MINING ASSEMBLAGES FROM THE EMPIRE MINE SHP, NEVADA COUNTY

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Over the past five years, the Anthropological Studies Center (ASC) has been working at the Empire Mine State Historic Park in Nevada County. In the course of this work, the ASC evaluated four residential sites associated with mining operations within the park boundaries. Three of the sites date from the 1850s to the 1880s, and one from 1900-1920. I compare the assemblages from the four sites to identify changes in living and working conditions as mining operations evolved. This paper presents the results of the analysis and some of the issues in comparing sites of this type.

Over the past five years, the ASC has been working with California State Parks at the Empire Mine State Historic Park in Nevada County. This work was summarized in a companion paper by Selverston and Hilton. In the course of this work, we evaluated four sites with residential components—the house-sites of miners or mine workers.

In this paper I will be comparing aspects of these four sites and discussing some of the problems and directions for these sorts of comparisons. I will focus on one site, CA-NEV-1919H, which is the earliest site and the last one we evaluated. This is a surface artifact deposit associated with a small hard-rock mining operation (Selverston and Walker 2013).

The second site, NEV-1914H (the Gallagher Mine site), has a residential locus dating to ca. 1860-1880 (Hilton and Selverston 2013). The residence had been demolished and the site graded some time after the 1890s. The archaeological deposits were redeposited from the grading. In contrast to the other sites, this was an individual's permanent house, as opposed to a more temporary living situation.

NEV-1889H (the Old Heuston Hill Mine site) is a mining landscape (Selverston and Walker 2012). Miners living on a terrace above the mine appear to have disposed of refuse into abandoned workings. Trail construction exposed one of these deposits, which the ASC then evaluated. The deposit dated from ca. 1860-1880.

The final site, NEV-1888H (the Sebastopol Mine site), has a 1900-1920 domestic refuse deposit, probably from the residence for workers at the mine (Selverston and Walker 2012). Most of the cultural material came from an abandoned ditch.

"House-site" may seem like a strong term for these sites if one is used to working in urban settings, with lot-lines, foundations, and hollow features filled with artifacts. Here we are looking at thin, diffuse deposits of domestic sheet refuse off the edge of a mining landscape. If we were lucky, that deposit contained a concentration of nails on a patch of relatively level ground, most probably the "house" location. A big part of our work on these sites was simply trying to find the house, or at least its approximate location.

The occupation dates for the sites (Figure 1) are derived from the manufacture ranges of the diagnostic artifacts. NEV-1919H, the Gallagher site, and the Old Heuston Hill site are roughly contemporary, having date ranges that overlap in the period of ca. 1860-1870. The date range for NEV-1919H begins around 1850, which may make it one of the earliest mining residential occupations thus far discovered in the park. The latest site is the Sebastopol site, which is an early twentieth-century site with a date range of ca. 1900-1920. Comparison between the sites will reflect not only occupational and social differences but also chronological differences, particularly in the case of the Sebastopol site.

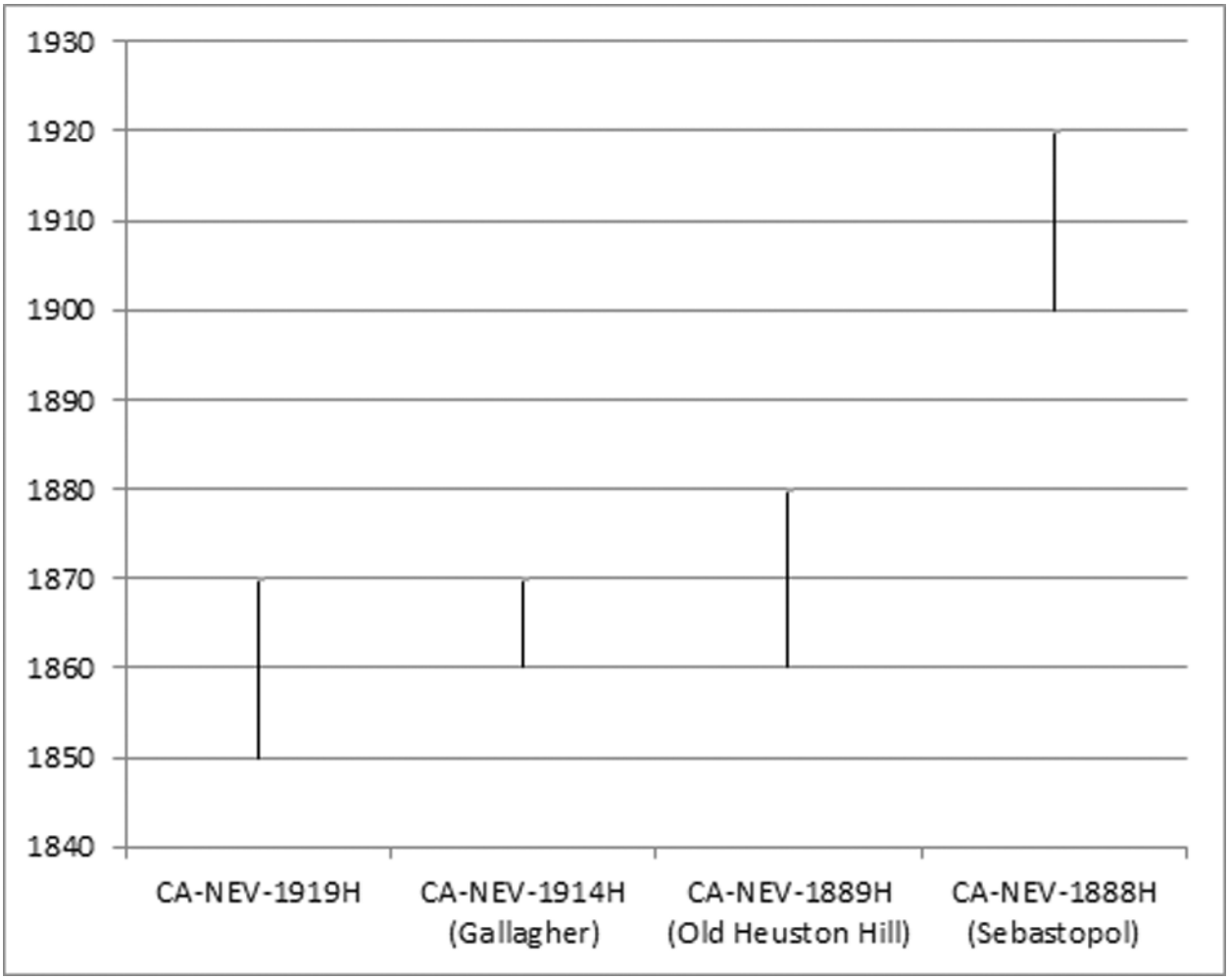

Figure 1. Occupation dates ranges for the Empire Mine SHP sites.

METHODS

Dealing with diffuse but culturally patterned surface artifact deposits has some methodological and sampling issues. In the absence of other visible surface features, sheet refuse becomes an important source of information, often our only source of information. Comparison between sites also needs to be thought about carefully. This is always the case of course, but this is a different set of considerations from comparing privy and trash-pit deposits to each other. Archaeological sampling becomes a primary consideration.

At Empire Mine, we usually started off with a surface walkover to get a sense of site boundaries, followed by metal detection of the entire area. The purpose of the metal detection was to define the extent of the artifact deposits and, by identifying metal concentrations (nails), identify possible building locations and areas for further investigation. We flagged each metal-detection hit and surface artifact, and pointed-plotted it with a total station.

Once we defined the extent of the artifact deposit through surface observations and metal detection, we placed a grid over the area of the deposit and used this to place a series of surface scrapes over likely areas. These were necessary because of accumulations of duff and humus. The placement of

the scrapes was based on topography and preliminary analysis of artifact densities—looking at the pin flags and going for where they were thickest.

The scrapes were broad area exposures, usually 10 x 10 ft. The typical scrape consisted of shoveling off and screening the duff and topsoil. In most cases, this was sufficient to expose the natural subsoil. If we encountered a hollow feature, we excavated and screened it separately. The scrapes are an efficient way to get artifact recovery and also to cover a fair amount of ground to see if there were features below the duff. At NEV-1919H, we were able to sample approximately 15 percent of the area of the artifact deposit. We used the same approach at two of the sites—the O'Conner site and the Sultana site. At the third site, the Old Heuston Hill site, we were confined to the deposit affected by a trail and were not dealing with an extensive area. In that case, we went straight to excavation units.

Since these are mining sites, the crew was HAZWOPER-certified, and we were careful to have dust control. This was simply a matter of wetting down the soil and having air monitoring to ensure the dust control was adequate.

The approach we took is a trade-off between characterizing the individual site as efficiently as possible and maintaining a consistent sampling approach across multiple sites for comparative purposes. We usually placed the scrapes judgmentally in response to individual site conditions, which can present problems for intersite comparisons. But in these cases, we used the same criteria for placement at three of the sites and covered a large enough percentage of each site that the samples are representative.

RELIABILITY OF SURFACE SAMPLING

One thing we were curious about was the extent to which the surface walkover and metal detection data were reliable indicators of what was actually there, at least as far as density of material goes. Figure 2 shows the surface fragment counts from walkover and metal detection, and the fragment recovery from each of the scrapes we did at NEV-1919H.

The surface/metal detector counts predicted empty grid squares and the general artifact concentrations reasonably accurately, but were an erratic predictor of what would be recovered through more intensive work. On a unit-level comparison, the number of surface artifacts and metal detector hits were a poor predictor of artifact-rich contexts. With the exception of Scrape 216, none of the units with 100 or more artifacts had noticeably more artifacts on the surface or more metal detector hits. The difference was due to nonferrous items, but also because many artifacts were in depressions and features, and were too deep to be metal-detected.

ASSEMBLAGE COMPARISONS

We cataloged the assemblages using the Sonoma Historic Artifact Research Database (SHARD). This is a system that uses *functional*, rather than *formal*, categories. While SHARD reflects common use of artifact types, in situations where there may be significant adaptive reuse of material culture, such as poverty or geographically isolated areas, the catalogued use of some artifacts may not reflect the actual historical use. However, the SHARD system is commonly used in California and its use permits comparison across the greatest number of historic-era sites.

As a note, the artifact counts we use in the following analyses are minimum numbers of items (MNI), not fragment counts. This provides a consistent and conservative count of items, although, as always, there are judgment calls involved, particularly with regard to the scale within the site at which the MNIs are estimated (within, for example, a particular context, or across the entire site).

FUNCTIONAL COMPARISON

Figure 3 shows the main functional groups from the four sites. As a qualification, I boosted the Structural percent for the Old Heuston Hill site from 22 to 55 percent, to make it comparable to the other

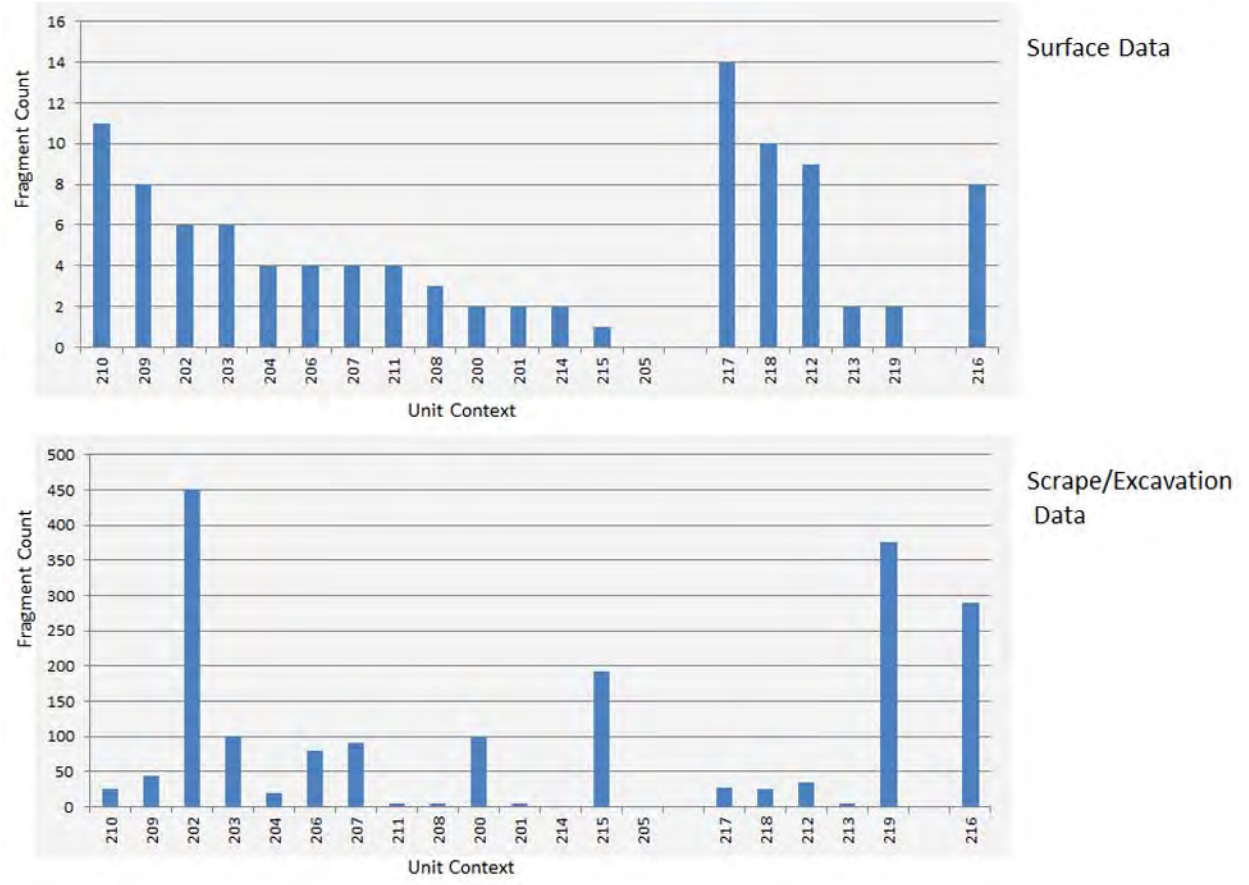

Figure 2. Comparison of surface walkover/metal detection data with scrape data at NEV-1919H.

sites. This is because the investigations at the Old Heuston Hill site were focused entirely on a refuse deposit, whereas those at the other sites were spatially extensive and involved identification of architectural components. So the differences in Structural group artifacts in this case were due to sampling and needed to be corrected.

With this adjustment in place, the sites are pretty similar. The peak in Indefinite Use artifacts is a formation process problem. Most of this group is bottle glass that cannot be functionally assigned. On exposed surface deposits, there will be more small fragments that are harder to identify. The peak at the Sebastopol site is probably due to historical changes. In the twentieth century, there is less of a link between bottle form and bottle contents as closure types and bottle forms become standardized—there are more types of glass container that could have held nearly anything. The near-total absence of faunal remains at any of the sites is certainly a formation process.

I do, however, think we can probably attribute the roughly equal proportions of Personal and Domestic artifacts at all the sites to socio-historical factors—conditions, markets, and consumption in the mining camps. For most of these sites, this is probably the result of low investment in tableware and the niceties of Victorian dining, and a relatively high investment in alcohol. (Alcohol bottles comprise most of the Personal group artifacts). But without comparison to urban and other sites, this is an assumption—a high probability one, but still an assumption.

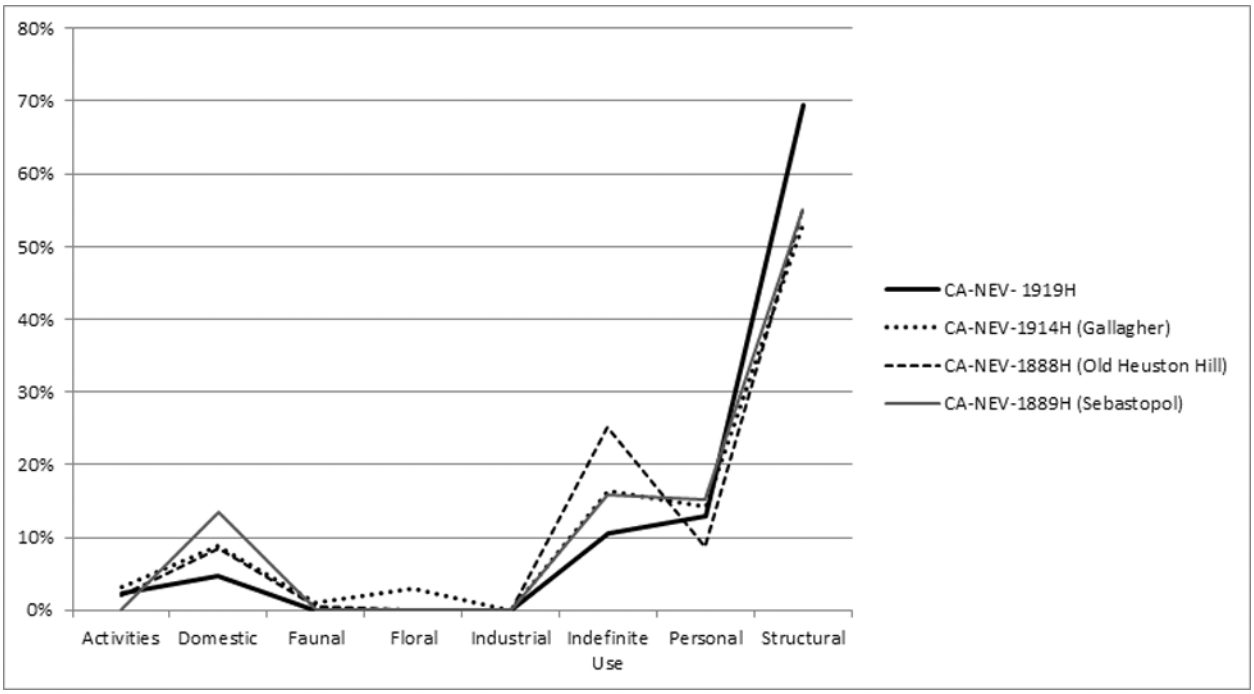

Figure 3. Comparison of functional groups by site.

FOOD

For the following analyses, I combined elements of the Domestic and Personal categories to look at the overall activity of eating and drinking.

Table 1 compares the MNIs for food and drink containers at the four sites. This comparison suggests a somewhat Spartan diet at NEV-1919H compared to the other sites. The standard set of food containers for these sites are for pickles, soda water and bottled beverages, and canned food. (The absence of cans at NEV-1919H is almost certainly due to poor preservation). The NEV-1919H food storage assemblage contained only three types of artifacts (four, if we assume the presence of cans). The next site up, the Gallagher site, had six container types. The extra artifact types at the Gallagher site were milk containers (a bottle and an evaporated milk can) and a jug. The extra artifact types at the remaining two sites (with 11 and nine types) were primarily condiments, particularly mustard. The inhabitants at the Sebastopol site also consumed some specialized canned items, namely chocolate, fish, and oysters.

What we are probably seeing here is partly an elaboration of diet though time, due to the increasing development of commercial infrastructure at the town of Grass Valley, concurrently with a shift from independent self-exploiting operators to a relatively stable work force of wage labor. It is also a function of an increase in sheer number of artifacts through time: if a site only has an MNI of eight, it is not going to have more than eight artifact types.

ALCOHOL

Alcohol containers followed the same pattern (Table 2). The earliest site, NEV-1919H, had fewer types of alcohol, and for the most part, these were types common to all the sites—beer/ale and wine/champagne, as well as some specifically unidentifiable alcohol bottles and a single gin bottle. But the site is distinctive in the number of alcohol bottles that we recovered. Alcohol bottles accounted for 30 percent of the NEV-1919H assemblage. This is comparable to the two mining sites, the Sebastopol site (27 percent) and the Old Heuston Hill site (34 percent). In contrast, alcohol bottles were only 14 percent

Table 1. Food and drink storage containers from the Empire Mine SHP sites.

Artifact	NEV-1919H ca. 1850-1870	NEV-1914H (Gallagher) ca. 1860-1870	NEV-1889H (Old Heuston Hill) ca.1860-1880	NEV-1888H (Sebastopol) ca. 1900-1920
Pickle Bottle	3	1	12	2
Soda-water Bottle	3	1	7	1
Can		3	5	10
Bottle	2		6	4
Mustard Bottle/Jar			1	3
Spice Bottle			6	2
Olive-oil Bottle			2	
Jug		1		
Milk Bottle		1		
Milk Can		1		
Chocolate Can Lid				1
Condiment Bottle				1
Fish Can				1
Oyster Can				1
Sauce Bottle				1
Spice/Pickle Bottle			1	
Tomato Can			1	
Total MNI	8	8	41	27

Table 2. Alcohol containers from the Empire Mine SHP sites.

Bottle Type	NEV-1919H ca. 1850-1870	NEV-1914H (Gallagher) ca. 1860-1870	NEV-1889H (Old Heuston Hill) ca. 1860-1880	NEV-1888H (Sebastopol) ca. 1900-1920
Ale/Beer Bottle	29	2	39	16
Wine/Champagne Bottle	25	1	53	19
Alcoholic Beverage Bottle	4		4	24
Gin Bottle	1	1		
Flask		2		9
Demijohn			2	1
Champagne Bottle			1	
Schnapps Bottle		4	12	
Bitters Bottle			5	
Cordial/Bitters Bottle			1	
Schnapps/Bitters Bottle			4	

of the house site (the Gallagher site) assemblage. While it is tempting to ascribe this to a difference between worker and private housing, it may well be due to the later grading that took place at the Gallagher site.

The gin bottle fragments at NEV-1919H were embossed with parts of the mark "BOOTH & SEDGWICK'S]// LONDON// CORDIAL GIN." Booth & Sedgwick products were advertised extensively in the *Daily Alta California*, with medicinal properties being emphasized. "To Travellers, to Miners, and others exposed to the hardships and vicissitudes of weather and climate, it is the grand desideratum, dispelling the annoyances occasioned by change of water, and as a preventative of FEVER and AGUE, and all dangers of malaria" (*Daily Alta California* 1857:1).

Schnapps, bitters, and cordials were also marketed as having medical benefits, so their presence at the nineteenth-century sites may be due to more than recreational and social drinking. The only

identifiable liquor bottles from the twentieth-century site (the Sebastopol site) were flasks for whiskey, which, as far as we know, had few medicinal benefits.

FUTURE DIRECTIONS

For comparison to be useful, these sites need to be set in a broader context. Understanding what it meant to be a miner means understanding what it meant to not be a miner. This may mean making comparisons that at first glance are rather odd. We need to compare these sites to, for example, urban working class sites from the same periods. But here we run into severe methodological problems of comparing surface sheet refuse deposits to sealed deposits in hollow features. Nearly everything involved here has significant differences, from the cultural context of deposition to formation processes to methods of excavation and analysis. For the most part, artifacts from urban sites are from sealed deposits. They tend to be from single depositional episodes. The fragments are larger and more easily identified, not having been subject to trampling and weathering, with unpredictable effects on functional classifications. Preservation is simply better, again, with effects on functional classifications that, if not unpredictable, need to be taken into account.

Regardless, that is the challenge. We need to understand variation in miners' lives, both across and through time. But we also need to understand how miners' lives differed from the rest of California society and to start making more difficult, and possibly less obvious, comparisons.

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