether or not a mine property has the potential to contain significant data that has not yet been recovered under evaluation Criterion D. All of the features and material that remains as part of the underground workplace, but left unrecorded for safety reason, are cultural manifestation equal to or greater in interpretive and research value to those identified on the surface (White et al. 1991). It can be reasonably argued that NRHP evaluation of mine sites cannot be adequately exercised without

also understanding the resources of the underground workplace. But personal safety is paramount in such dangerous places, and researchers must heed sound advice: “Stay Out – Stay Alive.”

During these projects, project archaeologists have experienced a variety of environmental extremes from blistering heat and driving rain to ground-covering snow. Crewmembers have crawled up steep mountainsides, scrambled over and been bruised by loose rock, and punctured by cactus needles. In pursuit of project features to record and evaluate, personnel have walked many miles across desert surfaces when cranky vehicles failed to start and dug them out of muddy washes in isolated mountain areas after a hard rain. These hardships have been temporary, because the crews have always had a warm meal and comfortable room to go back to. Nonetheless, a new-found and hard-earned respect for Nevada’s late-19th and early-20th century prospectors and miners has been gained as a result of these productive inventory projects.

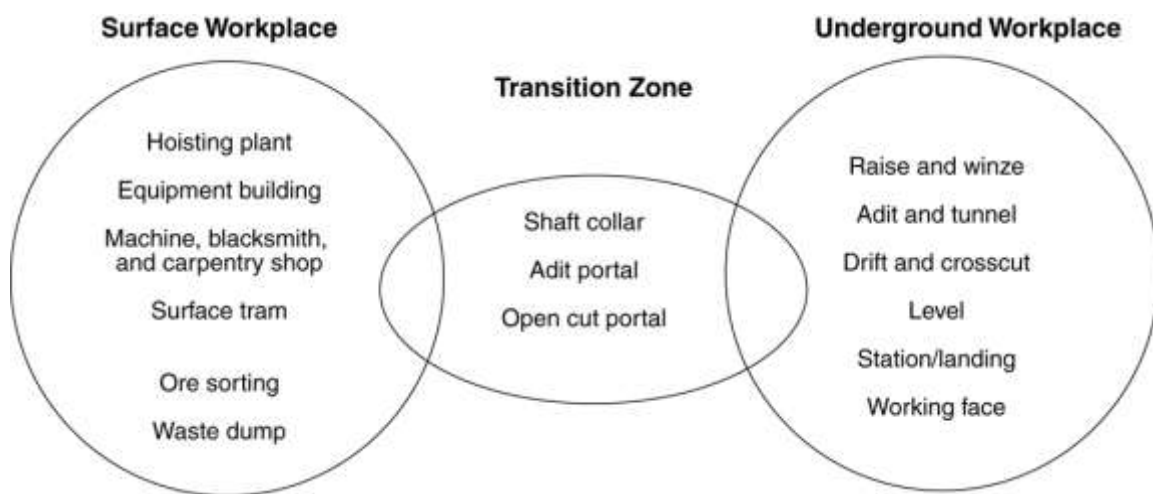


Figure 1. The relationship between surface and subterranean features on a mining landscape.

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The CCC and the Buena Vista Campground

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With Contributions by Gregory Seymour

HRA Inc., Conservation Archaeology

The Civilian Conservation Corps (CCC) played a significant role in the development of recreational and tourist facilities in southern Nevada. Much of the work conducted by CCC crews related to recreational infrastructure in the region allowed for the natural and man-made wonders of the area to be enjoyed by subsequent generations. One such recreational facility was the Buena Vista Campground near Overton, Nevada. During the spring of 2009, HRA, Inc. reevaluated a section of historic road located within a proposed mine expansion on BLM-managed lands. The road was determined to lead to the Buena Vista rest stop and cabins build by the CCC in 1935. To fully evaluate the road located within the project area, segments of the road and associated sites located outside the project area were also recorded, including the Buena Vista Campground located in the nearby Valley of Fire State Park.

The development of recreational and tourist facilities related to Hoover Dam and Lake Mead by the Civilian Conservation Corps (CCC) in southern Nevada is significant to the region. Much of the work completed by CCC crews within the confines of Lake Mead National Recreation Area and the surrounding area including Valley of Fire State Park has allowed for the natural and man-made wonders of the region to be enjoyed by numerous generations.

HRA, Inc., Conservation Archaeology was requested to evaluate a section of an historic road and four rock-and-mortar retaining walls located within the Simplot Silica Mine proposed expansion area south of Overton, Nevada. The Simplot Silica Mine has been in operation in some form since W. R. "Tex" Cozart discovered a pure silica deposit near Overton in 1928. The Nunn Company mined the deposit until the operation was taken over by the J. R. Simplot Company in 1955. Glass sand has been produced continuously from the Simplot pit since 1938. Today, the mine produces 650,000-700,000 tons per year of high quality silica sand

used predominately for glass making, as well as foundry and casting sand, and material for other pure sand applications.

In March of 2009, HRA archaeologists conducted a detailed documentation of the entire length of a CCC-constructed road, site 26CK7533. This endeavor included recording the entire road to determine its condition and significance as well as the presence of four rock-and-mortar retaining walls, the Buena Vista Overlook, and the Buena Vista Campground (26CK8648). The road consists of approximately 1.6 miles of graded dirt access road leading from Lake Shore Drive to the Buena Vista Overlook. The focus of HRA's investigations was to determine why the road and retaining wall features were built at this location and to evaluate their condition, integrity, and eligibility in a regional and national context. Historical research determined that the road was constructed by the CCC in 1934-35 to provide access to the scenic overlook and the Buena Vista Campground (26CK8648), located 0.2 miles northeast of the overlook.

During the process of re-evaluating and detailed recordation of linear site 26CK7533, located on BLM managed lands within the proposed mine expansion, portions of the site located outside the project area were also recorded to allow a complete site evaluation to be conducted. As a result, the Buena Vista Campground (26CK8648) and overlook, both of which are located in the Valley of Fire State Park, were also recorded due to their association with site 26CK7533.

THE CCC: A BRIEF HISTORY

During the Depression, at least 25 percent of all youths between the ages of 15 and 24 were unemployed and another 25 percent were underemployed. By that time, there were only one million acres of virgin forest remaining in the United States. A shortage of forests and a combination of overgrazing and drought caused massive soil erosion problems. Relief work had begun in a limited fashion in the nation's forests even before Franklin Roosevelt became President. A few subsistence camps for the unemployed were operated in California and Washington. The men were clothed and fed by the various states and worked for the Federal Government.

While serving as governor of New York, Roosevelt introduced a reforestation plan as part of an unemployment relief program. Tenthousand men were taken from the relief rolls. Salmond (1967) suggests that Roosevelt was the catalyst to bring previous programs and policies together and start the CCC. Governor Roosevelt first hinted at his national plans for conservation in his democratic nomination acceptance speech on July 2, 1932. He called for a land policy to combat problems like soil erosion and timber depletion and to create employment for millions of unemployed men. During the election campaign, he consulted other politicians, profession-

al foresters, and others for ideas and feedback related to the formation of the CCC.

It was not until mid-November of 1932 that any details were provided about this policy. Secretary of Agriculture-Designate Henry Wallace and Roosevelt advisor Rexford Tugwell instructed Chief Forester Major Robert Y. Stuart to develop plans for putting 25,000 men to work in federally-owned forests. Stuart agreed that this number was feasible, but in only a month, the numbers quickly swelled to 250,000 men. In January of 1933, Senator James Couzens, a liberal republican from Michigan, introduced a bill in the Senate authorizing the Army to house, feed, and clothe unemployed men between the ages of 17 and 24 at military posts. The bill was strongly opposed by the Army and was subsequently shelved; however, the bill introduced the idea of military assistance with relief efforts to Washington politicians.

Although the economic crisis worsened in the beginning of 1933, Roosevelt only made an indirect reference in his inaugural address of March 4, 1933. At a conference on March 9, he outlined what he had been thinking. The director of the budget, Army Judge Advocate-General Colonel Kyle Rucker and the Solicitor of the Department of the Interior Edward Finney were among those that attended. Roosevelt sketched out a plan to employ 500,000 men in a variety of conservation tasks. Rucker and Finney were to have a draft bill ready for the president that evening. The original draft proposed the recruitment of 500,000 men a year in conservation and public works programs. For the first time the program was given serious thought by the President.

The CCC was created by an act of Congress on June 28, 1937. It was born out of the popularity of the Emergency Conservation Work (ECW). Under the authority of the Emergency Employment Act of March 31, 1933, Roosevelt established the ECW by Executive Order 6101 on April 5, 1933. The ECW was popularly

known as the CCC and as a result of the emergency employment act, the programs were transferred to the CCC and the popular name was legally adopted. The CCC had been a continually functioning program; therefore, the President gave the effective date of the Act March 31, 1933 (United States Government). The purpose of the CCC was to provide employment and technical training to the unemployed, a limited number of veterans, and Native Americans. The CCC became a federalized social program to put 500,000 unemployed single and married men to work in forests, parks, and rangeland in support of multiple conservation-related projects (White 2003:4).

Terms of enrollment were for six months. At the end of six months, participants had an option to re-enlist for another period, for a maximum of two enrollment periods. This was later changed to an unlimited number of terms due to political pressure. The enrollee was paid \$30 per month, \$25 of which was sent back home. The remaining \$5 was for the enrollee to spend in camp stores or during recreational visits to local towns. Room, board, clothing (often ill-fitting), tools, education, and medical facilities were provided by the U.S. Army. The pay was opposed at first by the Labor Movement, but they were ultimately persuaded to go along with it (Salmond 1967). The government claimed that the primary reason was to employ the men and keep them busy, not necessarily to pay them, although the \$25 a month did make the men's families happy (Cohen 1993). This was the only income that many families had. In fact, 65 percent of families were already on public assistance or had at least one other member in a work program. More than three million dollars went to families for their support during the duration of the program. As the program developed, its purpose became three-fold: (1) provide work and training to unemployed young men and veterans; (2) assist needy families through allotment of proportion of enrollees' wages; and

(3) rehabilitate, conserve, and improve the nation's natural resources.

By the end of 1933, there were four kinds of enrollees: (1) 250,000 junior enrollees between the ages of 17 and 25; (2) 25,000 veterans; (3) 25,000 Local Experienced Men serving as project leaders in the junior camps; and (4) 10,000 Native Americans enrolled in the Indian Division. A junior enrollee had to be single and from a family on relief, pass a physical examination, and enlist for a minimum of six months (Booth 1991; Cohen 1993; Salmond 1967; United States Printing Office 1939). The first camp in the country was a 13-acre location in the George Washington National Forest, Virginia. It was designated as GWNF1 and opened on April 17 1933.

To administrate the CCC program, the country was divided into nine Corp areas by the War Department, which were further divided into districts (Nevada was one of seven western states assigned to the U.S. Army's Ninth Corps Area) (Kolvet and Ford 2006:34). These areas and districts were supervised by the Army, where most of the camp commanders were Army or other military Officers (Baldrige 1971). While the U.S. Army was the "surprised and bewildered foster parent of a quarter of a million young men," the army was "best suited to managing a large all-male workforce" (Kolvet and Ford 2006:34).

After Congress approved the formation of the program, the initial enrollment periods had more applicants than there were slots in the camps due to the relief need. As the program continued and economic stability slowly increased, men started to find jobs outside of the CCC, causing enrollment to decline. Camps closed as staffing them became more difficult, and the United States' entry into World War II and the concomitant need for men, materials, and equipment ultimately caused the program to be canceled. Enrollees still in the program either enlisted into the Armed Services or found jobs

related to the war industry. Equipment and materials used by the camps, as well as some of the camps themselves, were diverted to wartime activities. Over the life of the program, a total of 19 six-month enrollment periods staffed camps throughout the United States (Table 1).

Camp Life

The life of an enrollee was typically regimented and work schedules of the various camps differed only slightly. As Baldrige (1971:192) describes, mornings typically began with reveille at 6:00 a.m., where many camps would have 15 minutes of calisthenics before breakfast at 6:45 a.m., with time afterwards for enrollees to make their beds, police the barracks and grounds, and get ready for work call at 7:45 a.m. Lunch was typically a 30-minute break and the eight-hour workday was strictly adhered to. Work at the project site typically would end in time to arrive back at camp at 4:00 p.m. For projects requiring extensive commutes, either extended workdays would be required or tempo-

rary spike camps were used until the project was completed. Typically at 5:00 p.m., camps stood at "Retreat" as the flag was lowered (which was the closest aspect to militarism conducted in the CCC program) (Baldrige 1971:289). Retreat was followed by dinner and after eating the men could participate in leisure and educational programs (Baldrige 1971:289). Activities would continue until "lights out" at 9:30 or 10:00 p.m. If the camp was near a town, enrollees could leave camp two or three nights a week. Weekends were typically free time and free of work projects, but camp beautification and repairs were ongoing. Men were allowed to go into town or attend an organized camp trip on Saturday afternoons, but a sufficient number had to stay in camp to serve as a fire crew in case of emergencies (Baldrige 1971:290). While camps could take a holiday at the camp commander's discretion, each enrollee accumulated one day of leave for each month's service for a total of six days of leave per enrollment period (Baldrige 1971:290-291).

Table 1. Enrollment Periods of the Civilian Conservation Corps.

Enrollment Period	Date	Enrollment Period	Date
1 st	April 1, 1933 to September 30, 1933	11 th	April 1, 1938 to September 30, 1938
2 nd	October 1, 1933 to March 31, 1934	12 th	October 1, 1938 to March 31, 1939
3 th	April 1, 1934 to September 30, 1934	13 th	April 1, 1939 to September 30, 1939
4 th	October 1, 1934 to March 31, 1935	14 th	October 1, 1939 to March 31, 1940
5 th	April 1, 1935 to September 30, 1935	15 th	April 1, 1940 to September 30, 1940
6 th	October 1, 1935 to March 31, 1936	16 th	October 1, 1940 to March 31, 1941
7 th	April 1, 1936 to September 30, 1936	17 th	April 1, 1941 to September 30, 1941
8 th	October 1, 1936 to March 31, 1937	18 th	October 1, 1941 to March 31, 1942
9 th	April 1, 1937 to September 30, 1937	19 nd	April 1, 1942 to July 31, 1942
10 th	October 1, 1937 to March 31, 1938		

General Construction Methods

A variety of methods were used by the CCC to construct recreational and erosional features in the Desert West. These ranged from hand excavation and construction with simple hand tools, horse-drawn equipment such as plows, harrows, and “fresno” scrapers, and mechanized equipment such as bulldozers, towed graders, and a variety of dump- and flatbed trucks. Many features also incorporated a variety of techniques depending upon the size of the overall feature as well as the finish work required. This ranged from entire camps working with large mechanized equipment to construct large dams and reservoirs over a period of weeks to months, to two men using local materials to construct small check dams. In some cases, handmade wire baskets or stretcher-like contraptions made of welded pipes and wire were used to carry materials to the worksite (Seymour 1995).

Construction materials were generally collected onsite or from nearby areas and either trucked in or carried by hand. Locally obtained materials such as rock, soil, and vegetation were used extensively. These materials were typically used due to their minimal cost and transportation requirements. If construction materials were not available onsite or a short distance away, materials were trucked in from the closest source available. Manufactured materials were also used depending upon the requirements of the project, including cement to make mortar or concrete (using locally obtained sand and gravel), various types of wire (bailing, barb, hog, etc.), as well as various types of fasteners and milled lumber, depending upon what was being constructed.

THE CCC IN NEVADA

The Depression came at the worst possible time for Nevada, when low agricultural prices, cata-

strophic bank failures, mine closures, environmental deterioration by natural and human caused overuse, and the loss of jobs created economic and environmental hardships (Kolvet and Ford 2006:1). In Clark County, the Boulder Canyon Project enabled the area to be less hard hit by the economic depression than the rest of the state or country (White 2003:6); however, not all single and married men with families that traveled to southern Nevada seeking work with that project were successful. To add to the problem, after the project was completed in 1935, the former construction workers not finding work elsewhere only added to the swelling numbers of unemployed men in southern Nevada in need of subsistence relief (Kolvet and Ford 2006:20; White 2003:6). During this period of despair and unemployment, people became transient after losing their homes, ranches, and farms and with the vision of better pastures in the West (part of American culture), people moved to find work. The influx of unemployed and homeless people into the state mirrored the national dilemma (Kolvet and Ford 2006:23) and Nevada and other western states had little choice but to try to “accommodate the waves of men and families who passed through or settled in their state” (Kolvet and Ford 2006:23).

During the Depression, 90 percent of Nevada was owned by the federal government. Similar to other western states – sparsely populated with large amounts of public lands – Nevada received a higher-than-average percentage of federal assistance allocations (Kolvet and Ford 2006:2). This percentage was due to most of the federal assistance related to the CCC program focused on projects located on or related to federal or public lands. In 1930, Nevada’s population was around 90,000 (the least-populated state at that time) (Kolvet and Ford 2006:18). The federal government expended \$1,130 per capita in Nevada, the highest of all 48 states between 1933 and 1939 (Kolvet and Ford 2006:2). Of these federal expenditures, 72 percent went to

three agencies: (1) the Bureau of Reclamation (for the Boulder Canyon Project); (2) the Bureau of Public Roads; and (3) the CCC (Kolvet and Ford 2006:2). Politics played a role in the allocations the state received. Nevada's political clout came from the fact that the state's national representatives fully supported President Roosevelt (Kolvet and Ford 2006:2). Support of the President was not forgotten: greater financial support was allocated to states that solidly supported him during his 1936 bid for re-election.

For Nevada's federal agencies, the CCC provided a free labor force that allowed them to implement rehabilitation projects quickly (Kolvet and Ford 2006:3). This workforce totaled more than 30,790 men employed throughout the state during the life of the program (Kolvet and Ford 2006:3). Nevada had more camps and enrollees per capita than other states due to a combination of politics and the fact that most of the state was comprised of federal lands (Kolvet and Ford 2006:32). Fifty-nine main camps operated throughout the state during the CCC program, with 83 different companies organized from eastern, midwestern, or southern states (Kolvet and Ford 2006:32). The overall distribution of CCC camps was separated by the federal supervisory agency where projects were conducted: over the life of the program in Nevada, 26 camps worked under the Division of Grazing/Grazing Service, seven worked under the U.S. Forest Service, six worked under the Soil Conservation Service, six worked under state and national parks, five worked under the Bureau of Reclamation, four worked under the Bureau of Fisheries/Biological Survey/Fish and Wildlife Service, three worked for private entities, and two worked for military agencies (Kolvet and Ford 2006:32-33).

The CCC in Southern Nevada

During the nine year period of the CCC, nine primary camps and numerous smaller spike

camps were constructed and manned in Clark County (White 2003:7). Of these camps, four were established in the Moapa Valley or Muddy River drainage: (1) the Moapa Camp near Warm Springs; (2) Wells Siding at Logandale; (3) Overton; and (4) the Muddy River Camp near Moapa (White 2003:7). Five other camps were located throughout the rest of the county: (1) Las Vegas; (2) Boulder City; (3) Mount Charleston; (4) Corn Creek; and (5) Bunkerville (White 2003:7). The occupation of these camps alternated either during the summer or winter months and by different CCC companies depending upon the projects planned.

As part of the developments related to the construction of Hoover Dam and the impoundment of Lake Mead, the CCC constructed numerous visitor facilities in the region. One area that benefitted was the Valley of Fire State Park. Of importance to the present study, the Overton Camp (SP-1) housed men who worked on projects within and around the park. Two companies occupied the Overton Camp: (1) Company 974 established the camp after moving from the Mount Charleston Camp and worked from October 15, 1933 to May 1, 1934 (2nd and 3rd enrollment periods); and (2) Company 573 worked from November 3, 1934 to January 14, 1936 (4th through 6th enrollment periods) (White 2003). The camp's focus was to work on tourist facilities. One project was a road into the Valley of Fire which extended from Crystal to Overton that had two cut-offs leading to points of interest: one to Atlatl Rock and the other to a campground (*LVER-J* 1/16/1934:1; White 2003:14). Other facilities included stone cabins built "for the convenience of campers" and a large dam around a natural tank "to ensure an ample water supply to last throughout the summer" (White 2003:14-16). One enrollee, John Burns, worked there, helping to build small stone tourist cabins and armadas. "We built nine cabins in there," Burns says, "As stringers we used logs from out along the river and from

Mount Charleston” (McBride 1995:28-29). Company 974 moved from the Overton Camp in the spring of 1934 to Panaca in Lincoln County to start on flood control and tourist facilities at Cathedral Gorge State Park (White 2000, 2003:16). During their tenure at the Overton Camp, Company 974 also helped excavate archaeological sites associated with Pueblo Grande de Nevada, or Lost City, during the winters of 1933 and 1934 (White 2003:16). As a result of the excavations at Lost City, Company 573 continued work there, constructing a museum to house exhibits and the collections from the excavations (White 2003:18). Company 573 also continued work on improvements in the Valley of Fire until being relocated to Boulder City in 1936 to become part of Twin Camps (White 2003:18). Work in the area continued for several years out of the Overton Camp, which was maintained as a spike camp for crews out of the Boulder City Twin Camps (McBride 1995; White 2003:18).

THE CCC: A SUMMARY

The CCC represents an important but often forgotten era in our development as a country. From 1933 to 1942, the national infrastructure was given a huge boost as millions of trees were planted, acres of rangeland were reseeded, roads and trails were cut, and power lines were strung. Countless numbers of erosion-control and water-catchment features were built by CCC enrollees across the nation. During the nine years that the CCC operated, millions of dollars and person-hours were directed towards remedying the problems facing the country. Tens of thousands of jobless men were employed, bringing much-needed cash to poor families. More importantly, the CCC gave people work, training, and a sense of worth during a time of great need. By far, the majority of the enrollees participating in the program considered this era the most important

of their lives, providing training and confidence that was not forgotten. These men left their mark on the countryside, repairing damage done through previous years of abuse of the land. Although their builders have been all but forgotten, CCC erosional features, roads, buildings, recreational facilities, and other improvements can still be seen on the landscape. Our recent work highlights just some of these features.

RESULTS: SITES AND FEATURES BUILT BY THE CCC

Site 26CK7533: Buena Vista Road and Overlook

26CK7533 consists of an approximately 1.6-mile-long graded dirt access road leading from Lake Shore Drive to the Buena Vista Overlook (Figures 1 and 2). This road was constructed by the CCC in 1934-35 to provide access to the scenic overlook, or vista, and the Buena Vista Campground (26CK8648) located approximately 0.2 miles from the vista at the end of the road. The road has a graded and natural gravel surface presently in a variety of conditions. The original road was probably constructed by caterpillar dozers and a grader to finish the surface. The road does not appear to have ever been graveled or surfaced. This type of road construction produced a road surface 8-12 feet wide.

To better evaluate and describe the road in detail, the road was separated into segments according to intersections or condition points. These points also correspond to land management, mining, or past use boundaries. The road was divided into seven segments ranging in condition from totally modified to excellent (Table 2). Segments 1-4 are located on BLM-managed lands within the Simplot Silica mining claim and Segments 5, 6 and 7 are located on Valley of Fire State Park-managed lands. The actual length of the road (with a split or dual access

roads) is between 8,415 feet (Segments 1, 3-7) and 8,135 feet (Segments 2-7). Approximately 1.01 miles of road (with both short access roads included) is located on BLM-managed lands and approximately 0.82 miles of road is located in Valley of Fire State Park.

Segments 1 and 2 appear to both be part of the original road and are plotted in the as-built drawings for Route 1 from Overton to Lake Mead prepared in late 1937 by the USDA Bureau of Public Roads for the National Park Service. Both segments are depicted as existing roads on Sheet #9 of the 1937 “As Constructed Plans” for Project 1-A, Grading & Bituminous Treatment Surfacing of Route No. 1-Overton-Lake Mead Boulder Dam Recreation Area (National Park Service 1937). Route 1 was the original designation of Lake Shore Drive (26CK5431). Segment 1 leads from the north

(Overton) leaving Route 1 and traveling south. Segment 2 leads west from Lake Shore Drive (the road continues to the east towards the Muddy River arm of Lake Mead, but this road is a wide modern graded road that was not investigated east of Lake Shore Drive). Segment 1 is 30+ feet wide and is typical of a road graded and continually maintained by large road motor graders and used by large and heavy earthmoving equipment.

Segment 2 is separated into two sub-segments due to its condition. Segment 2a (620 feet) is in fair to poor condition as it has been graded, crossed by multiple bypass roads, and is eroded. Segment 2b (600 feet) passes through existing mining operations and has been totally modified with no original fabric remaining. Segments 1 and 2 connect and form a Y at the ends of the two segments.

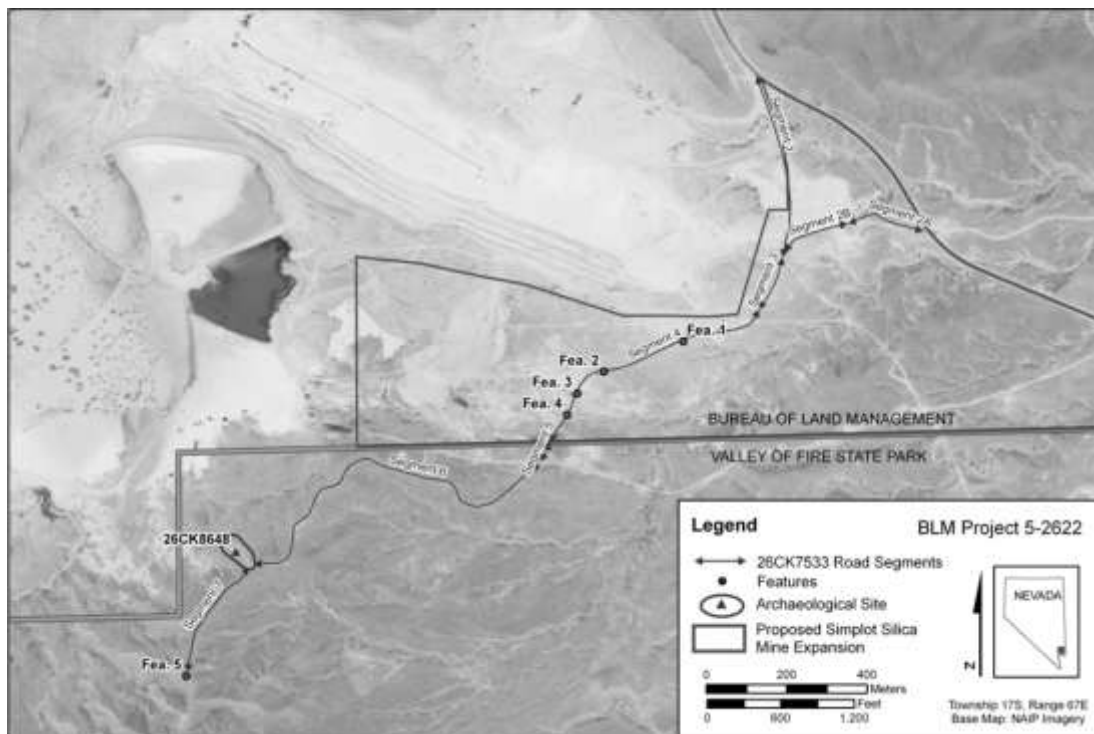


Figure 1. Site map of 26CK7533 as recorded by HRA.



Figure 2. Overview of 26CK7533 looking northeast.

Table 2. Physical Condition of Road by Segment, 26CK7533.

Segment No.	Total Length	Condition	Features
1	1,500 ft	Totally modified by mining operations, no original fabric remains	None
2a	620 ft	Fair to poor due to grading, erosion, and multiple bypass roads	None
2b	600 ft	Totally modified by mining operations, no original fabric remains	None
3	375 ft	Totally modified by mining operations, no original fabric remains	None
4	2235 ft	Fair to poor due to grading, widening, and erosion.	Four retaining walls (1-4)
5	180 ft	Fair to poor due to grading, widening, and erosion	None
6	3,075 ft	Good, modified by erosion and some grading/widening	Buena Vista Campground
7	1,050 ft	Excellent, minimal impacts from vehicle traffic, no evidence of grading beyond original construction	Overlook/Vista (5)

Segment 3 has been totally modified with no original fabric remaining. This road segment is 30+ feet wide and is typical of a road graded and continually maintained by large road motor graders and used by large and heavy earthmoving equipment.

Segment 4 is in a fair to poor condition due to repeated grading and maintenance resulting in widening the footprint of the road, removing the original fabric and causing erosion. This road segment is between 16 and 22 feet wide and is typical of a road periodically graded and maintained by road motor graders. Numerous locations along the road have been widened to 22+ feet with secondary roads constructed by heavy equipment leading to prospecting bore holes. This segment of the road contains four rock-and-mortar retaining walls (Features 1-4, discussed individually below) located on the down drainage (south) side of the road at deeper drainage crossings.

Segment 5 is in fair to poor condition due to repeated grading and maintenance resulting in widening the footprint of the road, removing the original fabric and causing erosion. This road segment is between 16 and 22 feet wide and is typical of a road periodically graded and maintained by road motor graders.

Segment 6 leads from the east-west access road crossing to the southwest along a ridgeline to the Buena Vista Campground (26CK8648) (the segment is totally within the Valley of Fire State Park). This portion of the road is 16 feet wide and appears to have been only occasionally graded and is in good condition with some modification by grading/widening, use and erosion.

Segment 7 leads from the Buena Vista Campground to the vista turnaround and parking area (the segment is totally within the Valley of Fire State Park). The road is 12 feet wide and minimally maintained. An alignment of rocks is present along one side leading to dry-laid retaining walls forming a flattened parking/turnaround area (Feature 5, discussed below). This portion

of road has had limited traffic: ATV tracks are the primarily evidence of use.

During the recordation of this road, five features were observed (Table 3). These include four rock rubble and mortar road retaining walls (Features 1-4) and the Buena Vista Overlook (Feature 5), which is comprised of a flattened turnaround and parking area at the terminus of the road. These are described below.

Table 3. Features Recorded at 26CK7533.

Feature No.	Feature Type
1	Rock rubble and mortar road retaining wall, 36 ft in length
2	Rock rubble and mortar road retaining wall, 34 ft in length
3	Rock rubble and mortar road retaining wall, 40 ft in length
4	Rock rubble and mortar road retaining wall, 46 ft in length
5	Buena Vista, dry laid retaining wall with flattened turnaround and parking area

Feature 1: Retaining Wall 1. This feature is a 36-foot-long by 16-inch-wide double-course-thick mortared rock rubble retaining wall that protects the road from erosion at the drainage crossing (Figures 3 and 4). Most of the exposed rocks do not appear shaped but there are some exceptions. The joint/pointing is rough with trowel marks still evident in places. The cap is mortar puddle and smoothed to make an even surface. Wall height is 8 to 10 inches on the ends with a maximum height of 20 inches in the center/deepest part of the drainage. The overall profile of the wall also relates the drainage, where the center portion of the wall is 23 inches below the ends of the wall. The outer portions of the wall are one to two courses high while the center portion is three to four courses high. Lo-

cated on the top of the wall within the mortar cap are circular impressions made while the mortar was still wet, probably caused by a pail or can placed on the wall during final cleanup and finish work. No formal foundation was found.



Figure 3. Feature 1 looking northeast.

Feature 2: Retaining Wall 2. This feature is an approximately 34-foot-long by 16-inch-wide double-course-thick mortared rock rubble retain-

ing wall that protects the road from erosion at the drainage crossing (Figures 5 and 6). Wall height is 29 inches at the deepest exposure in the center of the drainage. The overall profile of the wall also relates to the drainage, where the center portion is 19¾ inches below the ends of the wall. It is similar in most ways to Feature 1 and is manufactured of quartzite and sandstone. Most of the mortar joints are small and even with trowel marks present. One area of mortar in the center of the wall has a different color and mix, suggestive of the area being re-pointed post-construction as an attempt at maintenance or possibly that it was a different batch and mix of mortar. Flood debris comprised of rock and gravel fill is present in places on the south side of the wall, obscuring portions of the face. Three to four courses are exposed on the south face with blocks mostly unmodified with approximately one-quarter of the exposed blocks modified to some degree. Portions of the top were covered with flooding debris of sands and gravels obscuring the plan view of the feature.

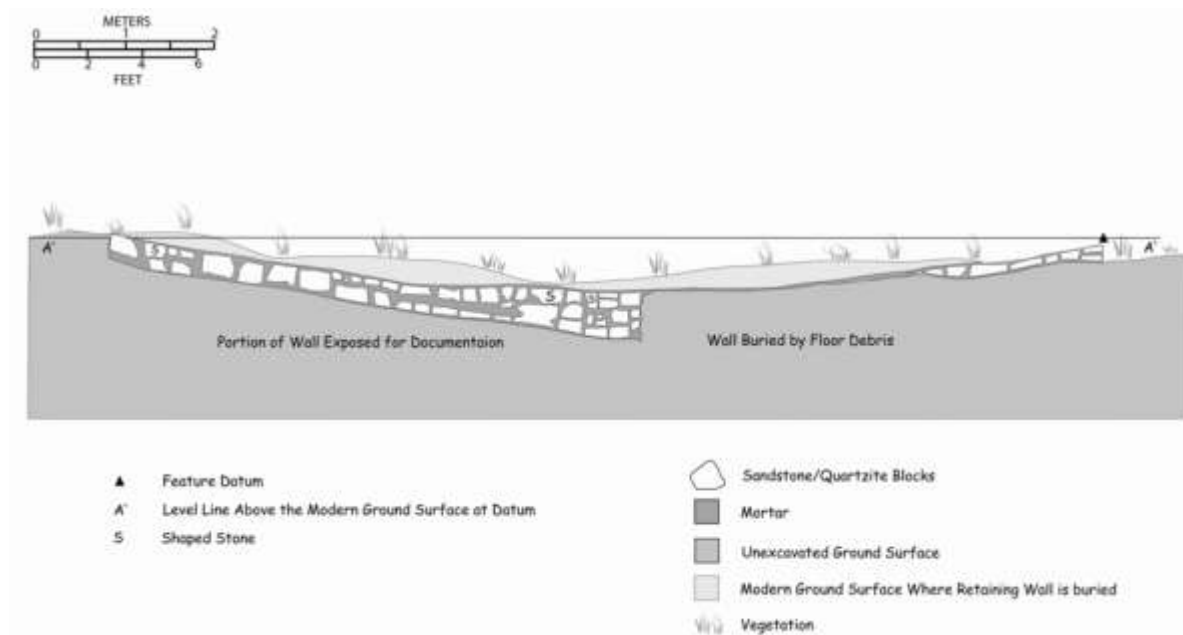


Figure 4. Profile of Feature 1 at 26CK7533.

Located adjacent to Feature 2 is the modified Buena Vista Road. This portion of the road has been graded and widened and berms produced by multiple grading episodes are present. The road is 23 to 26 feet wide between grader berms. The road has a drainage channel or ditch present on its north (uphill) side.



Figure 5. Feature 2 looking northwest.

Feature 3: Retaining Wall 3. This feature is a double-course-thick mortared rock rubble re-

taining wall measuring 40 feet long by 18 inches wide (Figures 7 and 8). It crosses a medium-sized drainage, which protects the road from erosion at the drainage crossing. Wall height varies between 4 and 10 inches with a maximum height of 31 inches at the deepest point of the drainage. The overall profile of the wall relates to the drainage, where the center portion of the wall is 18 inches below the ends of the wall. Construction technique is essentially the same as Features 1 and 2. Only a few stones exhibit evidence of shaping and a diffuse area to the south of the wall was observed to contain a few shaping flakes. No discarded mortar was observed in the vicinity around the wall.

The front (eastern) face of the wall has flood debris obscuring the wall profile. The outer portions of the wall have one to two courses of exposed wall, and the central portion has between four and six courses exposed. The drainage below the wall has areas of exposed bedrock and a portion of the southern end is mortared onto sandstone bedrock.

Feature 4: Retaining Wall 4. Like Feature 3, this feature is a double-course-thick mortared

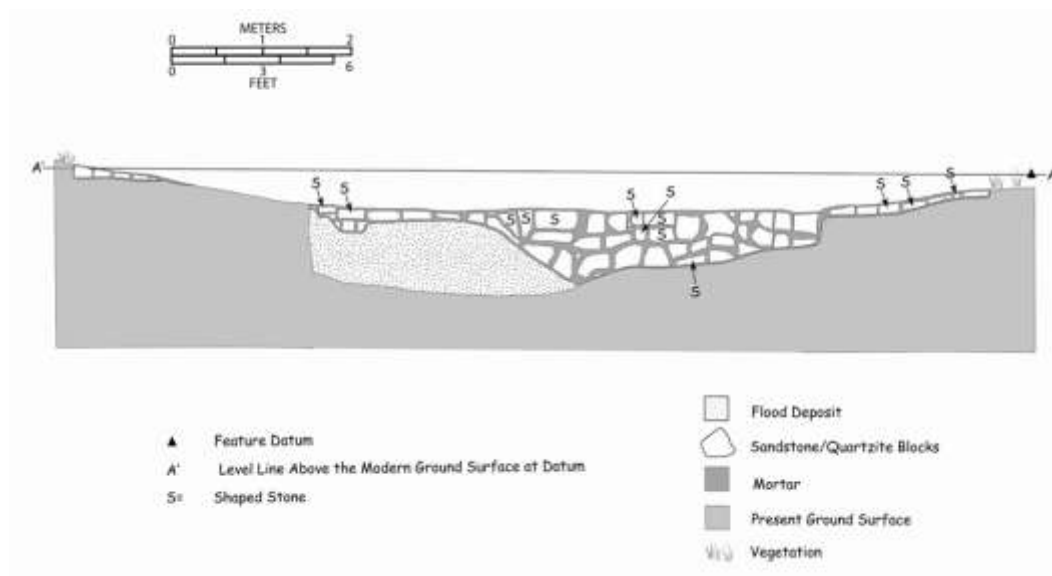


Figure 6. Profile of Feature 2 at 26CK7533.

rock rubble retaining wall measuring 46 feet long by 16 inches wide (Figures 9 and 10). It crosses a wide drainage along a hill located to the south of the wall. The feature protects the road from erosion at the drainage crossing. The method of construction is akin to that used to build the other retaining walls (Features 1-3).



Figure 7. Feature 3 looking northeast.

Most of the wall is between 2 and 10 inches high with one to two courses of wall exposed, with a maximum height of 24 inches and three to five

courses exposed in the center portion. The overall profile of the wall relates to the drainage, where the center portion is 24 inches below the ends of the wall. Approximately one-third of the exposed wall stones have some edge modification or shaping. The mortar is mostly intact with areas cracked and loose, with some of the cap missing altogether. The puddle mortar cap contains several faint pail or can impressions and may have been for tool cleaning or wetting during final finish work of the pointing and cap. This cap is also a darker color gray and coarser, suggesting that it may have been added later with a different and dryer mix.

Located adjacent to this feature is the modified Buena Vista Road. This portion of road has been graded and widened and berms produced by grading are present. The road is approximately 17 feet wide between grader berms at this location. The road also has a natural drainage channel present on the western side of the road where the drainage enters and crosses it. The wall has created a flat sandy area above the wall and the drainage below is incised and braided with an area to the south that has totally bypassed the retaining wall.

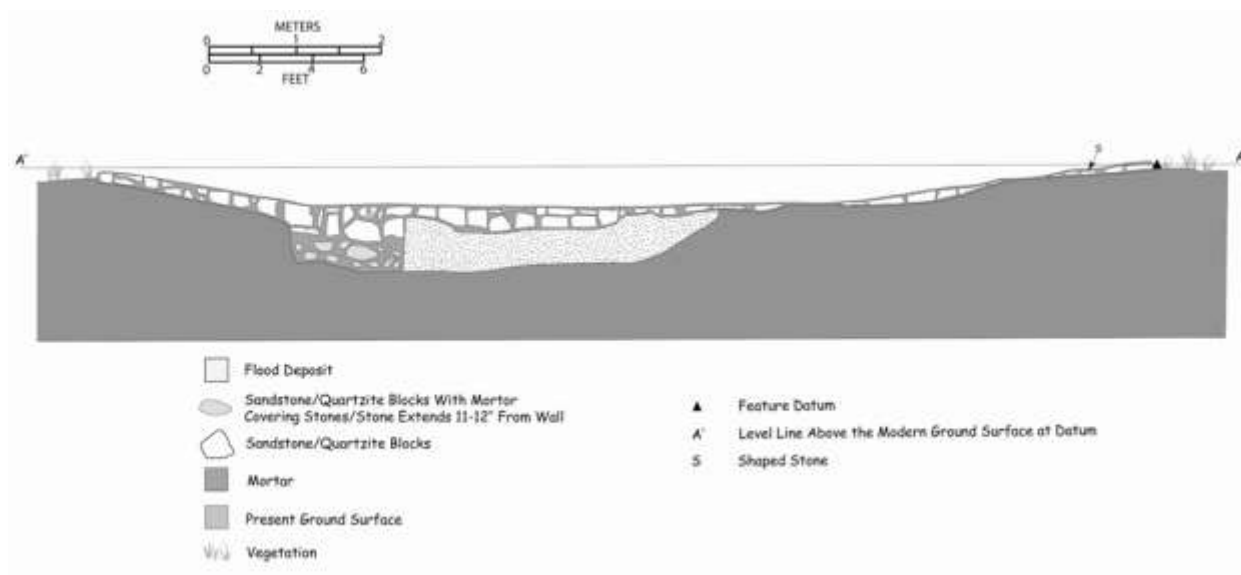


Figure 8. Profile of Feature 3 at 26CK7533.

Feature 5: Buena Vista, Turnaround, and Parking Area. Located at the southern end of the Buena Vista Road is Buena Vista (Figure 11), an overlook consisting of a 40-foot x 40-foot turnaround and parking area. The vista overlooks the northern part of Valley of Fire State Park to the west, the community of Overton and the Simplot Silica Mine to the north, and Lake Mead to the east. The feature was constructed by grading or flattening the top of the ridge at the edge of a drop off with a dry-laid rock retaining wall less than 2 feet in height along the western and southern edges of the turnaround. Beyond the wall and earthwork, no other attributes of construction were observed.



Figure 9. Overview of Feature 4 looking north.

Site 26CK8648: Buena Vista Campground

This site consists of the Buena Vista Campground (Figure 12) constructed by the CCC in 1934-35. This facility was built by the CCC SP-1 camp stationed in Overton as part of their visitor and recreational facilities projects for the Valley of Fire and Boulder Lake Park (later renamed Lake Mead National Recreation Area). The campground is comprised of multiple masonry visitor comfort facilities including a two-room masonry visitor cabin, a large picnic shelter with five masonry tables with concrete benches and table tops, two masonry double-sided campstoves, a large central fire pit, two circular masonry winding wall pit toilets, an area where a trash or ash bin was placed (missing), a dry-laid masonry retaining wall along the eastern edge, graveled paths to the toilets, a flattened and graveled camp and parking area, and a trail leading from the campground to the northeast (Table 4). The campground measures approximately 165 feet northeast-southwest by 280 feet.

Photographs taken during various stages of construction of the campground were located in the University of Nevada, Las Vegas U.S. Park Service Photograph Collection housed in the Lied Library Special Collections. Seven photos

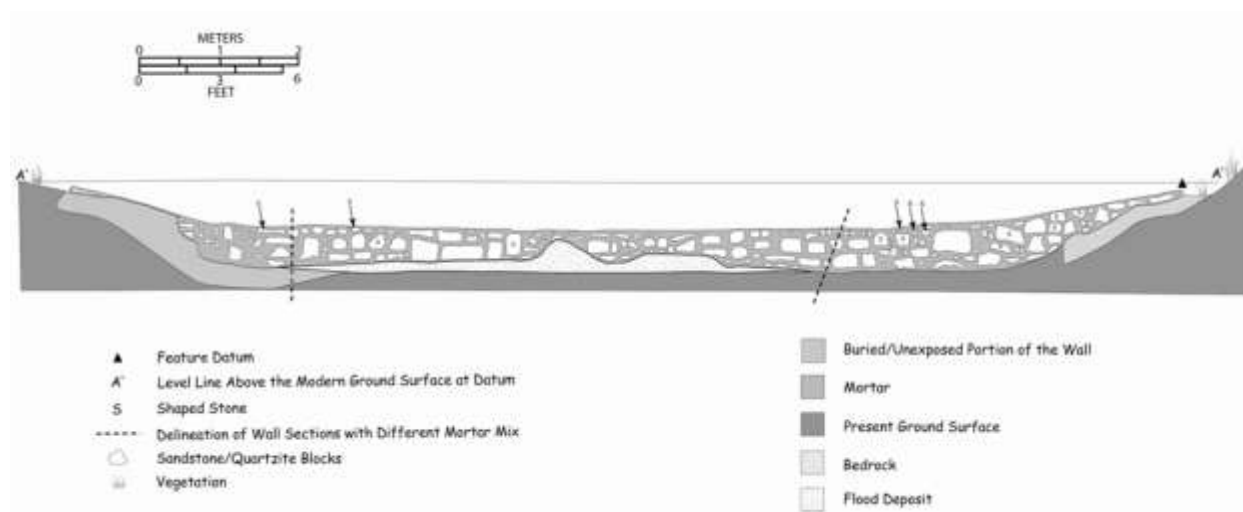


Figure 10. Profile of Feature 4 at 26CK7533.

of the site were obtained from that collection and are presented below. In addition, a photograph of the picnic shelter also appears in Good's (1938:51, 1990) *Park and Recreation Structures* as an example of the shelters built in unforested environments of the Southwest.

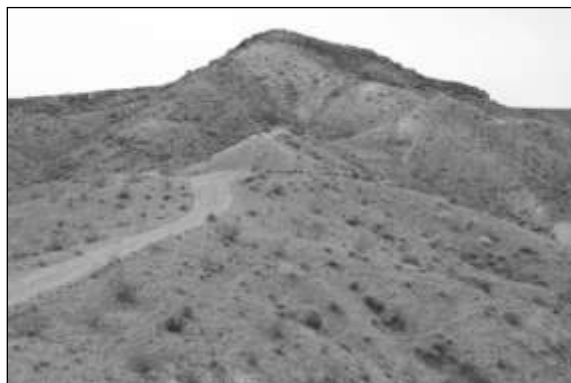


Figure 11. Overview of Buena Vista and turnaround looking southwest.

Table 4. List of Features Recorded at 26CK8648.

Feature No.	Feature Type
1	Two room masonry cabin
2	Picnic shelter and tables
3	North pit toilet
4	South pit toilet
5	South masonry double-sided campstove
6	North masonry double-sided campstove
7	Concrete outline for ash receptacle
8	Large masonry fire ring
9	East retaining wall
10	Trail

Feature 1: Two Room Masonry Cabin. This feature is a 24-foot by 12-foot two-room masonry cabin (Figures 13-17). The walls are a single course wide of large sandstone and quartzite blocks 12-18 inches wide with some notched for the doorway. Many of the blocks have been

modified to form uniform blocks or finished wall faces. The initial construction of this structure and the southwest pilaster of the picnic shelter can be seen in an historic photo taken in 1934 (see Figure 14). Each room measures 10 feet by 8 feet and a tall window opening with a log lintel is located in the eastern wall. A fireplace is present on the western wall, tucked into the corner opposite the doorway on the southern or northern wall (it shares the common center wall and forms a single chimney in the center of the exterior west wall (Figures 18 and 19). Entrances are located in the western corner of the structure, either in the southwest (Room 1) or northwest (Room 2) and once had wooden lintels. This doorway opens onto a 10 feet by 5 feet porch with three posts and three beams extending through the north/south end wall. The roofs of both rooms and porches have burned and are missing as well as the posts supporting the porch roof. The floor of both rooms is red sandstone laid into mortar, as is the porch outside Room 2. No flooring is evident in the porch area outside Room 1.

The cabin originally possessed a log rafter ceiling with layered vegetation (possibly willow) with what appears to be a topping of soil or clay to produce a flat pueblo style roof (Figures 20-21). The logs appear to be cottonwood, probably harvested from the banks of the Colorado River that were being cleared as Lake Mead filled behind Hoover Dam. One of the many jobs of the CCC working around the lake at the time was removing and burning vegetation and driftwood as the water level increased to reduce water hazards. In keeping with the thrifty nature of the CCC using natural materials, much of the wood was probably from this clearing of vegetation of the expanding lake bottom. The entrance doors appear to be craftsmen style milled wooden doors. The windows do not appear to contain glass but instead had carved wooden bars with shutters behind them (Figure 22). Only the wooden lintels remain (Figure 23).

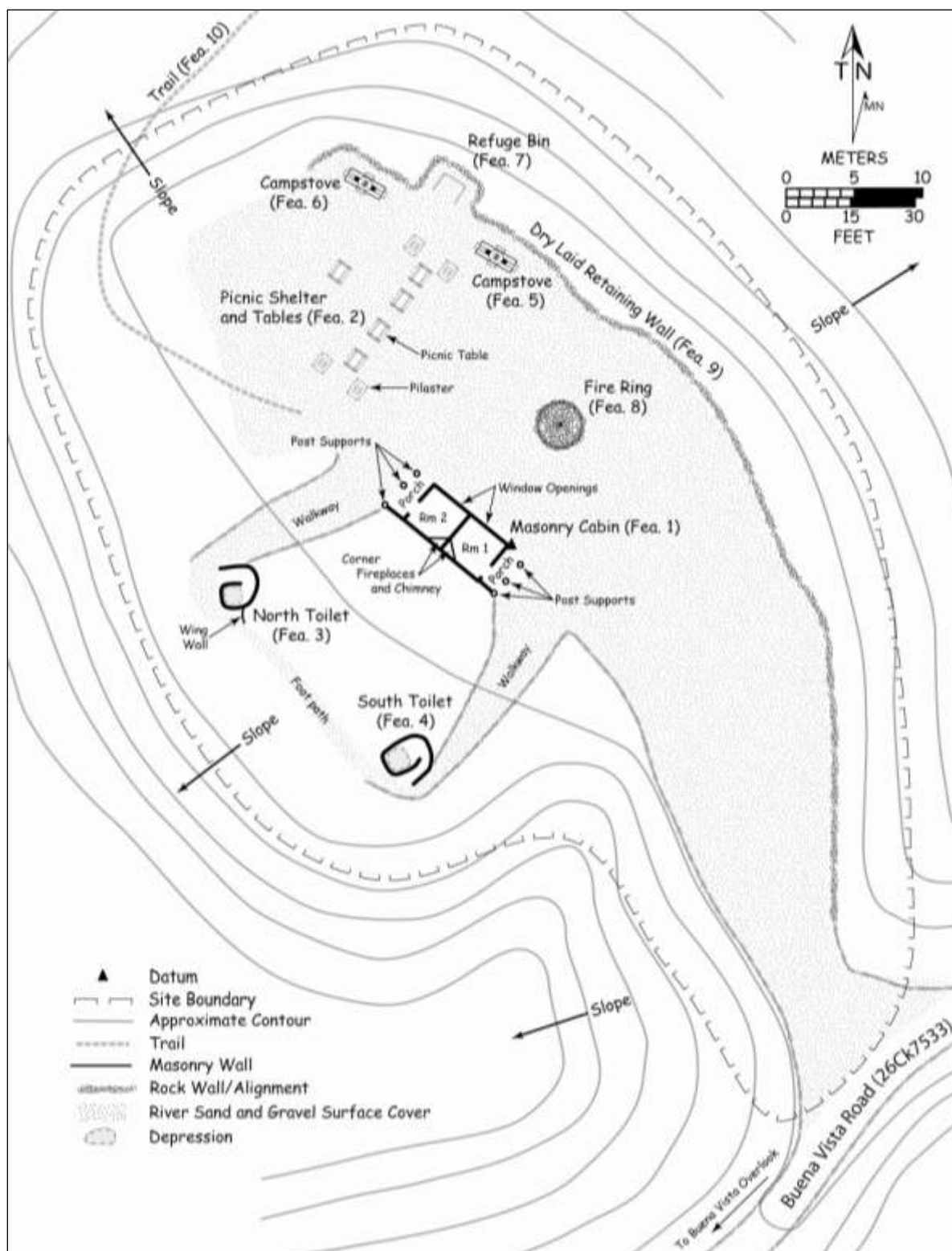


Figure 12. Plan map of Buena Vista Campground (26CK8648).



Figure 13. Overview of Feature 1, Room 1 looking northwest.



Figure 16. Historic photograph of Double Stone Cabin, taken May 2, 1935, view to northwest (Courtesy NPS Collection, UNLV Library).



Figure 14. Historic photograph of enrollees constructing public campground at high camp site, State Park Project #1, (1934) looking northwest (Courtesy NPS Collection, UNLV Library).



Figure 17. Historic photograph of western part of completed Buena Vista Campground with cabin, picnic shelter and tables, fire pit, and campstove in view, taken May 2, 1935 looking north (Courtesy NPS Collection, UNLV Library).



Figure 15. Overview of Feature 1, Room 2 looking southwest.



Figure 18. Overview of fireplace in Room 1.



Figure 19. Overview of fireplace in Room 2. Note: fireplaces in Room 1 and Room 2 share a common chimney.



Figure 22. Detail of cabin window treatment from portion of photograph presented in Figure 16.



Figure 20. Detail of Cabin from portion of photograph presented in Figure 16.



Figure 23. Detail view of window openings and lintels looking northwest.



Figure 21. Detail of Cabin from portion of photograph presented in Figure 17.

Feature 2: Picnic Shelter and Picnic Tables. Feature 2 is a large ramada-type picnic shade structure with the remains of five masonry stone and concrete picnic tables (Figure 24). Keeping with the rustic vernacular architectural style, the superstructure was large logs with smaller diameter poles used as secondary beams and joists (Figure 25). As with the roofing material used on the cabin, the materials used for this feature were probably salvaged from the Colorado River banks prior to or during the impounding of Lake Mead behind Hoover Dam. The superstructure (beams and roof) are missing but the four large masonry 4-foot-square pilasters are still intact. The southern pilasters are 7-8 feet tall and the

northern ones are 5-6 feet tall with semicircular beam sockets. The tables are a series of two short parallel rock rubble masonry walls approximately 12-16 inches tall and 6-feet-long set 4 feet apart. Four sets of tables sit between the four pilasters. The benches and table tops were constructed of concrete with rebar and/or wire mesh reinforcement. The tabletops have been moved, broken, and smashed in the vicinity of the footings. The benches have also been removed and/or broken. Historic photos (Figures 17, 24, and 38) show a fifth table outside the picnic shelter.



Figure 24. Overview of Feature 2, picnic shelter pilasters and picnic tables looking northeast.



Figure 25. Historic photograph of picnic shelter (Feature 2) after completion in May 1935 looking north (Courtesy NPS Collection, UNLV Library).

Located to the north of the pilasters and tables is a large cleared area covered or resurfaced with smooth river sand and gravels forming a smooth camping area. This covering is similar to that used for the parking area and the paths to the two toilets (Features 3 and 4). The material is not local and was probably trucked in from sources to the east, either from the local major drainage located immediately below the campground, along the Muddy River, or from similar sources.

A photograph of the picnic shelter (Figure 26) appears in Good's (1938:51, 1990) *Park and Recreation Structures* as an example of the shelters built in unforested environments of the Southwest. The original publication was limited in scope and production and was in high demand, so the National Park Service and the CCC funded an enlarged and expanded version to be used throughout the country to assist the CCC program in keeping with the rustic style of architecture (Good 1938:IX). While the structure was presented as an example without plans, numerous similar structures may have been constructed after 1938 by the CCC throughout the desert west due to this photograph appearing in the publication.



Figure 26. Photograph of Feature 2 that originally appeared in Good's *Park and Recreation Structures* (1938:51; 1990).

Feature 3: North Pit Toilet. Feature 3 is a spiral rock rubble masonry wall pit toilet or privy (Figures 27-28). The structure measures 12 feet x 10 feet and is made of single- to double-course shaped and unshaped sandstone and quartzite blocks. The top of the wall is flat, suggesting a roof may have been present, but a historic photograph taken in 1935 (Figure 29, with a modern equivalent in Figure 28) shows that no roof was present. The walls are 6 feet tall and a shallow mortar drain leads from the entrance across the trail (Figure 27). The interior appears to have had a cement- or mortar-lined opening with an unknown type of seat and waste retainment system. A graveled walkway leads from the cabin/camp area to the toilet. A less formal path leads to the south towards the other toilet (Feature 4, below).

Feature 4: South Pit Toilet. Feature 4 is a pit toilet similar to Feature 3 except that it has a rounded mortar cap on the top of the wall (Figure 30-31). A graveled walkway leads from the cabin/camp area to this feature and a less formal path leads to the north towards the other toilet. Feature 4 has an inscription in the mortar (inscribed while wet) of “Sitting Bull” and a teepee (Figure 32) with a smaller “Caveman” inscription.



Figure 27. Overview of northern pit toilet (Feature 3) looking east. Note entrance and drain in front.



Figure 28. Modern view of historic photograph of northern pit toilet (Feature 3) looking west.



Figure 29. Historic photograph of northern pit toilet (Feature 3) after completion on May 2, 1935 looking west (Courtesy NPS Collection, UNLV Library).



Figure 30. Overview of southern pit toilet (Feature 4) looking southwest.



Figure 31. Overview of southern pit toilet (Feature 4) looking northeast.



Figure 32. Detail view of inscription on exterior of southern pit toilet (Feature 4).

Feature 5: Southern Masonry Double-Sided Campstove. Feature 5 is a natural stone masonry campstove adjacent to the picnic shelter (Figure 33). It measures 12 feet by 6 feet and is comprised of a double-ended grilling or cooking area with a central round chimney stack. The cooking surface is approximately 2 feet above the ground and the chimney adds an additional 5 feet in height. Each cooking area is comprised of an iron plate which served as a griddle or cook top surface with a series of square rebar set in the mortar for grilling. Only one plate is still present on the north end of the feature, and no grill bars remain.

Feature 6: Northern Masonry Double-Sided Campstove. Feature 6 is identical to Feature 5 (Figures 34-35). One plate is still present on the southern end of the feature, and all of the grill bars remain.



Figure 33. Overview of southern double-sided campstove (Feature 5) looking northeast.



Figure 34. Overview of northern double-sided campstove (Feature 6) looking northeast.



Figure 35. Historic photograph of double-sided campstove taken May 2, 1935 looking northwest (Courtesy NPS Collection, UNLV Library).

Feature 7: Concrete Outline for Refuse Bin. This feature is a 59-inch-square outline of mortar and concrete forming a box-like support structure located between the two campstoves on a flattened raised area contained by a retaining wall (Figure 36). An historic photo verified the original presence of this metal aboveground container and its use as an ash disposal bin for the various fireplaces (Figure 37).



Figure 36. Overview of concrete outline (Feature 7) looking east.



Figure 37. Detail of right portion of Picnic Shelter historic photograph (see Figure 25) showing original metal refuse bin in place.

Feature 8: Large Masonry Fire Ring. This feature is a 12-foot-diameter masonry fire pit located in the center of the parking area (Figure 38). The pit consists of a single masonry course

of natural rocks mortared into a ring 2-3 courses wide with a mortar cap. An historical photograph taken on May 2, 1935 at the completion of the campground shows that the fire pit was stone-lined with a number of wooden benches around it (Figure 39). The condition of the base of this pit is unknown but the fire pit has been used in the recent past.



Figure 38. Overview of large central fire ring (Feature 8) looking west with Feature 1 in background.



Figure 39. Historic photograph taken on May 2, 1935 of the open fire pit (Feature 8) (Courtesy NPS Collection, UNLV Library).

Feature 9: East Retaining Wall. Located on the eastern edge of the campground is a low dry-laid retaining wall that flattens the ridge top upon which the site is located. The wall extends from the southern portion of the parking area along the east edge of the leveled and graveled parking area to the east side of the campstoves

and refuge bin to the camping area to the north end of the site for approximately 120 feet. The wall ranges from 1 to 2 feet in height.

Feature 10: Trail. Feature 10 is a trail leading from the western edge of the picnic shelter, around the cleared camping area, and to the northeast towards the silica mine operations. The trail is informal with no evidence of markers, leveling, or surface treatment. It is probably not original to the campground and was produced either during the use-life of the campground, or more likely post-abandonment use of the area. The area was a common teenage/high school party spot (Ben File, Simplot Mine Superintendent, Personal communication 2009), which likely accounts for the recent graffiti, which dates to the 1990s, etched or painted on various rocks and in mortar. There is also a modern trash scatter comprised of clear and amber beer bottle glass, aluminum cans, nails, and screws.

SOME FINAL THOUGHTS

The role of the CCC in the development of recreation and tourist facilities related to Hoover Dam and Lake Mead is highly significant to the region. Much of the work conducted by CCC crews related to recreational infrastructure, both within the confines of Lake Mead and the surrounding area (including Valley of Fire State Park), has allowed for the natural and man-made wonders of the region to be enjoyed by numerous generations since their construction, although some have been used more than others. Many CCC projects associated with the national and state park systems tried to adhere to a rustic architectural style to keep the facilities as natural in appearance as possible (White 2003:Appendix I). This style included but is not limited to the use of indigenous and natural materials with frontier methods of construction that were adapted to and consistent with the surrounding environment. Both sites, the road leading to the

Buena Vista Overlook and the Buena Vista Campground, have stood the test of time. Their integrity is varied, but their overall significance is not. The stability of the masonry components is a testament to the skill and craftsmanship of the builders, many who had never worked with masonry or construction, or dealt with extreme environment of the region prior to enrolling in the CCC program.

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An Archaeologist's Field Guide for Identifying World War II and Cold War Era Military Food Cans

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Since World War I the basic unit of food for United States military personnel in the field has been the military combat ration. The desert regions of southern Nevada, southern California, and northwestern Arizona were testing grounds for large scale, unrestricted open desert military maneuvers from World War II through the Cold War. Identification of field ration component artifacts left at military sites in this region can quickly help establish with which of these two nationally significant historical periods the sites are associated. This paper discusses individual combat ration component cans from the latter 20th century. It further provides a basic guide to distinguishing and dating military ration cans from the period between 1942, at the beginning of desert training in World War II, and 1984, when canned rations were replaced by lighter weight freeze-dried meals.

INTRODUCTION

Historical Period military archaeological sites are encountered throughout a broad expanse of the desert Southwest. Regions of southern Nevada, southern California, and northwestern Arizona were testing grounds for large scale, unrestricted open desert military maneuvers during World War II (WWII) and, later, the Cold War. Large military reservations with defined boundaries, including Ft. Irwin, California; Yuma Proving Ground, Arizona; and the Nellis AFB Range Complex in Nevada continue as critical military training ranges in these states. These installations are off limits to most civilian archaeologists. However, World War II Era and Cold War Era unrestricted maneuvers left hundreds, if not thousands, of historical sites on public lands

predominantly administered by the Bureau of Land Management. These sites, ranging from large-scale camps and airfields to small can scatters resulting from individual soldiers' meals, are the ones most frequently encountered by archaeologists. Examination of field ration component artifacts, primarily cans, left at the military sites in this region can quickly help establish with which of the two nationally significant historical periods the sites are associated - WWII or the Cold War. Two major military training events define the two eras: the 1942-43 Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA) exercises and Joint Exercise Desert Strike in 1964.

***Desert Training Center/California-Arizona
Maneuver Area (1942 - 1943)***

America's entry into World War II's European theater was anticipated by way of North Africa. In February 1942, the U.S. Army Chief of Staff ordered creation of a training center in which troops could be prepared for the coming desert warfare. Major General George S. Patton was given responsibility for finding a suitable training site, and he decided upon a broad expanse of

Mojave Desert – one stretching from extreme southern Nevada across southeastern California to the U.S./Mexico border (Figure 1). By late 1943 the training area had been expanded east of the Colorado River to include parts of western Arizona. During nearly two years of operation over one million soldiers and support troops trained within its borders (Bischoff 2000). The DTC/C-AMA contained 14 divisional camps, six full airfields, and more than two dozen auxiliary landing strips (BLM 1986).

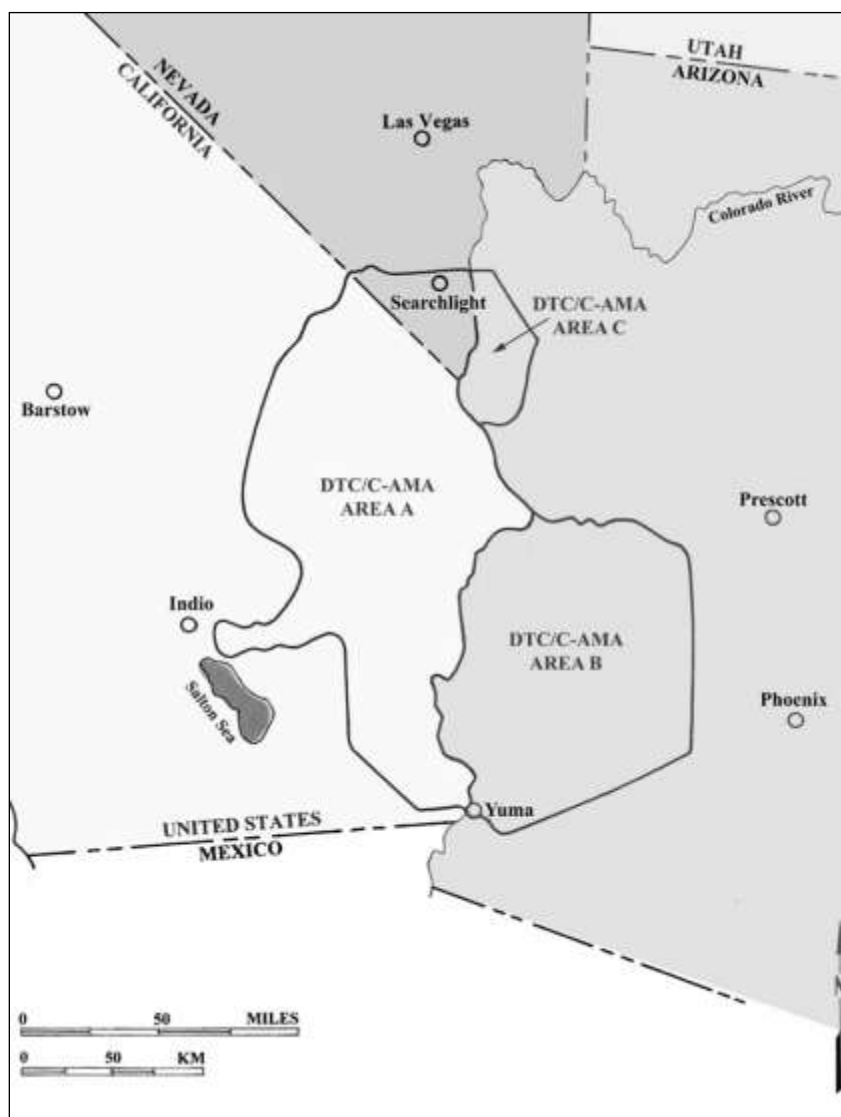


Figure 1. General location of the exercises for the 1942-43 Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA).

Operation Desert Strike (1964)

In 1964 the DTC/C-AMA region again became the general setting for large-scale military maneuvers as a joint Army/Air Force exercise dubbed Operation Desert Strike (or Joint Exercise Desert Strike) unfolded (Anon. 1964, Burba 1964, Kennedy 1964, Roach 1964). Desert Strike was designed to test Cold War nuclear tactics and equipment, and the joint-strike capabilities of regular and reserve Army units. In preparation for Desert Strike, two mythical

countries, Nezona and Calonia, were created (complete with governing bodies) on the Nevada/Arizona and California sides of the Colorado River (Figure 2). In brief, the scenario for dispute between the fictional nations was an ongoing struggle to control water rights to the Colorado River. In addition to live action troop movements and combat situations, fictitious nuclear strike scenarios were employed. Some 100,000 troops, 900 aircraft and 500 tanks participated, making it the largest U.S. military training exercise since World War II.



Figure 2. General location of 1964 Joint Operation Desert Strike exercise.

The Overlap (Present Day Archaeological Inventory Areas)

With these concise accounts of the largest WWII and Cold War training exercises, we can now effectively illustrate our modern day archaeological dilemma. Figure 3 shows the region under discussion, with boundaries of the WWII era Desert Training Center and the 1964 Desert Strike exercise outlined. The area of overlap, approximately 35,000 acres, presents the potential of military-related archaeological sites from both training events. So how do we distinguish cultural remains from these two distinct episodes, or recognize when a site is mixed?

TWO MAJOR PERIODS OF RATION CANS – 1938 TO 1958 AND 1958 TO 1984

The logistics of maintaining and deploying any army are complex, especially providing meals for soldiers. Since mobilization for World War I (WWI) the basic food unit for United States military personnel in the field has been the military combat ration – a commercially-prepared meal designed for use on maneuvers or when hot meals are otherwise unavailable. The first (WWI) canned rations were primarily intended for use as emergency rations, but by WWII, canned rations had evolved into items intended for regular, periodic, short-term use during field

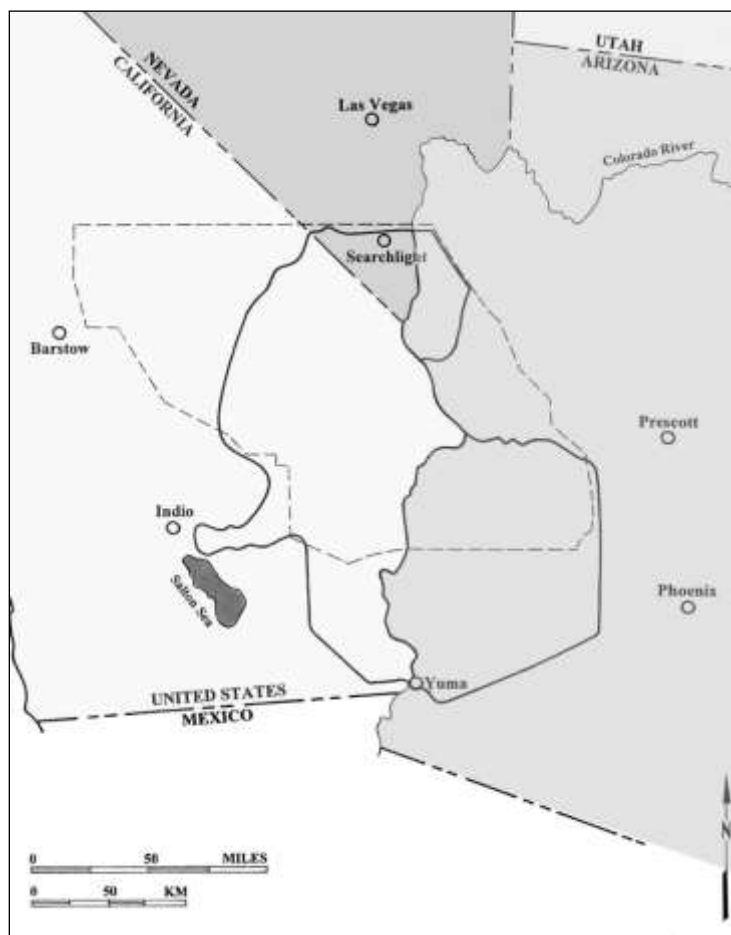


Figure 3. Area of overlap between the DTC/C-AMA exercises (solid line) and the Desert Strike exercises (dashed line), an area of approximately 35,000 acres.

deployment. In practice, however, problems associated with regular supply and delivery of fresh food led to the military's reliance on these tinned rations for extended periods throughout all combat theaters of WWII.

Officially dubbed the C-Ration (Combat Ration), WWII-era combat meals were first tested by the Army Quartermaster in 1938 and saw widespread distribution until 1958. Eventually the C-Ration was replaced with the "Meal Combat Individual" (MCI). Although officially new, the MCI was derived from and very similar to the original C-Ration, and American troops continued to use that name throughout the MCI's service life (1958-1984). The MCI remained the standard US military field ration until development of the modern "Meal Ready to Eat" (MRE), which transitioned the canned combat meal to a menu of freeze-dried entrees packaged in light weight paperboard and plastic pouches.

At the 2008 and 2010 Great Basin Anthropological Conference (GBAC) meetings, the authors presented papers (Wedding et al. 2008; Wedding and Heindl 2010) with preliminary results of an analysis of military ration cans from these periods. What follows is the synthesis of those studies and a typology developed for classifying C-Ration (1938-1958) and Cold War-era (1958-1984) MCI cans, which are primary indicators and quick identifiers for determining which era, or both, a desert military training site dates to.

C-Ration Development and Can Types

The C-Ration was a canned, wet, pre-cooked or prepared individual meal intended for use by U.S. military land forces when fresh food (A-Rations) or pre-packaged unprepared food (B-Rations) prepared in mess halls or field kitchens was impractical or not available, and when a survival ration (K- or D-Ration) was insufficient. As mentioned, C-Ration development began in 1938 by the newly formed Quartermas-

ter Subsistence Research and Development Laboratory in Chicago. C-Rations were first field tested under combat conditions in 1940 and wide scale adoption followed soon after¹. After World War II, cost concerns caused C-Rations to be standardized for field issue regardless of environmental suitability or weight limitations.

Each C-Ration consisted of two component cans, an M- and a B-unit (Figure 4). The M-unit was the canned „meat“ entrée (e.g., meat and beans, meat and potato hash, meat and vegetable stew). Also issued was one bread-and-dessert can, or B-unit, which typically contained five hardtack crackers, three sugar tablets, three Dextrose energy tablets, and a packet of beverage mix (e.g., instant coffee, cocoa, lemon drink, or bouillon broth powder). Each daily ration (i.e., food for one soldier for one day) consisted of six 12 oz. cans (three M- and three B-units) while an individual meal consisted of one M- and one B-unit. Each meal also included a brown butcher paper-wrapped accessory packet of toilet paper, a book of matches, a packet of cigarettes (three- or nine-count packs), candy coated chewing gum, a flat wooden spoon, additional sugar tablets, and halazone water purification tablets.



Figure 4. Example of a 1953 dated C-Ration B-unit can and contents including cellophane wrapped cocoa powder mix, tin of jam, and crackers.

The following discussion presents the typology developed for C-Ration tins as illustrated in Figure 5.

Type 1 Cans (coded as CR-1)

Type 1, 12-ounce cans are the primary tin used in C-Ration packaging found in the desert study areasⁱⁱ. Type 1 cans were used for both M- and B-unit components. These cans were manufactured of non-corrugated tinplate, had a visible tin solder seam, and incorporated a key-wind opening strip. Early C-Ration cans were coated with gold lacquer to improve corrosion resistance. Late in WWII this coating color was changed to olive drab paint to reduce light reflection (a change that remained standard through the transition and service life of the later MCI ration cans as well). Type 1 cans measure 3-7/16" in height and 2-15/16" diameter and may be further

classified as Type 1M (coded as CR-1M) or Type 1B (CR-1B) cans, if can condition is good enough to determine presence or absence of solder residue on the can's bottom. The opening keys were only affixed to B-unit cans, and were to be retained for opening the companion M-units.

Dimensions of Type 1 C-Ration cans are identical to those of the Type 1 MCI cans discussed below. The key to distinguishing cans from the two periods is, in fact, the key. Later MCI cans were opened exclusively by the small P-38 military can opener (affectionately nicknamed the "John Wayne" by the Marine Corps). Presence of the key, key-strip, or key tab (or absence of same) provides an excellent visual indicator for distinguishing C-Ration from MCI cans, even when rusty and lacking labeling or embossing.

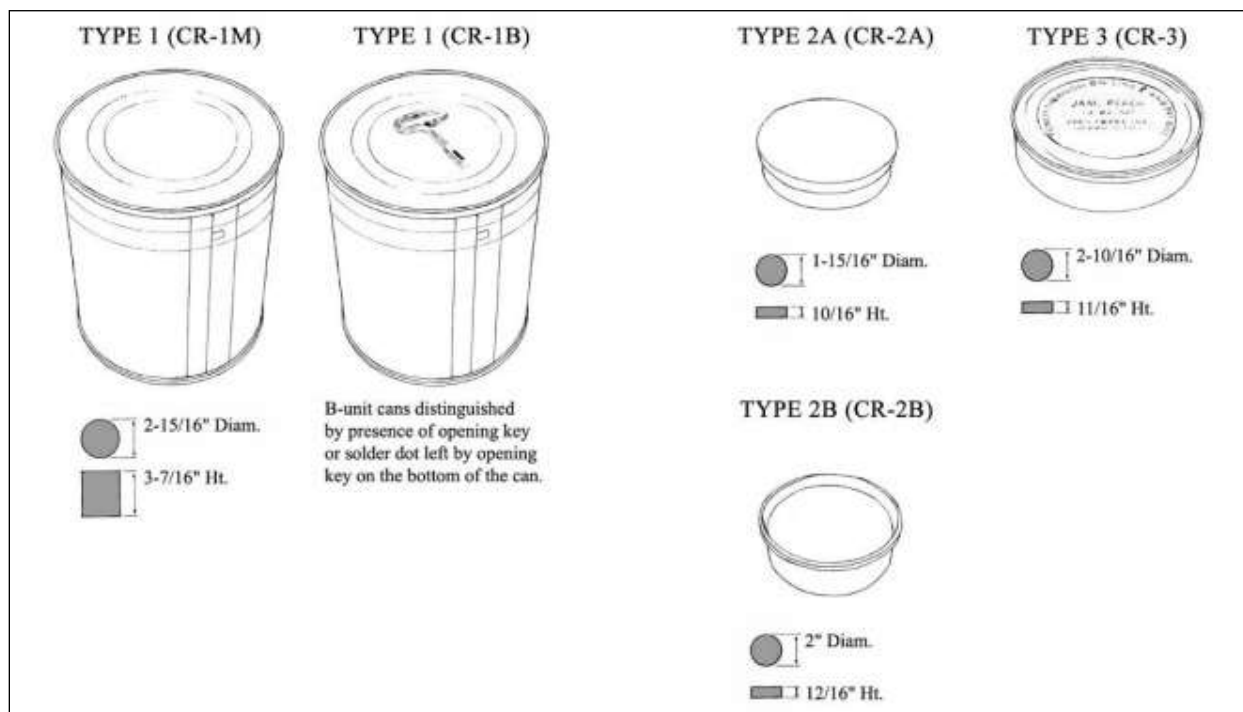


Figure 5. C-Ration can types and recording codes for ration tins dating from 1938-58.

Type 2 Cans (coded as CR-2)

Type 2 cans were packaged *inside* some B-unit cans. This much smaller tin held instant coffee. Other beverage powder flavors such as cocoa or lemon were included in cellophane wrapped cakes or foil-lined paper packets. But the coffee received special packaging in the small tin so as to preserve taste and freshness. Type 2 containers observed by the authors can be further subdivided into Type 2A and 2B cans. The difference lies in lid styles and size. Type 2A cans have an external slip-on lid, with average dimensions of 10/16" height and 1-15/16" diameter. Type 2B cans have an internal friction lid and measure approximately 12/16" in height and 2" diameter across the base.

Type 3 Cans (coded as CR-3)

Type 3 cans contained jam and were packed in B-unit cans in some menu variations. Type 3 cans began to appear in C-Rations after WWII (circa 1950), and so are not seen with the 1940s Desert Training Center-related can scatters. Type 3 tins remained in the packaging scheme during the transition to MCI rations, and so do appear in 1964 Desert Strike can scatters. By the 1960s this tin not only was used for jam, but also cheese spreads and peanut butter. In the current desert study area this dual timeframe use isn't a problem, as all of these cans occur in the 1964 context; however, application of this scheme would be hampered if 1950s maneuvers had also occurred. This potential problem should be considered if the scheme is used elsewhere. Type 3 cans measure 11/16" in height and 2-10/16" diameter.

COLD WAR ERA RATION CANS OF THE PERIOD 1958 TO 1984

Officially, the C-Ration was re-designated the

"Meal, Combat, Individual," (MCI) in 1958. It remained the standard ration until development of the modern "Meal Ready to Eat" (MRE). MCIs were packed twelve to a case, with each case also containing four "P-38" or "John Wayne" can openers. Each MCI was packaged in its own paperboard box containing various tins, a plastic spoon and an accessory pack (Figure 6). Typically, the tins held one of several meat items and, depending upon whether the meal was intended as breakfast, lunch or supper, some combination of canned fruit, bread or crackers, a dessert, beverage powder, candy and either peanut butter, jam or cheese spread. The accessory pack contained such items as matches, chewing gum, toilet paper, salt, toothpicks and, in some cases, another powdered beverage. Until 1978, the accessory pack also held a packet of four cigarettes.



Figure 6. Contents of an individual cardboard boxed MCI meal including multiple canned components, plastic spoon, and plastic wrapped accessory kit.

The authors have recorded several Desert Strike-related sites in Nevada and Arizona. The following typology has been developed to aid in documenting MCI military ration cans (Figure 7).

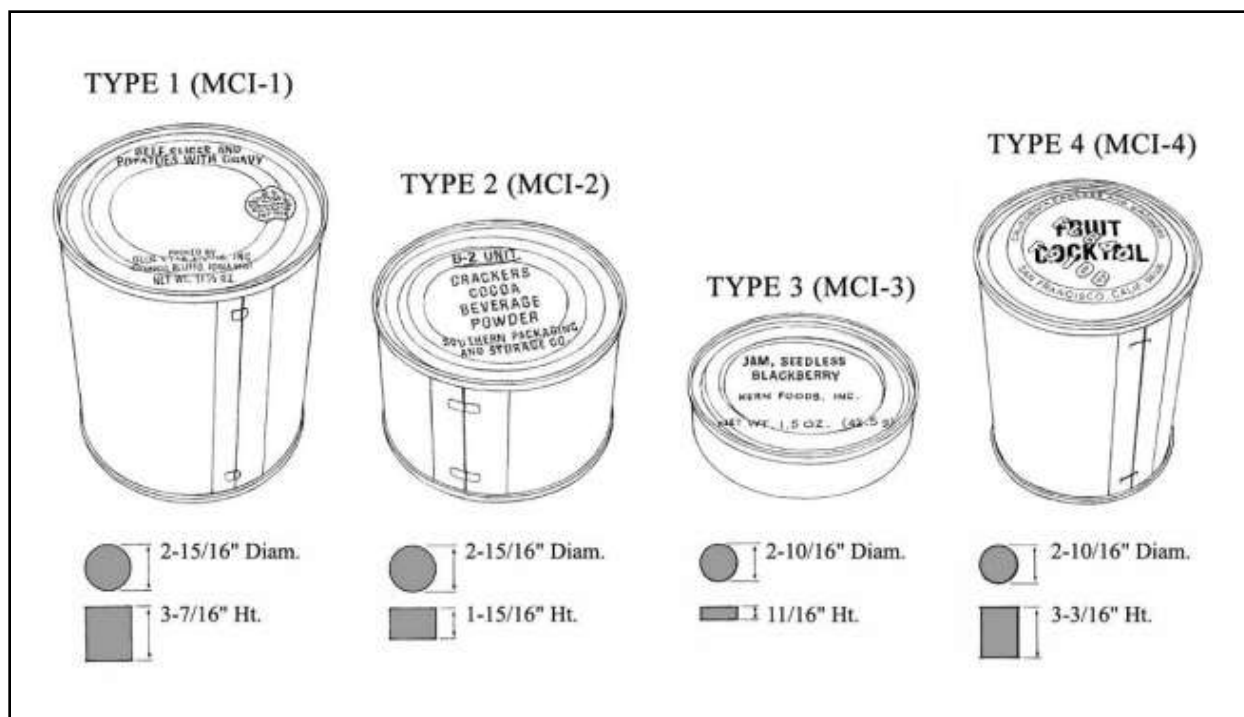


Figure 7. Meal, Combat Individual (MCI) can types and recording codes for ration tins dating from 1958-84.

Type 1 Cans (coded as MCI-1)

Type 1 cans are the largest MCI ration tin. These contained an 11.5 oz. serving of a meat item such as beef slices with potatoes and gravy. Type 1 cans measure 3-7/16" in height and 2-15/16" diameter.

Type 2 Cans (coded as MCI-2)

The Type 2 can was the most frequently used in MCIs. This 5.5 oz. can held smaller servings of meat items such as chopped ham and eggs, desert items such as pound cake, or combinations of cookies, crackers and beverage powder packets. Type 2 cans measure 1-15/16" in height and 2-15/16" in diameter.

Type 3 Cans (coded as MCI-3)

The smallest of the MCI cans, Type 3, held specific meal condiments. This tin was used exclu-

sively to package jam, peanut butter or processed cheese spread. The Type 3 cans measure 11/16" in height and 2-10/16" in diameter. This tin is the same as the Type 3 C-Ration can (CR-3), and is dated based on its association with other can types of each era.

Type 4 Cans (coded as MCI-4)

Type 4 cans were used exclusively for canned fruit. Fruit options included applesauce, fruit cocktail, sliced peaches or pears. Type 4 cans measure 3-3/16" in height and 2-10/16" in diameter.

CONCLUSION

Discarded military ration tins are frequently encountered in various parts of the desert Southwest. Thus far, it appears the dimensions of these cans are also unique to military packaging

and not used in civilian products. As illustrated by Figures 5 and 7, individual meal ration tins can be easily distinguished, providing the archaeologist with a quick method of tallying numbers and types present at a military site. More importantly, can dimensions and opening styles can distinguish WWII and Cold War-era military sites in the desert southwest, an area where military exercises from these two periods of history overlap. Practical field documentation may lead to future statistical leads to convert numbers of specific types of cans recorded into a minimum number of meal packages represented, and thus provide some insight into the number of personnel present at a given location.

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NOTES

ⁱ The first Type C-Ration consisted of a 16-ounce M-unit (canned meat item). The authors have yet to locate and analyze one of these original testing period c ration cans.

ⁱⁱ Field testing of 16-oz. M-unit cans is only documented for 1940 army maneuvers in Louisiana.



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The Nevada Archaeological Association is currently soliciting manuscripts for Volume 26 (2013) of the *Nevada Archaeologist*. The *Nevada Archaeologist* is an ideal venue through which professional and avocational archaeologists and students can present the results of their work. The deadline for submissions is **July 31st, 2013** and submissions must adhere to the following guidelines:

1. Papers should be ~6,000 words or less, excluding references cited and figure/table text;
2. Papers must focus on archaeological research in Nevada and/or neighboring parts of the Great Basin;
- and
3. Papers must adhere to the Society for American Archaeology's (SAA) Style Guide, which can be downloaded for free at www.saa.org/publications/StyleGuide/styFrame.html.

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