

LIFE, WORK, AND IDENTITY AT APEX, ARIZONA: THE ARCHAEOLOGY OF A
TWENTIETH-CENTURY LOGGING CAMP AND COMPANY TOWN

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ABSTRACT

LIFE, WORK, AND IDENTITY AT APEX, ARIZONA: THE ARCHAEOLOGY OF A TWENTIETH CENTURY LOGGING CAMP AND COMPANY TOWN

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As a twentieth-century American company town, the Apex logging camp provided lodging and services for its employees on the same property upon which they worked. Apex therefore represents a site to understand both labor and habitation for its mostly white, mostly immigrant workforce, a population experiencing distinct American racializing processes inextricably linked to gender and class. Apex was also situated in a fraught period of American history, where residents experienced the eco-socio-historical forces of the Great Depression and Prohibition. This thesis analyzes the built environment at Apex and what it reveals about life and work in twentieth-century northern Arizona, and how employee identities were informed by this historical moment and the environment they lived in. Through the use of spatial semiotics and architectural sociology, historic research that positions company towns as an entity primarily interested in extracting capital from labor, and archaeological analysis of the camp's cultural materials, I provide a thorough investigation into the embodied elements of life, work, and identity at Apex. In so doing, I contribute to the growing body of scholarship elucidating the history of the company town and logging camp and its contributions to the social and economic history of rural northern Arizona.

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This thesis is dedicated to the memories of Kathleen O'Connell (1938 – 2022) and Kevin Holleran (1961 – 2023).

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Chapter 1: Apex in Context

Between 1928 and 1936, the Saginaw and Manistee Lumber Company established and occupied a company town within the largest stand of ponderosa pines in the world. In the heart of today's Kaibab National Forest in northern Arizona, the company's laborers and administrators lived in close proximity to one another to extract timber processed at the company's Williams facilities. The company created railroad ties for the Atchison, Topeka, and Santa Fe railroad, the Grand Canyon railway, mining timber for Anita mines, and construction materials for Grand Canyon Village. Saginaw and Manistee played a pivotal role in the economic and social development of Williams, Arizona, and arguably the northern Arizona timber industry in general, outpacing production of the Arizona Lumber and Timber Company by 1906 (Matheny 1975:160-161).

Previous Apex scholarship (Dale 2023; Dale and Hangan 2022; Richmond 2017) has built an impressive and robust narrative of the settlement's economic contributions and its archaeological materials, but none have critically interrogated the community's status as a company town, or the tensions inherent in manager-laborer relationships historically present in similar environments. Company towns are historically sites of violence and repression, shaping the labor experiences of its constituents in profound ways. Further, I contend that labor experiences must never be considered in a vacuum, as identity categories such as race, ethnicity, gender, and class all intersect to inform people's embodied experiences in the workplace. Those embodied experiences necessarily change when one's workplace is the same as one's home.

This thesis is an archaeological and historical examination of the material and archival records associated with the logging camp and company town of Apex, Arizona. I use various data sources, including my own fieldwork at the site, oral interviews, newspaper clippings, and

more to illustrate the built environment of Apex and its influence on the lives and labor of its residents.

An Archaeological Overview of Apex, Arizona

Although Apex housed loggers and railroad engineers year-round, the site primarily functioned as a field headquarters for the Saginaw and Manistee Lumber Company administrators. Other business operations, such as the management of the company sawmill and box plant, were based out of the nearby town of Williams. Laborers with families and members of management were housed in slightly larger abodes with living rooms, kitchens, and single bedrooms, but these too were fundamentally mobile, constructed in an “L”-shape or “T”-shape that could be easily disassembled for transport to the next camp (Richmond 1988:78).

This practical approach to Apex’s physical and social construction, in addition to the site’s relatively short occupation (1928 - 1936), obscures a clear layout of the social organization of the logging camp and the relative location of its amenities due to the absence of extensive architectural features. Fortunately, historian Al Richmond has kept the site’s memory alive through extensive historical research and oral interviews since the 1980s. Chief among his contributions to our understanding of the site is its general layout, gleaned from interviews with previous Apex residents, which can be supported or refuted based on analysis of what little building materials remain, in tandem with the surface and subsurface cultural materials left behind by those who once called Apex home.

Apex, Arizona (AR-03-07-04-01784) is located in a small valley within the South Kaibab National Forest managed by the Williams Ranger District. The historic logging camp is bisected by Forest Service Road 2607 and lies directly west of the Grand Canyon National Park Airport.

Towering ponderosa pine and dense sagebrush have obscured much of the site's features and artifact scatters. Vegetation density likely obscures artifacts from view of looters and exposure to natural elements, leading to the good preservation of the site's surface assemblage. Soils consist of shallow, gravelly loam and decomposing limestone characteristic of the Kaibab Plateau (Brewer et al. 1991). The majority of the artifact assemblage lies at the surface, though multiple earthen depressions in the site may indicate former privies or refuse deposits with greater soil depth and potential for cultural deposits.

The historic assemblage at Apex consists of wooden and limestone cobble features and thousands of artifacts representing numerous categories and subcategories characteristic of early-to-mid-twentieth century American consumption habits. These categories include metal cans, meat and sardine tins, glass insulators and bottles, various ceramics, milled lumber, machinery parts, fire bricks sourced from a Denver-based company, and many other objects associated with long-term residential and commercial use of the area.

Compared to the extensive artifact assemblage, there is little in the way of architectural remains that would allow for a more precise visualization of community organization and daily life. The most substantial structural remains consist of the schoolhouse foundations, constructed from railroad ties, and lumber scatters associated with habitation areas. The lack of architectural evidence is attributable to an economic strategy that prioritized Apex's mobility over its longevity: given the extractive nature of the lumber industry, it would be impractical and financially inefficient to commit time and resources to long-term lodging or a more robust infrastructure. Housing for single male laborers, therefore, consisted of reused boxcars that could be transported along the rail line to other, smaller logging camps throughout the Kaibab, alongside the commissary car and flatbeds carrying their equipment (Richmond 2017).

Apex has previously been recorded as an all-or-mostly Swedish and Scandinavian immigrant community, as Saginaw Lumber company brought its mostly Swedish workforce when it arrived in Williams in 1893. Data in chapter 2 and my accompanying analysis in chapter 6 demonstrate that while the Swedish influence at Apex was significant, its emphasis obfuscates the role of various other nationalities and ethnicities present at the logging camp.

Objectives, Research Questions, and Methodology

This thesis analyzes the built environment at Apex and what it reveals about life and work in twentieth-century northern Arizona. My primary research questions are as follows:

1. How does Apex fit within the broader history of company towns?
2. How did the built environment at Apex inform life and work for its communities?
3. What can the artifactual and archival evidence tell us about the intersection of life, work, and identity at Apex?
4. To what extent does the material record reflect concepts of American gender expression, whiteness, ethnicity, and class?

To address these questions, I provide numerous historical contexts that informed Apex's establishment and occupation, including distinctly American constructions of race in the twentieth century, the history of the Saginaw and Manistee Lumber Company, and a detailed history of the site itself in Chapter Two. I then consider the two theoretical approaches of architectural sociology and critical Marxism and their applications in historical archaeological contexts in chapter 3. In chapter 4 I provide a full account of my research methodology, which consists of fieldwork, including excavation and pedestrian survey, performed in 2023 as part of the Apex, Arizona Archaeology Project, geospatial collection, and archival research. Chapter 5

contains the full excavation and survey results from the 2023 field season. Finally, I discuss the data presented in chapter 5 within the contexts established in chapters 2 and 3 to address my above research questions.

Chapter 2: Histories

In this chapter I explore the various historical contexts in which Apex was founded, occupied, and ultimately abandoned in order to position Apex in the larger history of American company towns and to assess the historic elements that informed the camp's built environment. I also contextualize early twentieth-century social norms and beliefs according to specific identity categories that may have shaped the lives and interactions of Apex residents, informing their daily lives at the camp.

I begin with an overview of different sets of American conceptualizations regarding "identity", namely those concerning race, ethnicity, gender, and class. I then provide a brief history of the American West and establish the Saginaw and Manistee Lumber Company work culture before Apex's establishment in order to better understand how the company treated its laborers. I also compare Apex to another contemporary Arizona company town, Clarkdale, to assess the logging camp's similarity to other company town policies.

Williams and Grand Canyon Railroad historian Al Richmond conducted several interviews with former Saginaw and Manistee employees and their relatives, some of whom had direct ties to Apex. All interviews mentioned in this chapter were performed by Richmond in 1984.

Identity in the Twentieth Century

Anthropologists have long investigated how personal identity is formed. The "narrative construction" framework suggests that individuals negotiate and make sense of their identities in ways that are temporary, dynamic, and perspective-driven (Ritivoi 2002:43-71). Identity

construction takes place through lived experiences, and identity is neither fixed nor deterministic. In an effort to avoid philosophical definitions of the self, which are many and contradictory, I consider stories and broader narratives to be the primary mechanisms that inform self-conception. Despite the deeply personal and fluid nature of identity, individuals are still situated in socio-historical contexts where aspects of the self are externally influenced. My intent is not to impose identity upon agents of the past, nor to imply particular behaviors or beliefs amongst Apex's population. Rather, in the absence of data indicating clear interior self-conceptualization at Apex, I analyze "identity" as the product of historically shaped categories that define the parameters of normative human sociality, and therefore the possibilities of an individual's life. Considering identity categories as end products of sociohistorical processes lends them utility in elucidating processes of self-conception as represented through the archaeological record.

I specify the broad cultural expectations for the historically-constructed identity categories of race, ethnicity, gender, and class in an explicitly American context. Since Apex was a mostly or all-immigrant community for the duration of its occupation, residents' home countries would have shaped their identity-formation processes. For daily life at Apex, American cultural norms for race, ethnicity, and gender were likely greater contributors to processes of self-conception at the camp than residents' countries of origin. I therefore define each category as defined in American contexts, comparing them against non-American conceptions where applicable.

To achieve greater analytical precision, when I employ the broad categories of race, ethnicity, and gender, I am specifically utilizing theories of "whiteness", "ethnicity", and "masculinity and class". As my data is based on laborer housing, a comparison with higher status individuals is not practical at this time, but as further parts of Apex are studied, a more in-depth

discussion of the role of class at the site will be available. Finally, implicit in my analysis is the framework of intersectionality. In her critique of American antidiscrimination policy, Kimberlé Crenshaw argues that discriminatory structures do not exclude marginalized groups according to “single-issue analyses” (1989:149) because experience categories like race and gender are not isolated from one another in practice. For instance, the subordination of Black women and other historically oppressed groups is informed by an “intersectional experience” that “is greater than the sum of racism and sexism”, among other axes of experience (140). Discourses within one identity category “are shaped to respond” (Crenshaw 1991:1244) to other socialized experiences, which can lead to marginalization within both. The mechanisms of social and political oppression are not unidirectional, but feminist theory and antiracist policy have been built around narratives of unidimensional perspectives that equate the experiences of white women with sexism as a whole (Crenshaw 1989:152). By neglecting an intersectional lens in any historical or archaeological analysis, the embodied experiences of humans through time become distorted and “theoretically erased” (139). I consider each identity category’s history separately, but I do not treat each history as a single-axis analysis.

Archaeologies of Identity

Race and ethnicity represent particular challenges to archaeological categorization, and therefore applying intersectional frameworks, in prior research and literature. North American archaeologists previously aimed to identify particular artifacts or features to serve as specific cultural indicators, leading to interpretations of material culture as static, totalizing representations of race and ethnicity. For example: Chinese laborers did consume opium, but an opium pipe in archaeological contexts does not automatically equate to exclusive use or

ownership by Chinese individuals. In the inverse case, ethnic origins are erroneously ascribed to archaeological features, such as relating ovens associated with railroad construction camps to Chinese laborers despite lacking supporting evidence (Wegars 1991). Additionally, archaeologists often struggle to determine whether artifact assemblages are associated with ethnicity, race, or class, as the difficulty of distinction between the three experiences is attributable to the overlapping nature of their material realities. It is, therefore, more useful to consider these categories as illustrative of the social structures that formed them: cultural materials define, and are defined by, American racialization and other exclusionary processes (Orser 1998:663). To avoid the same totalizing consequences as the conflation of race and ethnicity in historical archaeology, external social structures should not be treated as direct impositions of identity upon subaltern populations, but systems in which agents may express transgression or creativity (Agbe-Davies 2020:91). Further, whiteness cannot be treated as a racially neutral or as an identity only expressed through extremity, such as with artifacts of white supremacy in archaeological contexts, as it is an important, sociohistorically constructed system with material byproducts.

Race and Ethnicity in America

The construction of “race” as known in Western cultures originates from Carl Linnaeus’s definition of the four human races: the white European, the red American, the tawny Asian, and the black African in his 1735 *Systema Naturae* (Müller-Wille 2014:192-193). The Swedish naturalist did not intend for his categories to become geopolitically essentialized units of categorizing humanity, yet such became the narrative for anthropological writing in the eighteenth century. Linnaeus’ four divisions of humanity were expanded to five geographically

based groups by German naturalist Johann Friedrich Blumenbach: the “white”, “yellow”, “brown”, “black”, and “red” races. Despite a dearth of scientific evidence for his classification, Blumenbach’s categories became the foundational classification scheme for future anthropological research (Perez-Rodriguez and de la Fuente 2017:37-38), leading to scientific racism and racial differentiation studies that directly contributed to eugenics legislation in eight different U.S. states by 1912 and eventually Nazi Germany in 1933 (Pierpont 2004:61-62). Anthropologist Franz Boas emphatically challenged biological explanations for human differences over the course of his career (1883-1942)(Stocking, Jr. 1974), and he even testified before the U.S. immigration commission against the eugenics-based Immigration Act of 1924 (Pierpont 2004:16-17). The influence of Boas and his students’ refusal of cultural hierarchies would not be meaningfully employed in legislative decisions until *Brown v. Board of Education* in 1954. In 1994, geneticists conclusively disproved human biological difference on the basis of geography and supported, if anything, a higher degree of genetic similarity between disparate races than difference (Cavalli-Sforza et al 1994; Perez-Rodriguez and de la Fuente 2017:38). There is no genotypic reality to race, and therefore no inherent biological differences between racial groups.

Yet race exists as a sociohistorical process (i.e. racialization) and serves as a “real and central” component of social cohesion and community. The “reality” of race is a direct product of racialized social systems that stratify populations along racial lines, granting social advantages to those in superior positions. The associated privileges and disadvantages of existing within such a system inform what it means to be a “black” or “white” person in any given Western culture, which creates an embodied material reality that constitutes one’s race and, consequently, their sense of belonging to a community (Bonilla-Silva 1999:899).

Racialized social systems simultaneously manifest through, and are encoded in, the legislative process in America. Following the ratification of the U.S. Constitution in 1788, the naturalization process was limited to “free white person[s]” (Tehrani 2000:818). By 1870, the national decennial census listed “white”, “Black”, “mulatto”, “Indian”, and “Chinese” as possible racial categories, but the matter of race at the legal level was henceforth treated as a dichotomy of white and not-white (Humes and Hogan 2009:113). Between 1878 and 1952, 52 court cases tested the law’s racial prerequisite as a late nineteenth century wave of immigration forced lawmakers to reassess how “whiteness” was defined (Tehrani 2000:820-821). In every case, individual immigrants sued on the grounds that they should be considered white by law, and therefore eligible for American citizenship. The 1925 case *United States v. Cartozian* was the last time the Court justified its ruling (Armenians were determined to be white) on the basis of “scientific evidence” of one’s biological race. For every case thereafter, the criterion for whiteness became a matter of an immigrant’s ability to assimilate to mainstream Anglo-American culture.

Supreme Court Explains "Free White Persons"

(By The Associated Press)

Washington, Feb. 19.—Considerable enlightenment was thrown by the supreme court in a decision today upon the meaning of the word "free white persons" as used in the naturalization laws.

The decision was in a case brought by Bhagat Singh Thind, a Hindu of high caste, of full Indian blood, born in Punjab, India, who was granted a certificate of citizenship by the United States district court for Oregon over the protest of the government. The court today denied his right to citizenship.

Having decided recently in the Ozawa case that a Japanese was not entitled to naturalization because the term "free white person" was synonymous with Caucasian, the court indicated today that it had intended to leave the question to be dealt with in doubtful and different cases by the "process of judicial inclusion and exclusion." The mere fact that an applicant could establish a line of descent from a Caucasian ancestor was not necessarily conclusive, it explained.

"Caucasian is a convention word of much flexibility," the court stated, "as a study of the literature dealing with racial questions will disclose and while it and words 'white persons' are treated as synonymous for the purpose of the Ozawa case they are not of identical meaning."

The words "free white persons" are to be interpreted, the court said, as synonymous "Caucasian," only so far as that word is popularly understood. Whatever may be the speculation of the ethnologist as to what races it includes it does not, the court held, the body of men to whom the Hindu belonged.

Figure 2.1. Despite being Asian Indian and therefore Aryan or Caucasian according to *Ozawa v. U.S.*, Bhagat Singh Thind was ineligible for citizenship (*The Daily News Leader* 1923:1).

By the early twentieth century, whiteness and one's access to its privileges was a social and legislative undertaking subject to revision and contradiction (Figure 2.1). Such amendments to the criterion for whiteness were tightly bound to one's ethnic or national affiliations. As a result of this history, whiteness deserves as much scrutiny and investigation as any other body of archaeological work concerned with race.

Social sciences tend to conflate "race" with "ethnicity", or acknowledge the socially constructed nature of race while granting some biological legitimacy to the term ethnicity (Brandon 2009:5). To avoid confusing race and ethnicity in my analysis, when discussing ethnicity, I am referring to a social category of people based around universal perceptions of ancestry or shared social experiences such as religion, nationality, culture, and language (6). Nationalities encompass ethnic groups with a shared homeland or geographical region. Thus, an individual may be ethnically "Scandinavian", and "Swedish" as a nationality.

The Irish-immigrant experience in America is a well-documented example of the artificiality of criteria for whiteness and the role of ethnicity in the racializing process (see Brighton 2009; Ignatiev 1995; Orser 2007:79). Displaced from their homes by British colonial policy, up to one million Irish laborers and their families immigrated to America between 1815 and 1855 (Brighton 2009:36; Orser 2007:79) and became the country's unskilled labor force in domestic manufacturing jobs. This influx of immigrants and the resultant boom in urban populations prompted earlier Irish immigrants from the eighteenth and early nineteenth centuries to emphatically distinguish themselves from the "new" Irish, whose largely rural and Catholic backgrounds disrupted Anglo-American norms. Thus the Irish diaspora in America was split into two populations: immigrants between 1830-1855 became racialized as "the Irish", while earlier

immigrants were considered “ethnically” Irish, or Scotch-Irish. The distinctions between the two hinged upon either group’s ability to assimilate to American culture (Ignatiev 1995).

Fearing that the most recent influx of Irish immigrants posed a threat to Protestant American values and authority, Nativists in the mid-nineteenth century racialized the Irish in ways that positioned them alongside Black Americans in the country’s racial hierarchy (Ignatiev 1995:40-42). This was accomplished by confining Irish laborers to low paying, unskilled jobs, portraying them in the media as clumsy, stupid, and “wild”, and by using similar language as used in anti-Black rhetoric. The nativist antislavery and anti-immigrant organization best known as the Know Nothing Party was prolific propagandizing the Irish “race” as inherently pro-slavery on the basis of their physiognomy and culture (Brighton 2009:76-79; Orser 2007:89-109) (Figure 2.2).



Figure 2.2. “Uncle Sam’s lodging-house”, political cartoon by artist Joseph Keppler depicts the Know Nothings’ concern that Irish were a political nuisance (Keppler 1882:220-221), image from U.S. Library of Congress.

Nativist contempt and marginalizing rhetoric functioned to limit employment and social and political opportunities available to the Irish in America (Orser 2007:89). Many Irish immigrants responded by embracing the racializing process, participating in what historic researchers term “white ethnogenesis”, or the process of marginalized groups positioning themselves within a culture’s structure of domination and repression (Bell 2005:447). Strategies employed in this process include violent racism against African Americans, engagement in national chauvinism, and other rhetorical strategies (Brighton 2009:150-153). By the late-nineteenth and early-twentieth centuries, several high-profile Irish individuals in New York City and other urban communities attained political and economic power as politicians and business owners. The new sociopolitical standing for the Irish in America allowed the ethnic group to “earn” their whiteness in America (Orser 2007:110).

Scandinavians in America never needed to contest their whiteness. Their Protestantism and ease of assimilation into American labor values facilitated their integration into the nascent pluralistic society forming in nineteenth-century America, allowing them to maintain and promote their own cultures (Brøndal and Blanck 2002:1-2). Yet Scandinavians were still evaluated, and permitted to evaluate others, within the American racialized system. It is more accurate to assert that Scandinavians “learned” American whiteness, somewhat as a byproduct of ethnicization, or the process of negotiation between an immigrant and the dominant society (Joranger 2016:34). Rather than “earning” whiteness like the Irish, the ethnicization of Scandinavian immigrants required a reorientation of the self toward race-conscious systems of nationality and labor that were embedded in every social act. Racial and ethnic exclusion were not novel ideas in countries like Norway, where Lutheran authorities within the Kingdom of Norway excluded Jewish Norwegians from the right to vote in 1814 until 1851 (36-37). By the

early twentieth century, racial ideology was not wholly absent from Scandinavian politics, but countries had largely eschewed racialized social systems in their legislative processes.

The first wave of Scandinavian immigration to the U.S. circa 1840 – 1890 alongside Irish and German immigrants invited American nativist bigotry that did target Scandinavians based on their “supposed political ignorance” (Brøndal and Blanck 2002:5), but by 1859, the first Scandinavian Americans appeared on voting ballots in Wisconsin (11), and by the 1920s, the Scandinavian enclaves formed throughout the Midwest disintegrated with the onset of suburbanization and increased comfort in the American environment (23). When Scandinavians arrived in the American intermountain west in the early twentieth century, the need for ethnic or nationalist immigrant enclaves was gone, as Swedes, Finns, Norwegians, and Danes were mostly integrated into American culture (19).

Scandinavian immigrants in America were not bereft of employment or social opportunities due to their ethnicity in the same way as the Irish, but they still contended with stereotypes that informed their daily lived experiences. Anglo-Americans often lumped Finns, Swedes, Norwegians, and Danes under the “Scandinavian” moniker with little regard for the differences between them, but Americans nonetheless created specific stereotypes for each nationality. American anti-immigration activists mocked Swedes and Norwegians as “simple-minded and credulous” (Moquin and Salmons 2020:2) for their speech patterns and pronunciations. Nineteenth century European racial theorists such as Arthur de Gobineau influenced American nativists like Edward Ross to articulate Finnish immigrants as “Mongols” with an “Asiatic frame of mind” (Huhta 2014:170). Stereotypes in this vein did not invite violence or disenfranchisement, but they did represent a social and cultural gulf between Scandinavians and Anglo Americans that needed to be bridged. As part of their ethnicization

process and learning American whiteness, Scandinavians adopted similar strategies as other European immigrant groups to cement their unquestioned position in American history, culture, and society.

Euro-American immigrants needed to ensure their place in their new home's racialized social structures while maintaining reverence for their cultural origins. One solution was the creation of national immigrant "heroes", mythical figures that could be linked to critical points in American history (Green 1987). Italians lionized Christopher Columbus for his continental landing (127); the Polish emphasized the role of military leader and U.S. ally Tadeusz Kościuszko (121) in the Revolutionary War; and the Irish paid homage to Saint Patrick as a commiseration with the American public's anti-British sentiments (20). Scandinavians, meanwhile, had their own national heroes in the form of the Vikings.

Swedish immigrant and scholar Johan Enander was one of the most influential ethnic leaders, instrumental in introducing the "Viking Discovery of America" narrative in his 1893 book *The Norsemen in America*, published by the Swedish Lutheran Church in the U.S. as *Nordmännen i Amerika*. The narrative of Viking ancestors being the "real" discoverers of America positioned Scandinavians in Anglo-American U.S. history, and elevated them above the growing number of Italian immigrants in the American racial hierarchy who maintained that Christopher Columbus had "discovered" the continent (Blanck 2014:47-48). The claim of Viking primacy in the Americas was further substantiated when Scandinavian immigrants claimed the presence of numerous "Viking runestones" throughout the Midwest. In 1898, Swedish immigrant farmer Olof Ohman discovered the Kensington runestone in Minnesota (Minnesota Historical Society 1910), and the Heavener runestone was documented in 1923, suggesting a Viking presence in Oklahoma as early as the third century (Tompson 2011). Experts have since

thoroughly debunked the Kensington, Heavener, and other American “runestones” determining they were created by Scandinavian laborers, on the basis that immigrants from remote areas in Scandinavia still used runic writing by the late nineteenth century (31). Though they pulled from fictitious historic accounts, Euro-Americans successfully cemented their home countries’ national heroes in the American mythos whilst embedding Scandinavian and other cultural features within the American landscape.

American Masculinity

Like whiteness, ideas regarding normative masculinity and maleness differ across cultural groups through time and space and should not be thought of as neutral or “baseline” ways of existing in the world. American masculinity is constructed according to non-universal cultural values that are imposed upon immigrants. For example, as an inverse to the machismo of Western culture, Americans viewed Asian individuals through an orientalist lens that articulated them as metaphorically feminine. Historical and modern media depictions of China, the Chinese, and Chinese Americans portray men as emasculated and women as hyperfeminine due to their perceived incongruity with the gendered Western imagination (Williams 2008:56). One’s claim to maleness and masculinity were, therefore, tightly linked to the racializing process. As immigrants negotiated and navigated American whiteness, so too did they encounter normative expectations for gender performance, which often manifested in the workplace, especially male only occupations such as logging.

Appropriate gender presentation was invariably linked to one’s whiteness, ethnicity, and nationality, the latter of which often determined the nature of the work immigrant groups could access. The U.S. government identified “labor taxonomies”, defining the manner of jobs

immigrants could perform based on perceived innate racial traits that varied according to ethnicity and nationality (Newton 2017:309). Greek and Italian Americans became associated with railroad work, Austrians, Poles, and Bulgarians were linked to construction and industrial jobs, and the Cuban and Spanish “races” were known for cigar and tobacco manufacturing. Scandinavians were most abundant in logging work, though they filled roles in other extractive industries (310).

As economic undertakings, logging represented an opportunity for certain immigrants to earn their whiteness through a proximity to the American pioneering spirit (Newton 2017:56). By clearing and “civilizing” wilderness, rendering forests and unused land economically useful, non-white immigrant groups proved themselves worthy of citizenship through their domination of the environment. For Scandinavians, their northern European origins and Protestantism facilitated their ingratiation into the American system of whiteness, but it was their labor in confronting the “harsh” wilderness that made them a “unique [white] American race” (Newton 2016:138).

The “domestication” of American wilderness was an inherently masculine pursuit both in practice and ideology, and the role of lumberjack personified the convergence of Western values of race, ethnicity, and gendered embodiment in men (Loomis 2017:37). In general, white middle-class American men built an idealized masculinity through the body via biologically essentializing rhetoric. Where marginalized racial and economic groups had “natural laboring bod[ies]” (Baron 2006:149), white Americans “built” their muscular forms through the virtues of discipline and hard work. The value of muscularity and the intensity of manual labor were dependent on “the angle of the gaze” (149-150) and one’s “ritualized enactment” of masculinity was only valid if one’s racialization veered white. White or almost-white immigrant American

lumberjacks, by virtue of their racialization, labor, and masculinized bodies became historicized as ideal working-class heroes who braved harsh conditions to build the American West (Loomis 2017:42).

The mythos of Paul Bunyan and his quintessentially American exploits also represents this confluence of gender, race, and labor (Figure 2.3). Originating in stories told in logging bunkhouses throughout Michigan, the exploits of the legendary woodsman of reputed Scandinavian descent figured large in lumberjacks' oral culture in the early twentieth century (Quam-Wickham 1999:144). Bunyan stories, though variable throughout the West, maintain a common theme of reinforcing the "folk and class values of Western workers", which attribute competency in one's work to manliness (145). Lumberjack historiography in the northeastern United States illustrates the culture of life in the logging camps, where "physical force, aggression, competition, and male sexuality" were emphasized, and individual pride in difficult, dangerous work was motivation enough for loggers who otherwise received low pay (Tomczik 2008:699-704).

The Scandinavian "work ethic" of hard work, long hours, and few breaks existed prior to their Americanization, thus groups such as Swedes, Finns, and Norwegians had little difficulty in finding their place within lumberjack culture in daily life. Though immigrants at Apex assimilated into the culture of American labor, whiteness and ethnicity continued to inform the environment in which they worked.



Figure 2.3 Statue of Paul Bunyan and Babe the Blue Ox in Alpena, Michigan. Photo by Crystal Nelson (*Alpena News* 2021).

Archaeologies of gender largely focus on women of the past and the marginalizing social roles and structures they inhabited; like whiteness, men have been viewed as the “universal historical subject”, and have not received equal analytical treatment (Alberti 2006:401-422). Archaeology as a discipline initially fixed a bioessentialist framework to analysis of “men” and “maleness” until the 1980s, where sex and gender became understood as distinct and socially constructed. Historic period studies are advantageous in that researchers have access to the social and political contexts that shaped the “signs” of masculinity in any particular time or

culture. Like the gendered dimensions of mortuary analysis or ceramic production, the proscribed behaviors of maleness and masculinity leave similar material traces subject to archaeological analysis. Although difficult to locate within the archaeological record, the material remains of masculinity as imposed social structures manifest as presence and absences within the material assemblage. For example, Chinese immigrants in San Jose, California's Chinatown likely performed a culturally specific form of masculinity (*wu*) through liquor consumption, as evidenced by the presence of small, specialized cups associated with masculine rituals (Williams 2008:61-62); railroad workers and construction laborers in West Oakland adhered to expectations of masculine respectability by using grooming products (Walker 2011); and the absence of certain domestic artifacts that indicate food preparation, which historians and anthropologists associate with the domain of women, may suggest evidence for all-male housing in the mining community of Coloma, Montana (Thurlo 2010:71). Analyzing twentieth century assemblages in the context of their gendered dimensions, while complex and sometimes impossible, remains an effort worth undertaking for the benefit of engendered archaeological study.

American constructions of whiteness (and their varying relations to ethnicity and nationality), gender, and class were significant factors impacting daily life among immigrants and their naturalized descendants. Through an intersectional lens, one's racialization, nationality, gender performance, and class status all functioned as concomitant variables that informed the individual and communal embodied experience of living and working in the United States in the twentieth century. Regardless of an individual's personal self-conceptions, the above identity categories were externally applied as part of larger, national frameworks that worked to ensure and maintain American social order, and as a result, they informed the material dimensions of

life. Aided by historic documents and archival research, historical archaeology is exceptionally positioned to identify the physical traces of such socializing systems within broader historical moments. And, as a mostly-or-all immigrant Depression-era company town, Apex represents an ideal study area to assess how the visible elements of race, ethnicity, gender, and class manifested in association with specific sociohistorical settings.

The Saginaw and Manistee Lumber Company in Arizona, 1865-1928

For the purposes of brevity, my historical overview of Apex begins with the post-Civil War American West, which covers a period of integration for America's westernmost settlements into the nation's economic and political frameworks. The "American West" as a geographic region is defined as the area west of the 98th meridian (Figure 2.4) in North America, encompassing the Great Plains, Rocky Mountains, Great Basin, the Sonoran, Mojave, and Chihuahuan Deserts, the Pacific Coast, the Pacific Northwest, Alaska, and Hawaii (Dixon 2014:181). The West contains more than half of the nation's land, with much of it owned and managed by the federal government, and some by local and state governments. As the American West encompasses such a massive region, historic and archaeological research often focus on smaller geographic subregions with similar climates, natural history, and demographics. Northern Arizona is located within the Intermountain West, which extends from the Rocky Mountains in the east to the Sierra Nevada Mountains to the west (Hardesty 1991:29). While the northern and southern boundaries extend to the United States' geopolitical borders, archaeologists consider southwestern Arizona as part of the Mogollon Rim (Figure 2.5).



Figure 2.4. 98th Meridian map from Morgan et al. (2019:11).

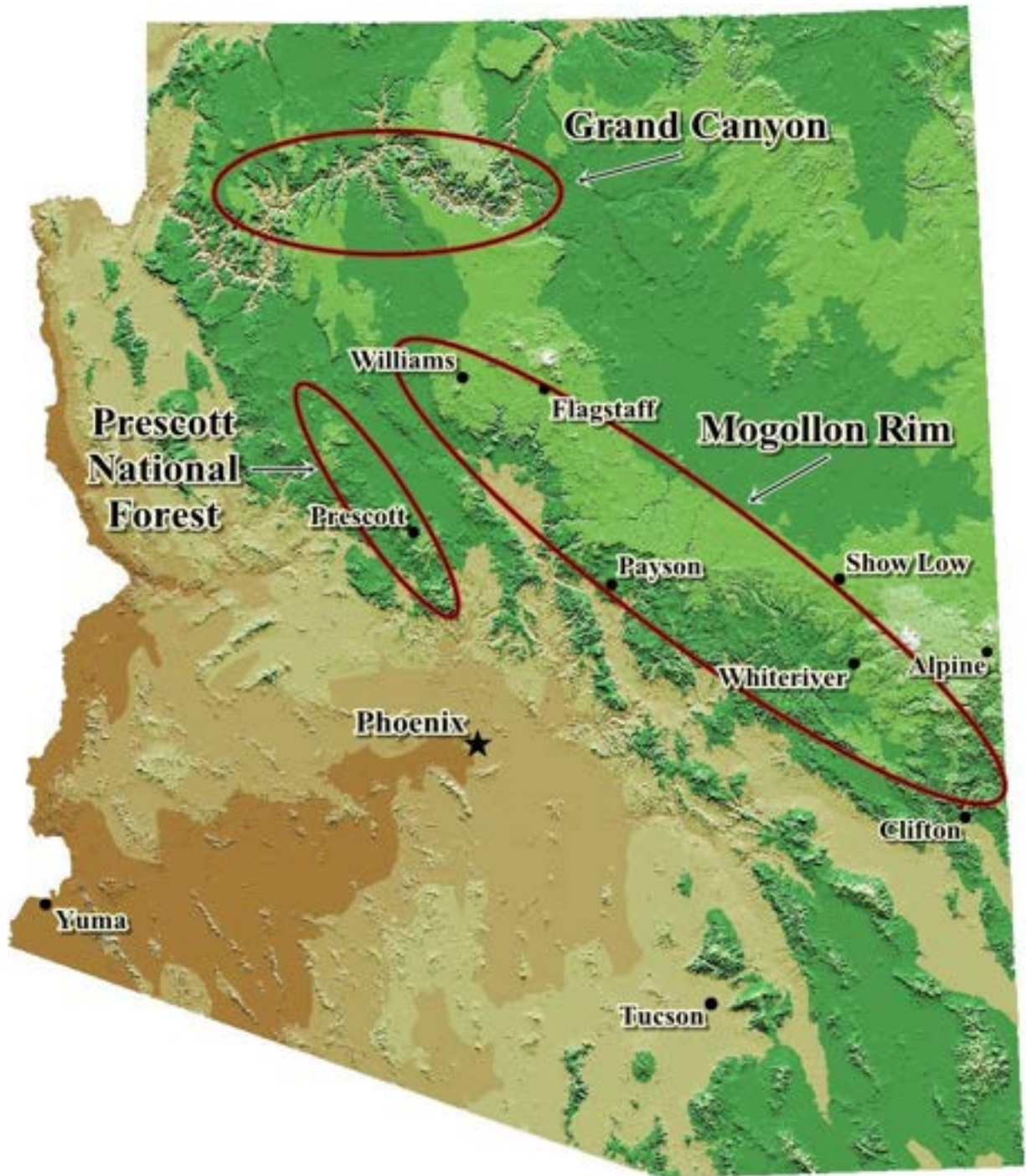


Figure 2. 5 Arizona regions map. Red circles indicate notable geological and ecological areas. Areas southwest of the Mogollon rim are considered a separate cultural region from the rest of the state. Author unknown, distributed by a Creative Commons BY-SA 3.0 license.

Archaeology of the American West

By 1865, the federal government's policy of stealing land from the Intermountain West's Indigenous groups consisted of nakedly aggressive acts of subjugation toward numerous Native populations, and by the 1870s former tribal public lands were open to market appropriation (Robbins 1994:64-65). The availability of Western lands and their abundance of raw materials for use in industrialization, transportation, and agriculture granted the U.S. "unprecedented growth in productive power" (69). Developments in history for the twentieth-century American West were deeply embedded in capitalist extraction and ideology, and cannot be disentangled from economic contexts. Due to limited government control over American capitalism in the nineteenth century, cyclic fluctuations in the national economy created prosperous boom periods that invited several waves of domestic and immigrant migration to the West, but also depressive busts that prompted large population turnovers among less-wealthy populations (55, 76).

Most westward migration consisted of native-born white individuals and families, but a significant portion of farmers, miners, loggers, and other laborers were Norwegian, Swedish, German, Irish, and Canadian (White 1991:195). Fewer numbers of Chinese laborers (whose numbers were severely curtailed by the Chinese Exclusion Act of 1882) entered the U.S. between 1900 and 1929, yet still constituted a disproportionately high percentage of the low-wage labor workforce, in particular railway construction and repair (284). Chinese immigrants also performed important domestic labor, serving as merchants, cooks, and laundrymen (Harrod et al 2012:85). Due to the Immigration Act of 1917, which barred companies from hiring Japanese, Chinese, and other East Asian immigrants, railway companies turned to the mass hiring of Mexican immigrants for low-cost labor (Camp 2011:307).

In addition to working for railway companies, in 1920 Mexican laborers constituted 30% of the Southern California citrus industry's workforce, which produced more wealth for the state than gold between 1890 and 1960 (González 1991:309). In the 1930s, Arizona was one of several Southwestern states to pressure the U.S. Labor Department to restrict Mexican immigration; as a result, "white trash" (Meeks 2020:99) Euro-American Dust Bowl refugees and other Okies filled the role of both laborers and scapegoats for Anglo-Arizonan frustration. Black American migrants migrated based on community ties or labor based networks (Hangan 2020; White 1991:187-197), and in service as Buffalo Soldiers from 1866 until the desegregation of the military in 1948 (Hangan 2020:152; Hanson 2011:433). Archaeological scholarship examining Buffalo Soldiers is richly textured with analysis of the intersection of American masculinity and Blackness in the West (Wilkie 2021) and the role of Black cavalrymen in the development of the American Western frontier (Brown et al. 1998). The economic and expansionist demands of American capital thus directly contributed to the racially and ethnically diverse American west.

Historical archaeological research dedicates particular attention to Western migration and the associated identity processes experienced by each group in the great American melting pot. Transnational methodological approaches, or frameworks that assess how ideas, people, and objects circulate across cultural boundaries, are critical in interpreting structural and cultural processes of identity formation and change (Dixon 2014:194).

For example, drawing on data from an immigrant group's homeland contextualizes cultural assemblages observed in host society environments. Cultural context facilitates analysis of assimilation and/or acts of resistance, as seen in Chinese immigrant communities in Kraus-Friedberg 2008 and Gonzalez-Tennant 2011, Italian immigrant communities in Fitts 2002, and Mexican immigrant communities in Camp 2011. Pulling from developments in historical

research regarding twentieth-century Western migration generates new avenues for archaeological frameworks for analyzing chronology, geography, spatiality, and materiality, See Ross (2012) for a discussion on rethinking archaeological classification schemes to accomplish broader analysis and Voss 2015 for an application of such frameworks in San Francisco. Finally, conducting excavations and other methods of archaeological inquiry can bring attention to untold histories in the narratives of communities across the country. See Thiel 2017 for Tucson's previously unknown Spanish presidio history and Praetzellis and Praetzellis 1992 for an analysis of the domestic contexts and archival documents of the understudied Black community in the American West.

Historical archaeology also provides the material dimensions that create new insights into historic trends. The boom-bust economic cycles characteristic of the West in the late nineteenth and early twentieth centuries leave material traces suitable for archaeological analysis (Hardesty 1991; Dixon 2014). Historical archaeology is an invaluable discipline in understanding the material aspects of the historic record through relevant archaeological assemblages, granting researchers understanding of the embodied experiences for agents of the past.

Company Towns in the U.S. Southwest

Company towns are communities located on company-owned land, where employees live in housing and utilize support services also provided by one or more businesses (Crawford 1995:1-2). Company settlements were often in rural environments far from urban centers and resources, so to attract a reliable workforce, employers needed to incentivize their laborers into living in their communities. Historically, company towns have employed corporate paternalistic strategies to ensure employee compliance and productivity.

Corporate paternalism refers to a “continuum of power” (Cowie 2011:15) within company towns in which administrators maintained “protective, yet controlling” relationships with their employees through mechanisms of oppression, support, or negotiation (58). Regardless of Saginaw and Manistee’s intentions with Apex’s spatial organization, company towns are categorically corporate paternalistic products. further, the close proximity of the management and laborer households at the camp implies paternalistic power relations wherein authority is based in one’s social position (the patriarchal leader, or camp superintendent) rather than a set of laws.

To understand where Apex fits within the history and discourse surrounding company towns, I turn to a comparison of the logging settlement with a contemporary mining company town in Clarkdale, Arizona. Where the early company towns of Arizona were either haphazardly organized camps or pragmatic solutions to a lack of housing, Clarkdale was a concerted effort to socially engineer space in order to produce the ideal work environment for employers (Peterson 2008:10). American entrepreneur and politician William Andrews Clark found economic and political success as a “Copper King” of Montana, but desired to extend his influence on mining industries elsewhere in the Southwest. Once quoted as saying that Butte, Montana’s copper smelters produced a smoke pollution that was “beneficial to women’s complexions and a disinfectant for disease” (22), Clark expressed an interest in establishing a company town with concerns for the health and safety of its laborers at the forefront. In 1888, Clark purchased the United Verde Copper Company (UVCC) in Jerome, Arizona, which would become one of the wealthiest copper mines in the world. As part of his acquisition of UVCC, Clark desired to create “the best, safest and most modern mine and smelter in the world” (Peterson 2008:23). Influenced by the Progressive belief in the power of aesthetic beauty and design as influential upon one’s

moral character, Clark established Clarkdale in 1914 to be as visually attractive to laborers as it would be lucrative.

In practice, Clarkdale's geography was marked by racialized districts with lower-level position employees, such as mechanics, clerks, and laborers, living in close proximity to the copper smelter, which naturally produced health issues for which the company refused culpability. Patio Park, also known as Patio Town, was the company's ethnic Mexican community. The UVCC planned Patio Park's streets so residents would always have the copper smelter in view, "creating a constant visual connection between the workers and the environmental power of the company" (Peterson 2008:59). In turn, Patio Park was the least comfortable and healthy of Clarkdale's neighborhoods. Conversely, Clarkdale's supervisors, school administrators, smelter engineers, and trades people (54) enjoyed access to a business district that boasted general stores, a theater, and other commercial comforts, as well as a pool for "Americans" that excluded Clarkdale residents of Mexican descent, despite the fact that many were United States citizens (51). Clarkdale supervisors also had access to large, sturdier, and more aesthetically beautiful homes located the furthest away from the copper smelter (53-56). An individual's race, gender, and class informed their access to both work and leisure activities at Clarkdale. Chinese and Black men, and all women, were generally excluded from working at the copper smelter, with very few exceptions, and ethnic Mexican laborers were not employed in higher-ranking positions (Peterson 2008:88-90). Town businesses offered more flexible hiring opportunities for marginalized groups that were still limited along gendered and racialized lines. The UVCC provided opportunities for leisure activities and education that doubled as strategies for social control and delineating what was considered possible at Clarkdale. Ill-behaved children and the violation of certain aesthetic housing policies could both

be grounds for eviction (Peterson 2008:69). I use Clarkdale as a point of comparison in the absence of extensive research within a similar contemporary lumber industry company town.

The History of Apex, Arizona

In 1892, the Atlantic and Pacific Railroad, a subsidiary of the AT&SF Railroad, began construction through northern Arizona, an enterprise requiring thousands of railroad ties (Richmond 2017:79). On February 14, 1893, the Michigan-based Saginaw Lumber Company secured timber rights to the Kaibab National Forest in a bid to supply those ties using the region's stands of ponderosa pine. Partly due to its abundance of easy-to-cut white pine, Michigan led the nation in lumber production in the nineteenth century, contributing to the decimation of its own local forests by the early twentieth century (Schaetzl 2023). With the deforestation of Michigan white pine impacting the eastern lumber industries, the Saginaw Lumber Company built and established a lumber mill in Williams, Arizona between April and June of 1893, and expanded operations to a box factory in January 1894. The company supplied wood to local Williams businesses, ranchers, and the AT&SF Railroad (Richmond 2017:79-80). Due to the extractive nature of logging and the size of their timber leases, the company built small, temporary lumber camps throughout the region and designed them for ease of mobility (Stein 2006:9). Housing consisted of boxcar-sized houses for laborers that could be easily disassembled and placed on flatbeds to be moved to the next camp once an area had been cleared (Figure 2.6). The Saginaw and Manistee Lumber Company was the first in Arizona to develop portable camps in the 1920s, followed by the Flagstaff (Cady) Lumber Company and the AL&TC. Over the next several decades, the company would expand and flourish in northern Arizona, leading to the establishment of the company town and logging camp at Apex. Unless

otherwise stated, all mentions of “Apex” are in reference to the community, not the railway siding.



Figure 2.6. Slide from USFS Kaibab National Forest of S&M moving camp #17 in 1922. From Williams Historic Photo project archives, Williams, AZ.

Setting Up Camp

The Saginaw Lumber Company brought its immigrant workforce with it from Michigan for its northern Arizona logging operations. The initial staffing of the company’s mostly Swedish staff was likely attributable to the logging industry’s preference for trustworthy employees that had established themselves back in Michigan. In particular, the Upper Peninsula region of Michigan attracted Swedish miners and loggers in the late nineteenth and early twentieth centuries (Mead 2012). German, Scotch, Polish, and other European groups all immigrated to the state for similar economic reasons, and often created settlements that “became tight, compact groups with [their] own schools and [their] own customs” (Karamanski 1989:158). Nationalistic pride served as one binder for these communities and may further explain why the Saginaw

Lumber Company first arrived in Arizona with mostly Swedish loggers on its payroll. The lumber mill and box plant facilities in Williams, however, were nearly exclusively staffed with Mexican employees, who were managed by white administrators (Dale and Hangan 2022:15).

On October 24, 1899, the Saginaw Lumber Company merged with the Manistee Lumber Company to acquire additional capital to expand its operations in northern Arizona (Matheny 1975:160). The newly-formed Saginaw and Manistee Lumber Company purchased 132,000 acres of former Arizona Cattle Company lands from William F. Baker for \$139,547. The involvement of Baker and Fentress, a Chicago bank and investment firm, ensured financing for the company's future expansion of its Williams facilities and logging operations. By 1905, the company's lumber mill was "twice as large" as that of their closest competitor, the Arizona Lumber and Timber Company (AL&TC), and matched its production by 1906 (161).

The location of the Williams lumber mill facilitated delivery of railroad ties and lumber to the Santa Fe and Grand Canyon Railroads during their construction, as well as mining timber for the Anita copper mine and most of the lumber for buildings at the Grand Canyon Village. To meet the demands of their clients, the Saginaw and Manistee Lumber Company logged timber leases throughout the Kaibab and Coconino National Forests (Richmond 2017:81). Saginaw and Manistee lumberjacks cleared their Kaibab and Coconino timber leases less than thirty years after their initial acquisition. While the company's loggers were efficient, the timber market was not amenable to increased production by the late 1920s, when Saginaw and Manistee concluded its leases. On October 24, 1929, the New York stock market crashed on what would become known as Black Tuesday, precipitating the Great Depression and wreaking economic havoc in the United States and the world for the next ten years. The response of Western industrialists was a dismissive one, as they believed that only speculation in eastern U.S.-based resource stocks

would suffer in the aftermath (White 1991:463-464). Manufacturers in the American West needed to borrow money in order to produce their raw materials, and after 1929, they were struggling to sell their commodities in order to pay back those loans. The mining, oil, and lumber industries throughout the West were overcapacity and oversupplied, and economic activity in the region declined by more than 50% between 1929 and 1933.

Fortunately for Saginaw and Manistee, in the late summer of 1928, approximately one year prior to Black Tuesday and the ensuing global economic crash, Saginaw and Manistee contracted with the AT&SF Railway Company for the grading of tracks and sidings after being granted a new timber lease in the Kaibab (Richmond 2017:81-82). To manage its timber operations most effectively in the new lease, the Saginaw and Manistee Lumber Company established Apex as a company headquarters camp on the east and west slopes of a small valley in the Kaibab National Forest. At milepost 52 of the Grand Canyon Railway, a railway siding known as Apex provided housing for mostly Mexican and Hopi AT&SF track section gang employees and their families (United States Census Bureau 1930). Apex linked the Grand Canyon Railway to Saginaw and Manistee lumbering operations, as the AT&SF railway transported cut timber to the company sawmill at Williams from the siding. To facilitate the clearing of its new timber lease in the Kaibab, Saginaw and Manistee established a company headquarters in the forest one mile east of the Apex siding.

Single men lived in homes resembling “small wooden boxcars without wheels” (Richmond 2017:83) and managers and families lived in larger housing with living rooms, kitchens, and single bedrooms. Camp superintendents, like Arvid Anderson, lived in the largest house, which consisted of the same amenities as family housing with an additional second bedroom. In the vein of the company’s earlier portable camps, all Apex housing was designed

for ease of disassembly and for loading onto flatcars or log car to transport to the next logging camp; workers transported their houses to the end of track to establish smaller, more ephemeral logging camps (84). By 1936, there were a total of fourteen houses, with seven to the west and seven lying east of the rail line that bisected the site (now Forest Road 2607) (84). The map in Figure 2.7 indicates a spatial division of administrators and employees, with managers occupying the western side of the tracks. There is no evidence for deliberate planning at Apex as seen in Clarkdale; employees were spatially separated according to hierarchical labor roles rather than ethnicity, but there were no apparent social programs nor draconian housing policies tied to one's employment. I use Clarkdale as an example of "oppressive" corporate paternalism, the extreme endpoint of patriarchal-leadership-based management practices that informed different embodied experiences for employees based on their class, race, ethnicity, and gender. Current evidence suggests Apex operated within a more "supportive" or "passive" form of corporate paternalism that nonetheless influenced daily life at the logging camp.



Figure 2.7. Don Bufkin's Map (Richmond 2017:80), annotations by unknown author.

Beginning in the fall of 1929, Apex School District Number 3 began offering classes to children of both Apex siding and camp employees in a one-room schoolhouse constructed from two boxcars set atop railroad tie foundations. The schoolhouse at Apex had five teachers between 1929 and 1936, all women (Richmond 2017:85). In 1929, Flagstaff native Margaret Longley taught grades one through eight for \$130 per month plus room and board. Longley was succeeded by another Flagstaff local, Katherine Shipp, in 1931. The “stern and forthright” (Richmond 2017:85) Rose B. Wilson served the role from 1932 until the school’s closure in spring 1936 (Figure 2.8).

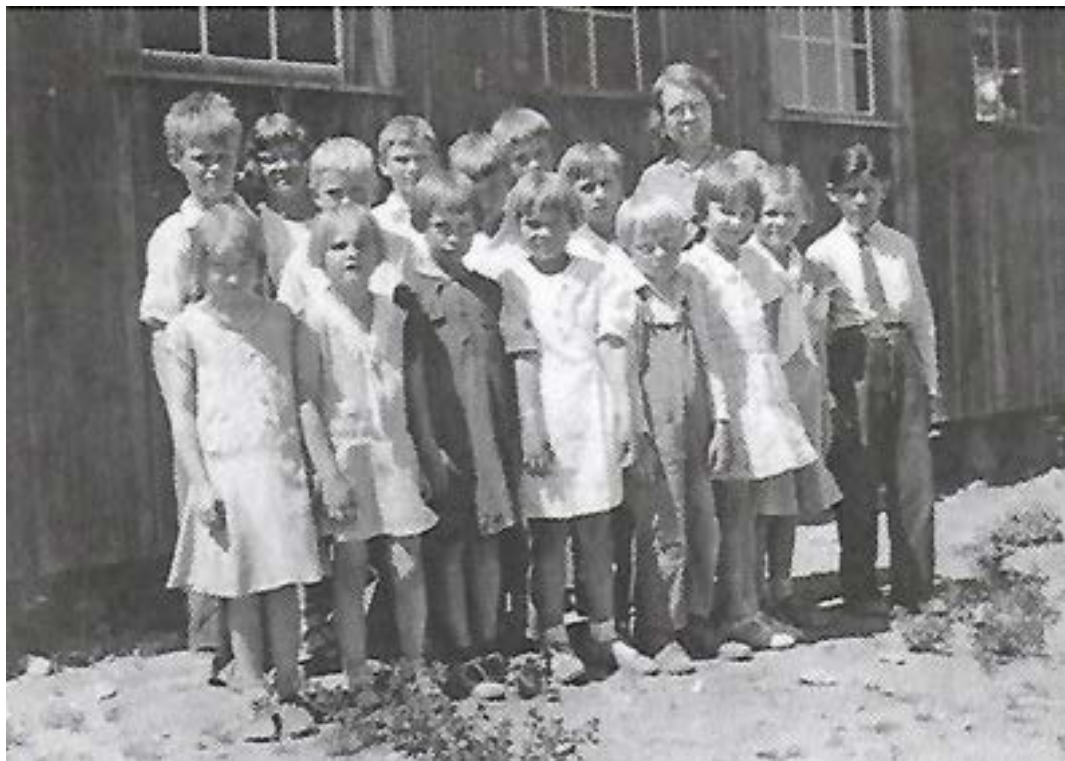


Figure 2. 8 Rose B. Wilson with her students at Apex in 1934 (Richmond 2017:86)

Harry Matson, son of Apex log loader Eric Matson, attended school at the logging camp between the winter of 1929 and spring 1936. Matson and his family are present on the 1930 Apex census. In an interview with Al Richmond, Matson mentions a fourth teacher, a temporary

substitute for Rose B. Wilson: “This other teacher Ruth Cameron, I think she was local from around Williams here too. She wasn’t even shown on the records. She didn’t teach there long, Mrs. Wilson got sick, [sic] one time she had appendicitis...She [Ruth Cameron] was temporary. Appendicitis in those days was quite a problem” (Matson 1984: 00:10:49-0:11:38). Williams native Vera Black also taught at the schoolhouse for an indeterminate period in the 1930s, and recalls having a class size of about five to eight children representing all grades (Black 1984: 00:03:10). The schoolhouse at Apex and its companion school at Anita mines both accepted Mexican and Indigenous children from the AT&SF section gangs (Richmond 2017:86). To the south, Williams schools still had segregated schools for Anglo and Mexican students

At Apex, a company store provided domestic goods, but Saginaw and Manistee charged premium prices for them and deducted purchases from employee wages (Richmond 2017:91). Harry Matson recalls driving to the Babbitt brothers’ store in the Grand Canyon to purchase groceries once a week when the commissary car was away at another logging camp; according to Harry Matson, it was more expensive to purchase from the company store than making the trip to the Canyon (Matson 1984: 00:16:11). Drinking water was supplied by a gravity feed sourced from tank cars situated between the railroad siding and Apex itself. The commissary car, kitchen and dining cars, and general supervisor’s car were intermittently parked at the site as well, in close proximity to laborer housing (Richmond 1988:78).

Logging crews at Apex started the workday at 5:00 A.M. and would end as late as 6:00 P.M., typically five days a week with Saturdays and Sundays free (Richmond 2017:90; Setterland 1984 00:17:25 - 00:18:03). Locomotive engineers’ schedules were less structured , as they always maintained the engines and maintained vigilance in case of fires. Laborers were not paid extra for overtime hours. Logging expended tremendous amounts of energy from its

laborers and required companies to supply their workforce with breakfast, lunch, and dinner, which included fresh and tinned meats, vegetables, fruits, bread, cake, cookies, and a steady supply of coffee (Richmond 2017:90; Stein 2006:10;). Prior to 1930, loggers typically manually felled trees using double-or-single-bitted axes and two-man crosscut saws. Kerosene was used as machine fuel, but pre-1930 it was more likely used to remove sap buildup from cutting the resinous ponderosa pines. Measuring sticks and log hooks were used to load uniformly cut logs onto horse-or-tractor drawn sleds or, in the absence of beast of burden or vehicle, wooden channels known as chutes or slides. In an interview, former Saginaw and Manistee employee (1941-1950) Millard Kuhn confirmed the company continued to use crosscut saws rather than chainsaws in the 1940s (Kuhn 1984 00:27:20). Saginaw and Manistee used horses and mules to transport (“skid”) logs via large two-wheeled, single-axled carts (Figure 2.9) into the late 1920s. The company made the switch to steam loaders as early as 1907, removing the need for horses or large crews of men for loading, and Millar Kuhn confirms the company stopped using horses altogether by 1925 (*The Williams News* 1907:1; Kuhn 1984: 00:29:00).



Figure 2.9. Five lumberjacks with a two-draft horse team pulling a Big Wheel cart loaded with logs, circa 1904 to 1910. From Williams Historic Photo Archive, Williams, AZ.

Saginaw and Manistee deducted \$1.05 a day from worker's wages in return for providing daily, hearty meals. It is unclear if this cost was constant across all logging positions. Assuming a thirteen-hour workday at most, board would be 25% of the day's wages for choker setters and 12% of the day's wages for loader operators, for example. Wages varied depending on one's role in day-to-day logging work. For instance, choker setters made 32 cents an hour and loader operators made 65 cents an hour (Richmond 2017:91). For comparison, choker setters working an average of 54 hours per week in Montana made approximately 41 cents per hour (U.S. Bureau of Labor Statistics 1930:59), and laborers in the same position in California made approximately

60 cents per hour during a 48 hour work week (49). “Loader men” in Arkansas and Louisiana earned 57 and 60 cents an hour for 60 hours worked, respectively (47, 56). The Saginaw and Manistee company payrolls of the 1920s and 1930s (Saginaw and Manistee Lumber Company 1928, 1929, 1930, and 1931) show slight fluctuations in wages for all positions due to the economic impacts of the Great Depression, with many of the changes contingent upon shifting cutting rates for timber. Despite the effects of the Depression and the company’s slump in the early 1920s, the Kaibab timber lease and agreement with the AT&SF Railroad kept Saginaw and Manistee afloat and its laborers employed.

Not all Apex employees were satisfied with their wages. Swedish-born Apex locomotive engineer John Setterland recalls a failed attempt to convince Saginaw and Manistee manager J.M. Bedford to increase wages: “You know, Saginaw and Manistee didn’t pay anything [...] a manager or something came from Klamath Falls...last one they had really was a stingy son of a bitch, didn’t know how to make anything” (Setterland 1984: 00:28:20).

Laborers at Apex worked year-round, weather permitting (Richmond 2017:86). Saginaw and Manistee did suspend logging operations during winters when snows made lumbering impossible. In early 1932, the Williams local newspaper detailed the company’s intentions to delay operations on the Kaibab “until the woods are cleared of the heavy snows, if possible, as logging under the present conditions would be extremely difficult” (*The Williams News* 1932:1). A year later, the company delayed operations at the sawmill and in the Kaibab due to a storm that produced snow “deeper in the woods than at any previous time during the winter, in which case it may be impossible to start up operations at the time planned upon” (*The Williams News* 1933:1).

Apex employees either returned to Williams for lodging or paid to stay at the headquarters camp until the spring snowmelt for “five dollars a week or something like that” according to Setterland (1984: 00:15:05). Speaking of his time with the company in the 1940s, Millard Kuhn recalls the logging season as highly weather dependent: “usually they’d start late March or early April, and it’d slow down sometime in October, November” (Kuhn 1984: 00:28:00). In an interview, Williams rancher Leland “Bill” Thurston implied that mining gold in Mojave County, Arizona was a lucrative pursuit for out-of-work laborers, which may have been the case for loggers at Apex when they were snowed out for the season (Thurston 1984 1:25:00). The close proximity of the Anita copper mine, Clarkdale, and Jerome, Arizona offered job opportunities for professionally flexible lumberjacks, railway employees, and other laborers in need of work for the winter season. It is currently unknown how many Apex employees took advantage of other labor opportunities during inclement weather, but it may prove a fruitful line of research towards understanding the greater labor market in early twentieth century northern Arizona.

Outside of work and school, Apex single male laborers rarely socialized while at camp. Per John Setterland: “Well, you got through working, and you’d eat supper, and go back to bed...there was no light to read with and nothing else, just a little lamp, that’s all” (1984:00:16:10). Families, on the other hand, attended social gatherings at the Apex schoolhouse. Apex residents often traveled into Williams on the paved road running parallel to the railroad for entertainment. During the spring and monsoon season in early summer, however, the muddy dirt roads to State Highway 64 would make travel elsewhere impossible (Richmond 1988:79). Telephones provided contact beyond the confines of the camp, but phone calls could be prohibitively expensive. For the single men, especially those with families back home in Sweden

or elsewhere, life was quiet and often lonely, with few sources of entertainment. Richmond (1995:120) recounts the tragic story of an unnamed “hard working Swede” who struggled to cope with the separation from his family back in Sweden. He worked long hours and abstained from alcohol consumption in order to save funds for a trip to bring his family back with him to Apex. Having saved up enough money, he departed to Williams to catch a train heading east. In a few days’ time he returned to the logging camp, “broke and hung over”, having stopped for a drink or several on his way to the train depot. This scenario played out multiple times, and the man never returned to Sweden.

Based on the implication that the unfortunate Swede was stopping at bars in Williams, this story most likely occurred after 1933, the final year of American prohibition. Federally ratified by the Eighteenth Amendment, and enforced via the Volstead Act in 1920, Prohibition outlawed the manufacture, transport, and sale of intoxicating liquors “except as authorized” by the Act (Hamm 1995:251). Led by groups such as the Women’s’ Christian Temperance Union and the Anti-Saloon League, the campaign against alcohol sale and use was rooted in the Protestant, reformist belief that liquor was the root cause of all social ailments. Concerted, prolific efforts to distribute Temperance propaganda, as well as its heavy platforming in Progressivist political campaigns, ultimately led to its success in Arizona in 1914 and nationwide in 1919 (Clark 1976:70-71). During the prohibition years, Apex residents brought in illicit alcohol by way of Flagstaff. According to Setterland, “We weren’t dry, I’ll tell you that” (1984: 00:30:40). Additional details of alcohol acquisition between 1928 and 1933 are unknown at this time. Many causes contributed to the repeal of national prohibition in 1933, including ineffective law enforcement, the association of “dry” politicians with the Republican party who received the blame for the economic crisis of the Great Depression, and the economic potential of

reintroducing alcohol sales in the country. The Twenty-First Amendment formally repealed the Eighteenth Amendment in December 1933 (Hamm 1995:269).

Dangers of the Lumber Industry

Logging was dangerous and stressful work. Accident and fatality data were not officially kept until U.S. states gradually incorporated workman's compensation laws beginning in 1911; Arizona did incorporate compensation laws in 1913 but inconsistently kept records until post-World War II (Fishback 1998:320; Lubove 1967:262, 268). While casualties were recorded post-1911, many documents from the early part of the century are now lost or unavailable, and no such documents were found for Apex.

Despite limited access to early twentieth century data, timber industry accident information from the U.S. Pacific Northwest remains the most robust dataset for assessing the dangers faced by lumberjacks every season. In Washington, between the passage of the state's workmen's compensation laws (1911) and 1941, timber industry accidents either gradually increased or remained high. In 1911, 43% of the 6,356 workmen's compensation cases were from logging and sawmilling accidents (Prouty 1982:375). Of those cases, 279 were fatal, 56% of which were attributed to the Washington lumber industry. It was not until the Washington State Department of Labor and Industries enacted improved safety programs in 1945 that percentages of this severity began to drop (385). In Oregon, logging and lumber manufacture accounted for 43% of workmen's compensation accidents between 1914 and 1915, and 58% of recorded fatalities (392-394). Like Washington, a 1941 state bill designed to improve safety conditions in "hazardous industries" passed, although post-1941 data reflecting impacts on non-fatal accident severity and frequency are unavailable until 1980.

Mechanization in the lumber industry increased accident frequency, though there is no evidence that mechanized skidding techniques other than the steam loader were employed by Saginaw and Manistee (Franzen 2020:35; Stein 2006:59). Common injuries among U.S. loggers were cuts, burns, sprains, and fractures, with more serious accidents including amputations or crushed limbs, concussions, heat-related illnesses, or falls from significant elevation (U.S. Bureau of Labor Statistics 1982:8-9).

Although specific statistics for the northern Arizona timber industry are not available, it is reasonable to assume that logging the Kaibab or Coconino National Forests, or working in a sawmill with the same manner of tools as those in the Pacific Northwest, produced similar accident and fatality rates. Internal Saginaw and Manistee documents indicate 152 workmen’s compensation cases between 1921 and 1925, three of which lead to permanent disabilities and two of which were fatal (1925 data covers January 1 through October 1)(Table 2.1) (Saginaw and Manistee Lumber Company 1925).

Table 2.1. Saginaw and Manistee Lumber Company Accident Data, 1921-1925. From Saginaw and Manistee Lumber Company (1925)

Year	Injuries	Fatalities	Total Settlements Amount
1921	15	0	\$642.99
1922	21	1	\$1,014.01
1923	52	1	\$7,237.06
1924	44	0	\$3,324.45
1925	20	0	\$550.76
Total	152	2	\$12,769.27

Common injuries in claims against the S&M ranged from bruises, cuts, and sprains to “fractured ribs”, “scalded back”, and “contusion of testicles” (Figure 2.10). Logging accidents

accounted for 23% of filed claims, while the remaining claims and two deaths occurred in association with the sawmill, “yard”, planing mill, lath mill, box factory, machine shop, commissary, railroad, teamsters union, and building maintenance departments. Additional accident data is unavailable, but correspondence from The Industrial Commission of Arizona on February 25, 1928 indicates the company had “an exceptionally fine experience during 1927”, suggesting Saginaw and Manistee kept its accident rates and severity low (Figure 2.11)(Hill 1928).

INJURY AND DAMAGE DATA - 1921

Date Injured	Name of Injured	Rate of Wages Earned Prior to Injury	Amount Full Settlement	Days of Disability	Temporary Total Disability	Permanent Partial Disability	Fatalities	Nature of Injury	Department
7/ 8/21	H.L. Cardiness	3.25	97.82	60	97.82			L. Foot Lacerated	Saw Mill
8/ 1/21	Norberta Lopez	2.50	17.50	14	17.50			Injured Hand	" "
	Totals		115.32		115.32				
11/15/21	John Juhl	2.50	13.52	10½	13.52			Fractured Thumb	Yard
4/29/21	Hans Olson	5.00	22.50	9	22.50			Contusions of body	"
	Totals		36.02		36.02				
10/29/21	Gust Nehoes	3.00	9.67	6½	9.67			Injured Finger	Planing Mill
	Total		9.67		9.67				
5/25/21	Miguel A vila	2.50	11.25	9-1/3	11.25			Injured Nose	Logging & Lumbering
12/17/21	Jack Bohick	2.50	17.87	14	17.87			Injured Wrist	" "
1/31/21	Joaquin Lucero	5.75	25.50	9	25.50			Laceration of legs	" "
5/20/21	Albert Newdick	4.50	14.81	6½	14.81			Lacerated Nose	" "
12/23/21	Tony Nenone	3.25	32.50	10	32.50			Wounded Thigh	" "
1/13/21	Steve Rypinski	4.25	53.12	25	53.12			Fractured Toe	" "
	Total		155.05		155.05				
2/14/21	D. Garant	4.50	22.50	10	22.50			Contus. of Testicles	" "
	Total		22.50		22.50				
3/ 8/21	Billy Hansen	4.50	24.81	11	24.81			Sprained Ankle	Railroad Operation
7/14/21	Ed A. Freborg	3.00	249.62	166½	249.62			Fractured Leg	" "
	Total		274.43		274.43				
7/14/21	Frank Sanchez	2.50	30.00	23	30.00			Sprained Knee	Calf Teamsters
	Total		30.00		30.00				
Total of all Departments			642.99		642.99				

Figure 2.10. Scan of 1921 Injury and Damage Data document. From Saginaw and Manistee Lumber Company (1921).



The Industrial Commission of Arizona
Phoenix, Arizona

R. B. SIMS, Chairman
BURY H. ELANDER, Member
WM. E. HUNTER, Member
HARRY B. TRITTE, Secretary



March 12, 1929

1756

Saginaw & Manistee Lumber Co.
Williams, Arizona

Gentlemen:

Enclosed herewith statement of account for the year 1928,
together with itemized list of accident cases and their cost.

A review of your experience for the three year period shows
a remarkable record for safety.

As you recall, we pegged a rate of \$1.50 per one hundred
dollars of payroll for the lumber industry. We then felt this
to be low. You, however, have an average accident cost of less
than one-half of this for the three years since the inception of
your policy.

Very truly yours,

B. F. HILL

Chief Clerk

BFH:McM
encl.

Figure 2.11. Scan of Feb 25 1928 letter from The Industrial Commission of AZ. From Hill 1928.

The danger of logging was not limited to felling trees or operating machinery. A June 8, 1930 letter from logging camp foreman Oscar Grant (Grant 1930) to the company office in Williams recounts a harrowing experience:

I have to report that Saturday, June 7th., 1930, about 11:35 A M while a train of logs drawn by Engine No.3, John Lund, engineer, Henry Epperson, brakeman, was proceeding from Camp #36 to Apex, a forest fire was discovered on Section 2, Township 29 North; Range 2 East, near Twin Tanks.

The train crew signaled the alarm and proceeded to put out the fire. James Hughes, Foreman, responded to the alarm with ten men of his Railroad [sic] crew, reaching the scene of the fire about twenty minutes after the alarm had been sounded. They succeeded in extinguishing the fire, which burned over an area less than one hundred feet square about one-eighth of a mile south of the track.

Nine men were employed one hour and one man three hours in extinguishing the fire.

An examination of the dirt road indicated that no vehicles had passed the scene that day, but fresh horse tracks made by a horse wearing three shoes was discovered south of the drift fence at the scene of the fire.

Rangers Monighan, Johnson and Osborn arrived at the fire shortly after Foreman Hughes and his crew.

Very truly,

O.R. Grant Foreman.

[?] Clerk.

Forest fires were an uncommon but expected occurrence for loggers on the Kaibab. Only one fire was ever attributed to Saginaw and Manistee lumber operations throughout their history on the Kaibab. On June 20, 1929 per correspondence from Tusayan Forest supervisor George W. Kimball (Kimball 1929a), lumberjacks were expected to deal with fires regardless of origin. A July 5, 1929 memo from Camp #35 listed foreman Oscar Grant as being informed of needing four to five of his men to fight a nearby forest fire (Kimball 1929b). Company manager R.A. Nickerson contacted Wayne Russell, logging superintendent of Apex, on July 6, 1929, informing Russell to allow his men to leave work and fight fires, and to leave a “night man at camp” to monitor for nocturnal blazes (Nickerson 1929). Life in the timber industry was fraught in numerous ways, and in light of workmen’s compensation laws, Saginaw and Manistee needed to mitigate the damage.

In April 1923, the Saginaw and Manistee Lumber Company’s Safety and Welfare Committee began issuing *The Lumberjack*, a monthly magazine that published company news, Safety and Welfare Committee meeting minutes, and poetry and prose (Saginaw and Manistee Lumber Company Safety and Welfare Committee 1923). The introduction to the December 1923 issue summarizes the publication’s purpose: “The ‘Lumberjack’... was originally edited by the Safety and Welfare Committee with the idea of fostering the spirit of Welfare and Cooperation, and to implant the idea of safe practices in the minds of our fellow workers” (2)(Figure 2.12).

THIS issue dear customers and fellow workers is an effort to make you better acquainted with the Saginaw & Manistee Lumber Company and the Saginaw family.

The "Lumberjack" which enters on its eighth month of publication with this issue, was originally edited by the Safety & Welfare Committee with the idea of fostering the spirit of Welfare and Cooperation, and to implant the idea of safe practices in the minds of our fellow workers.

To this end our magazine has been working and will continue to work, but we especially desired in this issue to give a brief outline of history of our plant, with a few photographs combining the information for our good friends of the Southwest with the regular monthly edition to the members of our big family at the plant in Williams and in our woods operations.

We are proud of our organization. We believe it is second to none in the country.

Figure 2.12. First page from *The Lumberjack* December 1923. From Saginaw and Manistee Lumber Company Safety and Welfare Committee (1923):1.

The January 1924 edition of *The Lumberjack* pays its respects to Antonio Soto, the company's sole fatality in 1923 (Saginaw and Manistee Lumber Company Safety and Welfare Committee 1924:7). Soto was crushed and instantly killed while using the log derrick at the Williams sawmill. The language of the Safety and Welfare Committee's response to the "fatal accident" illuminates the company's philosophy on workplace accidents:

No matter how vigilant we may be, no matter how careful, it seems that accidents will visit us. Accidents do not happen they are caused. Antonio Soto caused his. He took a chance although he knew the danger of it. Each one of us has a safety obligation to perform. We must acknowledge the responsibility which rests on all of us to 'make safety a part of our work'. Will you help the Safety and Welfare Committee of our plant by doing your part?

Saginaw and Manistee clearly expected its employees to take at least partial blame for any accidents that occurred at work, but company managers attempted to foster as safe an environment as possible despite the inherently dangerous nature of lumbering. Minutes from the December 10, 1923 Safety and Welfare Committee indicate regular maintenance at facilities, good lighting for housing, the erection of safety signs throughout the Williams facilities, and careful attention to needed repairs at company buildings (Saginaw and Manistee Lumber Company Safety and Welfare Committee 1924:5). Additionally, the committee erected five "Danger. Keep Away" signs in the log derrick area at the sawmill, nine days prior to Antonio Soto's death (6). Based on the committee's printed reaction to Soto's death, it is likely they believed they had met their obligations as guarantors of safety. The same meeting minutes also indicate a discussion concerning the publication of safety bulletins in Spanish. The committee

concluded that, after confirmation with the National Safety Council, due to “so little demand it was not profitable”, and in the interest of “furthering the Americanization spirit”, they would continue to publish bulletins printed in English(Saginaw and Manistee Lumber Company Safety and Welfare Committee 1924:5). The Saginaw and Manistee Lumber Company prioritized capital and nativist American cultural hegemony in its public safety responsibilities. It is unclear if such commitment to Americanization was a core value of the organization, or simply a politically expedient response mainly determined by a disinterest in spending additional time and funds on furnishing new bulletins.

The Saginaw and Manistee Lumber Company were seemingly proactive in addressing the inherent safety issues of the industry and keeping accident rates and severity low, while still placing fault squarely on the shoulders of its employees in the event of injury. Through the majority of the 1920s, the company was liable for its employees at its facilities and Williams and the temporary logging camps (Stein 2006:13). By early 1928, the lumber industry in northern Arizona suffered from the costs of workmen’s insurance coverage in addition to increasing freight rates. Raising lumber product prices was insufficient, as customers were now opting for cement over lumber as a construction material. The nationwide lumber recession of the 1920s further impacted company productivity, requiring Saginaw and Manistee and AL&TC to limit operations in the region (Stein 2006:13).

Who Lived at Apex?

Previous Apex and northern Arizona timber industry scholarship assert the region’s forests were logged by “Swede power” (see Stein 2006:9 for an overview), and oral interviews with former Apex residents and associates supports a strong Scandinavian presence at the

Saginaw and Manistee lumber company. According to Vera Black, “When the Saginaw Manistee was here [sic], they were all Swedish or Scandinavian or some Spanish - quite a few Spanish, and then when...Mr. Bedford brought in a lot of people from Louisiana down in that area...because they knew how to log and all that. So it was people from down there, Oklahoma and Arkansas, the Swedes, and Spanish people” (Black 1984: 00:03:23).

In another interview, Walter Mann, Forest Service Supervisor for the Kaibab during Apex’s occupation, mentions a “settlement of Finlanders” at Apex (Mann 1984:00:22:30). John Setterland states that when he started working for Saginaw and Manistee in 1904, logging superintendent Arvid Anderson explicitly wanted Swedish lumberjacks for the company: “The superintendent, he wanted all Swedes, you know, and if they didn’t have enough Swedes, they’d go back to Minnesota or somewhere in the spring and hire folks to come out here. There was nothing but Swedes here then”. Only when the company failed to find additional Swedish lumberjacks did they hire Oklahomans, Texans, and other Dust Bowl refugees in the 1930s. Additionally, according to Setterland, there were not many Norwegians at Apex and no Danes: “...nothing but Swedes and Mexicans and stuff like that” (Setterland 1984: 00:34:00-00:35:45).

The 1930 census shows that, of the 160 individuals listing their home as “Saginaw Logging Camp”, 123 (77%) were documented as “W” for white, and 36 (23%) were listed as “Mex” for Mexican. Josefa Russell, Wife of white Apex camp superintendent Wayne Russell, was the only resident listed as “Fil” for Filipino (Figure 2.13)(United States Census Bureau 1930). Of the white employees, 45 (37%) were Scandinavian either in surname or ethnicity according to the birthplace of their mother and/or father. Of these 45 Scandinavian individuals, at least seven families (two with the last name Anderson) are represented, whereas four families are represented among the 36 total Mexican employees. No Apex resident with a Hispanic surname

appears to be employed in an administrative position. For the remaining non-Scandinavian white employees, eleven families are represented among 78 individuals (Figure 2.14)(United States Census Bureau 1930). These data do not indicate that Apex administrators necessarily had a particular preference for Scandinavian employees, nor that the Scandinavian makeup at Apex was mostly attributable to the presence of families.

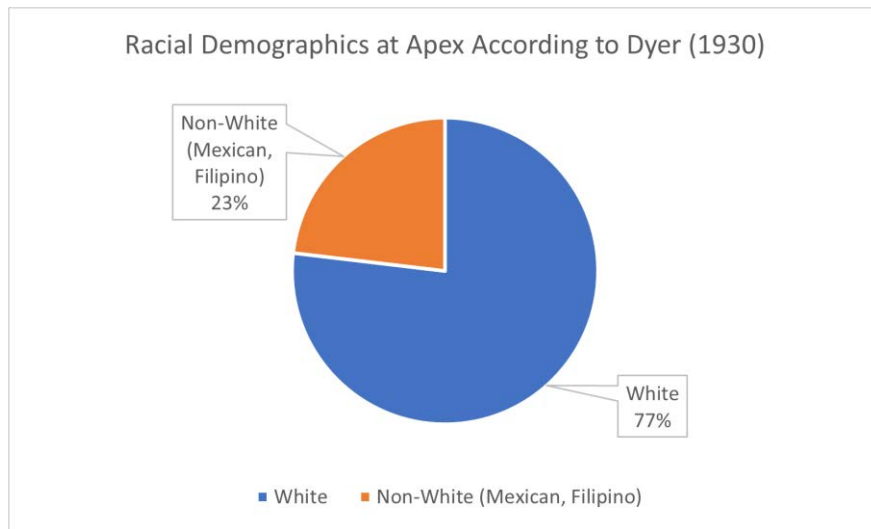


Figure 2.13. Racial Demographics at Apex According to United States Census Bureau (1930)

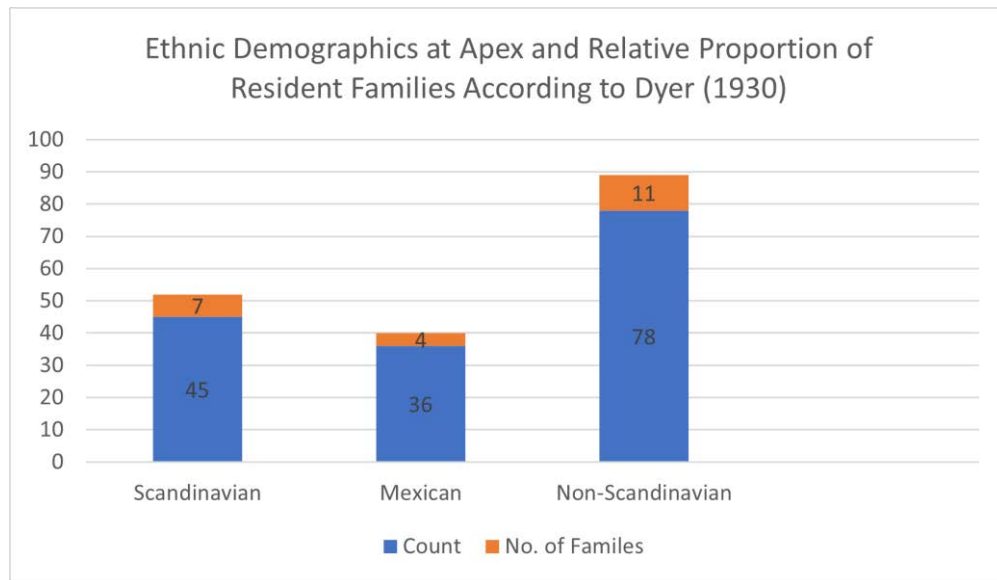


Figure 2.14. Ethnic Demographics at Apex and Relative Proportion of Resident Families According to United States Census Bureau (1930).

Swedes made up a significant portion of the logging industry’s labor force, but numerous races and ethnicities worked as lumberjacks for Saginaw and Manistee and the AL&TC. In the 1910s and 1920s, nearly half of Saginaw and Manistee’s logging personnel had Hispanic surnames (Stein 2006:9), and internal company documents indicate Mexican crews were paid less than their white coworkers. Further, despite company manager E.J. Wilder stating in a 1922 newspaper interview that African Americans were not “fitted for work in this locality” and that he would not hire them “both at the camps and at the mill” (*The Williams News* 1922:1)(Figure 2.16). Saginaw and Manistee employed a “Black Squad” of at least seven members in 1923. Their purpose and personnel are currently unknown (Stein 2006:9), but a photograph in the December 1923 edition of *The Lumberjack* suggests the moniker did not refer to the racial makeup of the crew (Figure 2.17). Finally, non-Scandinavian Europeans were also on the Saginaw and Manistee payroll: Wladyslaw Sutkowski, known in Arizona by his naturalized American name of Walter Schultz, was a Russian-Polish lumberjack from Detroit, Michigan (Figure 2.18) who began working for the company as early as 1927 until his death in 1938 (*The Williams News* 1938:1).

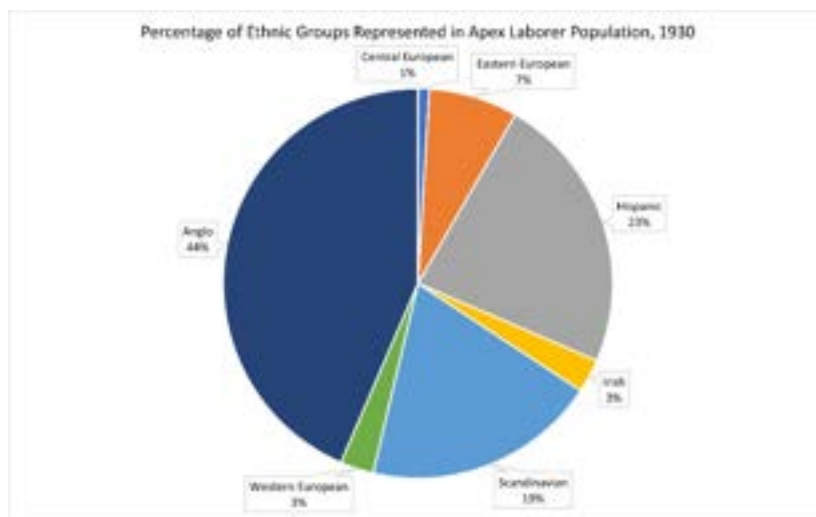


Figure 2.15. Percentage of Ethnic Groups Represented in Apex Laborer Population, 1930. From United States Census Bureau (1930)

Apex housed men and women from Canada, Mexico, Yugoslavia, Sweden, Norway, Russia, and Poland and others with ties to France, Spain, Germany, Ireland, Mexico, and other nationalities. A wide swathe of languages were spoken at the camp: Bohemian, Swedish, Norwegian, German, Russian, Spanish, and most commonly, English. Despite the ubiquity of English at Apex, at least 32 individuals listed that they could not speak English on the census. Of those 32 individuals, 23 (72%) were Mexican, the majority which worked as “laborers” (United States Census Bureau 1930). This is an illuminating data point in light of Saginaw and Manistee’s refusal to post safety bulletins in Spanish (Saginaw and Manistee Lumber Company Safety and Welfare Committee 1924). Those who left the census question blank were almost all born in the U.S. (or in the case of Eric Ryberg, Sweden, but had siblings born in America) and can reasonably be assumed to be native English speakers.

Finally, of the 160 individuals listed on the 1930 census, only 45 were women, and only two were employed: Bonnie McCoy worked as a cook, and Margaret Longley (listed as Laughy on the census) served at the Apex schoolhouse teacher (United States Census Bureau 1930). Excluding Margaret Longley, who was her own head of household, 22 of the 45 individuals listed as “female” on the census were wives of Saginaw and Manistee employees. One “Buelal” Hayes, 52, was listed as a “Boarder” and was potentially married to a William Hayes, 53, night watchman at the camp who was also listed as “boarder”. Table 2.1 shows the relative percentages of the gendered population at Apex and suggests a higher concentration of female children relative to male children.

Table 2.2. Gender Data as Recorded in 1930 Census (from United States Census Bureau 1930).

Sex as Listed on the 1930 Census	Total Number of Individuals in Sex Population	Percentage of Apex Population	Number of Adults at Apex	Percentage of Adults in Sex Population	Percentage of Employed Adults
Male	115	72%	101	85%	95%
Female	45	28%	26	58%	8%

According to a 1924 constitutional amendment, individuals under the age of 18 were barred from employment during Apex’s occupation (Kratz 2020). It is possible that Apex residents younger than 18 worked for or alongside their adult fathers and brothers, but based on the 1930 census and given the lack of evidence, this data set does not consider them part of the employment-eligible population. Given its nature as a company town, the majority of men at Apex were employed, but at least four men (three Mexican, one white with Mexican parentage), none of whom could speak English, lived at the camp with no occupation listed on their census.

The general policy of the company will remain the same as formerly. Mr. Wilder states that he is very well satisfied with the class of labor that he is able to secure and that he expects to continue with practically the same force of workmen both at the camps and at the mill. In reply to a question regarding a rumor that has been circulated regarding the importation of negro labor to work here, he stated that he had not given such a step a moment's consideration as he did not consider the negro fitted for work in this locality and he was very well satisfied with the labor which he is able to secure right here.

Figure 2.16. Newspaper clipping demonstrating the hiring practices of Saginaw and Manistee as described by company manager E.J. Wilder. From *The Williams News* (1922):1.



A FEW OF THE BLACK SQUAD

Figure 2.17. The Saginaw and Manistee “Black Squad” (Saginaw and Manistee Lumber Company Safety and Welfare Committee 1923:15)

No. 19195

UNITED STATES OF AMERICA

DECLARATION OF INTENTION

~~is~~ Invalid for all purposes seven years after the date hereof

Eastern District of Michigan }
Southern Division } ss: In the United States District Court
of Eastern District of Michigan

I, Wladyslaw Sutkowski, aged 32 years,
occupation Laborer, do declare on oath that my personal
description is: Color white, complexion fair, height 5 feet 4 inches,
weight 158 pounds, color of hair light brown, color of eyes blue
other visible distinctive marks none

I was born in Kensico, Russia Poland
on the 25th day of March, anno Domini 1885; I now reside
at 124 Finley Ave., Detroit, Michigan

(Give number, street, city or town, and State)
I emigrated to the United States of America from Hamburg, Germany
on the vessel Augusta Victoria; my last
(If the alien arrived otherwise than by vessel, the character of conveyance or name of transportation company should be given)
foreign residence was Kensico, Russia Poland; I am not married; the name
of my wife is _____; she was born at _____

and now resides at _____
It is my bona fide intention to renounce forever all allegiance and fidelity to any foreign
prince, potentate, state, or sovereignty, and particularly to The present Government of
Russia, of whom I am now a subject;

I arrived at the port of New York City, in the
State of New York, on or about the 25th day
of June, anno Domini 1904; I am not an anarchist; I am not a
polygamist nor a believer in the practice of polygamy; and it is my intention in good faith
to become a citizen of the United States of America and to permanently reside therein:
SO HELP ME GOD.

Wladyslaw Sutkowski
(Official signature of declarant)

Subscribed and sworn to before me in the office of the Clerk of
said Court this 18 day of February, anno Domini 1918.

[SEAL]

Carmie Dawson
Deputy - Clerk of the United States District Court.

By _____, Clerk.

Figure 2.18. Walter Schultz's (aka Wladyslaw Sutkowski) labor papers (U.S. Dept. of Labor 1918)

By 1936, Apex had housed a great diversity of laborers from all over the country and overseas as a direct result of the Great Depression's economic impacts. Apex oral accounts offer slightly different pictures of the camp's racial, ethnic, and national constitution, though it is possible that demographics fluctuated over the site's eight-year history. Data from the 1930 census does suggest a heavy Scandinavian presence at the camp, but somewhat tempers the narrative of "Swede-Power" as the dominant extractive force on the Kaibab.

Packing Up Camp

The Saginaw and Manistee Lumber Company concluded their cutting lease in May of 1936, and Apex's residents packed up their belongings and quite literally moved their domiciles onto the next job elsewhere (Richmond 2017:93). The maintenance men and section gang laborers were the only remaining employees responsible for disassembling the remains of the camp, but they did not take everything. Williams rancher Bill Thurston recalls the company leaving their three 10,000 gallon oil tanks for his ranch: "They were given to us because the Forest Service says you can't leave 'em there...we took picks and shovels out there and we had to relieve all the sides, and then we set up block-and-tackle and jacks, and jacked 'em out of the ground and took 'em" (Thurston 1984:00:42:11). According to Harry Matson, "Saginaw didn't move anything into town, just private individuals moved in by truck...Saginaw just left them out there, let people take them, you know?" Additionally, appliances were taken from Apex and reused, such as "...an old stove there [referring to a small camp nearby], big stove that they used in the Cook house", and several of "those shacks out there [Apex] that the men lived in" were moved into Williams (Matson 1984: 1:03:54 - 1:06:09). Saginaw and Manistee rescued every

still-serviceable building, rail, and railway vehicle for other timber leases and future work, and scrapped or burned everything else. Maintenance crews rolled old vehicles, loaded with decrepit wooden shacks, into great bonfires and sold the metal scrap (Richmond 2017:93). The schoolhouse was the final Apex building to be dismantled when classes concluded in spring 1936.

Hundreds of individuals called Apex home in the eight short years of its existence, at a time where many throughout the country struggled to find work and housing. The logging camp represents a unique opportunity to understand life and work during the Great Depression in rural northern Arizona and the importance of the timber industry to the region. The history of Apex, the Saginaw and Manistee Lumber Company, the American West, and various historic articulations of American identity categories all provide a rich context with which to understand the camp's robust archaeological assemblage.

Chapter 3: Theory

I analyze the historical and archaeological data in this study through the lens of two different, yet overlapping, theoretical perspectives. The first theory I apply is that of spatial semiotics, which encompasses the sub-field of architectural sociology. Spatial semiotics and architectural sociology are concerned with how social agents create and are influenced by their built environments, and the social and cultural meanings therein that are created and reified through physical space. The second theory I employ is Critical Marxism, an interpretation of Marxist philosophy that identifies and critiques “naturalized” structures of power in society.

Architectural Sociology and Rendering Meaning from Space

Architectural sociology is defined as the analysis of the discursive relationship between socio-cultural phenomena and the designed physical environment (Smith and Bugni 2006:123). It is an offshoot from the broader field of spatial semiotics, which seeks to “de-neutralize” space, or to interrogate assumptions that space and place constitute the “backdrop” of life rather than acting as agents in shaping human lifeworlds (Yanow 2014:369). Theoretical, philosophical, and sociological spatial analyses rely heavily upon foundational ideas established by Symbolic Interaction Theory or Symbolic Interactionism (SIT).

SIT is a framework that posits social reality as extant only through human interactions and the symbols employed therein. SIT is not structurally deterministic of human behavior in a social space, but instead grants individuals agency and power in the formation and maintenance of their social relations and, by extension, the social worlds and environments they inhabit. Symbols, language, and thought are derived and developed according to individual self-conceptions that acquire, reproduce, and change meaning through communication. Notable

critiques of SIT are the concerns that it invests too much generative power in individuals, neglects the role of social institutions and norms, and that it lacks attention to social inequalities or marginalized ways of being (Quist-Adade 2018). Applications of SIT in built environment or non-human object studies are productive toward addressing these concerns, as anthropogenic environments such as cities, through mechanisms of public policy and other institutions, contribute to both senses of alienation *and* community that impact individual behaviors and responses to other social agents (Smith and Bugni 2006:125).

I modify Smith and Bugni's definition of "architecture" to encompass any physical building, or domestic or industrial feature (e.g., water-delivery systems, locomotive maintenance areas, etc.) that need not be designed according to specific aesthetic principles. Architecture serves as a physical imposition of the arrangement of space within the world of a community. The lack of clear ideological or aesthetic design of an architectural structure is as informative regarding the "specific image of the collective" within a settlement as is the presence of overt ideological visualization (Delitz 2018:40). The aesthetics within a space and the physical arrangement of structures, objects, and people are subject to critical analysis regardless of the intentions of its constructors because its community ultimately renders meaning from its materiality, and because structures and settlements are always constructed within specific sociohistorical moments. Anthropological and archaeological applications of SIT often aim to construct spatial syntaxes for temporally and culturally comparative research (Buchli 2013),

To resolve another critique of SIT-based frameworks, spatial and architectural design are not deterministic of human behavior, even when such is the intent of their creation. For example, Christian architectural traditions invoke divine presence and the perpetuity of faith in their formal properties, but as social spaces take on new meanings that are dependent on the actions of

their congregations and other social agents (Brenneman and Miller 2016:83). Rather, in the symbolic view, spatial organization and design suggest and influence the material possibilities accessible to any given agent, depending on one's relationship to societal norms and hierarchies. As another example, American shopping centers present exciting avenues of consumption and undifferentiated access to goods for the general public, but those who occupy the space without the intent to purchase said goods are carefully scrutinized as non-consumers. Individuals such as loiterers and the visibly unhoused are therefore deemed ineligible to occupy the same space as those participating in the "celebration" of American consumer culture (Smith and Bugni 2006:129-137). This relationship between individual and designed space can be considered in the context of Foucault's "double mode" of binary division and branding, and coercive assignment. The occupants of any given space may fall into such categories as "normal" and "abnormal" in accordance with a person's individualization, which is an external process that assigns attributes communicating inclusion and exclusion. In the example of the American shopping center, "abnormal" individuals are excluded from the space by security officers who deem their appearance or behavior to be incongruous with the shopping center's manicured aesthetics and production of capital. In American malls especially, open interior architecture makes both seating areas, kiosks, and storefronts visible at any time while simultaneously rendering the space's occupants equally perceptible, and therefore subject to exclusionary scrutiny (Foucault 1977:199). In historical archaeology, "marginal neighborhoods" populated by the "abnormal" social outcasts and nonconformists of communities, representing satellite communities for twentieth-century model towns, similarly grant insight into life and social control as experienced by laborer residents and their families (Goddard 2002). Companies historically designed company towns in ways that allowed for surveillance of its subjects, facilitating the identification

of “normal” from “abnormal” employee behavior. To understand how this may have manifested at Apex, a discussion of Bentham’s panopticon is warranted.

Philosopher Jeremy Bentham’s panopticon (Figure 3.1) is often invoked in spatial studies as an example of architecture’s ability to exercise power over, and influence the behavior of, its inhabitants. Originally designed to monitor the productivity of Russian serfs, Bentham’s proposed structure and its imposition of visibility and surveillance upon its subjects produced a new, self-regulating “social consciousness” for prisoners. Foucault’s writing on Bentham and his panopticon demonstrates how configurations of space are imbued with expressions and mechanisms of power at every level (Foucault 1977).

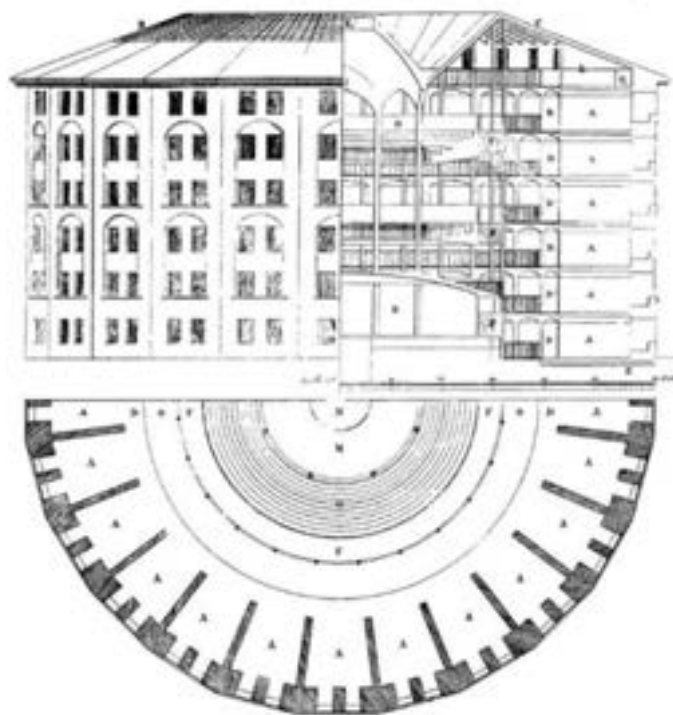


Figure 3.1. Jeremy Bentham’s panopticon prison design. Drawn by Willey Revely, distributed by a Creative Commons BY-SA 3.0 license.

The “built environment” is thus constructed of intentional or unintentional spatial design, often by those in positions of socio-politico-economic power, but also by the resultant decisions

and strategies enacted by individuals within the confines of cultural space. As the material remnants of past lives, archaeological assemblages and features are well-suited towards understanding how individuals used and conceptualized a particular space.

Other studies in archaeology that implement SIT-based spatial frameworks largely focus on ideological aspects of the landscape or cityscape (Leone 1984, 1995) but there are explicit applications in labor contexts and company towns in archaeological scholarship. Cowie's (2011) research at the nineteenth-century iron-smelting company town of Fayette, Michigan provides a case study for analyzing socioeconomic power within pre-progressive company towns, and the resultant power structures and their influence upon identity categories such as class. She found the Jackson Iron Company reinforced a tiered, hierarchical system among its employees enforced via the built environment and pay scales.

Archaeologists have also examined company towns as sites of conflict. Investigations at the coal-mining community of Ludlow, Colorado's violent history of class warfare illuminates the town's relationship with larger economic and social contexts (McGuire and Reckner 2002).. and artifacts from the 1897 Lattimer Massacre in the eponymous town in eastern Pennsylvania grant materiality and clarity to otherwise ambiguous historic narratives (Roller 2018).

The above case studies offer great insight into how future studies of company towns as archaeological sites may be conducted. However, none employ an explicit architectural sociological approach in their analyses of the built environment. My research builds upon the analytical strategies utilized in previous spatial analyses in labor contexts while introducing new ideas concerning the formal and aesthetic qualities of the structures at Apex and their relation to one another.

Critical Marxism

Any analysis of labor history implicitly invokes Marxist theory and critiques by virtue of the subject's intellectual history, but a brief, explicit overview is warranted here in the interest of specificity. What I refer to here as "Critical Marxism" is also known as "Frankfurt School Critical Theory", a sociopolitical philosophy born out of classical Marxism with emancipatory aims of identifying and deconstructing "modes of domination" in the twentieth-century world (Devetak et al. 2012:68-69). Critical Marxism holds that ideological beliefs, which can inform and be informed by aspects of the built environment, legitimize and obscure structural relations of power, including the manager-employee relationship at Apex. The "critical" aspect of this framework maintains that structured relations of power are artificial, and that by making them clear these relationships may be better understood and dismantled in the present (Johnson 2010:97-99). The Marxian emphasis on materialism makes it well-suited for analysis of archaeological objects, but its focus on identifying historical praxis and tracing socio-economic relationships through time can highlight the ideological components behind material assemblages. In a historical context, establishing Apex as a company town and logging camp appears "commonsensical" at face value due to the extractive nature of the work and corresponding need for mobility. Also taken-for-granted is the assumption that managers and administrators are entitled to better housing due to their more clerical, and therefore more "intellectually difficult" work. Critical work of this nature dovetails with political economic analyses as seen in Asad (1973), Bender (1989), Leone (1984), and Taussig (1980).

Chapter 4: Methods

In this chapter, I discuss the two main methods I undertook in order to understand life and work at Apex, and how its communal aspects compared to similar, contemporary company towns throughout the United States. First, I conducted fieldwork as part of the 2023 Northern Arizona University archaeological field school and Apex Archaeology Project directed by Dr. Emily Dale. I also provide an overview of work completed prior to 2023. Fieldwork encompassed pedestrian survey, excavation, and the collection and analysis of geospatial data with both my own personal devices and data provided by the U.S. Forest Service South Kaibab archaeologists. My second approach involved delving into the textual archival assemblage of Apex in the NAU Special Collections department and the Williams Visitor Center. Through these methods, I constructed a comprehensive view of social relationships at Apex as communicated through the built environment.

Fieldwork and Project Background

Kaibab National Forest (KNF) archaeologist Margaret Hangan conducted preliminary investigations in 2006 and revisited the site in 2017 (USDA 2006; USDA 2017). In 2022, NAU field school students and staff began more in-depth surveys of KNF-identified loci. As such, a brief discussion of prior fieldwork is warranted.

The USFS Kaibab National Forest manages the ancestral and presently occupied lands of their tribal partners: the Havasupai, Hopi, Hualapai, Kaibab Band of Paiute Indians, Navajo Nation, Pueblo of Zuni, San Juan Southern Paiute, and the Yavapai-Prescott. Margaret Hangan consulted these tribal partners in 2020 prior to the establishment of the Memorandum of Understanding (MOU) allowing for NAU's research at Apex (USDA 2024). No tribes had concerns or objections about the proposed field work. Although no prehistoric Indigenous

artifacts are included in this analysis, this project acknowledges tribal sovereignty and that this work was conducted on Indigenous land.

KNF archeologists submitted a Heritage Site Summary Report and Cultural Resource Record for the site in 2006 and 2017 respectively (USDA 2006; USDA 2017). Each document establishes the respective names and boundaries of different activity areas, each given a separate Locus designation, as well as structures and artifacts associated with each Locus. In 2006, KNF archaeologists Neil Weintraub, Michael Lyndon, and Liz Lane documented 17 loci, designated by the letters A through Q. Descriptions of relevant loci are detailed in Table 4.1. Their recordation consisted of pedestrian survey and surface mapping without the use of ground disturbing techniques.

In 2020, historical archaeologist and Assistant Professor Dr. Emily Dale of the NAU Department of Anthropology approached KNF personnel with the intent of starting a university-affiliated field school, wherein students would learn the fundamental skills of archaeological field work on cultural properties managed by the USFS. This prompted the Apex, Arizona Archaeology Project, a collaboration between the two institutions with the goal of comprehensively recording and researching the logging camp over a five-year period. Additionally, the project serves to elevate the visibility of historical archaeology in northern Arizona through advertised public tours of Apex. For permitting credentials, the MOU, and other documents pertaining to the project's establishment, see Appendix I.

After a delay due to the COVID-19 pandemic, Dr. Dale directed fieldwork in the summer of 2022 alongside one Teaching Assistant, Ashley Mlazgar, and six participating students: Nathan Crennan, Madeleine Gulbransen, Logan Hick, Andrew Naranjo, Eva Parra, and Ian Villamil. Data included in this thesis is derived from their site documentation and personal field

notes, and specific individuals will be credited where applicable. Undergraduate NAU students Logan Hick, Melissa Baskin, and Joey McCauley transcribed, digitized, and processed data from the 2022 season during the Fall 2022 semester.

2022 field school students and staff revisited loci A, G, and J and documented their findings through tape-and-compass mapping, pedestrian survey, and artifact analysis. The field school also conducted excavation at a depression just south of locus I, associated with the schoolhouse. Through survey, NAU field personnel also identified three new loci, designating them as R, S, and T. To facilitate recording, and to identify specific activity areas more precisely, each locus was divided into smaller analytical units known as numbered “concentrations”.

Phillip Mink of the University of Kentucky volunteered his ground penetrating radar (GPR) equipment and expertise to investigate several depressions throughout the site, at Loci E, I, and R in order to identify potential privies or other areas likely to contain subsurface cultural deposits. This geophysical investigation determined an area north of and behind Locus I to be excavated for that field season and suggested future avenues for excavation in 2023.

In accordance with the Archaeological Resources Protection Act (ARPA) permit and research design as approved by the USFS, only a single one-by-one meter excavation unit was opened, referred to as Privy 1, Unit 1, in a promising depression identified by Mink and the students near Locus I. The unit terminated at approximately 75 centimeters below datum (cmbd) due to lack of time and safety concerns, and while artifacts were present across all levels, the unit unfortunately did not yield anthropogenic soil deposits. Most data collected during the 2022 field season is believed to be associated with management housing and the kitchen and dining hall, based on oral history and previous USFS documentation. Loci A and R are firmly associated with laborer activity. The following locus summary excerpts for the 2022 field season are

provided by the Year 1 report for the USFS as prepared by Emily Dale and the 2022 students (Dale 2022), and the original KNF survey (USDA 2006).

Table 4.1. Loci A through Q as recorded by KNF archaeologists in 2006 (Dale 2023).

Locus	Description
<p>A (Kitchen and Dining Hall) [3 Concentrations]</p>	<p>“Locus A, at the southeast corner of the site, was recorded by the KNF, and was tentatively designated as the kitchen and dining area, per oral histories and information gathered from Al Richmond...We mapped the area and identified three separate activity areas we designated Concentrations 1, 2, and 3, each corresponding to a distinct building material scatter, suggesting at least four separate buildings”</p> <p>“Concentration 1, at the center of Locus A consisted of a scatter of milled wood at three intact wooden beams, two of which still held screws, nails, and washers. The presence of two separate ovens, an oven hood, a faucet spigot, and various ferrous scraps of stove pipes and stove pipe holes corresponds to the KNF interpretation of Locus A as the kitchen...”</p> <p>“Concentration 2, at the west end of Locus A, covers a larger area than Concentration 1, but has a wider and more sparse distribution of artifacts across the area. There was a small area with darker, possibly burned soil that contained some small, burned bone fragments and nails, possibly representing a kitchen burn pile...The most common artifact at Concentration 2 was pieces of milled wood, with four larger, more intact beams present...”</p> <p>“Finally, Concentration 3, at the east end of Locus A, contains the remains of at least two structures, and two large can dumps. Structure 1, at the northwest end of the concentration, consists of five milled beams, still in a square, and over 400 other fragments of wooden debris, including one burnt beam...Structure 2, at the southwest end of the Concentration consists of three wooden beams with nails and bolts in a rectangle, a possible window frame, and 10 hole-in-top cans and buckets.”</p>
<p>G (Management Trash Scatter)</p>	<p>“≈10,000 cans in a large, dense can dump, some cone top beer cans, lots of HiT cans, some glass, ceramics—fair amount of selenium glass, Pennzoil can, some church-key openings, few beverage cans, large (lard) buckets, shoe soles...Our survey of Locus G determined it to be approximately 16m x 10m in a general “C” shape around a pine tree, meaning that the feature is heavily covered in pine needles, likely obscuring the true size and artifact density of the dump. Cans make up the majority of the artifacts in the site, including HiT, cone top and pull-tab beer cans...The artifacts at Locus G point to an association with the domestic features in the area, possibly representing the discarded trash from one of the management houses. The large number of alcohol cans and bottles, all of which date to the post-Prohibition era, and the lack of malt extract cans present elsewhere on the site, perhaps date this specific Locus to post-1933.”</p>
<p>I (Below Schoolhouse)</p>	<p>“Poss. School house remains? 10-15 m long, ≈5m wide, RR ties, nailed/bolted together to form a large wooden platform, few cans, crown caps, Calumet external friction can lid, lots of milled lumber in area, some selenium/clear glass, metal/machinery parts... Artifacts at the foundations, themselves, were sparse, and our brief visit to Locus I confirmed the 2006 description...two depressions below...indicating cultural use of the area at the time of Apex...The southern</p>

	<p>depression demonstrated a clear depth of soil disturbance, suggesting a possible privy location.” The southern depression was the targeted area for excavation for the 2022 field season, and was not determined to be a privy.</p>
J (Management Housing)	<p>“..large structural area—abundant milled lumber, domestic refuse (buttons, etc..), crown caps, machinery parts, graphite (?) rods, Clorox bottles, some green glass... We also identified a can scatter to the north of the Locus and downslope of Locus I (but more closely associated with J), that was mapped, but not surveyed by the KNF... The general artifact scatter directly associated with the wood scatter that most likely represents the remains of a residence was fairly disperse. A Princess Pat make-up can, a bakelite bead, shoe buckle, Walter Baker Co breakfast cocoa can lid, part of a colorless glass vase, a bird cage, a decorative cut-out metal fish, fiestaware, and porcelain insulator all point to the domestic nature of the feature. Similarly, several artifacts were related to children, including a rubber child’s shoe sole, six sherds of a porcelain toy tea set, a “Leadall Playmate” button or toy wheel, a Pay Day button, and part of a Marx train car.”</p>
R (Kitchen/Dining Hall)	<p>“Locus R was a feature not recorded by the KNF and was the first newly designated Locus of the 2022 year. Located to the south of Locus A, Locus R is possibly associated with kitchen and dining hall areas. Due to its distance from Locus A and a large amount of vegetation between the two areas, we recorded Locus R as a separate feature, rather than a Concentration of Locus A. Still, it may be related to Locus A and the general functions of the kitchen and dining hall. Given the lack of a privy at Locus A, Locus R may be the outhouse location for this part of the camp. Locus R... consists of two can dumps, one surrounding the possible privy, and one at the top of the hill, at the northeast edge of the Locus.”</p>

2023 Fieldwork

I co-authored an Arizona Humanities Grant with Emily Dale (see Appendix I) to receive funding as a Teaching Assistant for the 2023 NAU field school at Apex. My responsibilities included giving site tours to the public, addressing the project's logistical concerns, and assisting Dr. Dale in directing fieldwork and supervising students. Work on-site was performed in accordance with the MOA between the USFS KNF (as sponsored by NAU Department of Anthropology) and the Research Design filed with the Arizona State Historic Preservation Office.

Fieldwork involved unit excavation, and pedestrian survey, and artifact analysis between 30 May and 23 June, 2023, and was performed by myself and Dr. Dale, as well as four field school students, Travis Cumming, Garrett Hoskinson, Alex Mason, and Rachel Matheson, and three Passport in Time Volunteers, Adrienne Dale, Fran Maiuri, and Carl Evertbusch, who were on-site for five days. Flagstaff Girl Scout Troop #7031 also briefly assisted with photographing, mapping, and excavation during their scheduled tour. Archaeological data was recorded on-site with paper forms digitized after the field season by NAU undergraduate student Madeleine Levesque. Students, staff, and volunteers also documented their thoughts and the day's progress in their individual notebooks. As part of the Apex Archaeology Project's contract with the USFS, these notebooks were digitally scanned and made available for analysis.

GPR survey previously conducted by Mink and 2022 field personnel indicated a highly promising depression near Locus E, which we believe was the laborer bunkhouse. For the 2023 field season, we thus focused our energies on Locus E and other nearby loci in order to better understand both the spatial organization of the camp as a whole, and the extent to which

management and laborer housing and facilities differed in their respective distributions and cultural assemblages.

While performing these data collection methods, I framed my target archaeological data in the context of my theoretical approaches of Critical Marxism and Architectural Sociology. Regarding the archaeological assemblage, I focused on identifying evidence for explicit ideological objects, e.g. religious or nationalist iconography, and artifacts that communicated more implicit ideologies, such as body odor-eliminating products or artifacts suggesting Americanization. In the vein of Architectural Sociology, I also made careful comparative notes between management-and-labor-associated loci in order to locate any differential access to goods based on the geography of the site.

Pedestrian Survey

Since Apex had already been systematically surveyed, we did not perform a traditional pedestrian survey. Rather, we treated data collection similarly to a Section 110 site revisitation. We identified our loci of interest according to previous data collected by the KNF in their 2006 site record. Field personnel then fanned out in order to resurvey the area and to clearly delineate the locus boundary, as well as to identify discrete artifact concentrations and previously missed features. Once we were content with our area coverage, we established an arbitrary wooden stake datum for mapping purposes. All loci were spatially documented by tape-and-compass maps, with pertinent points recorded on a tape-and-compass map form and mapped in the field on metric graph paper. Datums were later mapped in with GPS units provided by KNF archaeologists. In some cases, such as at Locus E, a second datum was established due to the size

of the area. Compasses were declinated to +10° in order to determine compass degrees for measurements.

After mapping, we recorded the smaller artifact concentrations within the larger locus boundary using artifact logs designed to allow us to record aspects of artifacts such as quantity, material, function, dimensions, and any relevant notes. We practiced a “catch-and-release” style of archaeology, in which field personnel collected notable artifacts and condensed them into a “cool things pile” for further analysis and photo documentation. More common artifacts such as nondiagnostic glass and ferrous metal fragments were recorded, but not collected. When a concentration, feature, or locus was completely recorded, we returned all artifacts to their original location. For a detailed inventory of cultural materials within the loci documented during the 2023 field season, see chapter five.

Upon the conclusion of fieldwork, the assemblage observed during the 2023 summer field season was analyzed and added to the Apex Archaeology Project Database in Microsoft Access. Where possible, analysis was performed in the field, and included estimating the “primary” and “secondary” functions of each diagnostic artifact when possible (for example, the “NORTHERN / CALIFORNIA” fish or meat tins were assigned the primary function of “Food/Drink” and the secondary function of “Food/Drink Storage”). This approach is used to approximate a characterization of the activity area and should be treated as precursory analysis for more robust, future investigations. See Table 4.3 for a complete list of functional categories.

Excavation

Unit placement was especially important to consider, as only ten total one-by-one meter excavation units are permitted in the project’s contracted five-year period. Thus, in accordance

with my and the field school's research priorities, we decided to excavate a depression near Locus E we believed had good potential to be a former privy. Historic privies have elsewhere offered incredibly informative cultural or natural materials (see Crist 2005; Faulkner et al 2000; Fisher et al. 2007; Foster et al 2015:362-369; and Goodwin 2014), such as microbotanical, parasitic, or pollinic remains that can inform our understanding of diet, health, and the environment. The depression's close proximity to Locus E indicated a fair likelihood to yield testable soil samples which could provide potential insight into the environment and physical well-being of Apex's residents. Archaeobotanist and geoarchaeologist Bruce Phillips of BGP Consulting, Inc. volunteered to analyze these soil samples following excavation (Phillips 2024). A table of his findings is included in Appendix I.

Excavation took place over the field school's duration and consisted of a single one-by-one meter unit oriented north-south. The unit was oriented so as to bisect the depression, with the goal of obtaining a good cross-section of the potential privy. The datum was positioned in the southwest corner of the unit, and was mapped into our tape-and-compass maps in our GPS collection. A burnt telegraph pole lay directly next to the depression, and was documented and photographed before removal to facilitate excavation. Little soil was visible on the surface, and several large-to-medium Kaibab sandstone cobbles, sage brush, and fountain grass debris needed to be removed by hand prior to breaking ground. Due to the high concentration of sandstone cobbles and other gravel dispersed throughout the unit, all excavation was done by hand trowel, and all visible artifacts were removed by hand. Excavation proceeded according to the natural stratigraphy of the soil, and in cases where the soil profile did not change after 10 centimeters of depth, new arbitrary sublevels were established until a new stratum was breached or until unit termination at bedrock.

Soils were sifted using a shaker screen with a 1/4 " mesh with the exception of possible privy soils, which were collected separately for wet screening and floatation after the field season. Most artifacts were stored in a temporary container until a level's completion, where they were thoroughly documented and photographed before deposition in the backfill pile. Some artifacts were briefly collected for further analysis in a lab setting prior to their return during the unit's closure. The end of each level was further documented via photographs and plan view sketches, as were all four wall profiles following the unit's termination. See Table 4.2. for an overview of Munsell values and artifact counts associated with each recorded strata and levels.

Table 4.2. Overview of Munsell values and artifact counts in Locus E, Privy 1, Unit 1.

Stratum	Level	Munsell Value and soil texture	Depths (cmbd)	No. of Artifacts
1	Surface	No visible soil	1.5 - 5.5	63
1	1	10YR 3/2: Very Dark Grayish Brown fine sand	5.5 - 15	127
2	1	7.5YR 3/2: Dark Brown fine sand	15 - 17	480
2	2	7.5YR 3/3: Dark Brown fine sandy loam; 7.5YR 4/3: Brown fine sandy loam in southeast part of unit	17 - 25	357
2	3	7.5YR 3/2: Dark Brown fine sandy loam; 7.5YR 4/3: Brown fine sandy loam in southeast part of unit	25 - 34	260
Feature 1, Stratum 2	1 - 3	5YR 3/2: Dark Reddish Brown clay loam	11 - 35.5	14
2	4	5YR 3/3: Dark Reddish Brown clay loam	35 - 42	25
3	1	7.5YR 6/1: Gray coarse sandy loam heavily influenced by limestone gravels	35 - 45.5	6
3	2	10YR 3/2: Very Dark Grayish Brown sandy loam	45.5 - 55.5	8
Total				1,341



Figure 4.1. Locus E, Privy 1, Unit 1, Surface plan view. Photo by Alex Mason, 2023.

As several artifacts were intermixed with the surface cobbles, duff, and other debris, we documented them separately in association with an arbitrary “Surface” level. No formal excavation occurred during this level, only the removal of immediately visible artifacts, and documentation. In total, 63 artifacts were identified at the surface. See chapter five for a detailed review of observed cultural materials for all levels.



Figure 4. 2. Locus E, Privy 1, Unit 1, Stratum 1, Level 1. Photo by Emily Dale, 2023.

Stratum 1, Level 1 consisted of the layer of natural lithic and floral material that was removed to better expose the soil layer. We determined this to be the beginning of a stratum based on the improved visibility and abundance of soil. Ending depths for this level appear to be shallower than those documented for the opening measurements associated with the Surface level; this is attributable to soil collapse and other disturbances resulting from the removal of natural lithic materials. Stratum 1, Level 1 terminated atop a color change in the soil.



Figure 4.3. Locus E, Privy 1, Unit 1, Stratum 2, Level 1 plan view. Photo by Emily Dale, 2023.

Stratum 2, Level 1 (7.5YR 3/2: Dark Brown) maintained a high gravel and cobble density in addition to manifesting notably darker, carbon-rich soils. The remaining natural lithics were left in-situ due to their large size and the likelihood of their removal jeopardizing the vertical integrity of the excavation. Level depths extended from 15 to 17 cmbd, with excavation often impeded by the presence of the large cobbles. In total, 480 artifacts were identified within this level.



Figure 4. 4. Locus E, Privy 1, Unit 1, Stratum 2, Level 2. Photo by Rachel Matheson, 2023.

Excavation continued into Stratum 2, Level 2 (7.5YR 3/3: Dark Brown), where lighter soil began to manifest in the southeast corner (7.5YR 4/3: Brown) of the unit. The main soil in the remainder of the level also appeared to become coarser in texture with depth. We noted an abundance of small charcoal fragments in the northern portion of the unit, which may have been due to the presence of a rodent burrow. The density of large lithic cobbles continued into this level. Depths extended from 17 to 25 cmbd. In total, 357 artifacts were identified.



Figure 4.5. Locus E, Privy 1, Unit 1, Stratum 2, Level 3. Photo by Emily Dale, 2023.

Stratum 2, Level 3 (7.5YR 4/3: Brown in the southeast portion of the unit, 7.5YR 3/2: Dark Brown in remaining soil area) saw an increase in root and natural lithic density at the top of the level and along the sidewalls of the unit. Soil moisture and compactness increased in the eastern portion of the unit, and soil color appeared lighter. Level depths extended from 25 to 34 cmbd. In total, 260 artifacts were identified within this level. At this point in the excavation, a large rock embedded in the western side wall, believed to extend well into the sidewall, was designated as Feature 1 and is associated with levels 1 through 3 of Stratum 2.

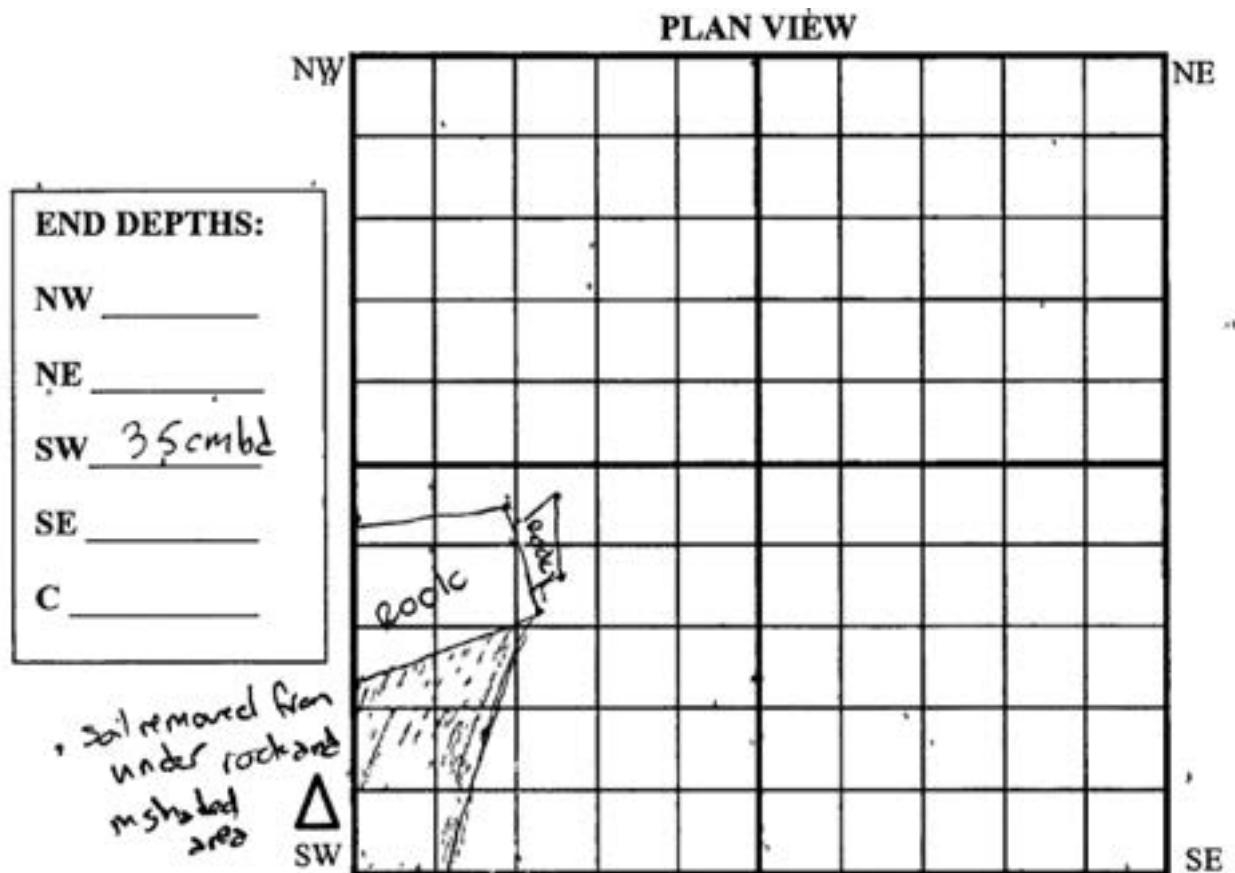


Figure 4.6. Locus E, Privy 1, Unit 1, Feature 1 plan view sketch by Adrienne Dale, Rachel Matheson, and Bruce Phillips.

Feature 1 (5YR 3/2: Dark Reddish Brown clay loam) consisted of a large rock with underlying soil that we were hesitant to remove due to its suspected role in the structural integrity of the western sidewall. The feature lies within levels 1 through 3 of Stratum 2, encompassing between 11 and 35.5 cmbd. The rock was pedestaled and eventually removed in the process of excavation Stratum 2, level 4. Artifacts associated with the feature potentially originate from non-provenienced areas, most likely levels 2 and 3. Bruce Phillips collected a soil sample from the northeast corner of the unit following excavation of the feature. In total, 14 artifacts were identified.



Figure 4.7. Locus E, Privy 1, Unit 1, Stratum 2, Level 4. Photo by Travis Cumming, 2023.

Stratum 2, Level 4 (5YR 3/3: Dark Reddish Brown clay loam) saw a precipitous drop in artifact density while the presence of small natural lithic deposits was consistent with previous levels. Level depths extended from 35 to 42 cmbd, reaching decomposing Kaibab limestone deposits between 30 and 37 centimeters deep. This constitutes the final level of Stratum 2, as it terminated atop significantly redder soils and a breaching layer of limestone bedrock. The presence of two large, thick roots running east-west across the lower segments of the unit, coupled with large cobbles and rocky soil, slowed excavation considerably. In total, 25 artifacts were identified and one soil sample (Bag #5) was collected within this level.



Figure 4.8. Locus E, Privy 1, Unit 1, Stratum 3, Level 1. Photo by Tim Maddock, 2023.

Excavation continued into Stratum 3, Level 1, which saw the continued trend of decreasing artifact density. Level depths extended from 35 to 45.5 cmbd, with several areas terminating atop impenetrable bedrock. In total, six artifacts were identified within this level. The large root was left in-situ, but smaller roots were clipped for ease of excavation.



Figure 4. 9. Locus E, Privy 1, Unit 1, Stratum 3, Level 2. Photo by Tim Maddock, 2023.

Excavation of Stratum 3, Level 2 yielded a low artifact density and terminated atop limestone bedrock. It represents the terminal level of excavation for Unit 1, with final depths reaching 55.5 cmbd at the deepest point. Some areas within the limestone were soft enough to penetrate to reach soil lying underneath in earlier levels, but by this point soil deposition was nonexistent. Eight total artifacts were identified.

In summary, 1,341 artifacts were recovered from Unit 1, with 35.8% of artifacts originating from Stratum 2, Level 1. Three total strata were identified in the unit, but none closely resembled privy soils in expected color or texture (see Fisher et al 2007:178). One feature (Feature 1) was documented and ultimately determined to be non-cultural. To close the unit, we placed a piece of burlap at the bottom to indicate the excavation's end, followed by a 2023 Bessie Coleman quarter in a plastic bag. All artifacts removed during excavation were then added in reverse order of their exhumation, and the unit was backfilled.

Geospatial Collection

The 2022 and 2023 field schools did not prioritize in-house collection of geospatial data as part of its scope of work or education, instead focusing on creating tape-and-compass maps. Rather, KNF archaeologists Charlie Webber and Rochelle Rhone brought Trimble GPS units to collect point data associated with the arbitrary datums established at each locus. Point data is useful as a dataset, but analysis of dimensions such as artifact density and comparative area measurements between loci are absent as a result. I returned to Apex in the fall of 2023 to collect specific locus boundaries and the location of documented artifact concentrations. Data was collected using a Pixel 3A smartphone and an iPad mini, both of which provide accuracy within three meters. Due to time constraints, it was not possible to collect boundary or concentration data for all loci, so I prioritized areas that showed the most analytical promise: Loci B, D, E, and G. Loci B, not yet re-surveyed by the Apex, Arizona Archaeology Project, and G, recorded in 2023 represent trash dumps associated with laborer and management groups, respectively, while loci E and D, both recorded in 2023, represent laborer housing. The location of formal management housing is less precise based on historical and artifactual data, but locus J serves as a potential candidate and was therefore documented.

All spatial data and geospatial deliverables were analyzed and created using ArcGIS Pro. With the point dataset, I performed Hot Spot Analysis (Getis-Ord G_i^*), which is a tool that identifies statistically significant spatial clusters of high and low values. This tool processed spatial and associated artifactual data to visually represent which activity areas manifested the highest frequency of specific artifact categories. I defined seventeen total categories, encompassing behaviors, habits, activities, and other information that yields insight into life at Apex (Table 4.3).

My methods for this approach are primarily informed by Architectural sociology and require analysis of data acquired from the fieldwork phase of this thesis. I collected geospatial data with the intent to explore spatial heterogeneity or homogeneity across assemblages at Apex and to identify what, if any, spatial trends were present through the organization of the material record. I also made note of any physical barriers or other features designed to delineate a space or communicate spatial separation or proximity.

Table 4.3. Artifact categories represented in geospatial analysis.

Category	Description	Associated Artifacts
Personal Hygiene	Hygienic products associated with individual use	Hand creams, toothpaste, wash bins, etc.
Tobacco Consumption	Products associated with or indicating the use of tobacco	Cigarette, chewing tobacco, and loose tobacco containers
Food and Drink Storage	Encompasses containers that were manufactured as storage for edible products	Alcoholic beverages, malt syrups, evaporated milk cans, maple syrup cans, food tins, etc.
Apparel	Any object used for personal adornment, whether decorative or utilitarian	Leather shoe soles and fragments, buttons, buckles, etc.
Entertainment	Objects associated with recreational activities	Radio fragments, musical instruments, vinyl record fragments, etc.
Toys	Includes products explicitly created for children*	Toy airplanes, miniature tea sets, tinker toys, toy guns, etc.
Food Preparation	Items used in cooking or canning processes	Skillets, kitchen utensils, mason jars, etc.
Appliances	Larger, typically non-movable objects used for cooking or similar domestic activities	Stoves, stovepipes, oven doors, etc.
Automotive	Items associated with automotive maintenance or manufacture	Motor oil cans, vehicle body fragments, spark plugs, etc.
Electricity	Encompasses objects associated	Batteries, electrical wires, etc.

Category	Description	Associated Artifacts
	with the supply of electricity throughout the camp	
Food Service	Products indicating the presentation or direct consumption of food	Plate fragments, mugs, eating utensils, serving trays, etc
Community Hygiene	Hygienic products intended for sanitizing or cleaning communal spaces (e.g. a privy)	Lye and bleach containers
Architectural	Any materials used in structural manufacture	Nails, roofing tacks, mortar, milled wood, bricks, etc.
Furniture	Includes the remains of objects once used for sleeping, seating, etc.	Box springs, frames, etc.
Hand Tools	Any tool used to accomplish individual tasks such as construction or repair	Hammers, hand saws, rakes, etc..or similar tools
Home Maintenance	Objects indicating home repairs or modifications	Paintbrushes, paint cans, etc.
Medicine	Items demonstrably and historically used as medicinal items or poultices	Laxatives, etc...

*If there is evidence that an item under “entertainment” (e.g. a harmonica reed) was historically intended for children, it will be re-considered as a toy.

Each category was created on the basis of assemblage size and ability to communicate the purposes or activities associated with specific loci. For example, Locus A and management housing were previously assumed to be the only areas where individuals would have access to kitchen appliances, but survey of locus D revealed stovetop and oven fragments. My geospatial analysis focused on identifying where expected and unexpected categories were located in relation to their respective loci's understood function, and at what relative frequency they manifested. An overview of my results and discussion of findings are included in chapters five and six, respectively.

Archival Research

Interpretation of archaeological sites and assemblages from the historic period is bolstered by the presence of associated archival and written records. My analysis and discussion of the data acquired during the 2023 field season is informed by documents provided by the NAU Cline Library Special Collections and the archives of the Williams Historic Photo Project, located at the Williams Visitor Center.

The NAU Cline Library Special Collections offers three primary collections that directly pertain to Apex and its community's employers. The Saginaw and Manistee Lumber Company/Stone Forest (1902-1953) and the Saginaw and Manistee Lumber Company (1893-1954) Collections were a crucial source of the company's business activities throughout northern Arizona, including legal documents, correspondence, financial statements, tax records, account and sale ledgers, insurance, employee, and motor vehicle records, as well as maps tracking company logging activities at the time of the camp's occupation. The Charles Hoffman

Collection (1939-2004) includes site reports and additional data that provide further insight into certain areas within the Apex property.

Other collections, while not directly related to Apex or company operations associated therein, still offered supplemental data and imagery, such as the Atchison, Topeka, and Santa Fe Railway Company drawings collection. A full discussion of the pertinence of their archival documents to elucidating life at Apex is provided in chapter six.

I met with Margaret Hangan of the Tonto National Forest for admission to the Williams historic archive, though any member of the public can contact her via the “Williams Historic Photo Project: Gateway to Williams History” Facebook page for access. Using the project’s in-house database, I searched keywords such as “Apex”, “Saginaw”, “logging”, and other similar phrases to identify photographs and documents in the digital archive that pertained to the logging camp or earlier camps associated with Saginaw and Manistee in northern Arizona. I also consulted documents and maps within the archive that have yet to be scanned or given a Williams Public Library (WPL) number. I have included this media and accompanying analysis in my discussion of findings in chapter six.

The procedure for accessing and analyzing documents was generally the same for both archives. The Williams Historic Photo Project in its entirety is only accessible via the Williams Visitor Center offices, as is its database search function. However, NAU’s Cline Library offers an online search function with detailed information regarding the contents of its collections, which facilitated a faster research process.

Summary

Through the methods outlined in this chapter, I compared life at Apex between management and laborer communities on the basis of previous and newly recorded artifactual, spatial, and archival data. Fieldwork will continue at the logging camp until at least 2026 as part of the Apex Archaeology Project's goal to further elucidate life there, thus the full picture remains incomplete. Future work will seek to identify additional testable privy soils and other information that will complement my discussion of findings provided in chapter 6. I now turn to an overview of the cultural and architectural assemblage recorded and analyzed using the methods discussed here.

Chapter 5: Results

This chapter presents archaeological data recovered during 2022 and 2023 fieldwork, using the methods described in chapter 4. I begin by summarizing the loci documented during the 2023 field season and conclude by providing statistical breakdowns of their assemblages in relation to one another and Apex as a whole. Generally, each loci contain smaller areas associated with discrete activities, structures, or simply areas of deposition.

A note on methodology and terminology: different groups of field personnel recorded different loci and activity areas, sometimes simultaneously to one another. This resulted in minor inconsistencies in field recordings (for example, some instances of documentation lack measurements and/or precise quantities of specific types of artifact), but the cumulative impact of these errors on the analytical utility of the dataset is negligible for the current study. Additionally, certain artifact types (e.g., tobacco tins) are recorded as separate entities in some contexts and as part of the general “can” assemblage in others. This is attributable to shifting methodological priorities over the course of the field season and my learning process in designing and executing archaeological field projects. Finally, in the interest of clarity, I use the term “solder dot” to refer to artifacts also known as “hole-in-top” or “matchstick filler” cans, and “amethyst glass” to characterize what is also called “purple”, “solarized”, “manganese” glass. Hole-in-cap cans also possess solder dots, but none were identified at Apex in the 2022 or 2023 field seasons.

I conclude the chapter with an overview of geospatial products created as part of visualizing life at Apex as well as archival documents that illustrate the role of the Saginaw and Manistee Lumber Company in the lives of their employees.

Locus E

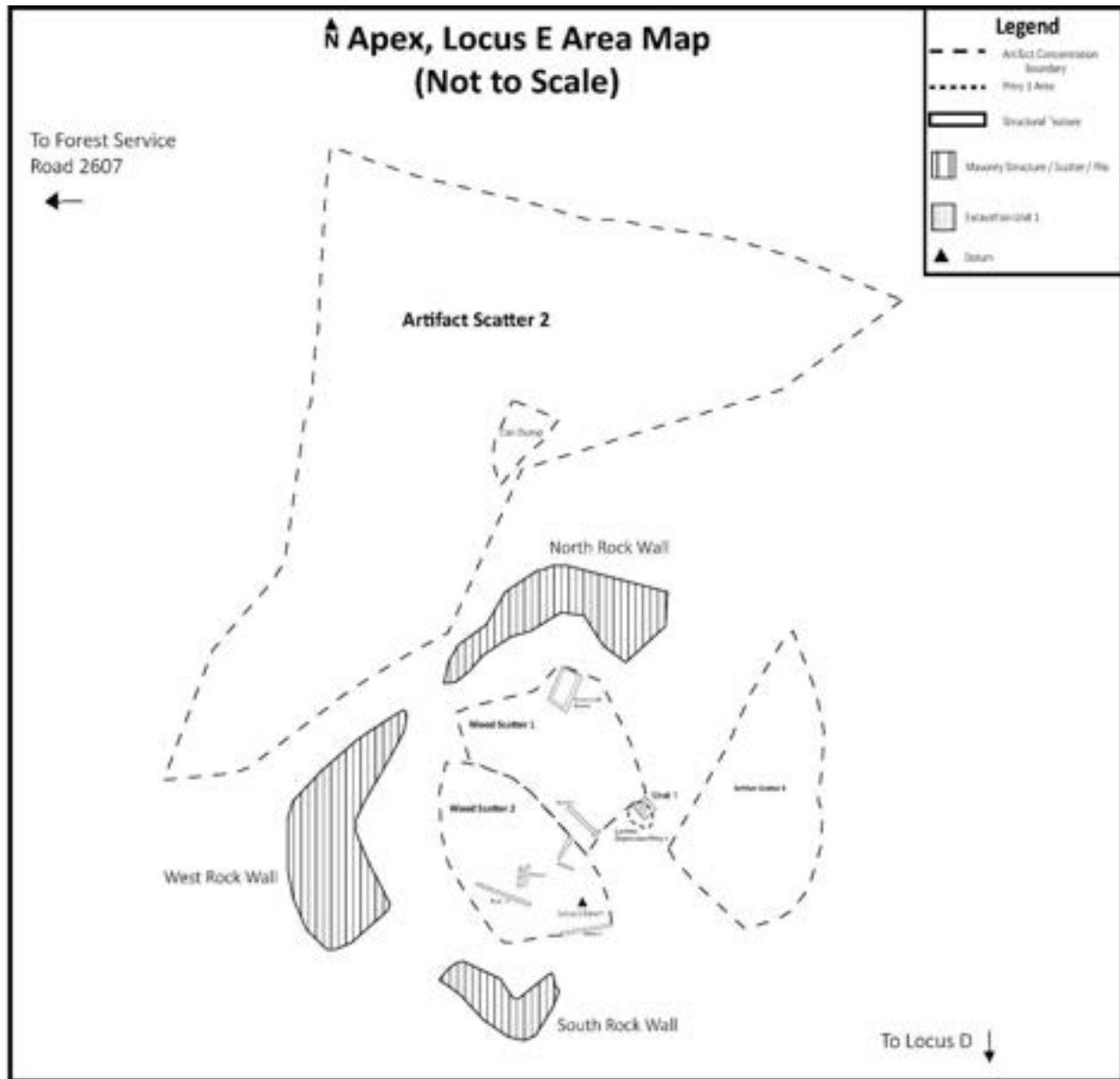


Figure 5.1. Not-to-scale map of Locus E. Digitized by author, original map by 2023 Apex, Arizona Archaeology Field School students and volunteers.



Figure 5.2. Tim Maddock and Travis Cumming surveying Locus E. Photo by Emily Dale, 2023.

Locus E was first recorded by the KNF in 2006 and represents the most likely location of the laborer bunkhouse, based on oral interviews conducted by Al Richmond in 1988. Following survey and establishment of the datum, the locus was thoroughly mapped to encompass the area's boundary, the location of Unit 1, its distinct artifact concentrations, and large scattered cultural features such as wood beams. The full extent of Locus E's areal coverage was not measured due to time constraints (see chapter four), but its relation to other loci in the area can be seen in Figure 5.1. Documentation of surface cultural materials occurred simultaneously with excavation of Unit 1 once discrete cultural areas were identified.

Privy 1



Figure 5.3. Privy 1 area overview. Photo by Alex Mason, 2023.

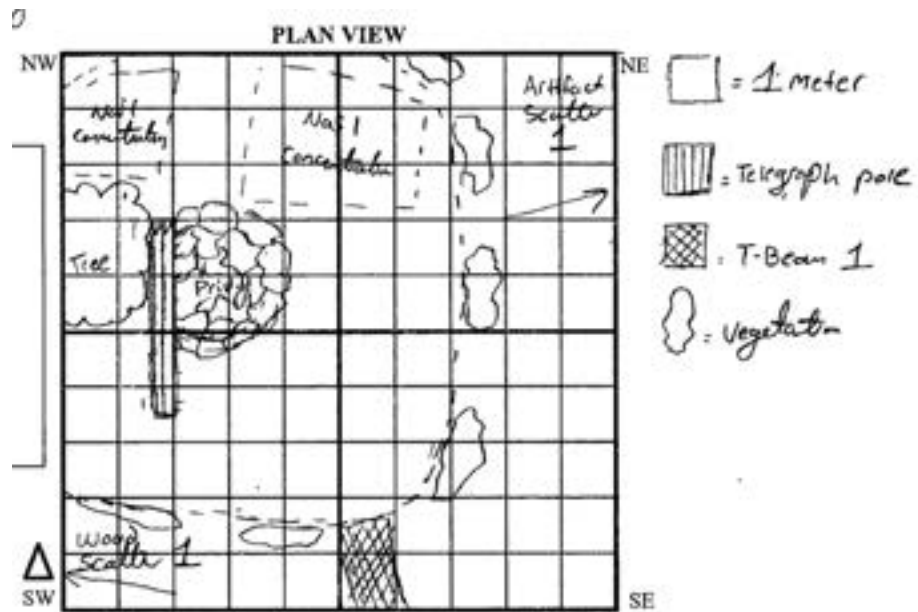


Figure 5.4. Privy 1 sketch map, drawn by Tim Maddock, 2023.

Privy 1 is an area on the northern end of Locus E that contains a large artifact scatter and an earthen depression. The area was named “Privy 1” during field work due to our placement of a 1m² excavation unit that bisected the earthen depression, but by the end of the field season it was redesignated as man-made depression. Privy 1 encompasses a broad, slightly sloped area that is flatter than the surrounding terrain and therefore suggests it was a likely location for a bunkhouse or single-occupant laborer housing.

Privy 1 consists of a roughly circular 53 meter² area bordered by low sagebrush to the east and south (distinguishing it from Artifact Scatter 1 and Wood Scatter 1, respectively), two distinct concentrations of ferrous nails to the north, and a collapsed, burned telegraph pole that lies along the western edge of the privy (Figure 5.4). Metal represents the dominant material type observed among artifacts associated with Privy 1, including hundreds of ferrous metal nails, cans, fragments, stove pipe pieces, and a non-ferrous ferrule. Also present are an even distribution of numerous colorless window and vessel glass fragments, several hundred amber and amethyst glass fragments, white earthenware ceramics, decorated porcelain sherds, leather shoe fragments, high-fire brick fragments, and other cultural artifacts (Table 5.1). The extent of the general privy area measures 8.15 meters north-south by 6.40 meters east-west, with the privy itself measuring 2.09 meters north-south by 1.41 meters east-west. The burned telegraph pole lying on the privy’s western edge measures 3.54 meters in length (broken) and 10 centimeters in diameter.

Table 5. 1. Inventory of artifacts observed at Locus E, Privy 1.

Quantity	Artifact	Material	Dimensions	Comments
183	Glass (various)	Glass	-	Includes colorless (flat and vessel), amber, and amethyst fragments
1	Owens-Illinois Glass Co. colorless bottle base	Glass	-	“4 / 20 [maker’s mark] 8 / 5635-W”. 1929 - 1960 date range
3	Amber glass bottle base	Glass	-	1 shard embossed: “50”; 1 shard embossed: “N”; bottle base: “[Illinois-Pacific Glass co]”; sides of vessel: “NET CONTENTS[...]”
31	Ceramic (various)	Ceramic	-	Includes stoneware and white earthenware, brick fragments
3	Porcelain	Ceramic	-	2 blue hand-painted, 1 pink painted (floral pattern)
32	Cans	Ferrous metal		Includes indeterminate cans of various sizes, lids (indeterminate, cocoa, seasoning), motor oil tins,
2	Can lids (embossed)	Ferrous metal	5 cm diameter (cold cream)	“COLD CREAM” in diamond logo with knife cut and “CALUMET / BAKING POWDER 1 lb / ABSOLUTELY PURE”
3	Tobacco can	Ferrous metal	-	-
3	Copenhagen brand tobacco lid	Ferrous metal	6.5 cm diameter	“COPENHAGEN / SNUFF”
1	Triangular file	Ferrous metal	20 cm length by 1 cm width	-

Quantity	Artifact	Material	Dimensions	Comments
434	Miscellaneous metal	Ferrous metal	-	Includes stove pipe fragments, nails, cast iron stove fragments, bottle caps, one threaded lid, washer, spring, chimney flashing, hinge with drilled holes, and wire
1	Non-ferrous metal artifacts	Non-ferrous metal	-	1 ferrule, 1 metal sheet
100	Charcoal	Charcoal	-	Concentrated in the northwest corner of the privy area
1	Button	Plastic	-	Small (no dimensions recorded), 4 sew holes
10	Shoe sole	Leather	-	Various sizes, some still contain shoe tacks
Total artifact count: 814				

Privy 1, Unit 1



Figure 5.5. Overview of Privy 1, Unit 1 area prior to excavation. Photo by Travis Cumming, 2023.

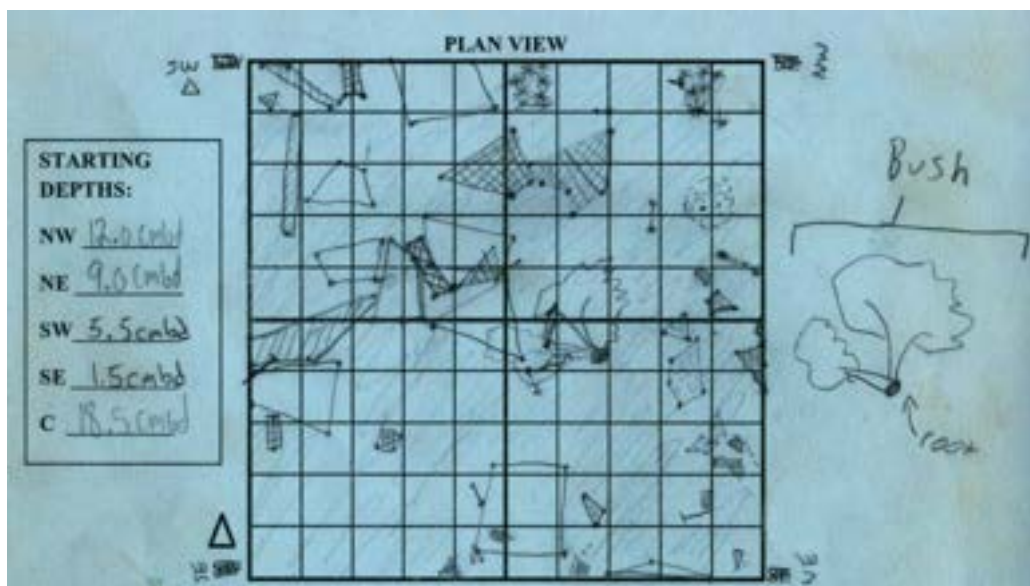


Figure 5. 6. Plan view sketch of Privy 1, Unit 1 surface. Sketch by Garrett Hoskinson, Alex Mason, and Emily Date, 2023.

Once the boundary and associated activity areas within Locus E were identified, excavation began within Privy 1, Unit 1. See Appendix I for a complete inventory of artifacts recovered during excavation.

The surface level yielded 63 total artifacts, consisting of milled wood, crushed ferrous metal cans, window glass, colorless and amber bottle glass, ferrous wire nails, ferrous and non-ferrous caps, faunal fragments, and a concentration of charcoal in the northwest corner, likely associated with the burned utility pole that was removed prior to excavation. No artifacts from this level were determined to be diagnostic.

Stratum 1, Level 1 yielded 127 total artifacts, constituted by window glass as well as colorless, amethyst, and amber vessel glass, ferrous metal fragments, calcined and burned faunal fragments, milled wood, mortar, charcoal, and one white posser button and one flat, non-ferrous button with a rectangular cutout. Diagnostic artifacts included one Old Dutch Cleanser lid.

Stratum 2, Level 1 contained 480 total artifacts: ferrous metal crown caps, crushed unidentified metal and cans, and fence staples, colorless, flat, amber, cobalt glass fragments (some melted) in addition to a green bottle finish, nails of varying types and sizes, faunal, charcoal, mortar, tar paper, possible rubber fragments, and natural wood fragments, in addition to low quality porcelain fragments, a two-hole posser button, a non-ferrous pencil ferrule, and an unidentified spherical ferrous object (Figure 5.7).



Figure 5.7. Unidentified object from Stratum 2, Level 1. Photo by Garrett Hoskinson, 2023.

Stratum 2, Level 2 yielded 357 total artifacts, consisting of colorless window glass as well as colorless, green, cobalt, amethyst, and amber glass vessel fragments, ferrous metal cans, various nails, and miscellaneous fragments, non-ferrous eyelets, foil seal fragments and unidentified artifacts, tar paper intermixed with charcoal, and one bakelite button. No diagnostic artifacts were identified. Stratum 2, Level 3 yielded 260 total artifacts: various ferrous metal fragments and lids, cut faunal remains, window and colorless, milk, amber, green, and cobalt vessel fragments, nails of various types and sizes, porcelain and white earthenware sherds, vinyl record fragments, leather fragments, linoleum fragments, charcoal, and wood fragments. Notable artifacts include one non-ferrous squeeze tube container rolled up from both its ends and labeled

“INFLAMMABLE” around the neck, one suspenders buckle, one possible electrical plug, one Bakelite button, one spring hinge clip, one linchpin with a safety pin running through the end hole, one non-ferrous threaded pipe with a cotter pin hole and attached melted lead, and one intact tin mug.

Unit 1, Feature 1 was excavated via wall pedestal following the conclusion of Stratum 2, Level 3. Feature 1 yielded one soil sample and 14 total artifacts, consisting of colorless and amber glass, faunal bone, lumber fragments, nails, ferrous wire, and a possible electrical element. Notable artifacts include one pocket watch (Figure 5.8) and a spark plug of indeterminate branding.



Figure 5.8. Pocket watch recovered from Unit 1, Feature 1. Photo by Rachel Matheson, 2023.

Stratum 2, Level 4 produced a soil sample and 25 total artifacts. The assemblage consists of colorless vessel glass, white earthenware, ferrous metal nails and fragments, and charcoal. Notable artifacts include one eggshell fragment.

Stratum 3, Level 1 yielded six total artifacts: cobalt glass and a colorless bottle base, ferrous wire nails, and milled wood fragments. Notable artifacts included one ferrous metal door plate. Stratum 3, Level 2 represents the final level of Privy 1, Unit 1. It consists of eight total artifacts: colorless and amber glass, charcoal, and ferrous metal wire, roofing tacks, and fragments. Notable artifacts include an amber glass fragment with embossed decorations.

In summary, 1,341 total artifacts were observed during excavation. The assemblage is generally characterized by cultural and natural wood fragments, ferrous and non-ferrous artifacts, window and vessel glass artifacts in varying colors, modified and non-modified faunal remains, historic ceramics of multiple styles and manufacture, construction materials, apparel, and personal items.

Artifact Scatter 1 (AS1)



Figure 5.9. Artifact Scatter 1 overview. Photo by Tim Maddock, 2023.

AS1 is a dense artifact concentration situated approximately five meters east of Privy 1 that fans out northeastward and downslope to terminate at the boundary of Locus E. It was differentiated from the neighboring Wood Scatter 1 (see below) based on its cultural assemblage, which encompasses more domestic artifacts than construction materials. AS1 contains various ferrous and non-ferrous metal artifacts (cans, tobacco tins, buckets, etc.), enamelware, stove fragments, ceramics, colorless (flat and vessel), cobalt, amber, aqua, green, and carnival glass, and leather shoe fragments. Notable artifacts include one ferrous metal doorknob, a Uruguayan *Frigorífico Nacional* meat tin, a Budweiser malt extract can, an Arizona license plate, medicine bottles, the face of a porcelain figurine, and an Eveready brand flashlight end cap.

Table 5.2. Inventory of artifacts observed at Locus E, Artifact Scatter 1.

Quantity	Artifact	Material	Dimensions	Comments
207	Cans	Ferrous metal	-	Majority solder dot. Includes evaporated milk (including Eagle Brand) and other thick liquid tins, large cans, can lids, enamelware plate fragments, a Mentholatum lid, Calumet baking powder lids,
1	Frigorífico Nacional meat tin	Ferrous metal	-	Canned in Uruguay
3	Northern California Sardine tin	Ferrous metal	16 cm diameter, 11 cm height	“NORTHERN / CALIFORNIA” large fish tins
1	Budweiser brand malt extract can	Ferrous metal	11 cm diameter base, 10 cm diameter lid	“HOP / FLAVORED/ BUDWEISER / BARLEY MALT / SYRUPS” “ANHEUSER-BUSCH / BUDWEISER/BARLEY / MALT / SYRUP / D89”
6	Copenhagen brand tobacco lid	Ferrous metal	-	“COPENHAGEN / SATISFIES”
10	Tobacco tin	Ferrous metal	-	-
26	Miscellaneous metal	Ferrous metal	-	Includes a barrel hoop, bucket, strand of barbed wire, lantern fragment, cast iron fragments, stovepipe fragments, and mesh fragments, a doorknob.
1	Arizona license plate	Ferrous metal	-	Tri-folded: “1-2[...] / ARIZ...”
3	Non-ferrous artifacts	Non-ferrous metal	1.5 cm diameter (gear)	1 Eveready flashlight end cap [“EVEREADY / FLASHLIGHT”], 1 can lid, 1 gear

Quantity	Artifact	Material	Dimensions	Comments
175	Glass	Glass		Includes colorless glass (flat and vessel), amber, dark amber, milk glass, cobalt, aqua, green, and refit carnival glass pitcher fragments, and one Hazel-Atlas bottle base
2	Aqua glass (embossed)	Glass	-	Shard 1: “[...]D MARCH 4 1924” Shard 2: “DELAWARE / [PUN]CH”, base and bottle
4	Medicine bottle	Glass	2.5 cm height, 1.5 diameter (Owens bottle Co.)	“CASTOR[...]” and “PEPSIN SY[RUP]” / 1 Medicine bottle base “6 [Owens Bottle Co.] g”; rectangular/medium bottle, Owen’s scar.
1	Amber glass bottle (embossed)	Glass	4 cm height, 8 cm diameter	“OAT BROS / [Maywood Glass Co.] / WINES/ LOS ANGELES, CAL”, round base with Owens scar
122	Ceramics	Ceramic		Includes white earthenware (some with blue glaze), stoneware, porcelain,
7	Brick fragment	Ceramic	-	“THE DE[NVER] / HI FI[RE] / FIRE OL[...]” and “TRO[...] / [Unidentified maker’s mark]”
2	Porcelain doll face	Ceramic	-	Unglazed porcelain cherub face for doll or figure, hollow interior
5	Shoe sole	Leather	-	-
1	Shoe sole	Rubber	4 cm wide	Small, white/purple, child’s shoe?
1	Button	Bakelite	1 cm diameter	Green, shank; triangle and dot design
Total artifact count: 577				

Artifact Scatter 2 (AS2)



Figure 5.10. Artifact Scatter 2 overview. Photo by Rachel Matheson, 2023.

AS2 is an artifact concentration located adjacent to AS1. It is separated from AS1 by Wood Scatters 1 and 2 and encompasses a larger area while being more diffuse in nature. AS2 contains various ferrous and non-ferrous metal artifacts (cans, tobacco tins, meat tins, etc.), stove fragments, ceramics, and a colorless glass bottle base (Table 5.3). Notable artifacts include a “COTY” brand cosmetics lid, a possible watch part face, and a Log Cabin brand syrup tin.

Table 5.3. Inventory of artifacts observed at Artifact Scatter 2, Locus E

Quantity	Artifact	Material	Comments
103	Cans	Ferrous metal	Includes a Calumet baking powder lid, modified large can with 11 puncture holes, one Log Cabin Syrup tin, solder dot cans, indeterminate crushed cans of various sizes
1	Sardine tin	Ferrous metal	“AT” / AG / U5”
28	Miscellaneous metal fragment	Ferrous metal	Includes a mug with a broken handle, circular metal fragment, and a hinge with articulated washers
12	Miscellaneous non-ferrous metal	Non-ferrous metal	Includes fragments, a coffee pot, oven pipe fragment, and a clock face with possible Chinese lettering
1	“COTY” makeup lid	Non-ferrous metal	Cosmetic brand
36	Glass	Glass	Colors unspecified in field notes. Includes a small, rectangular Hazel-Atlas colorless glass bottle base
1	Hazel Atlas bottle base	Glass	Small, rectangular base
22	Ceramics	Ceramic	Includes stoneware and porcelain
Total artifact count: 203			

Wood Scatter 1 (WS1)



Figure 5.11. Wood Scatter 1 overview. Photo by Travis Cumming, 2023.

WS1 consists of a general lumber scatter with potential origins from the laborer bunkhouse and is located in the northwestern corner of Locus E. It lies approximately four meters south of the northern rock wall (see below) and directly abuts WS2 to the south. WS1 and WS2 were determined to be separate scatters due to their concentrations and spatial distribution. WS1 contains the remains of a door or window frame and wall panel with embedded nails and bolts (Figure 5.12). The artifact assemblage of WS1 is characterized by cans, stovetop fragments,

colorless (vessel and flat), green, amber, and milk glass fragments, stove pipe fragments, wire nails, porcelain, and ceramics. Notable artifacts include one Towle's Wigwam brand maple syrup tin (Table 5.4).

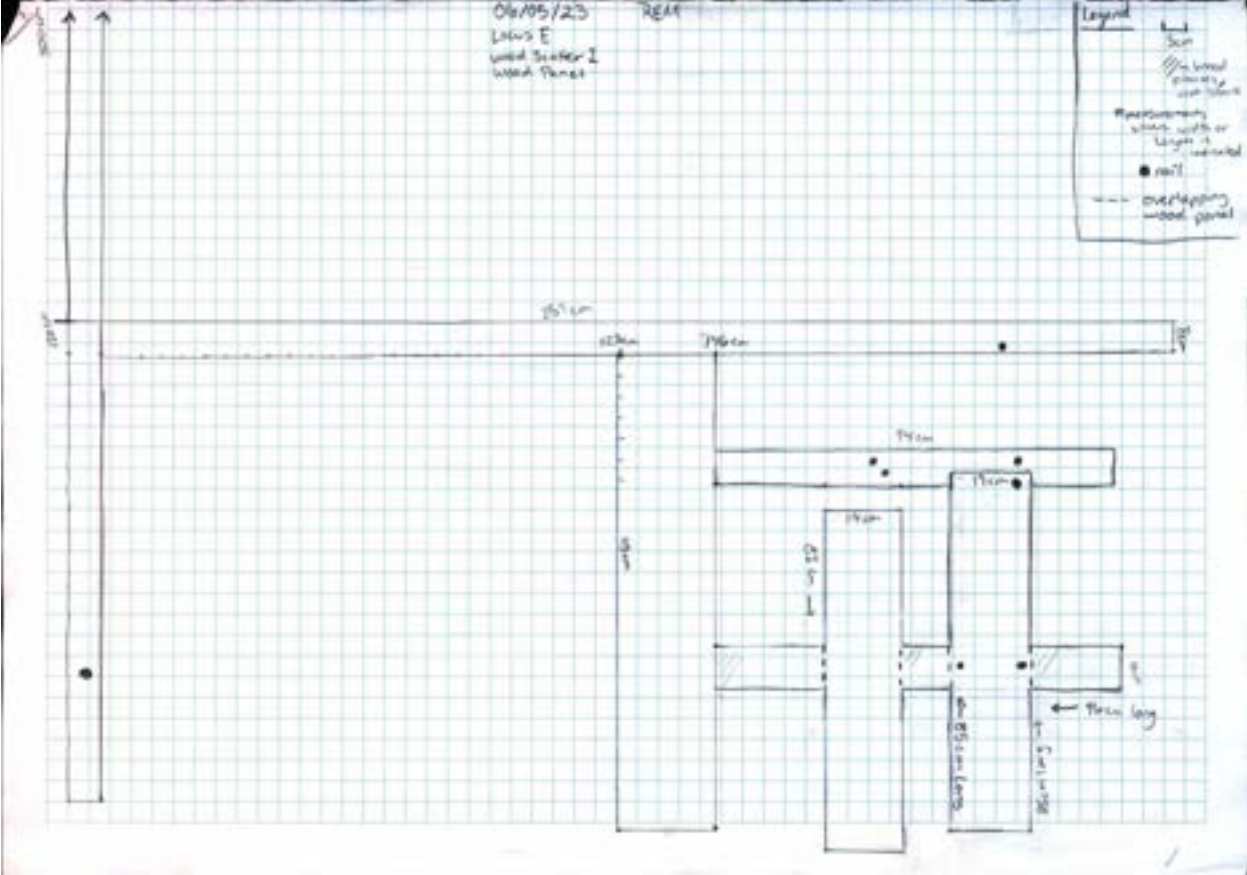


Figure 5.12. Plan view sketch of wall panel/frame in WS1. Sketch by Rachel Matheson, 2023.

Table 5. 4. Inventory of artifacts observed at Wood Scatter 1, Locus E.

Quantity	Artifact	Material	Dimensions	Comments
32	Cans	Ferrous metal	-	Includes tobacco tins, solder dot cans, sardine tins, oil cans, meat tins and Copenhagen tins, a Northern California sardine tin, and a "TOWLE'S WIGWAM SYRUP" lid
1	Copenhagen brand tobacco lid	Ferrous metal	65 mm diameter	-
1	Tobacco tin	Ferrous metal	-	Match strike at bottom
1	Tiny shovel	Ferrous metal	-	Potentially not a toy, purpose unknown
284	Miscellaneous metal fragments	Ferrous metal	10 cm length, 20 mm diameter (hooked spring)	Includes a stove pipe vent, wire nails, wire, crown caps, and a hooked spring
2	Saw blade	Ferrous metal	5 cm length, 11.5 mm width	-
1	Buckle	Ferrous metal	4 cm length, 2 cm width	-
1	Bottle finish with intact cap	Glass, Ferrous metal	30 mm (cap)	Twist top cap
139	Glass (various)	Glass	1 cm thickness (carnival glass)	Includes colorless (flat and vessel), carnival, green, and amethyst fragments
1	Jug neck and handle	Glass	35 mm diameter	Colorless
1	Colorless bottle	Glass	-	Solarized, "2" within circle and Owens Glass Co. maker's

Quantity	Artifact	Material	Dimensions	Comments
	base			mark embossed on base
1	Green glass bottle finish	Glass	21 mm diameter	-
1	Colorless bottle base	Glass	-	“D23 / 90 [Owens-Illinois] 6”
3	Green glass bottle fragment	Glass	-	Sides read:“2198 - E”; base reads “24 [Owens-Illinois] 7”
1	Colorless bottle base	Glass	-	“[FL]AGST[AFF] / BRO[OKS]”
35	Ceramics	Ceramic	-	Includes porcelain, white earthenware, stoneware (2 with white and orange glaze, 3 with white and blue glaze),
1	Chinoiserie	Ceramic	-	Red and blue hand-painted
1	Unidentified ceramic	Ceramic	-	Signs of fire damage, exposure
1	Shoe sole	Leather	-	-
2	2-hole sew-through button	Shell	20cm diameter	1 button broken in half
7	Shell casing	Lead	2.54 cm diameter, 3.81 cm length	“W.R.A.CO / 38 W.C.F.”
300	Charcoal	Charcoal	-	Concentrated next to can scatter
78	Wood fragment	Wood	-	-
Total artifact count: 896				

Wood Scatter 2 (WS2)



Figure 5.13. Overview of Wood Scatter 2, Locus E. Photo by Rachel Matheson, 2023.



Figure 5.14. H-Beam in Wood Scatter 2, Locus E. Photo by Rachel Matheson, 2023.

WS2 consists of a lumber scatter with six I-beams and one H-beam as well as a comparatively lower density of artifacts. It directly abuts WS1 to the north, but was determined to be a discrete area due to its density of lumber artifacts compared to WS2. In addition to wood beams and planks, its assemblage is composed of wire nails, 50 millimeter bolts, ceramics, cans, aqua, colorless (vessel and flat), carnival, green, and milk glass. Notable artifacts consist of hand-painted porcelain ceramics and a large H-Beam (Figure 5.14).

Table 5.5. Inventory of artifacts observed at Wood Scatter 2, Locus E.

Quantity	Artifact	Material	Dimensions	Comments
20	Cans	Ferrous metal	-	Various, unspecified in field notes
1	Monarch brand coffee tin lid	Ferrous metal	7.5 cm diameter	Identified between WS2 and AS2, recorded as part of WS2
162	Miscellaneous metal artifacts	Ferrous metal	4 mm thickness (wire), 30 mm (bolts)	Includes nails, fragments, wire, an undecorated serving tray, 4 springs, 3 paint cans of varying sizes, a possible telecom band, bolts, a barrel lid, and a sardine can key wind
45	Glass (Various)	Glass		Includes colorless (flat and vessel), aqua, carnival, milk glass, and 2 bottle finishes
51	Colorless glass	Glass	-	Includes 10 flat glass fragments, remainder are vessel glass
1	Pond's brand cold cream jar base	Glass	-	"[POND]'S" at base
11	Ceramics	Ceramic	-	Includes white earthenware (1 being a mug handle) and undecorated and decorated porcelain
1	H-Beam	Wood	-	H-shaped wooden beam with embedded metal
6	Wooden Beam	Wood	-	-
Total artifact count: 251				

Rock Walls



Figure 5.15. Top: North rock wall segment. Left: South rock wall segment. Right: West rock wall segment. All photos by Alex Mason, 2023.

Three Kaibab limestone cobble piles enclose Privy 1, WS1, and WS2, which are the bulk of activity areas within Locus E. These limestone cobble piles were likely created when laborers cleared rocks to construct building foundations and used the recovered cobbles to construct walls. The walls are situated to the south, west, and north and share similar, low density artifact assemblages. There was no evidence of an eastern wall within the locus.

Association of artifacts were determined based on their proximity to the walls: any cultural material within one meter of a wall was documented as part of the feature. The collapsed and eroded nature of the walls precludes an original course estimation, although it is also possible the walls were never formally constructed. Although the walls were mapped, no measurements are available at time of writing. Each rock wall was documented separately, but Table 5.6 lists all artifacts associated with all three features.

The westernmost rock wall lies approximately 10 meters north of the intersection of WS1 and WS2 and appears to be the largest of the three masonry structures. It lies 5 meters southwest of the north rock wall, creating a potential entryway between Locus E and D. The west rock wall contains the highest density of associated artifacts of the three masonry structures, containing ferrous and non-ferrous metal and glass artifacts.

The northernmost rock wall lies approximately 5 meters north-northwest of AS1. It is distinguished from the westernmost rock wall by a 5 meter gap, which is believed to be an intentional entryway for access into Locus E. There are no visible trails or roads associated with this gap. Artifacts associated with the north rock wall include ferrous metal artifacts and amber and milk glass fragments.

The southernmost rock wall appears to be the smallest of the three masonry structures and its eastern end is much more diffuse, suggesting a possible collapse. It is situated approximately 10 meters southeast of the west rock wall, suggesting an entrance or gap that may have facilitated travel to Locus D to the south. Artifacts associated with the south rock wall include ferrous metal, glass, and ceramic artifacts.

Table 5. 6. Inventory of artifacts observed at the West, South, and North rock walls, Locus E.

Quantity	Artifact	Material	Comments
7	Amethyst glass fragment	Glass	-
97	Cans	Ferrous metal	Includes a seasoning can, thick liquid solder-dot, large cans, and fragments
2	Log Cabin brand syrup tin	Ferrous metal	Shaped like a log cabin
1	Maxwell House brand coffee lid	Ferrous metal	“[...]JELL HOUSE COFFEE” / “...THE LAST DROP”
12	Miscellaneous metal artifacts	Ferrous metal	Includes indeterminate fragments, a spring, a threaded cap, crown caps, a bucket, and 1 possible metal wheel or disk with hole in center
1	Non-ferrous metal artifacts	Non-ferrous metal	1 can lid
73	Glass(Various)	Glass	Includes colorless, carnival, amber, and milk glass fragments
8	White earthenware	Ceramic	-
Total artifact count: 212			

Locus E Summary

Overall, Locus E contains 4,296 artifacts (including those recovered from Privy 1, Unit 1). Of the surface activity areas, WS1 contained the highest artifact density, followed closely by the Privy 1 area (Table 5.7). Percentages are rounded to the nearest whole number.

Table 5.7. Locus E activity areas and relative artifact quantities and categories.

Activity Area	Artifact Quantity	Percentage of Surface Assemblage	Most Frequent Artifact Functional Category
Privy 1, Unit 1	1,341	31%	Architectural
Privy 1	814	19%	Architectural
AS1	577	13%	Food/Drink storage
AS2	203	5%	Food/Drink storage
WS1	896	21%	Architectural
WS2	251	6%	Architectural
North Rock Wall	38	1%	Food/Drink storage
South Rock Wall	33	1%	Food/Drink storage
West Rock Wall	141	3%	Food/Drink storage
Total	4,294	100%	Food storage

Artifacts assigned the “Architectural” category (such as nails, lumber, and window glass) constituted 24% of the overall cultural assemblage at Locus E. While this may be attributed to the high density of nails within Privy 1, Unit 1, and the privy area, numerous concentrations of this artifact category are scattered throughout Locus E, suggesting some manner of intensive

structural assembly or disassembly in the area. Cultural materials assigned the “Food/Drink storage” represented the second-highest density within the overall assemblage at 4% in the form of glass bottle and mason jar fragments and diagnostic food tins.

Table 5.8. Quantity and percentage of artifact categories at Locus E.

Artifact Category	Quantity (Total)	Percentage
Apparel	24	2%
Appliance	12	1%
Architectural	1,047	78%
Automotive	2	<1%
Food service	50	4%
Food/Drink storage	173	13%
Hand tools	2	<1%
Home maintenance	3	<1%
Medicine	5	<1%
Personal hygiene	2	<1%
Tobacco use	18	1%
Total artifact count: 1,340		

The provided data do not offer irrefutable evidence of Locus E’s intended function as a bunkhouse area for laborers, but there are interesting trends that warrant discussion. Based on available information from Richmond (1988; 2017), it was initially unclear as to whether or not single laborers had access to personal kitchens, as administrative employees did. While the kitchen and dining areas at Locus A were situated closer to laborers’ housing, the presence of cast iron appliance fragments suggests that laborers did not need to rely exclusively on the company store or facilities for access to hot meals and beverages. Alternatively, the cast iron

fragments were used for heating domestic spaces. Further, the presence of the rock walls with gaps for pathways implies a discrete use area that either required or benefitted from enclosure.

Finally, while Privy 1, Unit 1 did not originally function as a privy, its depth and assemblage suggest it was an intentional depositional area, likely associated with laborer housing and domestic activities.

Locus D

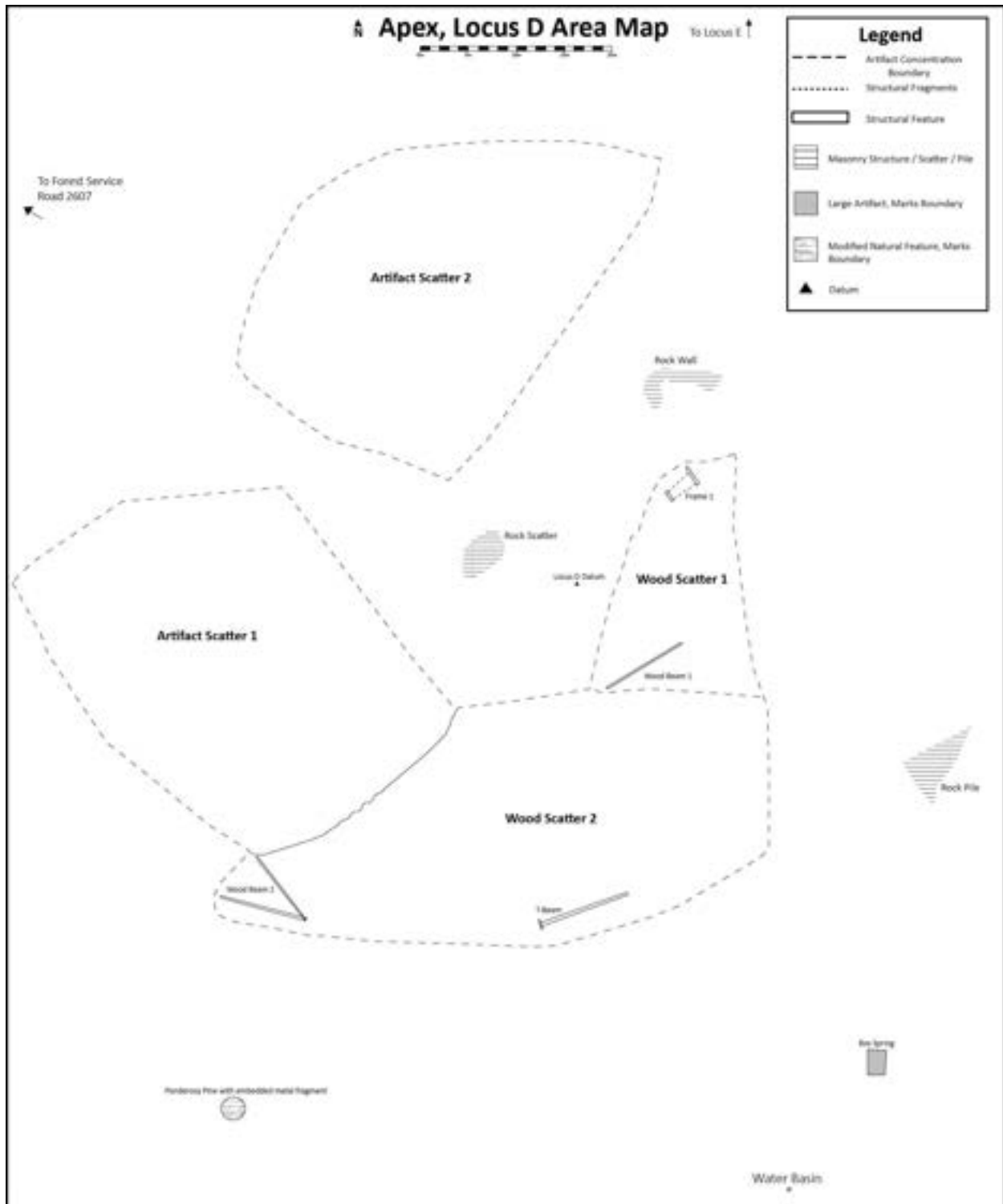


Figure 5.16. To-scale map of Locus D. Digitized by author, original map by 2023 Apex, Arizona Archaeology Field School students and volunteers

Following the conclusion of recording surface artifacts within Locus E, fieldwork turned to documenting Locus D, which lies south of Locus E and up a slight slope. Locus D was first recorded by the KNF in 2006, described as containing numerous milled lumber fragments and structural remains in addition to cans, glass, and ceramic fragments. The datum was placed at the locus's geographic center following pedestrian survey and the determination of its boundaries. Several activity areas and cultural features were also fully mapped and documented. Due to the smaller size of the Locus D tape-and-compass map, I was able to reliably produce a to-scale map as seen in Figure 5.16. This was not possible with the much larger Locus E map.

Wood Scatter 1 (WS1)



Figure 5.17. Wood Scatter 1, Locus D overview. Photo by Emily Dale, 2023.

WS1 consists of numerous lumber fragments, intact beams, and Frame 1 (see below), all of which are believed to originate from building foundations. The scatter is located near the

eastern boundary of the locus, toward the center. In addition to the lumber fragments, the assemblage consists of ferrous metal cans (predominantly meat, tobacco, and fish tins), porcelain, stoneware, and white earthenware ceramic fragments, and colorless (flat and vessel), amber, cobalt and green glass fragments (Table 5.9).

Frame 1, located within WS1, represents a wooden window or door frame with an accompanying scatter of lumber and colorless window glass in the immediate area (Figure 5.18). The frame is constructed from four wooden beams of varying measurements (15 centimeters for the northern-and-southernmost planks, five centimeters for the east and western portions), with the westernmost beam slanting inward, relative to the frame, to the northeast. No other artifacts were recorded in association with Frame 1.



Figure 5.18. Frame 1 in Wood Scatter 1, Locus D. Photo by Tim Maddock, 2023.

Table 5.9. Inventory of artifacts observed at Locus D, Wood Scatter 1

Quantity	Artifact	Material	Comments
56	Cans	Ferrous metal	Includes solder dot, small meat tins of indeterminate branding, and a Calumet baking powder lid
1	Frigorífico Nacional meat tin	Ferrous metal	“URUGUAY / INSPECCIONADO Y PROBADO / FRIGORÍFICO NACIONAL / [logo]”
3	Copenhagen brand tobacco lid	Ferrous metal	“COPENHAGEN / [logo] / SATISFIES”
3	Tobacco tin	Ferrous metal	-
23	Miscellaneous metal artifacts	Ferrous metal	Includes a barrel hoop, cast iron fragments, stovepipe flashing, pails, a bucket, crown caps, indeterminate fragments, servings trays (1 large, 1 small), a hinge, and a sardine tin wind key
1	Thin saw	Ferrous metal	Possible nail file
1	Bastard file	Ferrous metal	“...[simonds] / U.S.A”
1	Overalls or suspenders hook	Non-ferrous metal	-
1	Can lid (embossed)	Non-ferrous metal	“OLD” - Old Dutch Cleanser?
334	Glass (Various)	Glass	Includes colorless (flat and vessel), green, amber, cobalt,

Quantity	Artifact	Material	Comments
3	Best Foods brand Colorless mayonnaise jar fragment	Glass	“[BES]T FOODS / RGC / [DE]SIGN / [PAT]ENT / [...]918” on base ; side of base: [Illinois-Pacific Coast co maker’s mark] 12”
57	Colorless glass jug fragment	Glass	“ONE GALLON” ; “...RED” ; “[Illinois-Pacific Glass Co maker’s mark]
45	Ceramic (Various)	Ceramic	Includes stoneware, porcelain, and white earthenware fragments
30	Shoe sole and fragments	Leather	Various sizes, some containing shoe tacks
1	Button	Plastic	Potentially modern/post-dates site occupation
3	Asbestos	Asbestos	-
35	I-Frame	Wood	-
6	Beam	Wood	Average width: 18 cm, average length: 2.71 m. Beam 1 (see map) is largest: 23 cm by 4.89 m
35	Lumber	Wood	-
Total artifact count: 640			

Wood Scatter 2 (WS2)

WS2 was determined to be a separate assemblage of lumber fragments from WS1 based on its relatively lower density of large, intact wooden beams. The scatter is located south and downslope of WS1 and abuts the eastern boundary of AS2. Among the few present beams and lumber splinters and fragments are ferrous metal cans, fragments, and Copenhagen tins, colorless (flat and vessel), aqua, green, amber, carnival, and milk glass fragments, rubber tire fragments, a kettle, a scatter of porcelain sherds, a spark plug core of indeterminate brand, and a prehistoric chert flake (not included in this dataset) (Table 5.10).

Table 5.10. Inventory of artifacts observed at Locus D, Wood Scatter 2

Quantity	Artifact	Material	Dimensions	Comments
1	Kettle	Ferrous metal	20.5 cm diameter, 13.25 cm height	Enamelware and blue graniteware, missing its spout
71	Cans	Ferrous metal	-	Includes Log Cabin brand syrup cans, tobacco tins, solder dot cans, lids, buckets, and sanitary cans
1	Budweiser brand malt extract can	Ferrous metal	-	-
1	Calumet baking powder can	Ferrous metal	7.3 cm diameter	1 lb can
15	Copenhagen brand tobacco tin	Ferrous metal	0.51 cm diameter	“COPENHAGEN / SNUFF”, large concentration around rock pile ; 1 “COPENHAGEN SATISFIES”
1	Can (embossed)	Ferrous metal	10.4 cm height	“[...]FOR[...]” painted on side
13	Miscellaneous metal artifacts	Ferrous metal	-	Includes 1 cast iron fragment
1	Spark plug core	Ceramic / Non-ferrous metal	8.4 cm length by 1.8 cm width	Porcelain body and non-ferrous shaft ; possibly one painted red ‘ possible Model T or Champion brand. Same as the spark plug found in Privy 1, Unit 1.
181	Glass (Various)	Glass	=	Includes colorless (flat and vessel), milk, green, aqua, amber, and

Quantity	Artifact	Material	Dimensions	Comments
				carnival glass fragments
1	Jaciel cold cream milk glass jar	Glass	6 cm diameter	“Jaciel” on base
1	Barrel-shaped colorless glass jar	Glass	13 cm height, 7 cm width	Molded in the style of a barrel with raised “bung-hole” in the center with rivets throughout. Externally threaded finish. “[...]24 / 10” on base
1	Best Foods brand colorless glass jar base	Glass	-	“BEST / FOOD / REGISTERE[D]”
1	Carnival glass candlestick holder	Glass	9.5 cm height, 2 cm candle hole	Very wide base (no measurements)
1	Colorless glass (embossed)	Glass	-	“QUAKER” with image of Quaker man
1	Colorless glass bottle base	Glass	9.5 length, 5 cm diameter	Oval base with Owens scar, “D525 / 88 [Owens Illinois] 4”
1	Colorless glass bottle base	Glass	-	“3230 / 55 [Owens-Illinois] 5 / M 1676”
32	Ceramic (Various)	Ceramic	-	Includes porcelain and earthenware fragments
70	Board fragment	Wood	-	Consists of slivers and non-intact fragments
1	T-Beam	Wood	I-beam: 2 m	6 nails embedded, all measure 1.9 cm diameter

Quantity	Artifact	Material	Dimensions	Comments
			length by 11 cm width “T” portion: 70 cm length by 13 cm width	
2	I-Beam	Wood	W: 1.58 m length by 23cm width E: 1.60 m length by 13 cm width	Recorded as “V-Beam” = 2 I-beams in a V-formation. The westernmost (W) beam possesses 12 embedded nails (ranging from 2 mm to 1.9 cm diameter) and the easternmost (E) possesses 8 embedded nails
2	Tire fragment	Rubber	-	Black, possible tread
Total artifact count: 399				

Artifact Scatter 1 (AS1)



Figure 5.19. Locus D, Artifact Scatter 1 overview. Photo by Alex Mason, 2023.

AS1 was determined to be distinct from WS1 or WS2 due to its density of domestic artifacts and lack of evidence for robust structural remains. It is located on the western edge of the locus and shares its southern border with WS2's northwestern edge. Its assemblage consists of small milled lumber fragments, porcelain sherds, colorless (flat and vessel), amber, and amethyst glass fragments, ferrous metal artifacts (including a toy horse), cleaning products, and spice lids), shoe leather, and a flashlight head (Table 5.11).

Table 5.11. Inventory of artifacts observed at Locus D, Artifact Scatter 1

Quantity	Artifact	Material	Dimensions	Comments
1	Spark plug	Ceramic	-	-
1	Toy horse	Ferrous metal	-	Possibly originally part of a pull-along toy with small wheels and attached wagon or carriage
180	Can	Ferrous metal	-	Various sizes and unspecified types
1	Old Dutch brand cleanser tin	Ferrous metal	-	-
1	Lighthouse brand cleaner tin	Ferrous metal	-	-
1	Calumet brand baking powder lid	Ferrous metal	14 cm diameter, 2 cm height	-
1	CANCO brand can (embossed)	Ferrous metal	-	Large "CANCO" can
3	CANCO brand bucket	Ferrous metal	-	3 large "CANCO" buckets; 1 is embossed "ESTAB 2AU"
1	Train Master brand cigar tin	Ferrous metal	12 cm length, 12 cm width	"Train / Master // Cigar"
1	Sardine tin	Ferrous metal	15 cm length, 12 cm width, 3 cm height	"QUALITY MARK"
3	Indeterminate	Ferrous	8 cm diameter, 5 cm	1 fragment is scaled in appearance, 1 appears to be hemispheric in

Quantity	Artifact	Material	Dimensions	Comments
	metal	metal	height (hemispheric fragment) ; 33 cm diameter, 2 cm width	form, 1 is a liner
101	Miscellaneous metal artifacts	Ferrous metal	11.5 cm diameter, 3 cm width (clamp) ; 2.06 cm length (twisted cables) ; 88 cm length, 4 cm width (spring)	Includes nails, a possible baking shaker, crown caps, an indeterminate decorative metal fragment, a flashlight cap, fragments, a clamp, twisted cables, a possible automotive spring
1	Bowl	Non-ferrous and ferrous metal	24 cm diameter	-
1	Bucket	Non-ferrous	-	-
187	Glass (Various)	Glass	-	Includes amber, colorless, and amethyst
1	Owens glass bottle base	Glass	-	“DES PAT 87834”
80	Ceramic (Various)	Ceramic	-	Includes white earthenware and porcelain
1	Shoe leather	Leather	-	-
25	Milled wood	Wood	-	-
Total artifact count: 593				

Artifact Scatter 2 (AS2)



Figure 5.20. Locus D, Artifact Scatter 2 overview. Photo by Rachel Matheson, 2023.

AS2 is a small, diffuse artifact scatter. It is situated on a western slope facing the railroad and Forest Service Road 2607; thus it is possible that its artifacts were originally located upslope near the datum. AS2 is distinguished from WS1 and WS2 due to its lack of milled lumber, beams, or planks, and was determined to be discrete from AS1 due to distance and lower artifact density. The assemblage consists of ferrous metal cans, kitchenwares, and fragments, multiple glass finishes (medicine and beverage bottles), porcelain sherds, and non-ferrous metal fragments. One ferrous metal toy ram is also present (Table 5.12).

Figure 5.21. Inventory of artifacts observed at Locus D, Artifact Scatter 2

Quantity	Artifact	Material	Dimensions	Comments
38	Can	Ferrous metal	-	Includes lids, meat tins, evaporated milk cans, lids, and several cans with lid punctures
1	Toy animal	Ferrous metal	11.5 cm length, 10.5 cm height	Possibly a ram or other horned animal
1	License plate	Ferrous metal	15.5 cm width	Halved Arizona license plate, “[...]45A33”
1	Flag symbol can lid (embossed)	Ferrous metal	7.2 cm diameter	Unknown flag symbol with “A”, potentially stamped or carved
1	Maxwell House brand coffee lid	Ferrous metal	14.5 cm diameter	“Maxwell House/ Good to the last Drop”
1	Copenhagen brand tobacco tin lid	Ferrous metal	6.5 cm diameter	-
1	Shovel head	Ferrous metal	21.5 cm length, 13.5 cm width	Stove shovel
1	Bowl	Ferrous metal	16 cm diameter,	Trace amounts of enamel present
1	Tea pot	Ferrous metal	-	Trace amounts of enamel present, pot is flattened
1	Grill	Ferrous metal	-	-
6	Miscellaneous metal artifacts	Ferrous metal	-	Includes 1 bin, 2 kitchenwares, fragments

Quantity	Artifact	Material	Dimensions	Comments
3	Miscellaneous non-ferrous metal artifacts	Non-ferrous metal	-	1 band, 1 jar lid
21	Glass (Various)	Glass	-	Includes colorless (flat and vessel), aqua, green,
1	Colorless glass medicine bottle base	Glass	3.8 cm diameter 6 cm length	“5 [Diamond Glass Co.] E” “LYRIC” “. 8 .”
1	Colorless glass bottle (embossed)	Glass	3.2 cm diameter, 6 cm length	“[S in circle] / 5”, Pill bottle
4	Porcelain top	Ceramic	-	-
Total artifact count: 84				

Locus D Summary

In summary, Locus D contains 1,716 total artifacts, with an assemblage characterized by domestic products such as food storage and service vessels, cleaning supplies, clothing, and children's toys. Also present are automotive fragments, hand tools, and structural remains. Artifacts assigned the "Food/Drink storage" category (such as coffee tin lids, sardine and meat tins, and Budweiser malt extract cans) constituted 44% of the overall cultural assemblage (Figure 5.22). Cultural materials assigned the "Architectural" category represented the second-highest density within the overall assemblage at 36%, in the form of lumber fragments (including foundational remains, and hinges. No nail concentrations were observed as in Locus E. Additionally, the presence of paint cans (designated as "Home maintenance" artifacts) suggests a few possibilities. If Locus D represents a housing area, it suggests laborers were permitted to modify or improve their lodgings or expected to perform their own maintenance. The placement of the locus atop a hill and its distance from the railroad grade indicate a low likelihood of the paint cans' association with locomotive or other non-domestic contexts.

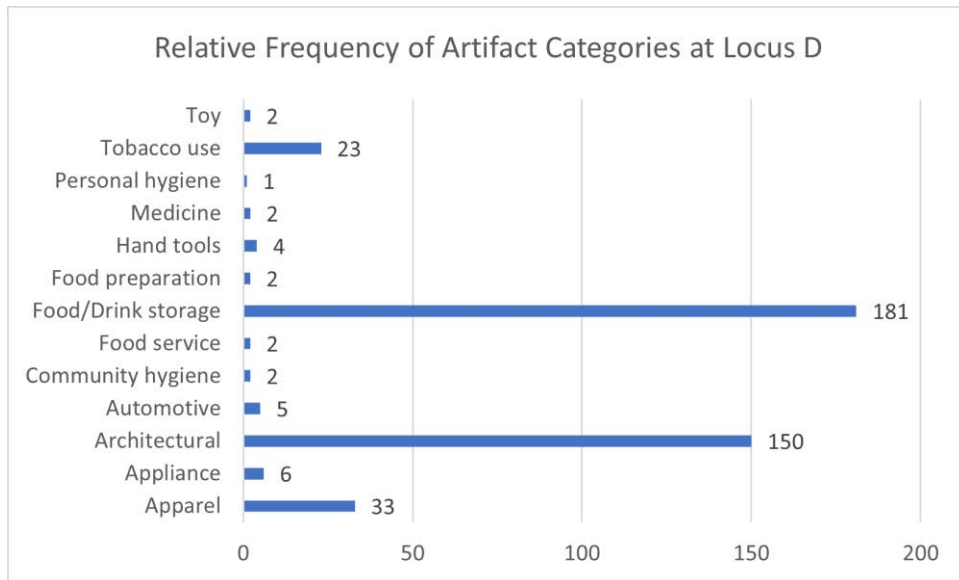


Figure 5.22. Relative frequency of artifact categories at Locus D.

The provided data suggest that Locus D functioned as at least one, possibly multiple, housing units where children played or lived based on the presence of children’s toys. The slight increase in the density of artifacts associated with automotive contexts also suggests that the area may have offered parking for personal or company vehicles. Locus D could have been the original location of the bunkhouse, in close proximity to Saginaw and Manistee laborer or AT&SF Railway engineer family housing. It also could have been exclusively associated with non-administrative family housing, as Apex employees were recorded as marrying while living at the camp (see United States Census Bureau 1930) and it would not have been prudent to house newly wedded women and young children alongside single male laborers.

Locus C

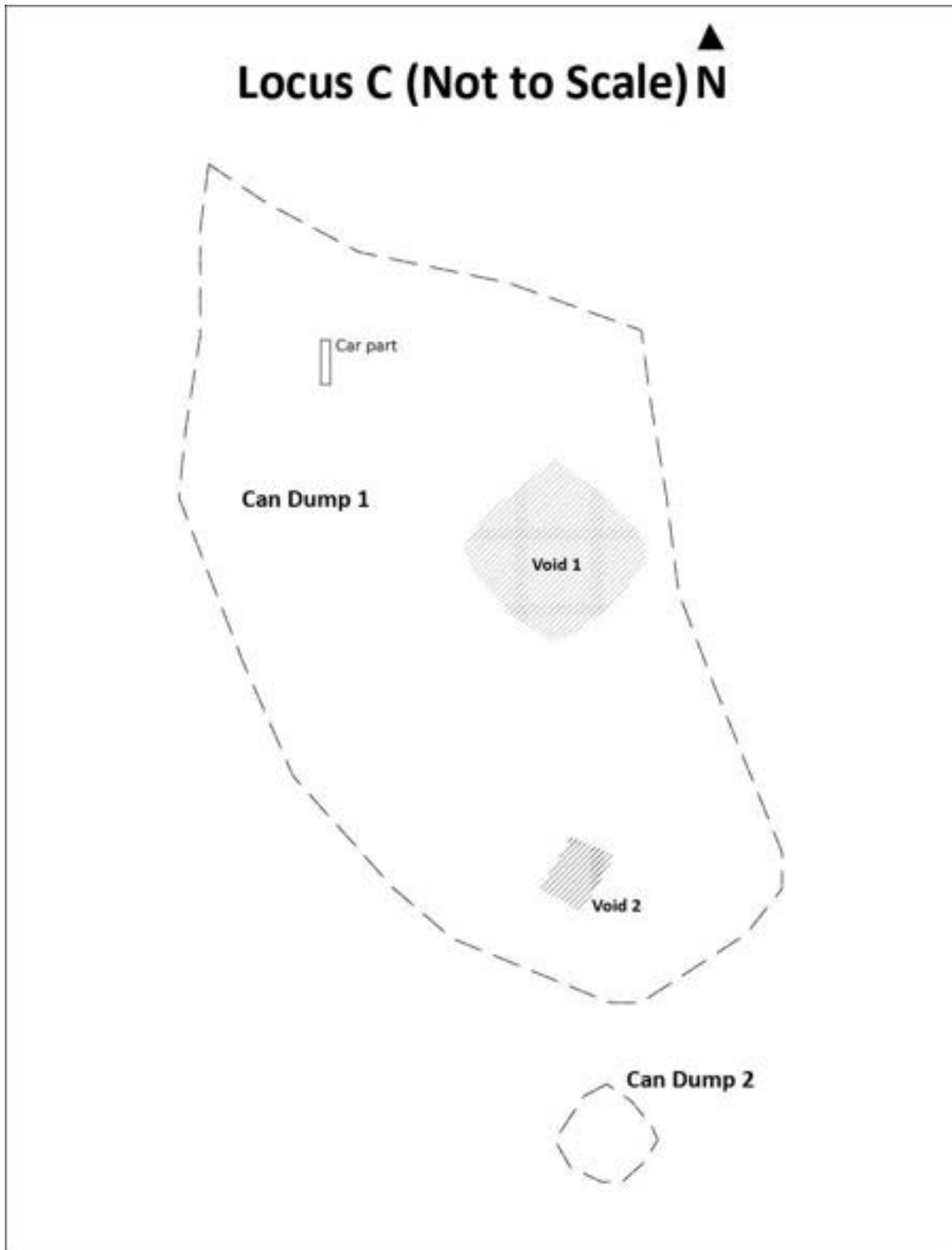


Figure 5.23. Not-to-scale map of Locus C. Digitized by author, original map by 2023 Apex, Arizona Archaeology Field School students and volunteers.



Figure 5.24. Locus C overview. Photo by Travis Cumming, 2023.

Locus C was recorded following the complete documentation of Loci E and D. It was originally recorded in 2006 by the KNF and was described as a large can dump consisting of solder dot and sanitary cans, fish and meat tins, crown caps, ceramics, and glass. NAU field personnel determined that Locus C was composed of two artifact scatters separated by a gap containing a low density of artifacts. The datum was placed at the locus's eastern end following pedestrian survey and the determination of its boundaries (see Figure 5.23). The two disposal areas within the locus, which are designated "can dumps" as ferrous metal cans represent the majority of the assemblage, are detailed below.

Can Dump 1 (CD1)



Figure 5.25. Can Dump 1, Locus C overview. Photo by Travis Cumming, 2023.

CD1 comprises the majority of Locus C, occupying a significant portion of the site's northern area. Its assemblage consists of ferrous metal cans (solder dot, sanitary, evaporated milk, sardine tins, Log Cabin Syrup tins) demonstrating various opening methods (rotary can opened, knife-opened, lids fully removed) and modifications (punctations). Notably, meat tins are relatively sparse. Colorless glass jar fragments, undecorated ceramics, wire, crown caps, shoe leather, and milled lumber fragments are also present. Within CD1 are two large "voids", or sparse areas without cans that contain smaller artifacts such as glass or crown caps. The assemblage of CD1 is more concentrated at its southern boundary, with additional artifacts likely obscured beneath pine duff and vegetation.

Table 5.12. Inventory of artifacts observed at Locus C, Can Dump 1

Quantity	Artifact	Material	Dimensions	Comments
8,000	Cans	Ferrous metal	-	Consists of solder dot cans, tobacco tins, sanitary cans, maple syrup tins, knife-opened cans, buckets, rotary can opener, and sardine tins
1	“Jack-O-Cantern”	Ferrous metal	15 cm diameter, 17.5 cm height	Solder dot can with a face cut into it from outside in the style of a Jack O’ Lantern
1	Automotive part	Ferrous metal	-	Cast iron frame with handle, turning knob (window opener?)
1	Bed/furniture frame	Ferrous metal	-	-
1	Pliers	Ferrous metal	15.5 cm length, 6.5 cm width	Handle texture for ease of handling, likely a Lineman’s plier
1	Can lid (embossed)	Ferrous metal	3 cm diameter, 3 cm height, 4.5 cm width	Possible screw-on cap, hollow and bell-shaped
1	Can lid (embossed)	Ferrous metal	8.25 cm length 5 cm width	“R.E. CABCI . ST, LOUIS MO”
1	Can (embossed)	Ferrous metal	16 cm length, 11.5 cm width, 3.25 cm height	“QUALITY / MARK” with star logo
1	Can lid (modified)	Ferrous metal	-	Concentric circles cut into lid radiating outward
3	Old Dutch Cleanser brand lid	Ferrous metal	-	“OLD DUTCH CLEANSER / TO SIFT / PUSH / IN HOLES/ CLEANSSES DIRT”

Quantity	Artifact	Material	Dimensions	Comments
5	Walter Baker & Co. Breakfast Cocoa brand lid	Ferrous metal	8.25 cm length, 5.25 cm width	“WALTER BAKER / & / CO INC / 2 In NET / BREAKFAST COCOA”
1	Maxwell House brand coffee lid	Ferrous metal	-	“MAXWELL HOUSE COFEE / 100% / [Coffee cup logo] PURE / GOOD TO THE LAST DROP”
20	Copenhagen brand tobacco lid	Ferrous metal	-	“COPENHAGEN / SNUFF” and “COPENHAGEN / SATISFIES” both present
1	Arizona license plate	Ferrous metal	15 cm height	“11-1[...] / ARIZO / J.G. / DHA / [...]NA / 192[...]” folded over itself, may be two plates
1	Sardine tin	Ferrous metal	16 cm length by 10.5 cm width by 4.75 thickness	“NORTHERN / CALIFORNIA // KN2 / 2”
1	KG brand baking powder can lid (embossed)	Ferrous metal	-	“SAME PRICE / BAKING / 25oz / KG 25 ¢ / POWDER / FOR OVER 40 YEARS”
1	Can (embossed)	Ferrous metal	5 cm height, 7 cm diameter	“CTX” sanitary can
1	Tree tea lid (embossed)	Ferrous metal	10.75 cm diameter	“TRY / TREE / TEA” with segment for opener/key
1	Lipton Tea brand Ceylon tea lid (embossed)	Ferrous metal	11.5 cm diameter	“LIPTON / TEA / PLANTER / CEYLON”
2	Calumet brand baking powder lid	Ferrous metal	7.5 cm diameter	“CALUMET [...] ABSOLUTELY PURE”, many punctures ; “CALUMET / BAKERS / BAKING POWDER / MADE IN U.S.A. / 10 lbs /

Quantity	Artifact	Material	Dimensions	Comments
	(embossed)			ABSOLUTELY PURE”
1	Mason jar lid	Ferrous metal	8.5 cm diameter	“KERR / WIDE MOUTH / MASON / PAT 8 [...]”
1	Mason jar lid	Colorless glass, Ferrous metal	7 cm diameter, 1.5 cm height	Internally-threaded ferrous lid attached to a solarized glass finish, “KERR / MASON / PAT 8-31-15”
1	Cap	Ferrous metal	2.75 cm diameter, 0.75 cm thickness	“PULL OFF / BY HAND”
1	Bowl	Ferrous metal	14.5 cm diameter, 6.5 cm height	Blue graniteware and enamelware bowl
1	Wheel	Ferrous metal	6.5 cm diameter, 1 cm height	Possible toy, 8 spokes, hole in center
1,021	Miscellaneous metal artifacts	Ferrous metal	-	Includes crown caps, wire, stove top and stove pipe fragments, indeterminate fragments, a mug, a carpenter saw, a utensil handle, and window frames
1	Rivet	Non-ferrous metal, ferrous metal,	1 cm diameter	Non-ferrous rivet with ferrous metal hook
1	Mechanical fragment	Ferrous metal, non-ferrous metal	8.5 cm length, 5 cm width, 2 cm height	Ferrous casing with non-ferrous gears

Quantity	Artifact	Material	Dimensions	Comments
2	Lamp fragment	Non-ferrous metal	-	“WHITEFLAME LIGHT CO GRAND RAPIDS, MICH”, originally rounded and tapered
1	Metal strip	Non-ferrous metal	2.5 cm length, 2 cm diameter	“LIFT / THE / DOT”, prongs on back, hole in center
1	Lamp fragment	Non-ferrous metal	7.5 cm diameter	Nickel-plated, “JUSTRITE / PATENTED JUNE 5, 1917 / MADE IN U.S.A.” holes surround shoulder and handle
1	Band	Non-ferrous	-	“[ARB]OW BRAND / [...]LAICHING SAN FRANCISCO”
7	Miscellaneous non-ferrous metal artifacts	Non-ferrous metal	-	-
598	Glass (Various)	Glass		Includes colorless (vessel and flat), amber, aqua, green, and milk glass fragments
1	Milk glass Mentholatum jar	Glass	7 cm height, 5.5 cm diameter	“METHOLAT[UM] / REG/ T[RADEMARK]” external thread finish
1	Orange Crush colorless glass soda bottle	Glass	-	“PAT’D / JULY, 20, 1920 / ORANGE / CRUSH / BOTTLE / 576184”
1	Citrate of Magnesia colorless glass bottle fragment	Glass	-	“CITRATE / OF [MAGNESIA?]”
2	Colorless glass mason jar fragments	Glass	-	1 “KERR GLASS MFG CO / PAT / AVG 31 / 1915 / SAND SPRINGS OKLA” ; 1 “Ball”
1	Colorless glass	Glass	7 cm length, 6	Possible Johnsen & Jorgensen maker’s mark - trident logo underneath initials

Quantity	Artifact	Material	Dimensions	Comments
	bottle base		cm width	“PL”, all within a shield shape
1	Colorless glass bottle base	Glass	5 cm diameter	“[Hazel-Atlas] 2-K-694”, Owen’s scar
1	Aqua glass stopper	Glass	3.5 cm length, 2.5 cm diameter	“LEA / PERRIN”
1	Colorless glass jar	Glass	-	“BAIL”, possess hole for handle
1	Colorless glass lid	Glass	-	Rim for inseting into vessel, knob with star on top, painted green on its interior
2	Colorless glass bottle	Glass, Ferrous metal	2.5 cm diameter	Threaded finish with caps still attached, cap has logo or symbol on top
1	Amber glass bottle base	Glass	5 cm diameter	“F / 316 / 3”
1	Cobalt glass bottle base (embossed)	Glass	3 cm width	Rectangular “2”
1	Colorless glass bottle base	Glass	6 cm diameter	“GLEN ROSA / [...]TS”
1	Colorless glass lid	Glass	3 cm height	Circular dish with squared angled sides - lid or dish
237	Ceramics (Various)	Ceramic	-	Includes decorated and undecorated white earthenware, porcelain, decorated and undecorated stoneware
1	White	Ceramic	5 cm diameter	Large footring, possibly from cup or mug

Quantity	Artifact	Material	Dimensions	Comments
	earthenware			
5	Mug/cup	Ceramic	-	Undecorated mug/teacup fragments
1	Porcelain	Ceramic	-	Molded and unglazed, possible doll fragment (cheek), slight pink and red tint
1	Porcelain	Ceramic	-	“MADE IN JAPAN”
1	Stoneware	Ceramic	-	“[...]IMPERIALE ROTA...]”
25	Shoe leather	Leather	-	Mostly shoe soles
6	Tire fragments	Rubber	-	-
2	Comb	Rubber	-	Black rubber comb fragments, missing teeth
10	Milled wood	Wood	-	-
3	Battery	Carbon	9 cm length, 5.75 cm diameter	Carbon battery rods, 2 still possess outer coating
3	Button	Shell	1.25 cm diameter	Fragments likely represent the same button, split horizontally in half, two-hole sew-through
Total artifact count: 9,994				

Can Dump 2 (CD2)



Figure 5.26. Can Dump 2, Locus C overview. Photo by Travis Cumming, 2023.

CD2 is a substantially smaller artifact concentration lying approximately 5 meters south of CD1. A very small number of artifacts (glass, ferrous metal fragments) indicate the space between the two concentrations. CD2's assemblage is characterized by ferrous metal artifacts (cans, cast iron stove fragments, indeterminate fragments) and glass fragments (colorless and green). No notable artifacts were observed.

Table 5.13. Inventory of artifacts observed at Locus C, Can Dump 2.

Quantity	Artifact	Material	Dimensions	Comments
71	Cans	Ferrous metal	-	Mostly solder dot with some sanitary
1	Can lid (modified)		5.5 cm diameter, 1.3 cm thickness	Punctuated holes
6	Miscellaneous metal artifacts	Ferrous metal	-	Includes indeterminate fragments and a cast iron stove leg
1	Indeterminate container	Ferrous metal	14.5 cm height., 6.27 cm width	-
11	Glass (Various)	Glass	-	Includes colorless glass fragments and a green glass bottle finish
Total artifact count: 90				

Locus C Summary

In summary, Locus C contains 10,084 total artifacts, with an assemblage characterized by mostly ferrous metal food containers. Also present are automotive fragments, hand tools, batteries, glass, and ceramic fragments. Artifacts assigned the “Food/Drink storage” category (such as sanitary and solder dot cans as well as mason jar containers) constituted 11% of the overall cultural assemblage (Figure 5.27). Cultural materials assigned the “Apparel” category represented the second-highest density within the overall assemblage at 3%, constituted by shoe leather and button fragments

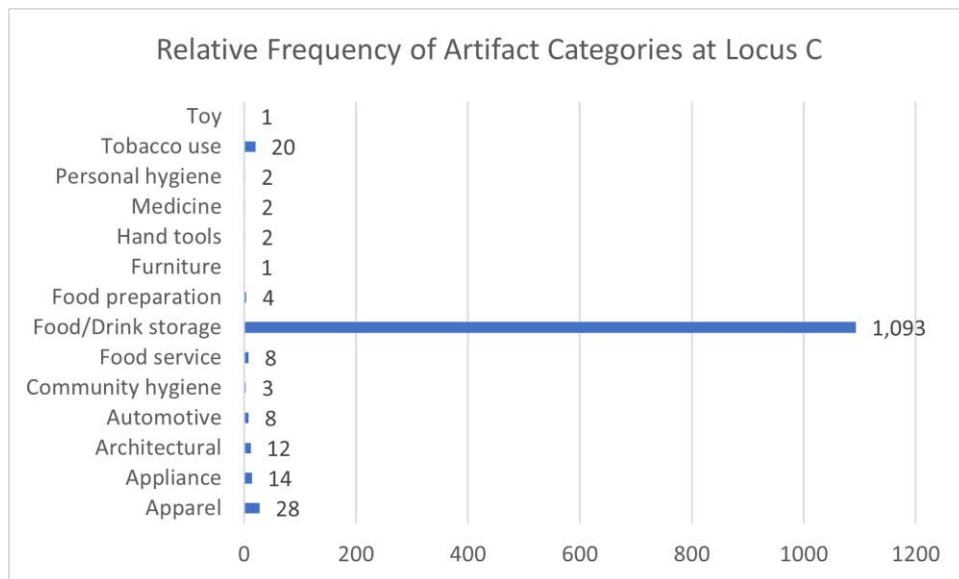


Figure 5.27. Relative frequency of artifact categories at Locus C.

The provided data suggest that Locus C primarily functioned as a refuse disposal area, as the only artifact definitively considered to be architectural was a broken ferrous metal window frame. The artifacts within the locus are likely associated with activities within Loci E and D based on the overwhelming amount of food storage materials present.

The locus also contains a large solder dot can with carved knife holes that resemble a Jack-O'-lantern style face. Known as the Apex Jack-O'-Cantern, the presence of this artifact

indicates the creativity of Apex residents in decorating their environment, possibly for holidays such as Halloween. A second Jack-O'-Cantern is present at Locus G.

Locus U



Figure 5.28. Locus U overview. Photo by Tim Maddock, 2023.

Locus U is a newly recorded activity area and depression (designated Locus U, Privy 1) that was the last area to be recorded in the 2023 field season. It is a catch-all locus encompassing the remaining artifacts near Loci C, D, and E, concentrations too small to be considered their own loci. Locus U consists of a large depression lined with Kaibab limestone cobbles, two rock alignments suggesting a pathway, and a waste rock pile lying near the southern edge of Privy 1. The Locus U datum was placed close to the depression in order to attain the most accurate recordings of that feature. The locus also encompasses several artifact scatters and can dumps across a sprawling area, which are detailed below. Due to time constraints and the large size of

the Locus U tape-and-compass map, there is not presently a digitized version of the locus U map available.

Privy 1



Figure 5.29. Privy 1, Locus U overview. Photo by Tim Maddock, 2023.



Figure 5.30. Privy 1, Locus U pathway leading away from privy. Photo by Tim Maddock, 2023.

Locus U, Privy 1 consists of a large depression (71 centimeters deep, 2 meters east-west by 2.25 meters north-south) and an associated sparse artifact scatter to the south and west. A large pile of decomposed Kaibab limestone, identified as a waste rock pile originally exhumed from the privy, is situated along its northeastern edge, and large cobbles litter the edges of the

depression throughout. A cobble-lined pathway extends from the eastern edge of the privy toward Locus E to the west.

Associated artifacts include colorless and carnival glass, ferrous and non-ferrous metal artifacts, and ceramics. A single lithic artifact was also observed, but is not included in Table 5.14 or the overall historic artifact tally.

Table 5.14. Inventory of artifacts observed at Locus U, Privy 1

Quantity	Artifact	Material	Dimensions	Comments
15	Cans	Ferrous metal	-	Includes standard solder dot, tobacco tins, lids, and large cans
4	Miscellaneous metal artifacts	Ferrous metal and non-ferrous metal	58 cm by 40 cm (large sheet)	Crown caps (ferrous) and a large metal sheet originally painted red on one side, holes punctured around outside (non-ferrous)
1	Chloride of Lime can lid	Ferrous metal	6.2 cm diameter	“CHLORIDE / OF / LIME”
19	Glass (Various)	Glass	-	Includes colorless flat and vessel and carnival glass fragments
2	Colorless glass bottle bases	Glass	-	“MADE IN U.S.A”
1	White earthenware	Ceramic	-	White glaze with hand-painted pattern of yellow flowers and black leaves
1	Milled lumber	Wood	-	Wood plank within privy
Total artifact count: 43				

Can Dump 1 (CD1)



Figure 5. 31. Can Dump 1, Locus U overview. Photo by Rachel Matheson, 2023.

CD1 represents an artifact concentration consisting almost exclusively of ferrous metal sanitary and solder dot cans. The bed spring delineating the southeastern boundary of Locus D lies approximately 10 meters to the north. Modern fuels reduction and timber thinning activities are evident from the presence of felled trees in the area. Most cans appear to have been opened via rotary can opener, though some were also knife-opened. In addition to ferrous metal cans, the artifact assemblage is also characterized by a leather shoe sole, flat glass, and miscellaneous ferrous fragments (Table 5.15).

Table 5.15. Inventory of artifacts observed at Locus U, Can Dump 1.

Quantity	Artifact	Material	Dimensions	Comments
102	Cans	Ferrous metal	-	One sanitary can lid reads "S-/ GRG2", one "ESTAB 558" ; sanitary and solder dot, unlabeled syrup can (Reads "TO-POUR-SYRUP / PUNCH / TWO . HOLES"), a tobacco tin, and meat tins
1	Chloride of Lime lid	Ferrous metal	-	"CHLORIDE / OF / LIME"
1	Flag symbol can	Ferrous metal	1.5 cm in diameter	Unidentifiable flag logo
1	Cans	Ferrous metal	7.5 cm in diameter	Reads "AL 4/25"
1	Can (embossed)	Ferrous metal	5 cm in diameter	Reads "S-/GRG2"
1	Can (embossed)	Ferrous metal	6.7 cm in diameter	Reads "ESTAB 558"
2	Crown caps	Ferrous metal	-	-
7	Miscellaneous metal artifacts	Ferrous metal		Includes crown caps, indeterminate fragments, and a pail
7	Aqua glass	Glass	Largest shard is 7 millimeters in thickness	-
1	Shoe leather	Leather	-	-
Total artifact count: 125				

Can Dump 2 (CD2)



Figure 5.32. Can Dump 2, Locus U overview. Photo by Travis Cumming, 2023.

Similar to CD1 and CD3, CD2 mostly consists of ferrous metal cans of various sizes, including Budweiser malt extract cans, tobacco tins, and a Hershey's brand cocoa powder lid. The scatter tails downslope and abuts the western boundary of Locus E. The artifact assemblage seems to consist mostly of foodstuffs, however very little text is legible on most of the cans. The remaining cultural materials include amber and colorless flat and vessel glass fragments, white earthenware ceramic fragments, and a shoe leather fragment.

Table 5.16. Inventory of artifacts observed at Locus U, Can Dump 2.

Quantity	Artifact	Material	Dimensions	Comments
140	Cans	Ferrous metal	-	Unrecorded types and sizes
1	Hershey's Cocoa brand lid	Ferrous metal	8.1 cm long by 5.5 cm wide by 0.5 cm thick	"HERSHEY'S COCOA"
3	Budweiser brand malt syrup can	Ferrous metal	10.5 cm diameter by 12.3 cm height	Reads "ANHEUSER-BUSCH / [?] / BUDWEISER / BARLEY / SYRUP/ D20" "HOP / FLAVORED / BUDWEISER / BARLEY /MALT / SYRUP"
2	Tobacco tin	Ferrous metal	-	-
1	Pail	Ferrous metal	-	-
11	Glass (Various)	Glass	-	Includes colorless flat and vessel and amber glass.
1	Colorless glass Hazel-Atlas bottle base	Glass	6.9 cm diameter	-
3	White earthenware	Ceramic	-	-
Total artifact count: 163				

Can Dump 3 (CD3)



Figure 5.33. Can Dump 3, Locus U overview. Photo by Travis Cumming, 2023.

CD3 predominantly consists of ferrous metal solder dot cans (standard and evaporated milk types), approximately half of which appear to have been opened via rotary can opener. Sanitary, hole-in-cap, and large solder dot cans are also present in smaller amounts. CD3 is bisected by a felled tree (presumed to have fallen during Apex's occupation as no artifacts lie crushed underneath), and the additional artifacts within the concentration are likely obscured by pine needles and other surface organic matter. The can dump lies at the base of a slope at the east end of the site, marking the general southeastern boundary of Apex as a whole.

Notable artifacts identified within CD3 include a marshmallow can, two cans embossed with “B”, and two with an unidentified flag logo. Additional cultural materials in the assemblage include leather shoe sole fragments and colorless glass vessel shards (Table 5.17).

Table 5.17. Inventory of artifacts observed at Locus U, Can Dump 3.

Quantity	Artifact	Material	Dimensions	Comments
112	Cans	Ferrous metal	-	Mostly solder dot with evaporated milk punctures, also present are large cans, non-diagnostic lids, and 1 hole-in-cap
1	Marshmallow can	Ferrous metal	14 cm diameter, 8.8 cm height	Reads “[ANGELUS] / MARSHMALLOWS // CANCO” ; top and bottom lids removed
1	Fruit can	Ferrous metal	15.5 cm diameter, 17.4 cm height	Reads “SECONDS WITHOUT ADDED SUGAR”, partially rotary can-opened
3	“Flag” can	Ferrous metal	7.4 cm diameter, 11.8 cm height	Embossed flag logo on top and bottom lids
2	“B” Can	Ferrous metal	6.7 cm diameter, 10 cm height	Standard sanitary can with embossed “B” logo on one end
2	Colorless glass	Glass	-	Possible condiment jar fragments
1	Shoe sole	Leather	-	-
1	Shoe sole nailed to metal fragment	Ferrous metal and leather	-	Leather strap nailed to ferrous metal strip
Total artifact count: 123				

Artifact Scatter 1 (AS1)



Figure 5.34. Artifact Scatter 1, Locus U overview. Photo by Alex Mason, 2023.

The majority of AS1's cultural materials lie west of an intact non-ferrous wash tub. The surface manifestation is obscured by organic material and pine duff, likely precluding a full count of artifacts associated with the scatter. The assemblage predominantly consists of ferrous metal cans and crown caps as well as milled lumber and glass fragments (Table 5.18).

Table 5.18. Inventory of artifacts observed at Locus U, Artifact Scatter 1.

Quantity	Artifact	Material	Dimensions	Comments
46	Cans	Ferrous metal	-	Majority solder dot
2	Can lid (embossed)	Ferrous metal	7.5 cm diameter	Solder dot outer ring "THE SINCLAIR MFG CO. / TOLEDO"
1	Can lid (embossed)	Ferrous metal	13 cm diameter	"KEEP COVER / ON TIGHT" ; knife hole slashed between lines of text
5	Tobacco tin	Ferrous metal	-	-
2	Can lid	Ferrous metal	-	"PATD. OCT. 20 191[4]" / "C+ / KHP3"
47	Miscellaneous metal artifacts	Ferrous metal	48 cm diameter (wash tub)	Includes crown caps, stove pipes, a wash tub, large bucket with handle, and a furniture spring
1	Stove body	Ferrous metal	20 cm width, 46 cm length, 42 cm height	Exhaust holes near top of oven, empty compartment on the bottom for fuel. 2 holes on top of oven.
1	Serving tray	Ferrous metal	20 cm width, 37 cm length	-
1	Battery	Multiple	-	Carbon battery rod with cuprous cap and paper-like ring around its top. Non-ferrous outer shell with fabric attached to its side.
1	Aqua glass bottle base	Glass	9 cm diameter	"9" with dot at bottom, round base
2	Colorless glass	Glass	-	1 shard of flat glass, 1 embossed vessel body fragment "P[H?][E?]"
5	Milled wood	Wood	-	Fragments
Total artifact count: 72				

Locus U Summary

In summary, Locus U contains 562 total artifacts, with an assemblage characterized by mostly ferrous metal and glass food containers. Also present are batteries, glass, and ceramic fragments. Only 91 artifacts were intact or diagnostic enough to receive artifact category designations. Artifacts assigned the “Food/Drink storage” category (such as crown caps, fruit tins, marshmallow cans, and meat tins) constituted 12% of the overall cultural assemblage (Figure 5.35).

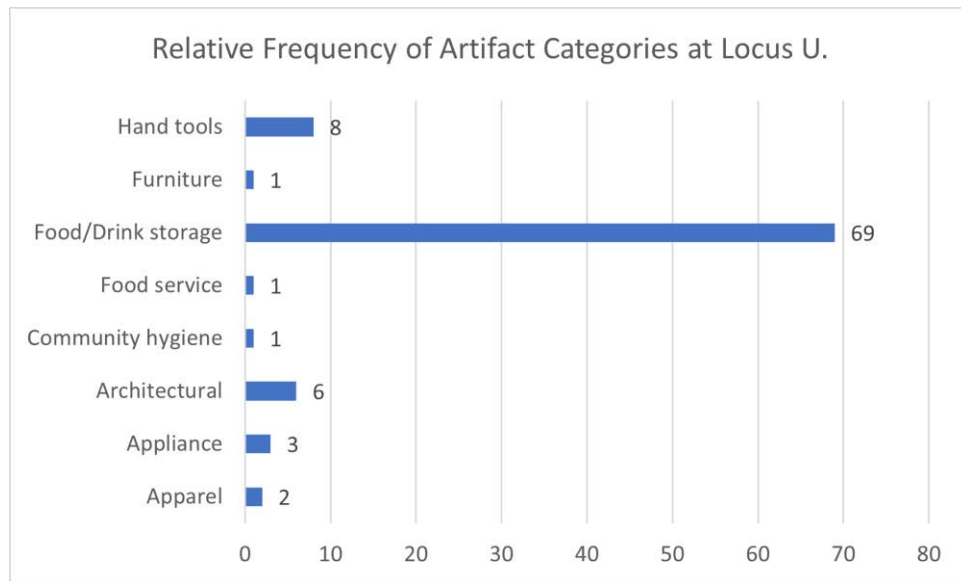


Figure 5.35. Relative frequency of artifact categories at Locus U.

If Locus U does represent a privy area, the surrounding assemblage of discarded metal and glass food and drink containers indicates the area may also have functioned as a trash disposal area, similar in nature to Locus C but distinct in its dispersal. The presence of Chloride of Lime lids (one being situated at the edge of the Privy 1 depression) also suggests the locus area required some level of communal hygiene upkeep not as prevalent in other loci throughout the site.

Loci Overview and Preliminary Observations

In total, the 2023 field season of the Apex Archaeology Project identified 15,317 surface artifacts in four different loci (Figure 5.37), and 1,341 total subsurface artifacts recovered during excavation of Locus E, Privy 1, Unit 1. The following statistical overview concerns the surface level assemblage. Of the specified artifact categories, cultural materials designated as “Food/Drink storage” constituted 9% of the total assemblage, with “Architectural” and “Apparel” representing 8% and 0.6%, respectively (Figure 5.36).

Locus C possesses more than half of the observed surface artifacts (61%) and 63 unique artifact “type” values, with Locus E containing the second-highest quantity of surface artifacts (26%) but a greater diversity of artifacts with 128 distinct types. Despite its large areal size, Locus U contains the lowest density of artifacts (3%) and only 37 unique types, while Locus D only possesses 10% of the surface assemblage but 95 unique artifact types.

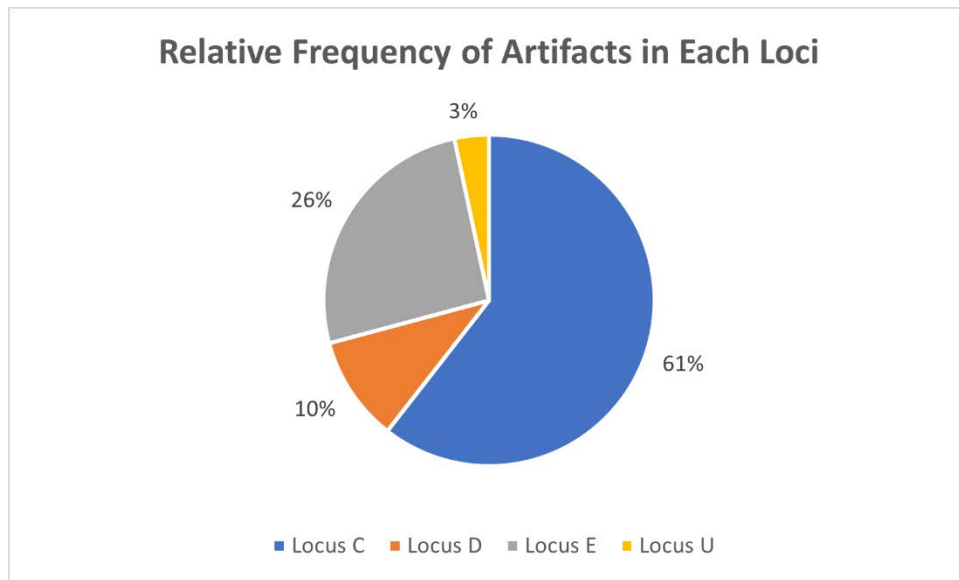


Figure 5.36. Relative frequency of artifacts in each loci.

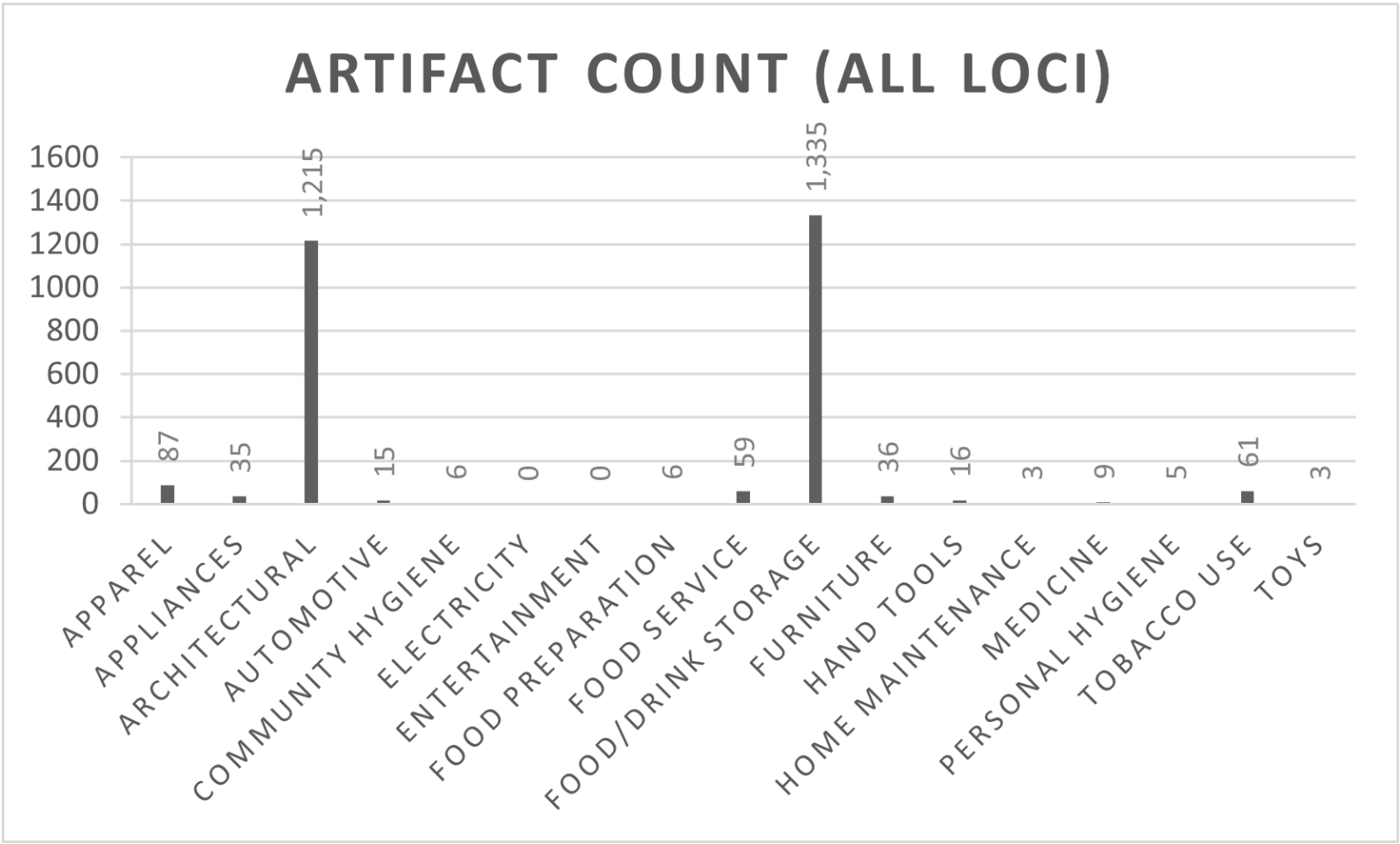


Figure 5.37. Comparison of Artifact Categories across all loci.

Artifact Mapping

Due to time and technological constraints, only point data associated with locus datum locations were recorded. Nonetheless, the point vector data combined with the artifact information in the previous section indicate interesting spatial trends across Apex. This section concerns a direct comparison between the assemblages of the 2022 and 2023 field seasons.

I created three different maps using the Hot Spot Analysis (Getis-Ord G_i^*) tool in ArcGIS Pro to assess the utility of geospatial analysis in comparing two assemblages. Each map concerns an artifact category established in Table 4.3. I selected “Food/Drink storage”, “Personal hygiene”, and “Tobacco consumption” to compare usage and concentration of each category between the management and laborer sides of the tracks, as these three categories possess robust concentrations within the overall assemblage. The data sets for the remaining categories are likely too small to yield similar or significant results at time of writing.

While Loci C and G, both can dumps, are comparable in their area sizes, densities of artifact assemblages, and purpose (e.g. refuse area), the latter locus indicates a significantly higher concentration of artifacts in this category than elsewhere throughout the site. This may be attributed to Locus G functioning as a single depositional area for management housing likely created when Apex was disassembled while Locus C functioned as one of multiple depositional areas used by laborers (Figure 5.38). Locus G represents the point of highest concentration of tobacco products, but does not appear drastically different from laborer-associated loci on the other side of the tracks (Figure 5.39). Locus A, considered to be the kitchen or dining area, contains the highest concentration of artifacts designated as “personal hygiene” relative to all

other loci. This may indicate that the locus area also housed either a commissary or common area where such products were either sold, actively used, or both (Figure 5.40).

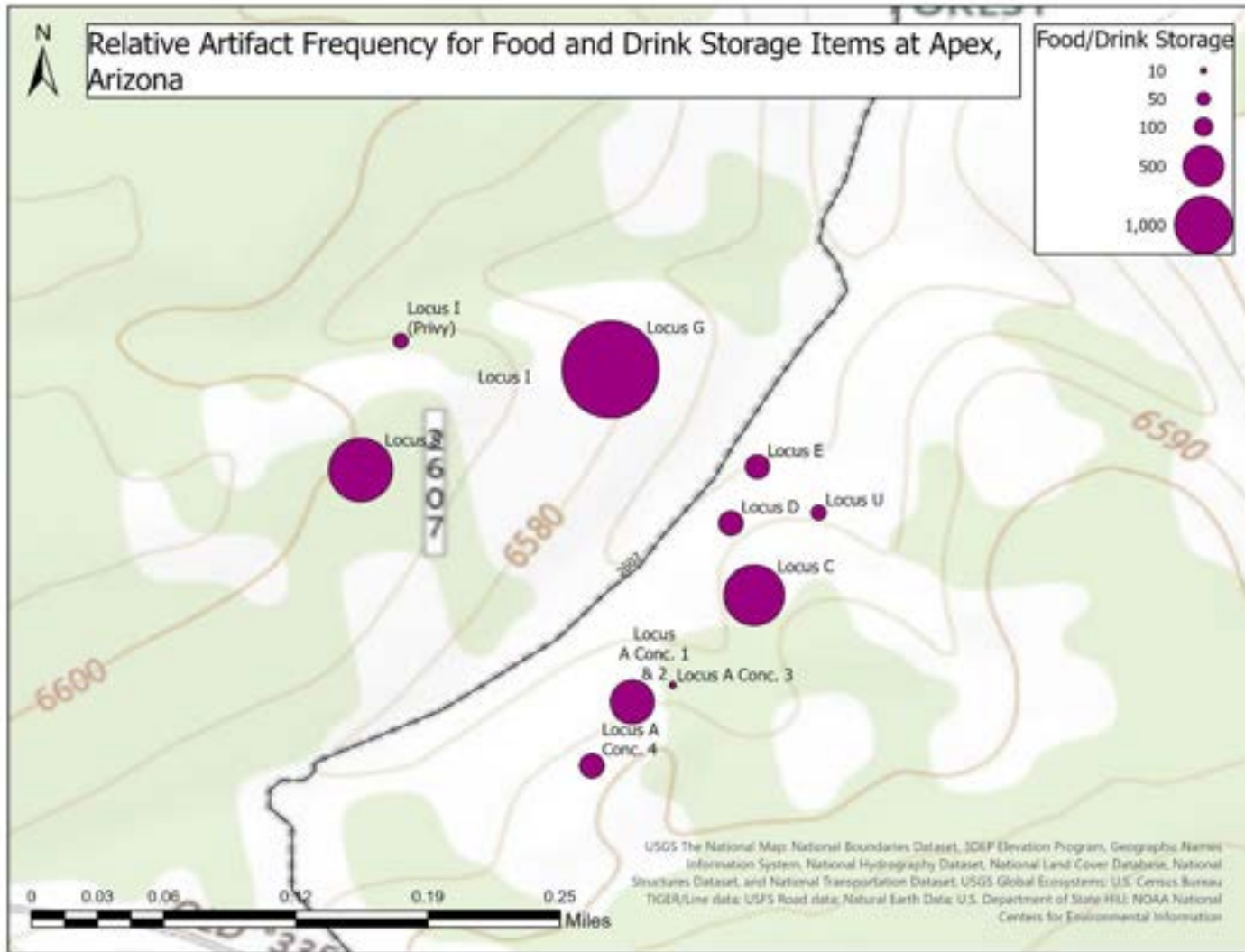


Figure 5.38. Map showing the Relative Artifact Frequency for Food and Drink Storage Items. Map by author, 2023.

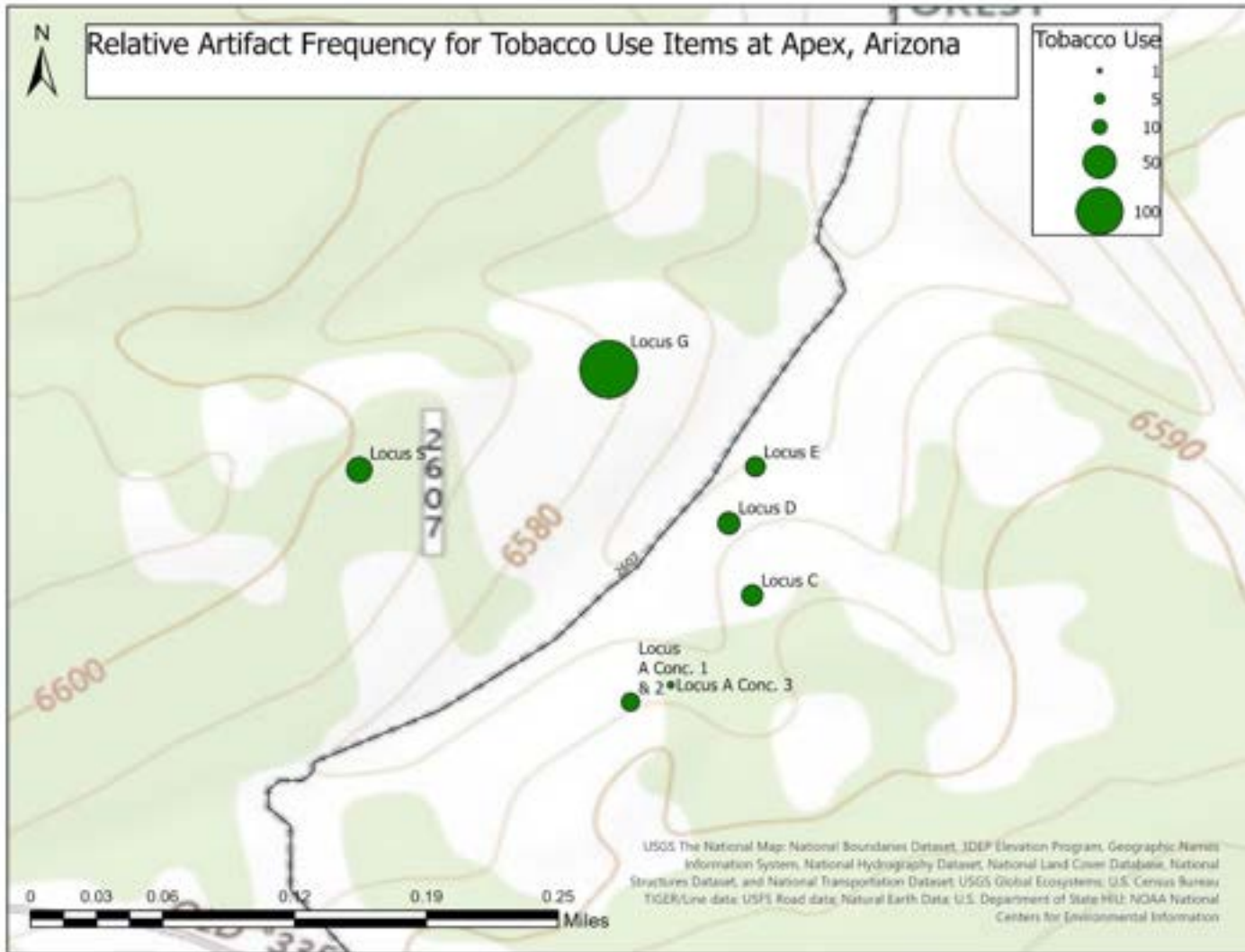


Figure 5.39. Map showing the Relative Artifact Frequency for Tobacco Use Items. Map by author, 2023

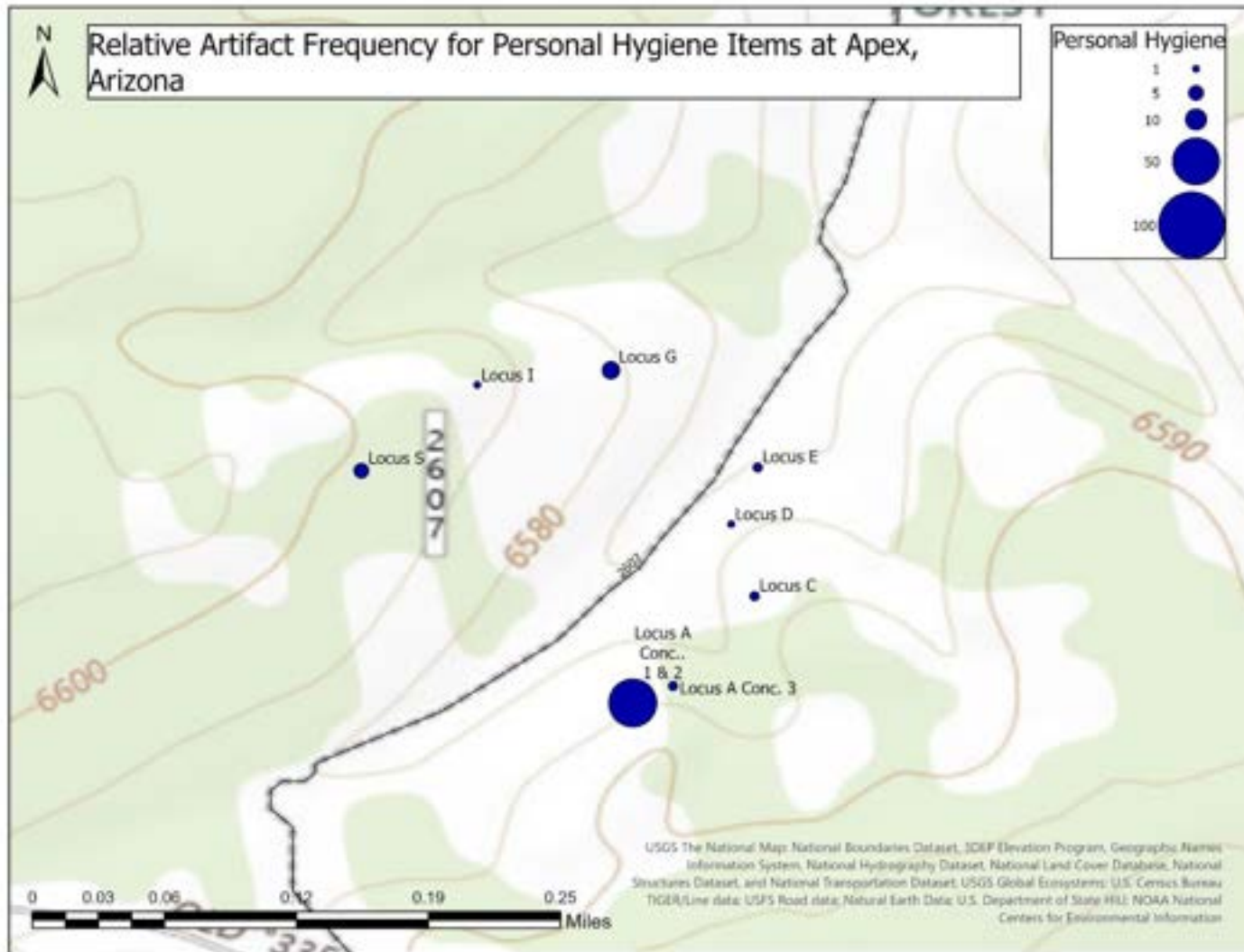


Figure 5.40. Map showing the Relative Artifact Frequency for Personal Hygiene Items. Map by author, 2023

Geospatial Analysis Overview and Limitations

Due to the limitations of the data set (a small sample size in addition to lack of spatial measurements), the maps are most useful in visualizing spatial relationships between particular assemblages. Future research may work to further subdivide categories to identify specific brand use where applicable, or to refine the categories established here. Additionally, as methodology shifted slightly over the course of the field season, some data is missing (i.e. in several instances, artifacts that would be considered under the category of “tobacco use” were unable to be quantified because they were recorded in association with the generic “can” artifact type). As preliminary results, however, the maps do indicate little discrepancy between tobacco use and access to food and drink products between both communities, and also support the notion of Locus A supporting multiple functions beyond kitchen and dining hall area.

Chapter 6: Discussion and Conclusions

This chapter considers the data presented in chapter 5 within the historical and theoretical frameworks established in Chapters two and three, respectively. I address the research questions introduced in the introductory chapter in separate sections where appropriate, then I discuss future research directions to improve and refine my research presented here, as well as to better illustrate the history of Apex and its communities. I conclude with a summary of conclusions derived from socio-historical analysis of the data as presented throughout my work.

Apex as a Company Town

1. How does Apex fit within the broader history of company towns?
2. How did the built environment at Apex inform life and work for its communities?

This thesis applies a critical lens to Apex as a community centered around labor and resource extraction. Texts that previously discussed Apex's occupation do not interrogate the variables that make company towns distinct communities in their own right or relative to other domestic spaces, especially in the rural American west. Thus, I ask: what are those variables, and how are they manifested at Apex?

If a common characteristic of company towns, as seen in Clarkdale, Fayette, or Ludlow, is the social and economic stratification of their communities, it is likely that their cultural materials would indicate differential access to housing, goods, and labor roles. Given its limited presence of standing architecture and absence (as of writing) of detailed housing records, Apex offers the most insight into its intercommunal structure through its artifact assemblage. I begin to answer the primary question posed at the beginning of this section by looking at the cultural materials within the loci recorded during the 2023 season (on the laborer's side) and select assemblages recorded in the 2022 season. I am specifically looking for significant differences in

access to goods in terms of branding, quality, and density as manifested through spatial organization across Apex.

To address the second question posed at the beginning of this section, I consider the spatial organization of Apex as manifested by the present architectural structures and contents of the loci and their accompanying artifact scatters. This is accomplished through topographic analysis and an examination of archival documents indicating potential housing locations of certain employees that challenge previous narratives of Apex's spatial arrangement. My target data consists of evidence of physical barriers delineating specific spaces and the spatial trends of product consumption and access across the camp. It is important to note that not all observed loci present at Apex have been fully recorded by the Apex, Arizona Archaeology Project at time of writing, thus my following conclusions regarding the layout are provisional. Thus, with the present data, I suggest how various configurations of the built environment of Apex may have informed life and work within the boundaries of the company town.

Consumption Habits

Analysis of the 2022 and 2023 assemblages at Apex indicates that the camp is distinct from other company towns such as Clarkdale in that consumption habits do not reflect severe economic stratification between administrative staff and seasonal laborers. Even if the company provided a dining hall and meals, employees still had access to food closer to their homes, which granted them agency in product selection. The company store also likely contributed to the homogeneity of the assemblage, but at present, Apex researchers have not located any company store records. Preliminary observations of the 2023 field data indicate similar choices in food and drink product consumption on either side of the camp. Management-and-laborer-associated artifact assemblages do differ in some notable ways. For example, the majority of sardine tins

observed on the laborer's side were either of U.S. or indeterminate origin, and none were "NORVEGE" or of clearly Scandinavian origin as observed in the 2022 assemblage (Figure 6.1). Additionally, no loci associated with management contained chewing tobacco, only loose cigarette tobacco tins. These discrepancies may be attributed to the additional costs incurred from importing overseas goods, which administrators would have been more likely to afford. It is unclear why no snuff tins were found on the management side, as the national average of cigarette and plug tobacco prices between 1928 and 1936 fluctuated enough that one was not more cost-effective than another (USDA 1938:39). It may have been easier for laborers to chew snuff throughout the workday rather than rolling and smoking their own cigarettes or cigars. Due to the poor preservation of their paper packaging, we do not know the popularity of pre-rolled cigarettes at Apex.



Figure 6.1. "Norvege" sardine tin, color corrected to enhance embossed text. Photo by Ian Villamil, 2022.

Apex residents, regardless of labor role, had access to the same kinds of entertainment for adults and children, like vinyl records and toys, and evidence for cooking activities, such as stove fragments, cooking vessels, and serving trays within domestic areas suggests that non-

administrative staff had access to personal kitchen areas. As the communal kitchen area (Locus A) is not far south from Loci E or D, laborers and/or families having either private or smaller shared cooking and dining areas suggests they were afforded a level of agency and privacy similar to administrative staff. Based on Setterland's interview, in which the locomotive engineer suggests that single male laborers did not have the time nor energy to engage in recreational activities after the workday, it is possible that the artifacts associated with entertainment were mostly used by administrators who spent more time at the camp during the day, or their non-working family members. Radio parts at Locus A and record fragments at Locus E may demonstrate more passive forms of entertainment as well.

As revealed in the interviews quoted above, alcohol consumption was common at Apex, even during Prohibition. as are Prohibition-era malt syrup extract cans of numerous brands. To stay afloat during Prohibition, modern popular beer manufacturers such as Anheuser-Busch and Pabst sold malt syrups and extracts, advertising their products as baking ingredients. It was well known that these extracts could be combined with other ingredients to make beer at home (Klein 2019). From "Hop Flavored Budweiser Barley Malt Syrup" (Figure 6.2) to "Bohemian Hop-Flavored Puritan Malt Extract", this artifact type is found at a volume and wide distribution that points toward a high likelihood of homemade beer production at Apex rather than a community of enthusiastic bakers. In 2022, three Budweiser Malt Extract Syrup cans were identified, one each at Loci A, R, and S. Locus A also contained one Puritan Malt Extract Company can and one Schlitz Malt Syrup can. In 2023, all observed malt syrup cans were Budweiser brand, with one identified in Locus E, Wood Scatter 2 and three within Locus U, Can Dump 2. So far, Apex archaeologists have located nine total malt syrup cans in camp areas like the company-run dining hall and kitchen area, laborer trash scatters, and administration housing. It is apparent that

Saginaw and Manistee did not care to enforce Prohibition within its logging camp, indicating a policy of company oversight that is unusual in the history of company towns.



Figure 6.2. "Hop Flavored Budweiser Barley Malt Syrup". Photo by Travis Cumming, 2023.

That Apex residents spurned prohibition on both sides of the tracks indicates multiple possibilities: that they were a community of immigrants disinterested in this aspect of Americanization, that illicit alcohol consumption and production provided solidarity along ethnic or labor-based lines, that allowing on-site consumption was an administrative strategy of keeping the peace, or simply that no administrator, regardless of ethnicity or nationality, cared enough to enforce the law. Setterland's interview confirms that Apex was not a dry camp, and that alcohol was acquired from Flagstaff between 1928 and 1933, but it is unclear how frequently and at what quantity. At present, it is therefore difficult to say how frequently malt syrups were used for beer

production at this time in comparison to other methods of obtaining beer and liquor. Post-prohibition beer cans and whiskey bottles are also abundant throughout the site at both laborer and administrative loci, representing “Non-Fattening” Acme Beer (1907-1956)(Brooks 2010)(Figure 6.3), Pabst, and Hiram Walker & Sons (1935-1964)(Whitten 2004). Both 2022 and 2023 field seasons observed numerous glass fragments embossed “Full Pint”, “One Quart”, or the menacing “FEDERAL LAW / FORBIDS / SALE OR REUSE / OF THIS BOTTLE”, a warning required to be printed on all alcohol bottles between 1935 and 1964 (Lindsey 2022).



Figure 6.3. Acme Beer ad ca. 1930s. From Brooks (2010).

Non-alcoholic beverages are evenly distributed across the site as well. Apex laborers and administrators alike enjoyed Hershey’s and Walter Baker & Co Breakfast Cocoa (Loci A, E, G, R, S, U), Ovaltine (Loci G and S), Tree Tea and Lipton Tea (Loci A, C), Maxwell House and Monarch Coffee (Loci C, E, S), and soda bottled by Frank Brooks’ Skylight City Bottling Works

in Flagstaff (Dale 2023:79). Brooks shipped Coca-Cola, Delaware Punch, Hire's Root Beer, Orange, Lemon, and Lime Crushes, Top-o-Peak soda water, and his own recipe drinks in Yavapai and Coconino counties. Loci A, C, and R contain a high density of Orange Crush bottle fragments, suggesting that one or more individuals preferred that particular brand and flavor.

The most important takeaway for this analysis is the lack of evidence in the material record for explicit paternalistic ideologies intended to control the camp's workers (Crawford 1995:54). Based on the literature, a "model company town" would have likely enforced Prohibition in order to produce sober, law-abiding laborers of good moral character. There is no archaeological evidence to suggest that Saginaw and Manistee, despite the period of Apex's establishment in broader company town history, intended for any kind of socially regulatory apparatus at the camp. This is supported by the dearth of historic or archival documents referencing any intent in the space as an engendering agent for specific consumption behaviors.

Finally, in all artifact categories, there is homogeneity in branding and object form across the site. The sameness of products for baking powder (Calumet, Royal), maple syrup (Log Cabin), tobacco (Copenhagen, Prince Albert), ceramics, enamelware, eating and serving utensils, and other products suggests heavy use of the company store and/or commissary. Select artifacts, such as a carnival glass candle stick, doll face, and cat statue fragments (Figure 6.4) were more likely from elsewhere based on their exclusivity, and communicate a sense of personal belongings as things Apex residents would have brought with them prior to living at the camp. Japanese imported ceramics and Chinoiserie ceramics are present in lesser amounts, suggesting they were similarly externally sourced. Throughout the site, there is also an abundance of carnival glass, a colorful and cheaper option than blown iridescent glass introduced in 1908 (Whitten 2004). The "carnival" moniker originates from the supposed distribution of this type of

glass at carnivals, circuses, and fairs, but they were more commonly purchased or given away as part of advertising for other products. It is possible that Apex residents acquired carnival glass artifacts when Williams hosted fairs or other community events, or it was a cheap product available from the company store.

The presence of canning (mason) jar fragments is evident at Loci C, D, G, I, J, and S. One “Kerr” brand mason jar lid was identified in Locus A, but at Apex it is more common to find evidence of canning in more domestic contexts than in community food preparation areas. The association of canning with domestic areas implies it was a task associated with women’s labor within the household, and that Apex residents also had access to fresh produce.

Enamelware and plain ceramics, based on their density and consistency, were more likely sold at the company store. The high reliance on the company store for goods is notable considering Saginaw and Manistee charged premium prices for purchases, as Harry Matson indicates it was more affordable to travel to the Grand Canyon for groceries when possible. It is not currently known how many administrators or laborers had access to vehicles, but both 2022 and 2023 field seasons observed numerous car parts and other automotive artifacts on both sides of the camp. Locus S has an especially high concentration of large car parts, including a hood, bench, and oil filter. Arizona and New Mexico License plates were found in Loci C, D, E, and S, suggesting it may have been common for laborers to have personal vehicles.



Figure 6. 4. (Top left): Porcelain cherub face, photo by Emily Dale, 2023. (Top right): ear from porcelain cat statute, photo by Emily Dale, 2023. (Bottom): Carnival glass candle stick, photo by Emily Dale, 2023.

Conclusions derived from this data are limited, as I base this discussion off of two years of fieldwork conducted at the logging camp. While substantial, the current data is not a full representation of social relations at Apex, and may be impacted by sampling and preservation bias. Additionally, the surface cultural deposits at the camp more likely represent the final act of deposition at Apex during the site's deconstruction in 1936 by maintenance crews. It is therefore difficult to discern whether the assemblage is representative of the entire time frame of Apex's occupation, or its community's behaviors from 1935 to 1936. This limits the comparisons I can make with other company towns that have more refined temporal dimensions.

Spatial Organization

Compared to contemporary company towns, there is no evidence at Apex to suggest any documentary evidence for intentional spatial organization on the part of Saginaw and Manistee Lumber Company or its administrators based on race or ethnicity. In terms of the town's layout, there is still a clear separation between Apex's domestic and industrial spaces, and the company did have populations of Mexican loggers that were paid less than their white counterparts, but there is no indication that they were spatially segregated, as was the case for Clarkdale's Patio Park (Figure 6.5). According to previous Apex scholarship, the only apparent spatial separation on site is based on class, where administrators lived on the western side of the camp and lower-paid laborers lived on the eastern side (Figure 6.6).

Map of Clarkdale

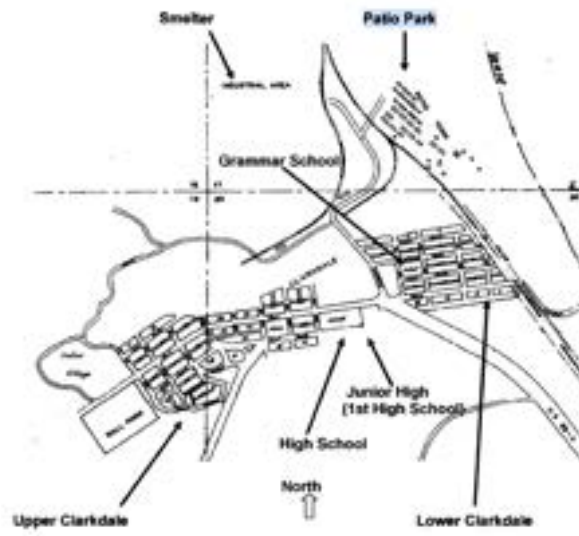


Figure 6.5. Map of Clarkdale showing Patio Park's distance from either communities in the town.
From Peterson (2008):107

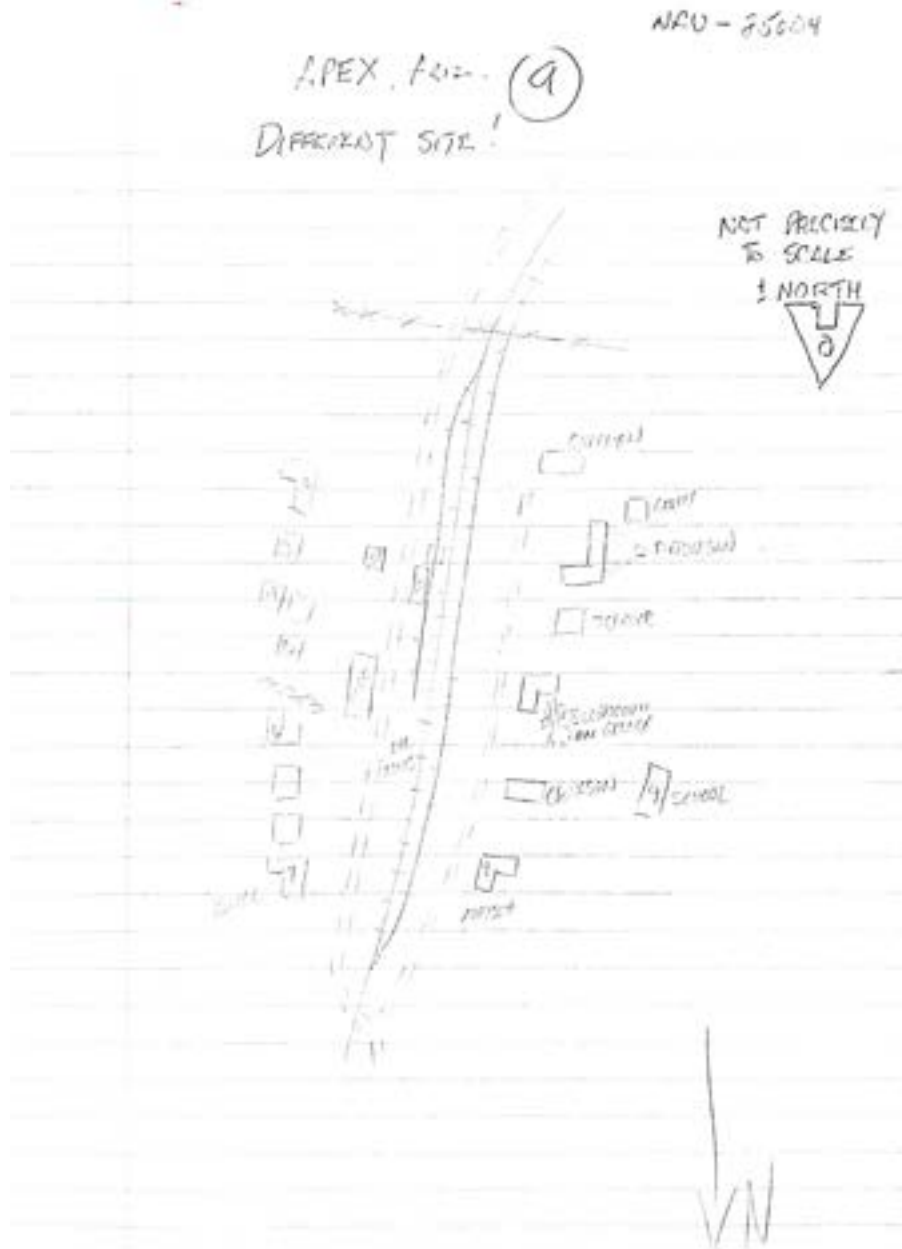


Figure 6.6. Early sketch map of Apex from Richmond (1984).

Analysis of archival research resolves a lack of clarity as to whether laborer families lived near administrators. Figure 6.6 shows an alternate map of Apex's layout drawn by Al Richmond and Don Bufkin in 1984. Notably, Richmond's 1984 map places the Matsons, a laborer household on the western side of the camp, the area mostly strongly associated with

administrative positions. The placement of the Matson household is likely derived from Harry Matson's interview: "Well, on the side of we lived...the school was further up on top of the hill. There, you know, behind the camp" (Matson 1984: 00:04:41). The 1930 census confirms that Harry's father and head of the Matson household, Eric, worked as a loader man at Apex until 1935. To the south of the Matson house is the possible household of Gus Erikson, railroad fireman, and his family. Superintendent Arvid Anderson lived in the camp's largest house further to the south, just north of a building labeled "Chapman". One individual named Emil Chapman lived at Apex in 1930 and worked as a "laborer", and was not listed alongside any wife or children. It is unknown whether he ever married or received a promotion within the company, and no other administrator with the last name Chapman worked for Saginaw and Manistee between 1928 and 1936. The other named domicile on the 1984 map is the designated teacher's house.

No members of the Matson, Erickson, and Chapman households worked in administrative positions for Saginaw and Manistee, disrupting the original understanding of the site as separated according to class lines. Additionally, across the tracks to the east on the "laborer's" side A1 included two L-shaped buildings, indicating family housing. One house is labeled "Black", but is unlikely to be the home of Vera Black, as she would have been in the teacher's housing and still identified by her maiden name of Goss (Black 1984: 00:15:00). There is no one with the last name Black on the 1930 census, and no other internal company documents indicate an employee with that surname. Archaeological evidence of children's toys and large domestic appliances from 2023 indicates a high likelihood of family housing on the laborer side of the tracks, verifying Richmond's 1984 map. Assuming that the Matson and Erickson

household locations are accurate, there are a few different possibilities regarding the spatial organization of the camp.

First, while Matson and Erickson were not administrators, they were Swedish immigrants who arrived in the U.S. in 1909 and 1913, respectively. Matson was a resident of Coconino County, Arizona by 1917, when he was drafted for World War I (*The Williams News* 1917:2). Gus Erickson is possibly the son of August Erickson, a Swedish logger who worked for Saginaw and Manistee from 1886 until his death in 1909 due to his “appetite for alcoholic drinks” (*The Williams News* 1909:4). By age 24, Gus Erickson had married an Arizona woman named Simone (United States Census Bureau 1930). As he was 33 in 1930, he was likely in the state by 1921 at the latest. Based on these timelines, both Matson and Erickson could have worked for Saginaw and Manistee prior to Apex’s establishment. This could explain their homes’ close proximity to the administrative buildings and the schoolhouse: they were men with families who had proven their reliability and work ethic through previous timber leases with the company.

I contend that it is most likely Arvid Anderson’s preference for Swedes on his logging workforce that placed the Swedish Matson and Erickson in a potentially spatially privileged position. Swedish families were a significant, but minority population at Apex per the 1930 census (United States Census Bureau 1930), so it is notable that the only family housing neighboring the administrators belonged to Swedish laborers. The laborers did not fill managerial roles, but their ethnicity and possible tenure with the company subjected them to a kind of “inclusionary” scrutiny, in the context of Foucault’s double mode of binary division and branding. The two Swedish laborers and their families could have been assigned specific attributes by Anderson or other management staff, within and beyond the confines of the camp, that placed them in a binary category more closely associated with “manager” than “laborer”. Or

rather than class-based categories, Anderson assigned a binary of “Swedish/Not Swedish” for Apex’s population; this is not to say the camp superintendent was prejudiced against non-Swedes, but that his valuation of Swedish labor coercively assigned categories to Apex residents, which defined the possibilities of the camp’s built environment. When the Saginaw Lumber Company arrived in Williams with its mostly Swedish workforce in tow, its laborers had already cemented strong nationalistic and ethnic ties while living in Michigan.

Those ties may have continued into the working relationships in Arizona, creating a kind of national and cultural solidarity that may have been alienating for Apex’s non-Swedish residents. This did not contribute to an actively hostile built environment so much as a physical space where the key authority figure (Anderson) permitted lower-level laborers of specific nationality better access to more spacious housing close to his own home. This could have impacted the occasions where Apex residents did socialize outside of work, but may also have impacted work culture and professional report built between loggers. Current Apex archival research does not indicate the extent of Anderson’s authority in enforcing company policy or making his own decisions within the camp. Additional internal company documents or oral interviews may elucidate the superintendent’s role in the daily life of his employees.

Second, if the placement of the Matson and Erickson households are incidental, the close proximity of superintendent Anderson to Apex’s laborers, regardless of occupation, implicitly communicates a corporate paternalist desire to ensure a cohesive working community. And, regardless of intention, providing larger housing for individuals in administrative positions implies a fundamental understanding of managerial jobs as authoritative both in purpose and in the character of the individual serving in the role. This is further supported by the lack of single male laborer sheds on the western side of the tracks; in a critical Marxian view, if there were not

some degree of coerced separation between laborers and administrators mitigated only by strong national and ethnic ties, it would be reasonable to assume all housing would be located in the same area of the camp.

Apex residents also apparently created physical structures and features intended to delineate one area from another, but not in evidently exclusionary ways. The roughshod rock walls of Locus E likely represent leftover cobbles moved during the construction of the camp's building foundations. Rather than haphazardly stacking the limestone cobbles in random locations, Apex residents aligned the walls to create pathways in the direction of loci D and U. A small rock wall is also present at D, but its organization and purpose are less clear. Locus U contains a large depression (likely a privy) ringed by Kaibab limestone cobbles. A small pathway lined with the same material is oriented in the direction of Locus E and the rest of the site. These structures and landscape features all suggest that the original Apex residents organized their environments in ways that connected otherwise discrete activity areas. This contrasts with the history of company towns, as it is a spatial design intended to unify rather than segregate.

Finally, the site's topography may have facilitated administrators' access to surveillance of laborers from their own homes. The map in Figure 6.7 shows the valley in which Apex is situated, with the schoolhouse sitting atop the highest point of elevation at the site. While giving tours during the 2023 field school, students on the other side of the site (Locus E) were easily visible from the schoolhouse (Locus I) and other areas on the west side of the tracks. My visibility was aided by the sparsity of vegetation and ponderosas, however. According to former Kaibab Forest Service Supervisor Neil Weintraub, the area would have been much more densely wooded between 1928 and 1936 prior to federal fuels reduction efforts to limit wildfire spread in the region (Weintraub, personal communication, 2023). It is therefore difficult to determine

visibility from either side of the camp. Even permitting the same visibility in 2023 as in 1928, given the community's open secret of consuming alcohol prior to the end of Prohibition, it is unlikely that Anderson or any other Saginaw and Manistee administrator surveilled laborers in order to guarantee idealized moral behavior. Nonetheless, the size and position of the superintendent's home served as a constant reminder of one's role in the company, and intentionally or not may have served as a Panopticon-esque structure that imposed visibility upon Apex's residents.



Figure 6.7. Selection of Apex loci and the surrounding area topography. Map by the author.

In the broader history of company towns, Apex is notable in its dissimilarity from large contemporary communities such as Clarkdale in that it lacks a clear spatial design intended to separate employees along firm racial, ethnic, or class lines. No internal Saginaw and Manistee documents indicate any kind of spatial planning nor specific social goals in Apex's construction; the logging camp was created for the explicit purpose of facilitating the extraction of resources and production of capital. Further, though the camp is not as firmly divided between laborers and management as previously thought, Apex was still constructed according to implicit ideological beliefs that privilege clerical work over physical labor and mask structural relations of power through the built environment. The camp may not have been explicitly designed, but its spatial organization belies a traditional corporate paternalist view of communities that marry domestic life and work.

However unintentional, the built environment of Apex possibly impacted relations between loggers and other non-administrative laborers by privileging those of Swedish descent, as evidenced by the presence of Swedish families with potentially deep ties to the company occupying the "management" side of the tracks. Non-Swedish laborers may have felt alienated by this preferential treatment, making the culture of work and life at Apex tense or otherwise inaccessible for those without strong ethnic or national ties. In further contrast to other contemporary company towns, the archaeological assemblage at Apex indicates similar product consumption habits across the site, indicating regular use of the company commissary and relatively equal access to goods. Some notable differences, such as the lower number of "NORVEGE" tins on the eastern side of the tracks, may point to either personal preference or an

instance of differential access to goods. Continued survey and excavation at Apex may provide more insight into the frequency and cost of imported goods such as Scandinavian sardines.

Life and Identity

1. What can the artifactual and archival evidence tell us about the intersection of life, work, and identity at Apex?
2. To what extent does the material record reflect concepts of American gender expression, whiteness, ethnicity, and class?

In this section, I consider how the archaeological and archival records illustrate life and labor as experienced at Apex. A close analysis of the material record, in tandem with archival documents and transcriptions of oral interviews with the camp's former residents and families, indicates that Apex residents were thoroughly assimilated within American culture by the late 1920s. No artifacts explicitly tied to nationality, ethnicity, or Whiteness were identified. In section 6.1.2, I contend that the racial and ethnic dimensions of life and work at Apex are more visible via the archival record and from Richmond's interviews from 1984. For my research into life and identity at Apex, the logging camp's archaeological assemblage proves most informative regarding the gendered dimensions of life and work, as well as hints towards the Americanizing process for the mostly-immigrant community. I begin with an analysis of particular cosmetic and personal hygiene products recovered at the site between 2022 and 2023, and situate their use within the historically shifting American cultural relationship with body odor and appearance in the early twentieth century. I then discuss the role of women at Apex and briefly provide context for gendered labor in educational roles. I conclude with a review of a selection of artifacts recovered during the 2023 field season that imply a process of assimilation for some residents at Apex.

Hygiene and Gender

The assemblage of personal hygiene and cosmetic artifacts at Apex suggests working bodies that frequently combated pain and discomfort, while also comporting themselves in socially and aesthetically acceptable ways. The early twentieth century marks a significant period in the development of the beauty industry and the socio-moral aesthetics of personal appearance in the United States, which had direct ramifications for the cultural materials at Apex.

Living in the woods was no excuse for a lumberjack to let his hair and beard become unruly, and evidence suggests that Apex's residents adhered to common American hygiene expectations of the time. A Paris-style razor blade, a shaving tube of indeterminate brand (Locus A) and a Gem Safety Razor (Locus G) indicate men's shaving preferences. The abundance of historical photos depicting the majority of Saginaw and Manistee employees post-1920 without facial hair suggests it was either more common or personally desirable to be clean-shaven. Black rubber comb fragments from Loci A, C, and G suggest that men, women, and children also kept their hair groomed. Like with any decision made with regard to one's outward appearance, "few men have groomed themselves in complete ignorance of its social implications" (Oldstone-Moore 2011:48). According to early-to-mid twentieth-century gender codes, the clean-shaven man was a virtuous man: the social virtues of youth, teamwork, and professionalism were etched into a face free of facial hair. The phrase "clean-shaven" indicates both a hygienic as well as sociable orientation, as the shaved face became associated with "honesty" and "strength" (56). By the mid-1900s, wearing facial hair at work could be grounds for citation, loss of promotion opportunities, or outright termination. The trend of shaving reoriented valuations of manliness and masculinity from patriarchal wisdom and the pursuit of domesticity to youthful, forceful

individualism and male camaraderie within and without the workplace. The presence of shaving implements at Apex, in addition to archival photographs depicting more clean-shaven men than mustachioed or bearded men in the 1920s-1930s, suggests that employees at Apex were susceptible to this historic trend.

Cosmetic and personal products are also present on both sides of the tracks: an A.S. Hinds Honey and Almond Cream bottle fragment (Figure 6.8) (Loci A and S), a possible nail file (Locus D), a Coty brand makeup lid (Locus E), Jaciel and Ponds cold cream (Loci D and A), and a Princess Pat makeup lid (Locus J) all imply the presence of women across the site beyond the confines of the schoolhouse and the home.



You can't stop this—
but you can prevent their skins from chapping

GORGEOUS FUN right now! But later—raw, sore skins! For children's delicate skins chap with alarming ease. Wind, cold—all winter weather causes it. Therefore, protect their skins—with Hinds Honey & Almond Cream.

Keep Hinds Cream in the bathroom. Let the youngsters rub it on every time after they wash hands and ankles these cold days. Hinds Cream will *prevent* chapping, keep their skins pliant, healthy. (The same wise precautions will safeguard your skin, too, keep it soft and smooth and white.)

Hinds Cream protects the skin, coaxes it to young smoothness, and soothes it if already chapped.

The coupon below will bring you a sample bottle of Hinds Cream. Just fill it in and mail.

Made by A. S. HINDS CO.
 a Division of LEHN & FINK PRODUCTS COMPANY

HINDS

Honey & Almond

CREAM

LEHN & FINK, INC., Sole Distributors Dept. 1
 Elizabeth, New Jersey

Send me a sample bottle of
 HINDS Honey and Almond CREAM,
 the protecting cream for the skin.

Name _____
 Address _____
 Town, State _____

Try HINDS CREAM—



Prevents chapping
 Prevents redness
 Prevents itching
 Softens skin
 Cleanses skin
 Soothes skin
 Makes complexion
 more beautiful
 "Smile"
 "Gladly"
 After shaving
 Prevents razor
 burn
 Prevents frost-bite
 water
 For children's skin
 Makes complexion
 more beautiful

Figure 6.8. Advertisement for Hinds' Honey and Almond Cream from the January 1927 edition of *The Ladies' Home Journal*. Distributed by a Creative Commons BY-NC 2.0 DEED license.

In addition to artifacts suggesting a concern for physical appearance, the Apex assemblage contains evidence of the use of body-odor-eliminating products. A Lavoris brand mouthwash bottle (Locus A) and a Pepsodent toothpaste tube (Locus G) indicate a concern for dental hygiene, and a Mum's Manufacturing Company brand milk glass deodorant jar (Locus J) suggests that Apex residents had some concern for their armpit and foot odors. Within Locus G lies an amber glass Lysol bottle fragment, a product advertised in the 1920s and 1930s as a feminine douching aid and spermicide to combat odor and pregnancy (Pasulka 2012; Dale 2023:87-88).

Finally, quality of life for Apex's laborers can be ascertained via the concentration of artifacts indicating bodily aches, pains, injuries, dry, cracked skin (a common issue in the arid northern Arizona climate), and perhaps most of all, constipation. The abundance of A.S Hinds' Honey and Almond Cream (Loci A and S) may indicate Apex residents of all genders were buying the same brands from a single source, likely the company store. Pond's Cold Cream fragments, one Jaciel brand jar shard and an entire intact Vaseline bottle are also found across the site (Loci A, E and I). Mentholatum jars (Loci A, C, and E) were used for aching muscles and joints, and an Emerson Drug Company Bromo-Seltzer bottle (Locus S) would have been used for headaches, upset stomach, and indigestion (Dale 2023:88). Several jars representing different brands of constipation curatives like Pepsin Syrup, Citrate of Magnesia and Petrolagar Laboratories brand laxatives (Locus C) suggest it was a common ailment at Apex, and the diversity of brands found at Apex implies resident preferences for the efficacy of certain products over others.

The American use of deodorizing products for both the breath and the body in the late nineteenth and early twentieth centuries show a marked divergence from European views on

personal hygiene. The national anxieties regarding public health transformed personal hygiene from awareness of environmental hazards into an individualized practice of cleanliness that became deeply encoded with social virtues (Bushman and Bushman 1988:1228). The influx of southern and eastern Europeans, with their unfamiliar body odors, prompted American nativists to distinguish themselves from these newcomers and “lower-class” individuals. Unlike Americans, European ideas of cleanliness and body odor were not so tightly bound to social position or morality, and thus were less concerned with explicitly deodorizing products. By 1920, personal deodorant products were common implements in the American grooming toolkit for all genders, but women were especially susceptible to advertisements for deodorizing products (MacPhee 1992:89-95).

By 1936, the end of Apex’s occupation, aftershaves and lotions were common men’s products among white-collar employees, but fragrances and scented products were deemed too “sissified” (Peiss 1998:158). A man interested in anything beyond brushing his teeth and hair and shaving his beard put himself at risk for accusations of “frivolity, weakness, and homosexuality” (160). The shift in thinking that made cosmetics and fragrances popular among men in urban areas by the late 1930s was less prevalent in rural areas such as northern Arizona (Peiss 1998:158-160). It is therefore more likely that the deodorant recovered at Apex thus far represents use by women, but this is difficult to say without additional evidence. In terms of personal hygiene and masculinity, Apex’s laborers seemed more concerned with grooming their hair and presenting themselves as strong, young professionals rather than grizzled men of the woods. Between 1928 and 1936, internal Saginaw and Manistee documents suggest that the majority of immigrants working at Apex had been in the U.S. for a significant amount time prior

to their work at the logging camp, and so European conceptions of body odor were less of a factor in deodorant use than masculine norms.

Women and Children at Apex

The archival and material record at Apex mostly illustrate the lives of men at the camp, but the labor of employed women, as opposed to the unemployed mothers and housekeepers that stayed behind at the camp, is readily visible in the context of the camp schoolhouse. Of all five teachers reported to have taught at Apex School District Number 3, all were women, and all were hired from the Williams area. The decision to hire exclusively women for this role in the 1920s and 1930s has its roots in the “separate spheres” ideology that encouraged employment for men and housekeeping for women in the United States (Weiler 1989:16). By the 1860s, however, more women than men worked as teachers throughout the northeast U.S., as they had no other opportunities for wage work and employers could pay them significantly less than men. The rising literacy rates among middle class women, the decreased need for home-manufactured goods due to industrialization, and the ability to hire them at low wages made American women an economically advantageous workforce for school administrators (23). To maintain the separate sphere ideology, American writers and educational reformers such as Horace Mann and Catherine Beecher articulated the schoolroom as a “continuation of the family” and women teachers as performing their natural duties of motherhood by “nurturing” their students. Characterizing the job in this way cemented teaching as “the domain of women”, a moniker that lasted into the 1930s and in some manner continues today.

Additionally, Apex and the school at Anita being the two only unsegregated schools in Arizona at the time of their establishment may indicate administrative indifference to the American system of segregation. As a Swedish man with a preference for Swedish laborers,

Apex camp superintendent Arvid Anderson may have exhibited the values of his home country, which did not have a similar policy of segregation. A form of “learning” American whiteness could have manifested in the eventual segregation of the school, but nothing of the sort ever happened between 1928 and 1936. The experiences of nonwhite students while at Apex and white laborer’s opinions of the school’s unsegregated nature are currently unknown.

The fact that Saginaw and Manistee only hired women to teach Apex’s children is based in this belief of the schoolhouse as implicitly a woman’s space. The company’s payrolls post-1920 did list woman stenographers and secretaries for their Williams office, but the role at Apex, even in explicit labor contexts, consciously maintained the separate sphere ideology of the nineteenth century.

Finally, two artifacts from the 2023 field season provide explicit support for the idea that Apex’s residents were either mostly or fully assimilated into American culture. The two “Jack-O’-Canterns” (Figure 6.9) recovered from loci C and G (e.g. both sides of the tracks) resemble the faces of traditional American Jack-o’-lanterns, whose origins lie in the Gaelic celebration of Samhain brought over by Irish, Scottish, and other immigrants of Celtic origin. By 1928 to 1936, the practice of carving faces into root vegetables and ferrous metal cans was more associated with explicitly American traditions of Halloween rather than their pagan origins (Carnegie Museum of Natural History). The Apex Jack-O’-Canterns may therefore be evidence of immigrant assimilation into the celebration of American holidays, or at least an openness to the



Figure 6.9. (Left) Locus C Jack-O'-Cantern, (right) Locus G Jack-O'-Cantern. Photos by Emily Dale, 2023.

Americanization of their children. These artifacts may also represent a non-immigrant American's celebration of the holiday, but it is impossible to tell at present.

The artifactual and archival evidence at Apex suggest a physically difficult life of labor with few opportunities for entertainment at the end of the workday. The abundance of medical and personal hygienic products indicate its residents regularly dealt with sore muscles, constipation, and dry, cracked skin, and dealt with their ailments personally rather than via a formal doctor. Nonetheless, laborers were well fed and by all accounts were happy with their housing. The material record at Apex does not reflect concepts of American whiteness nor any sense of clear ethnic or national solidarity. The archaeological assemblage does provide insight into the gendered dimensions of life at Apex, such as twentieth century norms for masculine aesthetics and appropriate labor for women.

In summary, Apex is unique in the history of company towns in its lack of clear design and relatively egalitarian treatment of its residents, but still exhibits a corporate paternalist ideology through its spatial organization that may have encouraged constant surveillance. Consumption habits appear to be identical for both the eastern and western sides of the tracks, and the presence of the Matson and Erickson households on the previously believed “management” side of the camp challenges previous understandings of the camp’s layout and social separation. While there is little evidence for documents or artifacts connected to the distinctly American “white” identity, the unsegregated schoolhouse may represent a defiance to the Americanizing process of defining whiteness against all other races through the process of segregation. There is stronger evidence regarding the gendered dimensions of life and work at Apex, where men were likely behold to specific twentieth century ideals of aesthetic masculinity and women laborers were still viewed according to the nineteenth century separate sphere ideology.

Conclusions and Future Research

Apex represents an exciting avenue of research for better understanding the history of rural Depression-era northern Arizona and for the study of community towns within the timber industry more generally. The timber harvested by Apex loggers and processed by Mexican and Indigenous laborers at the Saginaw and Manistee Lumber Company Sawmill in Williams contributed to the construction of economically and culturally significant icons of the region, including the Grand Canyon Railway and the El Tovar hotel in the Grand Canyon Village. Through the work of the Apex Archaeology Project, the 2022 and 2023 field seasons produced enormous amounts of data in the pursuit of fleshing out previous work, archaeological and

archival, performed by Kaibab National Forest archaeologists and Williams historian Al Richmond.

The data I have presented and analyzed represents only a fraction of Apex's potential informational potential for regional history and for the advancement of historical archaeology in Arizona. In the following section, I detail a few potential lines of inquiry and the promising future of public archaeology at Apex.

Recommendations

The Kaibab National Forest will continue to manage and preserve Apex while working with NAU students and personnel at the Apex Archaeological Field School until 2026. Over the next few years, more surface and subsurface data will be collected and enrich the already robust history of the logging camp. This thesis provides a starting point for other research into rural extractive industry communities in northern Arizona and for the employment of architectural sociology in the study of archaeological built environments. There are numerous research trajectories available for future work at the site, some of which I detail below.

In my view, the most important and accessible pursuit in better understanding Apex's history is continued archival research using a variety of resources. The NAU Special Collections department is rich with textual and photographic documents charting the history of Saginaw and Manistee from its beginnings in Williams, Arizona to its postwar dissolution in 1954. It is entirely possible I have overlooked, or neglected to consider, information in these archives that is crucial to illustrating Apex's history and importance to the region. The Williams History Project is based out of the Williams, Arizona visitor center and is publicly available to all who are interested in the town's history, which necessarily includes Apex and the Saginaw and Manistee Lumber Company. Due to time and geographic constraints, I did not consult Saginaw and

Manistee documents located outside of Arizona. Historical documents from the Baker and Fentress office in Chicago or any Michigan-based operation associated with the company may also prove an invaluable source of additional information. Finally, analysis of Riordan, Cady, and other logging companies in northern Arizona and their internal records will permit comparisons with Saginaw and Manistee, further elucidating its economic role in the region.

Fieldwork will continue as part of the Apex Archeology Project, which will include excavation of earthen depressions as identified by the 2006 and 2017 Forest Service surveys and Phillip Mink in 2022. There are multiple options for excavation throughout the site for the next several years, each one with the potential to contain privy soils with even more information regarding the health and well-being of Apex residents.

Finally, the potential lines of research available at Apex are numerous and exciting. The site is well-suited for more advanced geospatial analysis than what I've provided here and will only provide richer datasets with the passing of each field season. 2023 field school students frequently expressed their own curiosity in various topics, including the use of trees as boundary markers at the site, the use and maintenance of automobiles, and questions regarding personal apparel. At the time of writing, NAU undergraduate students have expressed interest in additional site mapping and geospatial analysis and the medicinal, cosmetic, and hygienic assemblage at the site and its implications for worker health. The information presented here as part of my thesis research provides foundational information for any future in-depth research at Apex, and it is my hope that our understanding of life, labor relations, and identity at Apex will only be deepened with time.

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Appendix I

USDA Permit for Archaeological Investigations [Excerpt]

Authorization ID: KAI151
 Contact ID: HR03NAU
 Expiration Date: 12/31/2026

FS-2700-32 (V.07/2012)
 OMB No. 0596-0082

**U.S. DEPARTMENT OF AGRICULTURE
 FOREST SERVICE
 PERMIT FOR ARCHAEOLOGICAL INVESTIGATIONS**

AUTHORITY

The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-mm

1. Holder Emily Dale, Ph.D. Department of Anthropology Northern Arizona University	2. Date of corresponding application 12/8/2022
3. Address PO Box 15200 Flagstaff, AZ 86011-5200	4. Telephone numbers 928-523-1272
	5. Email addresses emily.dale@nau.edu
6. Name of authorized officer Diane Taliaferro Acting Forest Supervisor Telephone numbers 928-635-8200 Email addresses diane.taliaferro@usda.gov	7. Name of principal investigators Emily Dale, Ph.D. Telephone numbers 928-523-1272 Email addresses emily.dale@nau.edu
8. Name of field directors authorized to carry out field projects Emily Dale, Ph.D.	Telephone numbers 928-523-1272 Email addresses emily.dale@nau.edu
9. Activities authorized <ul style="list-style-type: none"> • Academic Research (consulting activities not authorized) • Non-ground-disturbing activities (such as surveys) • Non-ground-disturbing activities that include limited testing (e.g., shovel tests or scrapes) • Ground-disturbing activities (e.g., excavation or collection) involving archaeological resources more than 100 years old. 	

<ul style="list-style-type: none"> • Ground-disturbing activities (e.g., excavation or collection) involving archaeological resources 100 years old or less.
<p>10. Description of National Forest System lands authorized for use (hereinafter referred to as "the permit area")</p> <p>Township 30 North, Range 2 East, sections 27 and 34, Gila and Salt River Baseline, Coconino County, Arizona, Kaibab National Forest – Tusayan Ranger District</p>
<p>11. Permit term</p> <p>From: 1/1/2022 To: 12/31/2026</p>
<p>12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from activities conducted under this permit shall be deposited for permanent preservation on behalf of the United States Government.</p> <p>Kaibab National Forest 800 S. 6th Street Williams, AZ 86046</p>

TERMS AND CONDITIONS

I. GENERAL TERMSA. AUTHORITY. This permit is issued pursuant to The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-mm, 36 CFR Part 251, Subpart B, 36 CFR Part 296, the Uniform Rules and Regulations of the Antiquities Act of 1906, 43 CFR Part 3, and applicable Forest Service policies and procedures and is subject to their provisions.

B. AUTHORIZED OFFICER. The authorized officer for this permit is the Forest Supervisor or a subordinate officer with delegated authority.

C. ANNUAL REVIEW. If this permit is issued for more than one year, it shall be reviewed annually by the authorized officer.

D. RENEWAL AND EXTENSION. This permit is not renewable. The holder may request an extension of this permit for a limited, specified period to complete activities authorized under this permit. Requests for an extension must be submitted in writing at least one month before expiration of this permit.

E. AMENDMENT. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law, regulation, the applicable land management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215. Any amendments to individuals named in or activities authorized by this permit that are needed by the holder must be approved by the authorized officer in writing.

F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS. In exercising the privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations, and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulations, or policy. The Forest Service

Kaibab National Forest, Williams and Tusayan Ranger Districts, Project Proposal Form

Dr. Emily Dale NAU Field School Proposal
Tusayan Ranger District

Kaibab National Forest
Neil Weintraub, South Kaibab Zone Archaeologist
Neil.Weintraub@usda.gov
928-635-5647
9/17/2019

Type of Project:

Northern Arizona University Historic Archaeologist Dr. Emily Dale proposes to have a 5 week archaeological field school for up to 15 students at the historic Apex Logging Camp and the historic Anita Mining Camp located off the 306 and 335 Roads on the Tusayan Ranger District.

Project Location:

- General Description: West side of the Tusayan Ranger District off Forest Roads 335 and 306. (see individual attached map)

Background/Purpose & Need:

Field schools are far and few between and this is an excellent opportunity for Kaibab archaeologists to learn more about the history of the Forest, but it will also serve as an interpretive opportunity for members of the public

Description of Proposed Activities:

Students would spend 5 weeks conducting field excavations, artifact analysis, and public interpretation while camping out at Ten X Campground. They would alternate between the sites at Apex and Donaldson Tank. Test excavations would be limited to 50 square meters of disturbance.

Kaibab National Forest, Project Proposal Form

Internal Scoping Only

Project Specialist Review

Resource Area	Signature	Date	Comments
Botany/Invasive Species	Jesse D W	11-4-19	Rate plants near both sites - coordinate w/ Botanist/Students
Range	[Signature]	11/12/19	
Recreation	[Signature]	11-4-19	
Archaeology	[Signature]	11/24/19	SHAPO Consultation under way
Tribal Relations			see attached.
Wildlife	[Signature]	11/26/19	
Fire and Fuels	[Signature]	12/16/19	
Silviculture	[Signature]	11/4/19	
Timber	[Signature]	11/25/19	
Lands and Minerals	Matthew Georgeff	11-20-19	
Soils and Watershed	[Signature]	11/18/19	
NEPA	[Signature]	11/15/19	

Responsible Official Approval -- Proposal approved? [Y / N]

Signed: *Colin Galke*

Date: *1/24/2020*

Responsible Official Comments:

p: 928-635-5632
Victoria.Payne@usda.gov
Please note email change
742 South Clover Road
Williams, AZ 86046
www.fs.fed.us
  
Caring for the land and serving people

From: Lyndon, Nanebah - FS
Sent: Thursday, December 19, 2019 10:35 AM
To: Payne, Victoria - FS <Victoria.Payne@usda.gov>; mglyndon@gmail.com
Subject: RE: Project Proposal Form

Hi Victoria,

I'm not officially acting yet, but a couple questions off the top of my head...

1. What will be excavated – prehistoric or historic Anglo sites? By the title of the field school it sounds like only historic Anglo.
2. Has SHPO been consulted?

Once I figure out my start date, maybe we can get something scheduled to chat NEPA.

Thanks ☺

From: Payne, Victoria - FS
Sent: Thursday, December 19, 2019 9:26 AM
To: Lyndon, Nanebah - FS <nanebah.nezlyndon@usda.gov>; mglyndon@gmail.com
Subject: Project Proposal Form

Good morning,
Welcome to the Kaibab (almost!)
Attached is a project proposal form for a field school Neil is hoping to host here on the Kaibab. Let me know if you have any questions, or concerns. If there are not any concerns regarding this project, please email me back with that information and I will get this project signed and on its way.

Also, sometime after the new year I would like to sit down with you (Noni) to discuss how to be more effective with NEPA and tribal consultation in regards to our expedited NEPA process we are doing here on the South Zone.

Happy Holidays!

Thank you,



Victoria Payne
NEPA Planner
Forest Service
Kaibab National Forest, South Zone
p: 928-635-5632
Victoria.Payne@usda.gov
Please note email change

742 South Clover Road
Williams, AZ 86046
www.fs.fed.us
  
Caring for the land and serving people

From: Weintraub, Neil S -FS
Sent: Thursday, December 19, 2019 9:03 AM
To: Payne, Victoria - FS <Victoria.Payne@usda.gov>
Subject:



Neil Weintraub
South Kaibab Zone Archaeologist
Forest Service
Kaibab National Forest, South Kaibab Zone
p: 928-635-5647
neil.weintraub@usda.gov
742 South Clover Road
Williams, AZ 86046
www.fs.fed.us
  
Caring for the land and serving people

Payne, Victoria - FS

From: Lyndon, Nanebah - FS
Sent: Wednesday, January 22, 2020 12:09 PM
To: Payne, Victoria - FS
Subject: RE: Project Proposal Form

I don't have any concerns regarding this project.
We'll table it for the annual SOPA letter to inform tribes. Thanks, N

From: Payne, Victoria - FS
Sent: Wednesday, January 22, 2020 12:08 PM
To: Lyndon, Nanebah - FS <nanebah.nezlyndon@usda.gov>
Subject: RE: Project Proposal Form

Hey there,
I am just checking on the status of tribal consultation regarding this project.

thank you,



Victoria Payne
NEPA Planner
Forest Service
Kaibab National Forest, South Zone
p: 928-635-5632
Victoria.Payne@usda.gov
Please note email change
742 South Clover Road
Williams, AZ 86046
www.fs.fed.us
Social media icons for LinkedIn, Twitter, and Facebook.
Caring for the land and serving people

From: Payne, Victoria - FS
Sent: Thursday, December 19, 2019 10:40 AM
To: Lyndon, Nanebah - FS <nanebah.nezlyndon@usda.gov>; mglyndon@gmail.com
Subject: RE: Project Proposal Form

Good morning,
As of right now, SHPO is being consulted.
They would be excavating historic Anglo sites. While there are prehistoric materials in the area, only historic features would be excavated.

Thank you,



Victoria Payne
NEPA Planner
Forest Service
Kaibab National Forest, South Zone

Memorandum of Agreement between USDAFS Kaibab National Forest and the Arizona SHPO re: Apex Research Project [Excerpt]

**MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE KAIBAB NATIONAL FOREST
AND
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
APEX LOGGING CAMP AND RAILROAD SIDING (SITE 03070401784)
RESEARCH PROJECT**

WHEREAS, the US Department of Agriculture Forest Service (FS) – Kaibab National Forest (KNF) plans to undertake archaeological research as part of an archaeological field school to be conducted jointly by the Department of Anthropology of Northern Arizona University (NAU), and the FS, consisting of intensive inventory, recordation and limited data recovery to identify and define features at the Apex Logging Camp and Railroad Siding (Site 03070401784) (Project), located on the Tusayan Ranger District of the KNF; as such, the Project is an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C 306108 and its implementing regulations, 36 C.F.R. Part 800; and

WHEREAS, the FS, pursuant to the 36 C.F.R Part 800.4(1).(a) has determined that the Area of Potential Effects will be defined as the reported boundary of site 03070401784 (see Appendix A), and

WHEREAS, the FS has determined that the undertaking will have an Adverse Effect on site 0307030401784, which is eligible for listing in the National Register of Historic Places (Attachment A, current site record), and has consulted with the State Historic Preservation Officer (SHPO) and the SHPO has concurred with the finding of effect (May 5, 2020) pursuant to 36 C.F.R Part 800.5 and Part 800.6; and

WHEREAS, the SHPO is authorized to enter into this agreement in order to fulfill its role of advising and assisting Federal agencies in carrying out their Section 106 responsibilities under the following Federal statutes: Sections 101 and 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C 306108, and pursuant to 36 CFR Part 800, regulations implementing Section 106, at 800.2(c)(1)(i) and 800.6(b), and SHPO is a signatory to this agreement; and

WHEREAS, the FS has invited NAU, as Project proponent, to enter into this agreement as an invited signatory; and

WHEREAS, the FS has consulted with the Havasupai, Hopi and Hualapai Tribes, Kaibab Paiute Tribe, Navajo Nation, Yavapai-Prescott Indian Tribe, and the Pueblo of Zuni, hereinafter referred to as the Tribes, for which the APE may have religious and cultural significance, and has invited the Tribes to sign this Memorandum of Agreement (MOA) as concurring parties to this agreement; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(i), the FS has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination providing the specified documentation, and the ACHP, on April 29, 2020, has chosen not to participate in the consultation pursuant to 36 C.F.R. Part 800.6(a)(1)(iii); and

WHEREAS, the MOA was posted on the Kaibab National Forest website to invite public comment; and

NOW, THEREFORE, the FS and SHPO agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on site 03070401784.

STIPULATIONS

The FS shall ensure that the following measures will be carried out:

I. RESEARCH DESIGN

- A. The FS and NAU have jointly, in consultation with SHPO, developed a Research Design (Appendix C) for the intensive inventory, evaluation, and limited data recovery at site 03070401784.
- B. The evaluation, limited data recovery and analysis program specified in this Research Design is consistent with the Secretary of Interior's Standards and Guidelines (48 FR 44716-44742) and the Council's handbook *Treatment of Archaeological Properties* and guidance of the Department of Agriculture Forest Service (FSM 2360).
- C. The Research Design specifies, at a minimum:
 1. A description of the property to be affected by the Project and the nature of those effects. Site 03070401784 is a historic site and no prehistoric features have been identified within the site boundary. However, if cultural features are identified during the implementation of the Research Design as having traditional cultural or religious significance to the Tribes, in accordance with 25 U.S.C. Section 3056, Section 304 of the NHPA this information shall be reported in publicly available documentation only with Tribal permission.
 2. Research questions and goals that are applicable to the Project and which can be addressed through intensive inventory, detailed recordation, limited data recovery and laboratory analysis, along with an explanation of their relevance and importance.
 3. Specification of the level of effort (in text and portrayed on site maps) to be expended on the treatment of the sites, including treatment locations and methods of sampling, sample size, and procedures for selection of specific sample units.
 4. A discussion of permits and personnel qualifications.

5. A lecture series to be provided to the students during field school activities and offered by both NAU and KNF to include:
 - Cultural sensitivity training.
 - Cultural resource laws applicable to field school activities, including National Historic Preservation Act, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act.
6. Fieldwork and analytical methods and strategies, including unit backfilling and stabilization, applicable to the Project area, along with an explanation of their relevance to the research questions.
7. The methods to be used in the management and dissemination of the resultant data to the professional community.
8. A strategy for a public outreach program with the goal of disseminating information to the general public about the results (either ongoing or post-data recovery) of the cultural resources investigations.
9. Specification of the interim, draft, and final report standards as well as Project time frames.
10. The proposed disposition and curation of recovered materials and records in accordance with relevant state and federal laws.
11. Disposition of any Human Remains and Associated Funerary Items that may be inadvertently discovered and subsequently recovered from Forest lands as a result of the implementation of this Research Design will follow in accordance with Section 3c of NAGPRA and its implementing provisions.

II. MITIGATIVE STIPULATIONS

- A. All research shall be directly supervised by a Secretary of the Interior-qualified archaeologist.
- B. The Research Design and Final Report will meet the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48FR44734-37).
- C. The Final Report will be shared with Tribes and any other consulting parties.
- D. Public presentations will be made regarding the Project at various venues including the Annual Grand Canyon Historical Society Meeting, the Arizona Historic Preservation Conference and the Annual Society for Historic Archaeology Meetings.

III. ACCEPTANCE AND IMPLEMENTATION OF RESEARCH DESIGN

- A. The SHPO will be afforded an opportunity to review and comment upon the Research Design. The FS will review all comments and revise the Design accordingly.
- B. It is agreed by the SHPO and the FS that by implementation of the Research Design utilizing the mitigation measures in Stipulation II, the FS will resolve the Adverse Effects of this undertaking.
- C. Upon completion of the Agreement and filing with the ACHP, the FS shall issue authorization to proceed with implementation of the Research Design.
- D. All field work, analysis and reporting specified by the Research Design, including the submission and acceptance of the Final Report, shall be completed within five

(5) years of the signing of this Agreement. Any extension of this schedule must be approved by the FS.

IV. CURATION

All analyses will occur in the field; as such, no collection of artifacts is anticipated, with the exception of highly sensitive or unique items such as money, jewelry, intact children's toys, whole bottles that are from an uncommon manufacturer, or other items that could be deemed highly valuable on the commercial market. In those rare cases, the collected material will be recorded, photographed *in situ* and placed in an acid free box. The boxes will be curated at the KNF Supervisor's Office.

Surface artifacts will be analyzed and left in situ. Artifacts that are identified during the subsurface testing exercises will be analyzed and returned to the test pit and reburied, unless they meet the criteria listed above.

V. DURATION

This MOA will expire if its stipulations are not carried out within six (6) years from the date of its execution. At such time, and prior to work continuing on the undertaking, the KNF shall either (a) execute a new MOA pursuant to 36 C.F.R. § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 C.F.R. § 800.7. Prior to such time, the KNF may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VIII below. The KNF shall notify the consulting parties as to the course of action it will pursue.

VI. MONITORING AND REPORTING

- A. The KNF will monitor the site regularly when field work is in session. A preliminary report summarizing the work completed, photos, and completed maps will be submitted to the KNF within 12 weeks of the completion of the first stage of fieldwork. A final draft report will be submitted within 26 weeks of the completion of field work. The SHPO and Tribes shall have 30 calendar days to review the draft report and to provide comments to the KNF. NAU or KNF shall revise the draft report accordingly. The final field-season report will include a discussion of goals and anticipated work during the next field season.
- B. At the end of the Project, a draft final report shall be prepared, summarizing the Project accomplishments, including relevant artifact and feature descriptions and analyses, photos, maps and maps. It will be submitted within 26 weeks of the completion of field work. The SHPO and Tribes shall have 60 calendar days to review the draft, and to provide comments to the KNF. NAU or KNF shall revise the draft report accordingly. A final report will be submitted, along with two copies, within 6-12 months after the completion of field work.

VII. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the KNF shall consult with such party to resolve the objection. If the KNF determines that the objection cannot be resolved, the KNF will:

- A. Forward all documentation relevant to the dispute, including the KNF's proposed resolution, to the ACHP. The ACHP shall provide the KNF with its advice on the resolution of the objection within thirty (30)-calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the KNF shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. The KNF will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30)-calendar day time period, the KNF may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the KNF shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
- C. It is the KNF's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VIII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP. A copy of the executed amendment will be provided to the consulting parties.

IX. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VIII, above. If, within thirty (30) calendar days (or another time period agreed to by all signatories), an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, the KNF must either (a) execute an MOA pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The KNF shall notify the signatories as to the course of action it will pursue.

X. ANTI-DEFICIENCY ACT

This Agreement shall be subject to available funding, and nothing in this Agreement shall bind the State and/or the Federal agencies to expenditures in excess of funds appropriated and allotted for the purposes outlined in this Agreement.

XII. COUNTERPART SIGNATURES

This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. Electronic signatures are allowed.

EXECUTION of this MOA by the KNF and SHPO and implementation of its terms evidence that KNF has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

USDA Forest Service Southwestern Region 3, Regional Forester

By: _____ Date: _____
Michiko Martin

Arizona State Historic Preservation Officer

By: _____ Date: _____
Kathryn Leonard

CONCURRING PARTIES:

Northern Arizona University

By: _____ Date: _____
Emily Dale

ATTACHMENTS:

Appendix A: Site location Maps

Appendix B: Site Record (Separate PDF)

Appendix C: Research Design

Project Grants - Fall/Winter FY2023

Arizona Humanities

Project Grant Information

Project Name

Character Limit: 100

Contract Number

Character Limit: 8

Amount Awarded

Character Limit: 20

Project Start Date

Character Limit: 10

Project End Date

Character Limit: 10

Final Report Due Date

Character Limit: 10

It is a pleasure to inform you that Arizona Humanities has awarded a grant to your organization as outlined above. This grant is made on the basis of the activities described in the application and is subject to the provisions listed below and to any special provisions listed in the award letter. The funding source for this grant award is the National Endowment for the Humanities/SO-283117-22. Outright grant awards and any matching funds from Arizona Humanities are federal funds awarded under a program identified as 45.129 in the Catalog of Federal Domestic Assistance.

Please confirm your acceptance by electronically signing this *Grant Agreement* and submitting it to Arizona Humanities. **The signed *Grant Agreement* must be received by the due date to receive funding.**

By signing this Grant Agreement, the authorizing official agrees to the provisions listed here and in *Responsibilities and Reporting Requirements for Project Grant Recipients* below. The project director agrees to manage the project in accordance with the documents referenced above.

Any grant funds remaining uncommitted at the end of the grant period must be returned with the submission of the *Final Report*.

I understand the assigned final report for this grant must be submitted within 90 days of the end of the project period along with any remaining grant funds.*

Choices

Yes

Project Social Media

Connect with us via social media where we can share your project updates.

facebook

Character Limit: 150

twitter

Character Limit: 150

youtube

Character Limit: 150

instagram

Character Limit: 150

other (please describe)

Character Limit: 150

Project Director Signature

Please note: By entering data into the next three (3) fields calling for insertion of your Name, Title, and Date, you are (1) representing that you are the Project Director listed for this grant, (2) agreeing to submit this grant agreement in an electronic form and shall be bound by its contents as an electronic signature, and (3) agreeing that your insertion of data into these three fields constitutes an electronic signature.

Project Director Signature* 

Character Limit: 50

Project Director Title* Field School Director/PI

Character Limit: 50

Date* 3/7/23
Character Limit: 10

Authorizing Official Signature

Every application must be signed by the organization's authorizing official. This person is authorized by the organization to commit institutional resources, services, and personnel to a funded project. (Typically, an Executive Director, CEO, or President).

If the Authorizing Official is someone other than the Project Director (and you have not already given them permission to view the application) you can do so through the collaborator feature. This will allow them to review and sign this form. For more information on the Collaborator feature including instructions on how to use it click [here](#).

Check Information*

Enter how the funds should be released include:

- Name of the funded organization as it should be entered on the check.
- Mailing address to the which the funds should be sent. Include a primary contact if needed.

Example

Organization name
Attn: Jane Doe
1234 Fake Address Dr
Phoenix, AZ 85004
Character Limit: 1000

Authorizing Official*

Please note: By entering data into the next three (3) fields calling for insertion of your Name, Title, and Date, you are (1) representing that you are an officer or other agent for the applicant Grantee duly authorized to enter into legally binding agreements on behalf of the Grantee, (2) agreeing to submit this Grant Agreement in an electronic form on behalf of the Grantee which shall be bound by its contents as an electronic transaction, and (3) agreeing that your insertion of data into these following fields constitutes an electronic signature.

Authorizing Official Signature

Character Limit: 50

Bruce Phillips Archaeobotanical Report for the 2023 Field Season

Table 4. Pollen data, Privy 1, NAU 2023 Apex field school.				
FS	5		6	
Sum	105		201	
Concentration (grains/gram)	33,831		129,524	
Types/sample	12		14	
	Count	%	Count	%
Degraded	13	12.4	8	4.0
<i>Platyopuntia</i>			1	0.5
<i>Typha</i>	1	1.0		
<i>Juniperus</i>	12	11.4	15	7.5
<i>Pinus monophylla</i> -type	22	21.0	70	34.8
<i>Pinus ponderosa</i> -type	12	11.4	47	23.4
Asteraceae, high-spine	3	2.9	1	0.5
Asteraceae, low-spine	16	15.2	21	10.4
Caryophyllaceae			1	0.5
Cheno-Am	10	9.5	11	5.5
<i>Ephedra</i>	3	2.9		
<i>Euphorbia</i>	1	1.0		
cf. Fabaceae	2	1.9	5	2.5
Liliaceae			1	0.5
Poaceae	9	8.6	15	7.5
Rhamnaceae			1	0.5
<i>Sarcobatus</i>	1	1.0	3	1.5
<i>Sphaeralcea</i> -type			1	0.5

Inventory of Artifacts from Locus E, Privy 1, Unit 1

Surface	Surface	1.5 - 5.5 cmbd	27	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes indeterminate fragments, nails, and a crown cap
			14	Glass (Various)	Glass	-	-	Includes vessel and flat colorless glass
			1	Cap	Non-Ferrous metal	-	-	-
			4	Faunal bone	Faunal	-	-	-
			12	Charcoal	Charcoal	-	-	-
			4	Milled wood	Wood	-	-	-
1	1	5.5 - 15 cmbd	1	Sanitary can lid	Ferrous metal	-	-	-
			48	Miscellaneous metal artifacts	Ferrous metal	5 cm diameter (internal threaded lid)	-	Includes indeterminate fragments, nails, wire, and an internally threaded lid
			29	Glass (Various)	Glass	-	-	Includes flat and vessel colorless glass
			1	Button	Non-Ferrous metal	1 cm diameter	-	One rectangular hole through center
			1	Button	Prosser	1.5 cm diameter	-	White, four-hole sew-through
			4	Mortar	Mortar	-	-	-
			13	Faunal bone	Faunal	-	-	-
			25	Charcoal	Charcoal	-	-	-
			4	Milled wood	Wood	-	-	-
2	1	15 - 17 cmbd	5	Cans	Ferrous metal	-	-	Includes sanitary cans, some modified, and lids
			263	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes flat metal, a crown cap, fence staples, roofing nails, wire and door nails, and an indeterminate spherical object
			82	Glass (Various)	Glass	-	-	Includes flat and vessel colorless glass, amber, cobalt, and green fragments in addition to a melted bottle fragment
			1	Colorless bottle base	Glass	-	-	"4-0 - 9050"
			1	Whiskey bottle finish	Glass	-	-	Externally threaded finish, "[F] EDERA [L]"
			1	Ferrule	Non-Ferrous metal	-	-	-
			2	Indeterminate fragments	Non-Ferrous metal	-	-	-
			1	Porcelain	Ceramic	-	-	Poor quality, possibly industrial
			1	Button	Posser	-	-	2-hole
			2	Mortar	Mortar	-	-	-
			2	Rubber	Rubber	-	-	-
			2	Tar paper	Tar	-	-	-
			28	Faunal bone	Faunal	-	-	-
			64	Charcoal	Charcoal	-	-	-
			6	Milled wood	Wood	-	-	-
2	2	17 - 25 cmbd	1	Cans	Ferrous metal	9 cm diameter, 11.5 cm tall	-	-
			1	Tobacco tin	Ferrous metal	2.5 cm width 7.5 height	-	-
			1	Nut	Ferrous metal	0.5 cm width	-	Flat, hexagonal nut
			1	Phillips head screw	Ferrous metal	1.5 cm length	-	-
			146	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes small fragments, an eyelid, wire and roofing nails
			80	Glass (Various)	Glass	-	-	Includes colorless vessel and flat glass, amber, cobalt, green, and amethyst fragments
			2	Alcohol bottles	Glass	-	-	Amber glass alcohol bottles: "[F] / [SC] / [AL] / [F]ORBIDS / DR REUSE"
			2	Unidentified	Non-Ferrous metal	2 cm length	-	Hollow, one wider than the other, possible plugs for electrical device, similar to "lightbulb" at Locus A
			1	Foil fragment	Non-Ferrous metal	-	-	Thin seal or cap
			1	Button	Bakelite	1 cm diameter	-	Green, shank; raised square in center, with radiating lines spiraling out towards edge in symmetric pattern
			41	Tar paper	Tar	-	-	-
			18	Faunal bone	Faunal	-	-	-
			4	Milled wood	Wood	-	-	-
			17	Unknown	Unknown	-	-	Material resembles charcoal and coal, melted
2	3	25 - 34 cmbd	1	Cans	Ferrous metal	11.3 cm tall, 7.5 diameter	-	Solder dot, small holes punctured on both sides
			1	Lid or cap	Ferrous metal	34 cm diameter	-	Internally threaded with a hole in the center
			2	Can lids	Ferrous metal	is 7 cm diameter, 1 is 11.5 cm diameter	-	-
			1	Mug	Ferrous metal	5.9 cm tall, 9 cm diameter	-	-
			1	Tobacco tin	Ferrous metal	10.9 cm tall, 2.9 wide	-	-
			125	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes crown caps, wire and roofing nails, indeterminate fragments, wire, paperclip, clip, ring, and a bracket
			70	Glass (Various)	Glass	-	-	Includes colorless vessel and flat glass, amber, cobalt, green, and milk glass fragments
			1	Tube	Non-Ferrous metal	-	-	-
			1	Plug	Non-Ferrous metal	-	-	-
			1	Pipe	Non-Ferrous metal	8 cm length 7 cm diameter	-	Threaded pipe with cotter pin hole, melted lead attached
			1	Aglet	Non-Ferrous metal	-	-	Possible shoe aglet
			6	Ceramics (Various)	Ceramic	-	-	White earthenware and porcelain fragments
			1	Fire brick	Ceramic	11.1 wide	-	Broken in half, "924 / [] URITY"
			1	Pin	Combination	10.5 cm long 1 cm wide	-	Lynchpin with safety pin through end hole
			1	Suspenders buckle	Combination	-	-	Non-ferrous buckle with ferrous button
			1	Button	Bakelite	-	-	Red, sew-through
			3	Tar paper	Tar	-	-	-
			4	Record fragments	Vinyl	-	-	-
			4	Leather fragments	Leather	-	-	-
			9	Mammal rib fragment	Faunal	-	-	-
			8	Mammal vertebrae fragment	Faunal	-	-	Unfused, cervical
			1	Mammal cranium fragment	Faunal	-	-	-
			1	Cow rib fragment	Faunal	-	-	Cut with a metal tool on both sides
			1	Cow left rib fragment	Faunal	-	-	End cut
			1	Rabbit vertebrae	Faunal	-	-	Lumbar
			1	Linoleum	Linoleum	-	-	Reddish-pink and bumpy on one side, white on the other
			4	Charcoal	Charcoal	-	-	-
			4	Milled wood	Wood	-	-	-
			2	Unknown	Unknown	-	-	Material resembles charcoal and coal, melted
2	Feature 1 (1 - 3)	11 - 35.5 cmbd	5	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes wire and roofing nails
			1	Pocket watch	Non-Ferrous metal	-	-	Collected in Bag #6
			1	Electrical component	Non-Ferrous metal	-	-	Cone-shaped, flattened, electrical element inside - possible light fixture
			1	Spark plug	Combination	8 cm length 3 cm diameter	-	Ferrous screw end, porcelain body, non-ferrous
			5	Glass (Various)	Glass	-	-	Includes colorless vessel and flat and amber glass fragments
			1	Faunal bone	Faunal	-	-	Burnt
			1	Milled wood	Wood	-	-	-
2	4	35 - 42 cmbd	5	Miscellaneous metal artifacts	Ferrous metal	4.25 wide, 1.5 tall (hinge), 0.5 cm wide	-	Includes nails, a hinge, a metal strip, and a fragment. All corroded
			6	Colorless glass	Glass	-	-	Bottle fragments
			2	White earthenware	Ceramic	-	-	Footring fragments
			1	Eggshell	Faunal	-	-	-
			1	Charcoal	Charcoal	-	-	-
3	1	35 - 45.5 cmbd	3	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes a door plate and wire nails
			2	Glass (Various)	Glass	-	-	1 Illinois-Pacific Glass co. bottle base, 2 cobalt glass fragments
			1	Milled wood	Wood	-	-	-
3	2	45.5 - 55.5 cmbd	3	Miscellaneous metal artifacts	Ferrous metal	-	-	Includes a wire nail, a roofing tack, and an indeterminate fragment
			3	Glass (Various)	Glass	-	-	Amber and colorless fragments
			2	Charcoal	Charcoal	-	-	-

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