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Gender, Social Networks, and Labor Disputes: Household Archaeology at the Industrial Mine Camp

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GENDER, SOCIAL NETWORKS, AND LABOR DISPUTES: HOUSEHOLD ARCHAEOLOGY AT THE INDUSTRIAL MINE CAMP

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Laura Gwynne Vernon

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Acknowledgments

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Chapter One

Introduction

Setting the Scene

The Industrial Mine sits to the southwest of the main part of present-day Superior, Colorado. The mine largely responsible for the founding of the town itself has faded both from the landscape and the memory of current residents. The site of the Industrial Mine and the workers camp housing has been preserved by the city and county of Boulder. However, the jointly owned land, known as the Erin Arsenault Preserve, is not open to the public. Nearby, the Mayhoffer Singletree Trail brings runners, bikers and the occasional family out for a weekend stroll. Not much of the site is visible from the trail. Passersby can glimpse the remains of the tipple and the superintendent's house, but there is no signage to indicate history of these features.

In recent years, the tipple has been fenced off, having gained a reputation as a place where high school teens would gather to drink away from the prying eyes of adults. Concerned with the structural stability of the ruins, the city opted to erect the fence. Most likely, visitors to the trail think of the Erin Arsenault Preserve not as the former home of the Industrial Mine, bus as ranch land. For many years, Boulder County has leased the site to local ranchers as grazing land for cattle.

The entrance to the site is small dirt service road blocked by a locked gate. Driving up the road, more foundations come into view. Some are related to the operation of the mine, many more are the footprints of the homes where miners lived with their families. These foundations sit in the shadow of the slagheap, and the remains of the tipple, the water tower, and other evidence of the mine that must have loomed over them, can still be seen. This thesis will delve into the domestic lives of the people who called the camp home. It will explore the roles played by the women who lived and worked in small four room structures with views of both the majestic Flatirons rock formations and the churning coal mine.

Significance

The earliest coal mines in Colorado date back to 1859 in Denver and Boulder Counties. Coal mining spread throughout both the north and the south of the territory. By 1893 Colorado was the nation's leading coal-producer. As such, the state became home to a host of company towns. Company towns, created by industrial ventures like mining, are the product of more centralized control than voluntary towns, and therefore speak to how people negotiate life in settlements where their behavior is more restricted. In addition, most mines, and therefore company towns, were founded by Anglo-Americans, who imported Victorian values. American Victorian Culture dominated the American cultural landscape from the end of the Civil War to the end of World War I; most mining settlements in Colorado were founded during this time. As a result, middle class values of temperance, emphasis on efficient use of time, conspicuous consumption, individual self-righteousness,

and emphasis on natural laws of moral principles were imposed upon the working-class by the middle-class (Clark and Corbett 2007, Baker, Smith and Sullenberger-Fry 2007).

The archaeology of coal mining camps in the southern Colorado coal fields, mainly Ludlow and its associated camp, Berwind, have been studied extensively, led primarily by the Colorado Coal Field War Project. The project investigated coal mining sites occupied by people who that participated in the strike from 1913 – 1914 resulting in the Ludlow Massacre (Colorado Coal Field War Project N.d.). The project has resulted in many publications relating to life at the camp discussing labor relations, class conflict, and resistance relating to the 1913 – 1914 strike (McGuire and Reckner 2003, Saitta et al. 2005, McGuire and Reckner 2002, Saitta 2007). The northern Colorado coal fields had not been thoroughly archaeologically investigated and prior to the investigation on which this thesis is based, the Industrial Mine in Superior had not undergone any archaeological investigation.

The Industrial Mine drew many families in search of work to Superior. Though much of Superior's history is a story of labor struggles, these families found a home in the Industrial Mine Camp. It fell to the miners' wives to work in these homes, while their husbands toiled in the mines. The Superior Historical Commission, and local historical museums throughout the northern coal fields, tell the miners' stories. The lives of Superior's housewives are largely absent from these narratives.

This site holds significance given the importance of coal mining to the Colorado economy, as well as Colorado's history as a primary coal producer in the nation. Further, the town of Superior owes its existence in large part to the Industrial Mine. Though many residents have forgotten the origin of their town, the Superior Historical Commission works

to preserve this history. They hold meetings, send out newsletters, create child friendly educational tools for distribution to the local schools, and have published a book on Old Superior, which I have used throughout this thesis. Further, the Superior Historical Commission works with other local history societies. They have shared resources with the Louisville Historical Association as well as other northern coal field town historical centers. These relationships, while helping to preserve history, also reflect it. The small mining towns of the northern coalfields were interdependent on each other. The mining operations in the northern part of the state tended to be smaller than those in the south. As a result, these mines could not always support year-round labor. Many of the coal miners in Superior worked at other mines in the northern fields when necessary, and vice versa. This created a network of towns connected by their shared labor. In times of labor unrest, news of a strike at one mine often led to strikes at nearby mines.

Though living and working conditions varied by town and mine, this interconnectedness adds significance to this project. The work presented here, while specific to the camp housing at the Industrial Mine in Superior, illuminates life in the entire northern coal fields.

Historical archaeology does the work of uncovering those parts of history which don't make it into the textbooks. With a few exceptions, working class people are often overlooked, their stories told instead as the rise and fall of industry. Working class laborers fought for many of the rights we take for granted today, including the eight-hour work day, weekends off, and many other benefits. In the rare cases where history does record the lives of working-class Americans, it focuses almost exclusively on men. The lives of working-class women are rarely discussed. Even when they took paid work, it often fell into the

domestic sphere rather than the public sphere. Common jobs included work as washer women, taking in boarders, and providing other domestic services, often for single male workers who did not have wives to attend to day-to-day necessities. As a result, the contributions of women to the financial stability of a family, and their work in communities has often been overlooked.

This project was brought to my attention when the Superior Historical Commission approached Dean Saitta about the possibility of an archaeological investigation of the Industrial Mine. Kathryn Barthes, a member of the commission, had seen Professor Saitta talk about his work on the Ludlow and Berwind sites. Unable to commit to a new project, and knowing we were searching for a historical site, Professor Saitta proposed that Jenna Wheaton and I take it on as our thesis project. We met with members of the Superior Historical Commission as they gave us a tour of the Industrial Mine site. We decided that the site offered opportunities for both of us to explore topics that fell within our research interests. I was drawn to site for the potential to examine the daily lives of women and families in the mine camp. Jenna Wheaton felt that she could productively explore themes of economic solidarity in such an environment. Further, the fact that the site had never been the subject of archaeological study intrigued us. The Industrial Mine Site would give us valuable experience in starting an archaeological investigation from the ground up.

This project would not exist without the efforts of the Superior Historical Commission. The Commission, comprised of Superior citizens, and at least one former resident of the camp housing, fought to have their history examined. We began working closely with Superior Historical Commission, as well as Boulder County Parks and Open Space, the owners of the land on which the Industrial Mine sits. The historical commission

provided valuable background information and helped us get in touch with the appropriate members of Boulder County Parks and Open Space.

From its conception, this has been a project dedicated to the concept of public archaeology. Our stakeholders have guided us, some more forcefully that others. We were committed to open dialogue and engaged in multiple means of sharing our progress and our process throughout. We took this course of action not just because archaeological ethics dictates that we should, but because the people of Superior fought to have their history examined. They saw the significance of the Industrial Mine to their own town.

The mining history of Colorado can largely be divided into the northern and southern coal fields. The southern coal fields have gained more attention in both state and national history as result of the 1914 labor strikes which ended with the Ludlow Massacre. While Colorado labor history largely focuses on the southern coal fields, labor struggles were a regular occurrence in both the north and the south. In fact, the strike of 1914, often called The Long Strike, lasted a year in the southern coalfields. It lasted 4 years in the north. The mines in the northern coal fields were often small, and the Industrial Mine is no exception. The mines could not support year-round labor and many miners worked at more than one mine in the coal fields, in addition to taking other jobs in the off season. These differences necessitated different approaches to labor struggles for miners in the north. The history of labor resistance is integral to both Colorado history and US history more broadly.

Research Questions

In order to begin an archaeological study of the lives of women living in the Industrial Mine, I developed the following research questions.

- To what extent were the women of the Industrial Mine Camp conforming or not conforming to gendered expectations of Victorian womanhood prevalent at the time?
- How do the lives of women in the mining camp compare to those of the women in Berwind?
- How do the consumption patterns of Superior homes compare to those of similar working-class household of the time?
- To what extent were women in the Industrial Mine Camp manipulating gender and class expectations?

When I started this project, I had hoped to examine the Industrial Mine at the time of the Long Strike and observe how women in the northern coal fields contributed to that labor movement, following the model laid out my Margaret Wood in her dissertation, *Fighting for Our Homes* (2002). It soon became apparent that a study at such a narrow temporal scale was not possible in Superior. Further, the majority artifacts collected during survey and excavation date to the later period of the mine operation. Oral Histories collected by the Maria Rogers Oral History Project primarily feature the recollections of individuals who were children at the Industrial Mine Camp during the late 20s and the 30s. As a result of my dataset, this thesis examines the lives of women in the mine camp from the 1920s to the close of the mine in 1945. The Long Strike gained fame and notoriety as a result of the Ludlow massacre which ended the dispute, both in the south where the massacre occurred, and in the north where its reverberations were felt. Though less famous, labor disputes continued throughout the life of the Industrial Mine. Mine companies like the Rocky Mountain Fuel Company slowly chipped away at the victories won after the Long Strike,

and workers once again banded together, culminating in another large strike in 1927. Smaller disputes continued until the mine ceased operation in 1945.

The research questions above guided and shaped this project. At the end of this thesis, some questions are answered more fully than others. Still, all of them forced me to seek out information about working class women, labor movements, and the Colorado coal mining industry, that I hope will be of use to my stakeholders. If nothing else, these questions place working class women front and center and bring them out of the backwaters of history (Wood 2009).

Chapter Two

Background

The Northern Fields and the Founding of the Industrial Mine

The northern coal fields of Colorado are located in Boulder and Weld Counties, north of Denver. Mining in the northern coal fields began in 1856 when the Washington Lode mine opened near Coal Creek. At first the mining industry was slow to take off, as there was not an efficient means to transport the coal. However, as railroad systems extended into northern Colorado, more and more mines opened in the northern field. The town of Superior was founded before opening of the Industrial Mine. William Hake founded Superior in 1860, when he and his family moved into the area from Wisconsin. In 1864 a flood exposed a massive coal seam on his land. Hake did not exploit this coal seam until 1895, when he and eventual president of the mine, James H. Hood constructed the primary shaft of what would become the Industrial Mining Company. In that same year, Hake officially platted the town. In 1896 the Boulder City Directory listed 200 residents of Superior. The town was officially incorporated in 1904. James Hood sold the Industrial Mine to the Northern Coal and Coke Company at the turn of the century. In 1911, Northern Coal and Coke was absorbed by Rocky Mountain Fuel Company (Smith 1989).

With the mine came the mine camp houses. These houses were simple hipped box vernacular wood frame buildings. They were one-story structures with two bedrooms, a

living room and a kitchen. A chimney was at the apex of the roof. Each house also had a small porch with a shed roof. For the most part, the residents of the camp houses were less well off than the residents of the town. However, in one respect the lives of the coal miners and their families were more comfortable than their town counterparts. The camp houses all had running water. They did not have indoor toilets, however. Each house had a privy on the lot (Superior Historical Commission 2004).

The coalmine brought other businesses to the Superior. Schilling house, a boarding house catering to unmarried miners opened its doors in the mining camp. By the time of its incorporation in 1904, Superior supported two hotels, several saloons, and the Miners' Trading company—which sold groceries, dry goods, and clothing for scrip.

Life at the Industrial Mine

Miners who worked at the Industrial Mine had several housing options. Single miners, or those whose families were living elsewhere could choose to live in the boardinghouse. This option was cheaper than renting one of the camp houses, and meals were provided by the boardinghouse. Miners could also choose to live the bunkhouse. The bunkhouse provided lodging primarily for young men without families and who were just starting to make a life for themselves. This was the cheapest option, for good reason. Occupants did not necessarily have individual rooms, and they were not looked after to the same degree as those men who lived in the boardinghouse. Meals were not provided, and their rooms were not kept up for them. Finally, miners with families could choose to rent

camp houses from the company. Though this was the most expensive option, it offered miners and their families a place to make a home.

Unsurprisingly, life at the Industrial Mine was not easy. The men worked in the mines for up to twelve hours a day for low pay. Often throughout the history of the mine, workers were paid in scrip, not cash, and therefore were only able to purchase goods from the company store. Mine work was often dangerous. Though it must be noted that the Industrial Mine was relatively safe, accidents still occurred, such as fires and mine collapse.

While the men worked in the mines, their wives toiled in the home. Not much has been written about the lives of women in the Industrial Mine Camp. We know that they were responsible for running the household, cooking meals, shopping, caring for children, and managing the household budget.

Mining families had to make do with small living quarters. This meant that children shared rooms with one another, parents shared rooms with children, and family gathering areas were converted to sleeping rooms at nightfall. I do not wish to paint life in the Industrial Mine only back-breaking and oppressive. Children who grew up in the mine camp swam in Coal Creek, roasted potatoes in the burning slag heaps, and went sledding on old (no longer burning) slagheaps in the winter. Women cultivated gardens, partly as means of stretching a small income, but they also took pride in this work as evidenced by historical accounts of an annual garden competition (Superior Historical Commission 2004).

Labor Struggles

The Industrial Mine, like its neighbors, experienced several periods of labor struggles. The most prominent of these struggles was the Long Strike. In the northern coal fields, the Long Strike began on April 1st, 1910. The strike was the result of a desire for increased wages, increased safety measures, and fair practices when it came to weighing the coal workers had extracted each day. On May 16th of 1910, Eli Gross, the assistant to the Colorado Deputy Labor Commissioner was sent to the northern coal fields. On June 4th he visited Superior. Gross reported that company officials employed guards to stop workers from leaving the mine camp.

On September 18th of 1910, Boulder County Sherriff M.P. Capp was called to Superior. A French miner, and member of the strike, had been assaulted. The police magistrate of Superior, who was also the Superintendent of the Industrial Mine attempted to broaden the fight, presumably to spread the blame to the striking miners. Capp, well respected by both the mine company and the miners, was able to convince the miners to go home. During this turmoil, the company changed hands. The new owners, the Rocky Mountain Fuel Company, inherited the chaos (Smith 1989).

In November of the following year, a shootout occurred between striking miners and scabs, workers brought in to replace the striking miners. One of the scabs, Dude Searcy, was killed. The following morning more than one hundred miners from Louisville marched to Superior to face the remaining members of the Searcy family and their supporters. Sherriff Capp was once again able to convince the miners to return home without any

further bloodshed. Despite this, the Rocky Mountain Fuel Company brought in Federal troops to maintain order.

The Long Strike continued for 3 more years. The strike in the northern fields only ended as a result of the Ludlow Massacre in the Colorado's southern coal fields. The Ludlow Massacre resulted in the deaths of two women and eleven children when their tent was set ablaze during a shootout between striking miners and the National Guard.

After the events at Ludlow, tensions in the northern coal fields ran high. A shootout occurred at the Gorham mine near Marshall. Men gathered together in homes with rifles. On Monday, April 27th the governor's office informed the sheriff that he was to collect all the machine guns and searchlights installed at the mines owned by the Rocky Mountain Fuel Co., including Superior.

The deaths of innocent women and children outraged the nation and mining companies felt pressure to end the strike. The long strike officially ended when President Wilson called for mediation in November of 1914. By December 10th the strike was over.

Though periodic striking continued, it was not until 1927 that another major strike rocked the northern coal fields. This time, the majority of the action took place at Columbine Mine in Serene. As the nation moved towards the financial crisis of the Great Depression much of what the miners had won during the Long Strike was lost. Most companies still did not compensate miners for "dead work." Dead work refers to any work necessary for the process of coalmining, but which did not produce coal, such as timbering coal rooms, clearing away rock piles, and laying railroad track. Despite laws that were passed, most miners still felt that mine company weigh bosses, who weighed the coal a

miner extracted each day to determine compensation, were cheating them. At the same time, wages were decreasing in mines across the state. Furthermore, the United Mine Workers of America union was in disarray. They were unable to organize miners effectively, as they had done during the Long Strike. By 1927 no Colorado coal mine was under contract with to the UMWA. As a result, many miners turned to the more radical International Workers of the World, or Wobblies, as they came to be known.

IWW organizer Adam Bell moved in to the northern coalfield and settled in Erie. Shorty after, Adolphus Stewart Embree joined him. Embree had previously been a member of the UMWA, but he was expelled from the group for his radical views. The IWW used several tactics to draw in members. They created a host of different committees which any member could join, unlike the more top-down UMWA. Additionally, they treated foreign-born and minority miners with respect. One of the main goals of the IWW was to gain members in the southern coal fields and conduct strikes in that area of Colorado. They used their newfound support in the northern fields to achieve this goal. They organized auto caravans from the north to the south. One hundred and fifty cars full of northern miners and IWW leaders arrived in the southern fields to let the miners there know that organizing was both possible and necessary. In the Summer of 1927 the IWW leaders decided to make a move. They organized a walkout at the southern fields. The walkout was initially supposed to last for three days. However, so many miners participated that the mines were forced to halt production. The IWW felt that they had made their point and ended the walkout a day early.

Following the walkout, the IWW leaders planned a strike for the fall. They held mass meetings in the northern fields. On the evening of October 17th, anywhere from 1,500 to 4,000 people attended a meeting at Lafayette. The next morning about one half of all coalminers in the state of Colorado stayed home. In the northern fields, almost all the miners stayed home. Only the Columbine Mine opened with a small crew of strikebreakers.

Striking continued, as did additional auto caravans. The IWW provided food and other necessities to striking miners. In response to this, Colorado governor Billy Adams set up an additional military force to deal with the situation. Adams put Louis Scherf in charge. Unofficially, the group was called the "state law enforcement department." Scherf was connected to prominent figures in the Ludlow Massacre years before. The military force was armed with riot guns, automatic revolvers, and tear gas.

On November 7th, strikers began blocking the road between Lafayette and Columbine. The Columbine Mine was also owned by the Rocky Mountain Fuel Company. In response to the unrest, Rocky Mountain Fuel company installed barbed wire around the company houses, as well as a search light on top of the tipple.

Strikers and their families from all over the northern coal fields began picketing at Columbine on a regular basis, in defiance of the Industrial Commission's ruling against picketing. One morning the strikers arrived to find a machine gun on top of a truck. Around the same time, Louis Scherf began rounding up and jailing IWW leaders. In response, the IWW published a call for workers and union men and their families to come to Colorado from all over the country, "Send all footloose rebels to Colorado. This is the hour of glory for every rebel in the economic war against on the Colorado Fuel and Iron Company and

allied robbers of coal miners." The tactic worked. People flooded into Colorado from all over the nation.

People came to the strike not just to support the cause, but also to join in the festivities. High school students and others treated it as a novelty. The picketing became a social event. A trumpet played in the morning to announce the forming of the picket. Doughnuts and coffee were often served, and baskets of food were sometimes handed out.

On November 14th the situation began to take a more serious turn. A scuffle occurred between picketers and the Weld County law enforcement. When the deputies tried to arrest one man, 500 miners took him back. Adam Bell then directed the picketers to leave and join an auto parade on Pearl Street in Boulder. However, the Sherriff of Weld county ordered the outside gate of the Columbine mine to close.

On November 16th, early morning picketers saw that the machine gun which had previously rested on the back of a truck was installed within the mine on top the water tank. Barbed wire and sand bags now surrounded the mine. Despite this, or perhaps because of it, the number of early morning picketers at the Columbine mine continued to grow. On November 19th, a reported 800 men, women, and children marched around the north end of the mine.

On November 20th, Louis Scherf and 20 of his state law enforcement officers arrived at the Columbine Mine property. Merle Vincent, a manager of Rocky Mountain Fuel Company, was apprehensive about this buildup of law enforcement. He went to see Governor Adams and asked why Scherf was at the mine. The Governor attempted to contact Scherf and order him to leave Columbine. He was unable to reach Scherf. Adams,

now worried, sent the Lieutenant Governor of the Industrial Commission to Columbine to investigate. It was after 2:00 in the morning by this point. They only arrived in the town of Serene at 5:30 AM. By this time, the early morning picketers were already on their way to the mine. Scherf and his men were waiting. Scherf was not in uniform. The picketers surged forward. Bell was pulled to the ground and beaten. The state law enforcement officers threw tear gas into the crowd, which the strikers picked up and threw back. Shots were fired. Six miners and strikers died as a result. One fell immediately and the rest died from their injuries. In addition, sixty picketers, both men and women, were injured.

Louis Scherf later claimed that several sharp shooters in the crowd of picketers, not his men, were the first to shoot. Someone later reflected that the miners must have been terrible shots if that were true. No one inside the mine compound was shot.

Despite his actions, Governor Adams supported Scherf. The National Guard was called in and a curfew was set. Adam Bell and others were jailed. All Colorado labor groups now joined the IWW in expressing outrage. A service for those killed at Columbine was held at Ludlow, where 14 years earlier others had died as a result of labor unrest. The Weld County Coroner pronounced that though the 6 men died of gunshot wounds, their deaths were not felonious.

After several back and forths concerning who would and would not participate, the Industrial Committee voted to mediate the strike. They began hearing testimony on December 19th. The Commission's report came out on March 20th, 1928. The report concluded that wage cuts, abuses in weighing coal by weigh bosses, lack of compensation

for dead work, and dangerous conditions might have led to miner discontent. The report suggested that both miners and operators should consider collective bargaining.

On February 20th, IWW leader Adolphus Embree spoke to a group of miners and congratulated them on their partial victory and urged them to go back to work. Around 1700 northern coal miners already had. The following day, the last of the prisoners were released from the Longmont Jail (Smith 1989).

Josephine Roche

In this midst of the 1927 labor struggle, Rocky Mountain Fuel Company changed hands. Early in 1927, John Roche, president of the board and largest stockholder in the firm, died. His daughter, Josephine Roche inherited his shares. Roche attended her first stockholder meeting in March of 1927. She hoped to gain control of the board and change the company's policy towards the striking miners. Roche did not achieve her goal and was only able to choose three of the seven directors on the company board. However, she did manage to convince the very conservative board of directors to hire Merle D. Vincent as vice president and general manager. Vincent had previously worked as an attorney in Denver and had been president of the Colorado Bar Association. Vincent was well known for his liberal views. In fact, he had previously published his opinions on labor issues of the day. "When operators in their greed for business cut prices to bedrock, they make their men pass on the loss." He and Roche were both registered members of the Progressive Party.

Roche and Vincent disapproved of the working conditions at mines owned by Rocky Mountain Fuel, but they had to abide by the conservative attitudes of the board of

the directors. However, she and Vincent took action where they could. Vincent, as discussed above, tried to avert the armed conflict instigate in part by Louis Scherf.

Throughout the 1927 strike, Roche continued her fight to gain control of the company. When news of the massacre at Serene reach her, she still had not achieved this goal. The deaths troubled her, and she searched for answers. She hired a private detective to figure out who ordered Louis Scherf and his men to move into Serene. The private investigator was unable to discover this information.

In March of 1928, Josephine Roche managed to gain control of Rocky Mountain Fuel Company by purchasing the holdings of a Denver real estate investor. After this purchase, Roche owned 51% of Rocky Mountain Fuel Stock. Immediately, she called for a new election of board of directors, promoted Merle Vincent to president, and hired former labor organizer John Lawson as vice president. She also hired a former union lawyer to serve as counsel for the company.

Under Roche, Rocky Mountain Fuel Company reached out to the United Mine Workers of America and proposed a 2-year contract. This action revitalized the union. They met with Rocky Mountain Fuel in May of 1928 and by June, the once defunct union organized three fourths of the northern coal fields. The contract was signed on August 16th and took effect on September 1st, 1928. The preamble to the contract affirmed liberal ideals of the unionization and collective action.

Under the contract, the minimum wage for workers was raised from $6.77 to $7.00 per day. Miners could work eight-hour days, six days a week and receive eight paid holidays per year. Workers were also provided with systematic ways in which to express

their grievances. As a result of her policies, Josephine Roche was well loved by men who worked in Rocky Mountain Fuel owned mines (Smith 1989).

Women and the Labor Movement

Josephine Roche was far from the only woman involved in the labor struggles in the northern coal fields. Women were often at the front of picket lines, especially if strikers felt violence might erupt. The thought was that while mine guards would shoot men, they would hesitate to kill women. One woman gained fame as a dedicated picketer and leader of the strikes in the northern fields. Elizabeth Beranek, wife of miner Joe Beranek, marched alongside Adam Bell at nearly every protest. She often carried the American flag and was an outspoken proponent of unions and labor rights. Her ferocity garnered her the nickname "the Amazon." She gained so much notoriety among the guards and Scherf's law enforcement men that apparently, they felt no qualms about endangering this particular woman. During the chaos of the Columbine Massacre, law enforcement officers ripped the flag from her hands and proceeded to beat her. Beranek survived the incident (Smith 1989).

Though women often showed their support through picketing, they contributed in other ways as well. This thesis explores how women contributed to these movements through household economy and social relationships. Such work has been conducted in the southern coal fields, and elsewhere in the United States. I rely on this body of work as a point of comparison for the archaeological and oral historical data accumulated from the Industrial Mine.

Previous Research

Margaret Purser examines the lives of working-class women in the western United States (Purser 1991, Wood 2001, Wood 2006, Wood 2009). She uses documentary evidence, such as newspapers, to show that the women in Grass Flats, California were much more mobile than previously thought, and that such mobility was both modeled on, and distinct from the visiting habits of middle-class Victorian values. Women would visit each other and announce these visits in the "local items" section of *The Mountain Messenger*. The newspaper columns, often written by the women themselves, carefully described these visits in terms of the fashionable, upper-class practice of the day, replete with calling cards and parlor games. But these visits were not conducted in the same way as high society visiting. Visits could last for days, and many of the most active visitors were women who ran stores or boardinghouses. These visits also served economic and well as social functions. Patterns of reciprocal visits linked mountain and agricultural households, connecting the mountain households with fresh vegetables, fruit, and meat. Women from the mountains often left an older daughter in these valley agricultural households for the summer. With the arrangement, the mountain household had one less mouth to feed, and the agricultural household gained extra labor. The use of upper-class Victorian language shows that while these women may have wished to participate more fully in American Victorian culture, they did so in ways that benefitted them both socially and economically (Purser 1991).

In her doctoral dissertation, *Fighting for Our Homes*, Margaret Wood argues that women's housework in the mining company town of Berwind, Colorado was linked to

social change. Wood examines the domestic lives of women from 1900 to 1930. She uses the 1913-1914 strike as a center point of comparison, examining both pre-and post-strike contexts. Wood notes that pre-strike, the houses in Berwind were larger, miners could build their own homes on the company land, and houses and yards lacked fences. Women were able to contribute to household income by taking in boarders. They purchased tinned foods, though they were more expensive, for the convenience they offered in feeding and housing many people (Wood 2001, Wood 2006, Wood 2009).

After the strike, as part of the Industrial Representation Plan, Colorado Fuel and Iron, Co renovated the company town. They did away with large houses, instead constructing four room houses, and fencing in yards. Such housing promoted notions of individuality that stressed the nuclear family as the proper family unit. The doctrine of the nuclear family was a middle-class notion and attempts to naturalize it have been interpreted as a middle-class endeavor to secure cultural hegemony (Wood 2009).

Beginning in the 1920s, social reformers pushed household and family reforms for working class households. Social workers and industrialists both believed that crowded houses and apartments in working-class communities were breeding grounds for wickedness and sloth. Such action eventually worked to change American national identity, and it had profound effects on the working-class. At Berwind, the smaller housing forced most families to give up boarding as a source of income. Despite the wage increases that resulted from the strike, losing boarders appears to have affected the financial security of mining families. Women stopped purchasing canned goods and began home canning as way to cut costs (Wood 2009).

At Superior, houses began as small, four-room structures. Given the size of these homes, taking in boarders was not a widespread practice like it had been in Berwind before the strike. American Victorian values of individuality were present in the Industrial Mine Camp from the start. The following chapters will explore how the differences in history and housing resulted in different strategies for emulating or rejecting dominant social values at the two mining sites.

Chapter Three

Theoretical Frameworks

Introduction

This project uses the theoretical frameworks of feminist archaeology, practice theory and the archaeology of consumption. All three theoretical frameworks were utilized in both the project design and the resulting analysis. These frameworks helped guide my research to best answer the questions I set out for myself at the beginning of this process.

Feminist Archaeology

All feminist research is concerned with gender, but not all gender research applies feminist concepts and theories. The most basic theoretical standpoint of feminism in anthropology is that gender is a foundational social structure that always needs to be analyzed. According to Suzanne Spencer-Wood, "If the process of feminist critiques of androcentrism is not first undertaken, then gender is uncritically explained using received male biased theoretical perspectives, frameworks, concepts and methods" (Spencer-Wood 2006: 60). In a study of women in a space defined by men's labor, it is especially important not to fall into such biased frameworks.

Traditionally, any discussion of feminism must involve a discussion of the three "waves." First wave feminism began in the late 19th century and lasts through about the

1960s, with periods of more or less political activity throughout. Political activism defines first wave feminism. The women's movement fought for expanded civil, educational, and employment rights for women. During this time, many advances were gained in the area of reproductive health. The most well-known and arguably the most important success of first wave feminism was women's suffrage (Stockett and Geller 2006, Spencer-Wood 2006).

First wave feminism is often critiqued for catering to the needs and desires of upper-middle-class white women while ignoring low-income women, women of color, and immigrants. Despite this valid critique, the importance of first wave feminism cannot be overstated. In academia, and anthropology specifically, first wave feminism acted primarily as a corrective paradigm. The recognition of androcentric bias led to remedial work within the field that primarily sought to make women visible. First wave liberal egalitarian research worked to correct the biased devaluations of domestic work and demonstrate the importance of women's social agency in domestic roles. However, the constant measuring of women's domestic roles against men's public roles often did not challenge the dominance of the men's public roles in the gender status hierarchy. (Stockett and Geller 2006, Spencer-Wood 2006).

The arrival of second wave feminism in the late 1960s and early 1970s shifted the focus to an analysis of how the patriarchy maintains gender inequality. Second wave feminism again centered primarily by white, western, middle class women. During this time, the majority of feminist anthropologists focused on ideologies of the patriarchy and female oppression. Most of these works discussed these ideologies within a structuralist

framework. Others during this time adopted a decidedly more Marxist point of view. Both approaches have been criticized for essentializing gender, sex, femininity, and masculinity. (Stockett and Geller 2006, Spencer-Wood 2006).

Third wave feminism is often associated with postmodernism. Third wave feminism employs postmodern concepts related to identity, difference, and performance to combat the essentializing elements seen in second wave feminism. Third wave feminism within anthropology focuses on variability. It posits gender and sexuality as diverse, complex, and fluid. It calls attention to emic constructs and borrows the concept multivocality from postcolonialism. Third wave feminism abandons the notion of sex and gender as binaries and seeks to locate the intersections of gender, race, ethnicity, class, sexual preference, etc. It focuses on the relative importance of gender within the construction of identity. Third wave feminism sees gender performances as texts and discourses that can be understood through deconstruction. "Postmodern gender research analyzes the polyvocal nature of women's and men's actions in constantly negotiating gender ideologies and actual gender practices" (Spencer-Wood 2006:80). As a result, third wave postmodern feminism has produced many strong works that examine the extent to which 19th century women followed or ignored various reform movements and dominant gender ideologies. (Salzman 2001, Spencer-Wood 2006, Stocket and Geller 2006).

Purser notes "gender is a fundamental structuring principle in any society. Employing an analysis of gender is an integral part of any interpretive perspective" (Purser 1991: 6). The feminist assertion that gender must be analyzed has led to new questions that have expanded archaeological theory and knowledge. Feminist historical archaeologists

note that women are often ignored in the documentary record, and until recently in archaeological studies as well. Feminist archaeologists challenge androcentric biases, namely, the assumption that men have always been the significant members of society and that domestic activities are not significant and do not contribute to history (Spencer-Wood 2006). This is particularly true of working class, immigrant housewives. Separated from the world of production, these women "recede into the backwaters of history" (Wood 2004:211).

In his extensive work with the archaeology of mines, Donald Hardesty notes, "the archaeological remains of mining towns are an enormous repository of information about gender strategies" (Hardesty 1994:130). Further, he states, "the activities reflected in archaeological remains of households can provide key information about how gender influenced labor and social relations at the grassroots level" (Hardesty 1994:137).

Margaret Wood suggests that archaeology has a key role to play in revealing the lives of these women. "It may be necessary, however, for archaeological material to play a more primary role in the examination of domesticity among working-class and ethnically diverse households, for whom the same type of written material does not exist" (Wood 2004:214). Intersectional feminism has allowed me to explore both the effects of gender and the effects of class on the lives of women living in the Industrial Mine Camp. This thesis will take an explicitly feminist approach grounded in third-wave postmodern, intersectional feminism.

Practice Theory

Practice theory as developed by Pierre Bourdieu and later expanded by anthropologists such as Sherry Ortner and Kent Lightfoot, states that individuals order their daily lives in ways that construct their underlying worldviews, social identities, and organizational principles (Lightfoot 1998).

Bourdieu centered practice theory around the concept of the habitus. Habitus refers to those structures in society that have been unconsciously formed over time, and which guide the behavior of members of a group. Though Bourdieu asserts that habitus guides the decisions of the individual and the group, he emphasizes that practice theory need not be deterministic. Habitus is an infinite capacity for generating thoughts, expressions, actions, etc. However, this capacity is limited by the historically and socially situated conditions of its production. Habitus is shaped by the social structures and historical context of a given group. In fact, Bourdieu notes that habitus is "embodied history, internalized as second nature and so forgotten as history" (Bourdieu 1990:56). This embodied history, which produces individual and collective practices, ensures the active presence of past experiences which in turn leave traces in the archaeological record.

Lightfoot notes that trash deposits accumulate through routinized tasks, and therefore present great promise for examining the daily practices of households and neighborhoods. Daily routines produce patterned accumulations of material culture that often lead to fruitful interpretation.

> It is through daily practices—how space is structured, how mundane domestic tasks are conducted, how refuse is disposed of—that people both organize and make sense of their lives. The focus on daily practices and spatial organization is well suited to archaeology (Lightfoot 1998:210).

Daily practice allows archaeologists to examine the ways in which individuals express agency, as individual actors work to shape their lives through the acting out of routines. Such a framework allows me to examine the ways in which women employed agency in their homes and in their neighborhood within the context of a company town. Practice theory provides a lens through which to study not only the artifacts from the Industrial Mine, but the features and built environment. In a mine camp, the built environment is largely determined by the mining company. However, individuals living in camp housing made changes to their homes, and to their yards, and may have used the built environment in ways contrary to the expectations of the mining company.

A common critique of practice theory is that it assigns too much agency to individuals living in highly structured, capitalist societies. Sherry Ortner has this to say about such critiques:

> A theory of practice is not an abstract methodological debate about the relative weight of free will versus determinism…but rather, a theory of how people's actions reproduce or change a world that is never free of, and often centrally organized around, inequalities and power differentials (Ortner 2001:272).

Practice theory and the archaeology of consumption are particularly suited to each other. According to practice theory, people shape their lives through routinized tasks. In the 19th and 20th centuries, the bulk of such routines involved consumption in some capacity. A study of the objects of daily life in a mine camp necessitates a study of the consumption practices of the inhabitants of the camp. Diana DiZerega Wall regards consumer goods as texts which consumers decode and thereby help to 'produce' them in the act of their appropriation. Through the selection and use of goods, consumers create an

intelligible world for themselves. “Goods do not merely reflect various aspects of culture; rather they constitute the very fabric of culture itself” (Wall 1991:69).

Archaeology of Consumption

As capitalism rose to prominence in the United States, the ways in which citizens participated in their economy changed dramatically. Production shifted from the local artisans and merchants to manufacturing centers in distant regions. Consumers purchased services of these artisans less and less and began purchasing readymade, mass produced goods in greater numbers. In his book, *The Archaeology of American Labor and Working-Class Life*, Paul Shackel notes that for this shift to occur, the rise of capitalism first required many other changes for the new economic system to thrive. First, an expansive monetary system was needed. Second, banks became an important vehicle for the creation of capital. Shackel points out that in the late 18th century only a few banks existed in the United States. However, by 1830 over two thousand banks had been established across the country. In these early days, banks all printed their own money and often printed more than what they had to back the paper, however, this increase in capital allowed for new investments, despite a cycle of inflation. Thirdly, the emergence of the corporation became an important vehicle for the investment of this capital. Corporations encouraged risk capital, or the speculation of and investment in new ventures. Fourthly, this encouragement of investment brought on the development of rapid transportation infrastructure. In under a hundred years, the United States witnessed the turnpike boom, the canal boom and the railroad boom. Each new transportation network further spread consumer goods and ideas.

Rapid transportation also carried people, leading to the fifth factor in the rise of capitalism: the expansion of the frontier. The opening of the frontier furthered the process of speculation and investment. Fortunes were made and lost investing in the frontier and banks funded much of this speculation. Sixth came the change in the mode of production. This transition occurred at different rates based on products and location. Often skilled workers were first replaced by semi-skilled laborers, who in turn were replaced by unskilled laborers. As a result, workers no longer controlled the means of production. Seventh, increased consumerism fueled capitalism. Debates continue as to whether production led to consumerism, or the desire for goods encouraged the growth of consumerism and production. Regardless, Americans sought to increase their material wealth beginning in the 18th century and through the 20th century. The eighth and perhaps most important factor in the rise of capitalism was the change in mindset of the American public. In the 18th century, Americans adhered to the ideology of classical republicanism. This ideology emphasized family and community and critiqued the spread of 18th century consumerism in America. However, a new ideology, liberal republicanism, began to rise. This ideology was reinforced by the U.S. Constitution, which allowed the individual to act as an independent citizen. By the 1820s and 1830s the development of capitalism as liberal republicanism won out and became part of the dominant American ideology (Shackel 2009).

Industrial capitalism fully in place, items once made in the home could now be more easily purchased. Many of these goods ended up in the archaeological record. Historical archaeologists, therefore, pay special attention to the consumption practices of

the community under study. Most often, historical archaeologists attempt to use recovered consumer items to make connections to larger interpretive issues. Consumer practices and patterns of purchase become a means of identifying social status, or ethnicity. Such work has often been successful, especially work regarding social status and class relations (Purser 1992).

Pierre Bordieu has defined consumption as "a stage in a process of communication,...an act of deciphering, decoding, which presupposes practical or explicit mastery of a cipher or code" (Bourdieu in Purser 1992:106). To participate, as in any form of communication, one must know what things mean. Therefore, the action of acquiring and using products is not just about sending messages but receiving them as well. As a result, consumption practices involve power. If individuals lack the requisite knowledge, then they are unable to either send or receive messages and are left out of the discourse entirely (Purser 1992).

Archaeologists drawing from practice theory also believe consumption involves more than the simple purchase of goods. In her 1992 essay, Margaret Purser argues that consumption, as a process, is in fact a form of communication. In this process, people both impose meaning on and read meaning from material culture (Purser 1992).

In her essay "Consumption as Communication in Nineteenth-Century Paradise Valley, Nevada," Margaret Purser studies the changing consumption practices in a small town as mass produced goods became more widely available. She focuses not just on the appearance of new commodities, but on the new ways of acquiring and using them. Purser divides the material culture of 19th-century Paradise into three categories. The first is the

built environment, which encompassed the commercial and public sphere and included shops, saloons and hotels. The second is the more private lots, residences, backyards, and alleyways. The final category is the goods, materials, and technologies that flowed between the more public and private spheres (Purser 1992).

Material culture in Paradise often involved locally made products which used non-local industrial goods as component parts. In the early days of the town, Paradise residents often chose to visit their local stores for goods, rather than the larger, cheaper stores. Local stores would accept credit, thus giving them more appeal than the larger stores. Throughout the 1800s the Paradise residents paid for services, such as carpentry and blacksmith work, as well as goods. They would buy component parts, which were then assembled in Paradise resulting in locally produced products with industrially produced component parts. Over time, there were fewer small local stores, and residents visited larger stores where they bought mass produced goods rather than services. By the 1920s, increased industrialism resulted in the appearance of objects with easily replaced parts that could simply be ordered from catalogues. By the early 1900s there was no longer a carpenter in town. The shift from services to fully manufactured goods created a purchasing pattern which tended to make the unit of contact and participation that of the individual household rather than the community (Purser 1992).

The built environment and private space is an especially salient category for this case. Purser notes that Paradise was a somewhat marginal town that supported few local resources for construction or manufacture. As a result, construction materials and consumer goods needed to be brought in from elsewhere. This resulted in a fairly conservative

attitude, especially concerning built structures. Most residents were renters, and trade specialists often built their homes next door to, or adjoining their homes, physically blending public and private space. Storekeepers frequently incorporated public space in the form of dance halls, meeting halls, or saloons into their buildings. The consumption practices of early Paradise Valley blurred the distinction between customer and community member, as well between public and private space (Purser 1992).

In Paradise, as in other places throughout the industrializing United States, social competitiveness arose between households. Brand name products, fashionable clothing, and new household items served as vehicles for communicating social status or desired social status. Notably in Paradise, this competitive display affected the built environment. Architectural embellishments became a primary means of "keeping us with the Joneses." Those with more money added false fronts to their homes or built on new rooms. Those that couldn't afford to take on larger construction projects subdivided their existing homes to add small parlors, closets, and bathrooms, even if those bathrooms didn't have running water. Many added picket fences to their homes. Storekeepers scaled back their public spaces and focused instead on the buying and selling of goods. Hotels fenced off their properties from the street and like the homeowners, created barrooms, dance halls, and club rooms, all of which required payment for entry (Purser 1992).

Much of the shift from consumption driven to production driven material culture was the result of increased industrialism throughout the United States. As more products became available ready-made, residents no longer required the services the local carpenter. The transformation of public spaces to private ones indicates a desire to conform the

individualism of the American Victorian period. The changing of the built environment introduced a fundamentally new way of using homes, streets, and commercial space. Because of the marginality of Paradise, the changing of space was conducted in ways which fit with conservative attitude towards building. This did not apply to the consumption of goods and technologies. This change in consumption practices was driven not by the local environment but by the manufacturers and advertisers who produced these goods in distant places.

Purser notes that though market participation and conspicuous social competition are part of consumption, they do not make up the entirety of consumer practices. She argues instead for "a holistic, contextual approach to all the actions involved in acquiring and using objects, materials and spaces" (Purser 1992: 107). Such an approach recognizes and contends with realization that at smaller scales, consumption practices are diverse, contested, and manipulated. They vary greatly along regional boundaries, class lines, ethnic groups and time. Also acknowledged is the expansion of capitalism as a global process. This process may have sparked individual's involvement as consumers. However, if consumption practices were simply a response to industrialism and mass production, then archaeologists would expect to find somewhat uniform patterns of consumption, regardless of class, ethnicity, or region, changing only as product availability changes. Many archaeological studies have found that this is not the case. In order to fully understand consumption practices and their meaning, archaeologists must examine all the processes involved, from distribution and acquisition, to use (Purser 1992).

While Purser stresses consumption as a process and as a means of communication, Paul Mullins focuses on the multivalent nature of consumption. In his essay "A bold and Gorgeous Front: The Contradictions of African America and Consumer Culture," Mullins states that material culture can be defined along a spectrum of possibilities ranging from conscious resistance to the masked reproduction of inequality. Archaeologists struggle with multivalency due to reduction of objects to monolithic surface attributes. This in turn leads to totalizing systemic or "identity" parameters for material meaning. Multivalence allows researchers to acknowledge both dominant social processes and consumer agency alike. However, there is a tendency to choose one side or the other. Some ascribe too much agency and endless multivalencies and ignore dominant social and economic structures. On the other hand, other researchers reject multivalence as simply the masking of consumers' oppression by the larger economic system. Consumption is seen as a mass assimilator. True multivalence generally understands that "all consumers construct meaningful symbols at the very moment they risk (or even accept) being confined by the society that produces such goods" (Mullins 1999:188, Purser 1992).

Mullins's study of the consumption practices of turn-of-the-century African Americans illustrates the multivalency of material culture. Mullins sees African American consumption as neither wholly the emulation of white of society, nor entirely the conscious resistance of racism. Rather consumption was a dynamic process in which African Americans avoided and subverted racism, while also forging new economic and social possibilities for themselves. For Mullins this notion is illustrated by the frequency with which African American consumers purchased brand name goods, rather than bulk

commodities. Brands were universally more expensive than bulk goods. The previous explanation for African American devotion to brand named products was that they were taken advantage of by local merchants. However, Mullins posits a different reason. Bulk goods were packed by the storekeeper, making it easy for racist merchants to provide African American customers with inferior quality goods at a higher price. Brand prices were determined by the producer rather than the store owner, were sealed before they ever got to the store, and emphasized their superior quality. Most importantly, brands promised consistency, both of product and of price (Mullins 1999).

Consumption of brands, however, was more than simply evading racism. The purchase of the best brands likely gave African American consumers a sense of socio-economic advance and genteel accomplishment. Though brand consumption was consistent among all African American consumers, archaeological investigations show higher levels of brand consumption among the wealthiest African Americans, hinting at some class differences (Mullins 1999).

The exploration of multivalence allows Mullins to explore the ways in which African American consumers used consumption to assert their agency and resist dominant social narratives of subordination and racism. Both Purser and Mullins present compelling ways to view consumption at the Industrial Mine Camp Housing. Purser's focus on the built environment is particularly salient for the mine camp. At the Industrial mine, workers were limited by camp itself, rather than the marginality of the town. All the houses were the same, and mining families could make minimal changes. This did not stop them from small construction projects intended to make their minimalistic homes more desirable. In

one case a father built a small closet in his daughter's room. Some households built fences around their yards. Many households focused time and energy on their gardens, competing in an annual contest. Mullins' concept of multivalency allows for an interpretation that considers the agency of the mining families in making these decisions, while also noting the dominant social and economic structures with which these families had to contend.

Conclusion

I chose the above frameworks as they are best suited to a design and analysis which allows me to meet my research goals and answer my research questions. Feminist archaeology was chosen, because like Suzanne Spencer-Wood, I believe that a study of gender that fails to take feminist theory into account will fall into androcentric biases to explain the roles and choices of women. I chose to utilize practice theory as it is particularly well suited for historical archaeology, and the study of the mundane. Unsurprisingly, the mundane in 19th and 20th century mine life are primarily objects of consumption and capitalism. Most importantly for my research, all three of frameworks discussed above allow for the examination of individual agency while also recognizing overarching structural inequalities and oppression.

Chapter Four

Methods

Introduction

The Industrial Mine archaeology project was developed in full by myself and Jenna Wheaton. From the start, our approach centered around the use of multiple methods. Historical archaeology is unique and powerful because it allows researchers to access multiple lines of evidence. This was true of the Industrial Mine and as such, Ms. Wheaton and I felt that to ignore the availability of these sources would be to tell only part of the story. In addition to the material objects collected during excavation and survey, we had access to census data, photographs, maps, and newspapers. Thanks to the Boulder Public Library, we were able to rely on oral historical accounts of life in the mine camp as well. These sources along with geophysical data, the built environment, and material remains recovered from the site, allowed for a full and rich analysis of women's lives in the Industrial Mine Camp.

Project Development and Design

The design of this project was guided by two overarching and sometimes conflicting set of requirements. The first of these were self-imposed, the second was imposed by a memorandum of understanding with the County of Boulder. Jenna Wheaton and I came up with our own set of research questions and goals. While my goals focused

on uncovering the women of the Industrial Mine, Ms. Wheaton focused instead on the ways in which the mine workers formed a sense of solidarity and community. Though our goals differed, we both were interested in investigating the domestic sphere. Both of us also wanted to investigate potential class differences at the site. As a result, we were able to agree on the areas where we wanted to focus our archaeological investigations.

In the beginning stages of planning, we gave little thought to the logistics of starting an archaeological investigation from the ground up. In some ways, this naivete likely helped us develop our project. We chose the areas to investigate further based on the relevance to our research, and not what would prove to be easiest. Our unyielding optimism that our proposal would eventually be accepted allowed us to wait for confirmation far longer than most reasonable people. We began working on our proposal in March of 2015. The proposal was submitted to Boulder County on April 8th, 2015. We did not receive full approval until August 27th, 2015.

In order to gain approval for our project, we signed a Memorandum of Understanding with the Boulder County Department of Parks and Open Space. The matter was further complicated by the fact that the county leases the land on which the remains of the Industrial Mine reside to local ranchers. It took months of back forth, as well as compromise on both sides, to come to an agreement that Boulder County felt safeguarded their public lands and that we felt was not prohibitively burdensome. Our main contact at Boulder County Parks and Open Space was Carol Beam. Carol acted as a liaison between the department and me and Jenna. We could not have gotten through the approval process without Carol. Our long wait to start the project did have some benefits. Had our proposal been accepted quickly, we would have begun the project in June 2015. This would have

been prime grazing time for the cattle that often reside on that land. As a safety precaution, we were asked to fence all excavation areas from the cattle with chain link fence. The cost of a fence rental is quite high. However, the delay of the project meant that we didn't start excavation until September. The grazing period was over and the ranchers who lease the land agreed not to allow the cattle on the Industrial mine site for the duration of the project, saving us the cost of a fence rental. Additionally, the spring of 2015 was unusually rainy, leading tall lush grass growth. The grass obscured the ground, making it nearly impossible to see any surface artifacts during the summer months. By the end of September, cattle grazing and fall temperatures diminished the growth. As a result, we were able to conduct a surface survey.

The terms of our MOU with Boulder County are many and varied and can be found in appendix A. The most important for the design of the project were areas deemed off limits for excavation, as well as the overall limit on excavation. Our MOU stated that no more than 15 square meters could be disturbed by excavation. The off-limits areas were easy to work around. Neither designated area greatly affected our excavation plan. Though I had always planned on utilizing geophysical methods for this project, their importance grew significantly when the limit of 15 square meters was finalized.

Geophysical Data

Magnetometry

Magnetometers measure how magnetic objects and features affect the earth's magnetic field in localized areas. Human occupation often affects the magnetism of certain features. For example, heating objects to certain temperature (curie point) creates

thermoremnant magnetism. Additionally, ferrous objects are naturally magnetic in the presence of the earth's magnetic field. Contrast can be seen between the difference in magnetism of the natural environment and features or objects introduced or modified by humans (Kvamme 2006). Magnetometry allows large areas to be surveyed in a relatively short amount of time.

We used a Bartington Grad 601 dual sensor fluxgate gradiometer magnetometer to conduct magnetometry surveys of the area. We used historic maps, and aerial photography from Google Earth to place the grids on the site, concentrating on areas of interest for our research. Over a three-day period at the end of May of 2014, we collected magnetometry data from three different areas of the site. The areas chosen were a judgmental sample of the overall site. The first grid we collected was largest and was chosen to cover areas where we knew worker housing once was, based on maps and standing foundations. This grid was 100 meters by 60 meters. We also a collected a small grid over another area of worker housing. This grid was 20 by 20 meters. We collected a third grid over the area we thought to be the boardinghouse. We later found out that this was incorrect, and that the foundations in the area were actually the remains of a bathhouse. This grid was 20 meters by 40 meters. We were unable to conduct a magnetometry survey of the Superintendent's house due to tall foundation walls, trees, and shrubs in the area.

Magnetometry allowed us to identify areas of high magnetism, indicating features such as house foundations and areas of artifact accumulation. These areas were then used to choose the locations of the ground-penetrating radar surveys.

Ground-penetrating Radar

Ground penetrating radar (GPR) is a geophysical method which allows for the nondestructive investigation of the subsurface. GPR systems emit pulses of high frequency electromagnetic energy from a transmitting antenna. Discontinuities in the subsurface layers can cause some of the that energy to be reflected back to a receiving antenna. Radar energy is reflected back to the receiving antenna when two adjacent materials have different enough properties that a change in velocity is produced when the radar energy travels from one material to the next. The amplitude value of the reflected radar energy, as well as its two-way travel time measured in nanoseconds, is recorded by a control unit and mapped over distance traveled. Computer software then colors the positive amplitude values white and the negative amplitude values black to make the resulting image easier to interpret. These images, known as GPR profiles, or radargrams, contain information about changes in subsurface conditions.

We conducted ground-penetrating radar surveys of areas of magnetic contrast indicated by the magnetometer. In addition, we conducted a GPR survey of the area in and surrounding the superintendent's house, which we were unable to survey using magnetometry. By using the magnetometry data as a guide, we were able to focus on relatively small grids that were easy to collect and interpret. GPR surveys take time, as does the processing of large amounts of data recovered during survey. For this reason, we kept our grids at or under 20 meters by 20 meters. We collected data from eight grids. Four grids were placed in worker housing, three were placed in or near the superintendent's house and one was placed over the bathhouse. These grids were conducted using a 400-megahertz antenna. The 400MHz antenna allows for greater ground penetration, but the

resolution is not suitable for the identification of smaller clusters of buried objects. This survey allowed us to identify subsurface foundations and other buried features.

After the analysis of the 400MHz data, we returned with a 900MHz antenna to conducted smaller more intensive surveys based on the data gathered from the 400MHz survey. Radar energy propagated from a 900MHz antenna does not penetrate very deep in the ground, but the level of resolution is much better. We conducted 5 surveys with the 900MHz antenna. Two of these were located in worker housing, 2 were located near the superintendent's house, and one was located outside of the bathhouse. The 900MHz surveys allowed us to identify areas of potential artifact concentration.

While we used GPR data to help us choose excavation areas, the data has value outside of this use. GPR can provide information on the layout of miner's homes, and the potentially the ways in which they may have modified or changed their surroundings. This is especially evident in GPR grid 8. This grid was collected in the southwest corner of the largest magnetometry grid. It was collected over top of a house foundation.

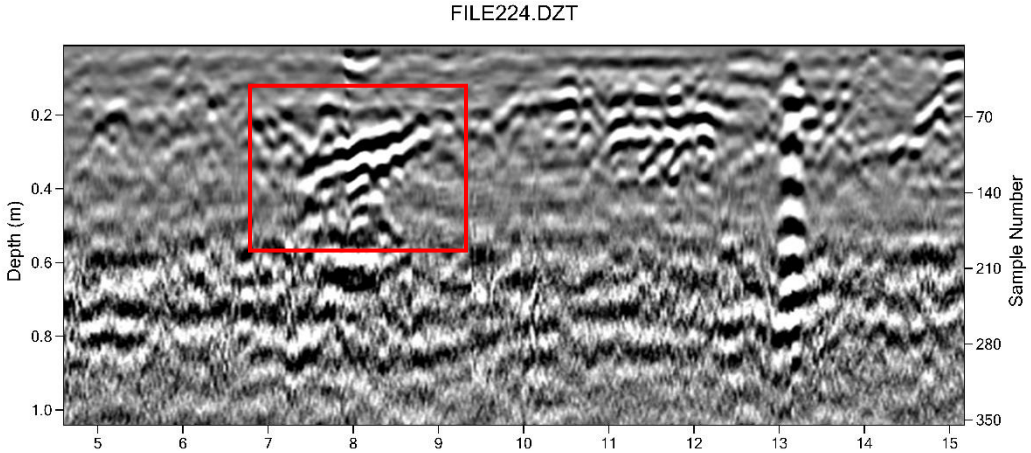

Figure 4-1: Profile from 1.5 meters into GPR grid 8. The highlighted area shows a high amplitude planar reflection.

Figure 4-1 shows a profile collected 1.5 meters into the grid. This profile was collected outside of the area containing the house foundation. There is a small high amplitude planar reflection starting about 7 meters into the profile and extending to about 9 meters. Underneath this there is a hyperbolic reflection. Further along, at about 11-12 meters, there are several hyperbolic reflections. Because of the limits on excavations, we could not investigate every GPR reflection of interest. In this case, however, we ended up placing the excavation grid along this profile, from meter 6 to meter 13. We were able to uncover the area that produced the planar reflection. We found what appears to be deliberately placed slate that was unrelated to the house foundations. This could be evidence of mining families adding to, or changing the built environment imposed on them by the mine company.

Oral testimony from former residents, as well as pictures of the camp while it was still in use indicate that the houses had small porches on the front and rear sides. The rocks causing the reflection in profile 224 above may have been related to more foundational elements, perhaps to raise one corner of the foundation, or as a means preventing water from pooling near the corner of the house foundation. Additionally, this area could have provided support or stability for the corner of the porch.

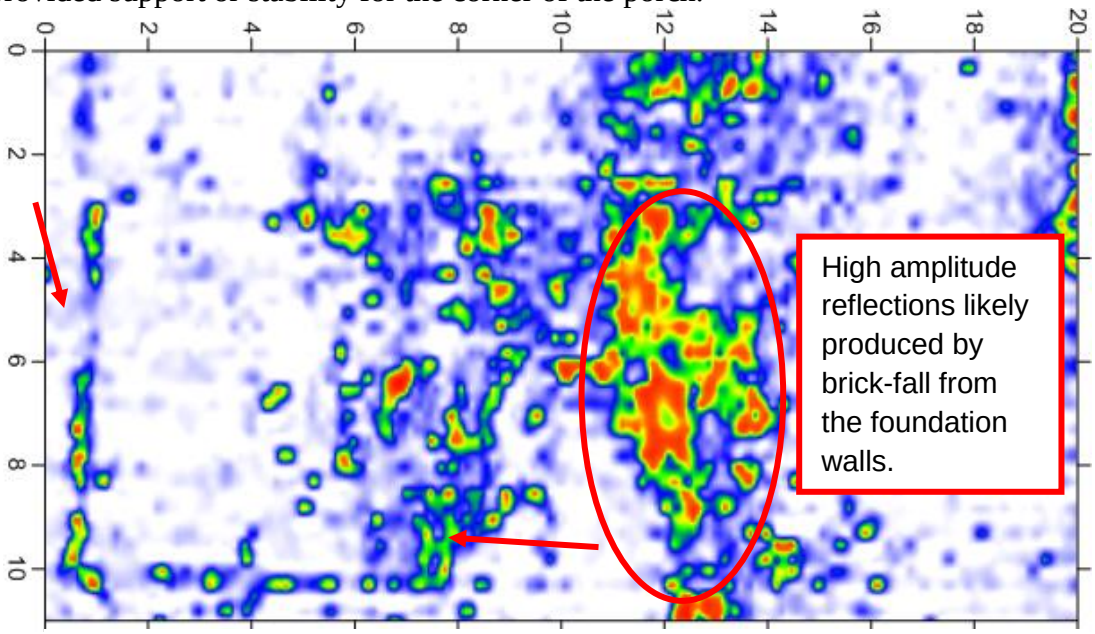

Figure 4-2: Slice map of GPR grid 8. The arrows indicate house foundations, while the red box highlights the amplitude reflections just beyond the house.

Figure 4-2 shows a horizontal slice map of grid 8 at 5 nanoseconds depth. In this slice the foundations of a house are visible. There is also a cluster of high amplitude reflection north of the house. These reflections are the result of brick scatter from foundations that fell after the house was removed.

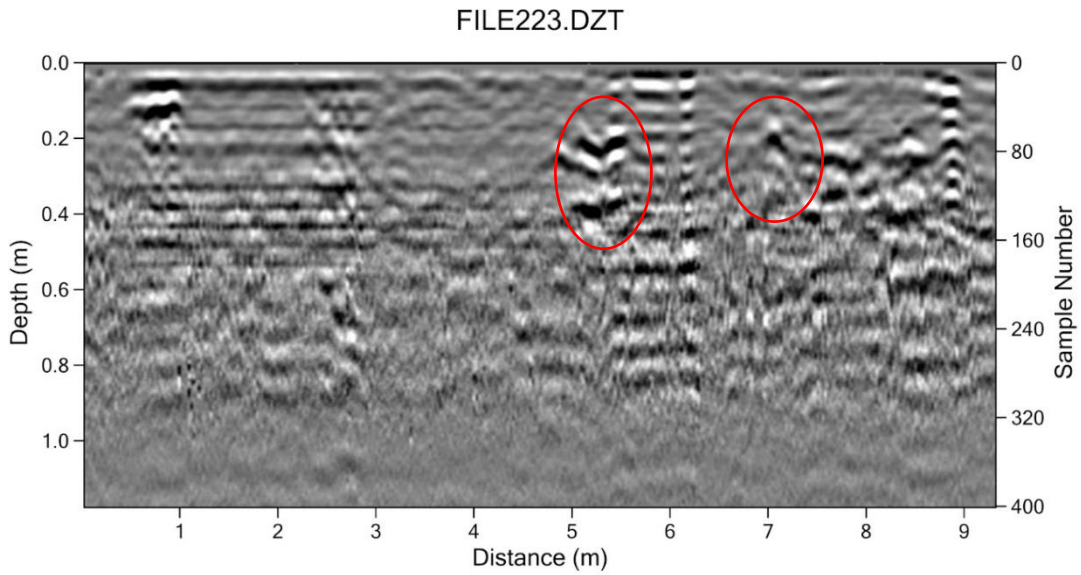

Figure 4-3: 900 MHz profile collected just outside of the back of an Industrial Mine Camp house.

As mentioned above, oral accounts indicate that cellar may have been present on the rear (west side) of the houses, next to a small porch. Profiles directly next to that side of the structure show reflections that may indicate a possible cellar. However, there is convincing evidence of a such a feature on the opposite side of the house.

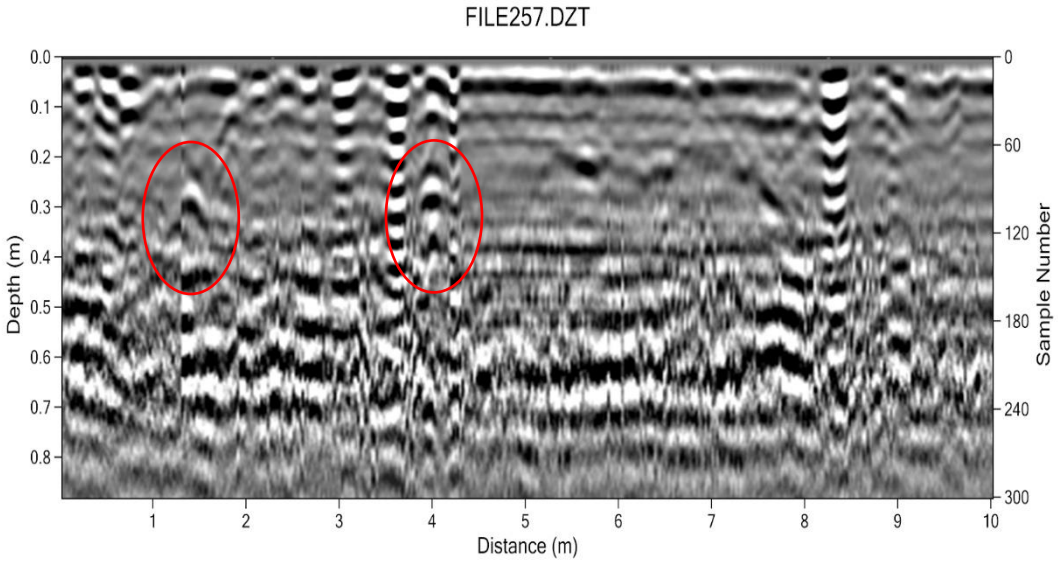

Figure 4-4: 900 MHz profile collected just outside of the front of the same Industrial Mine Camp house shown in the previous two figures.

In the profile above there are two hyperbolic reflections at 25-30 cm in depth. These reflections could be caused by the walls of a small cellar. This area also appears to be to be filled in with different material over time.

With the information obtained from collecting and analyzing GPR data we were able to place our excavation unit over areas likely to contain important artifacts and features. This data also served as a comparison point with information gleaned from oral accounts as well as providing additional information on post depositional features.

Figure 4-5: Aerial view of the Industrial Mine showing results of a magnetometry survey conducted on the site. The red outlines show the areas chosen for the initial ground penetrating radar surveys.4

Excavations

Areas to excavate were determined through magnetometry and GPR data. Four grids of 7 by 0.5 meters were placed in four different locations. The grid size was chosen in an attempt to cut across multiple features seen in the GPR data. Such features included possible middens and garden features. Additionally, grids were kept small in accordance with a Memorandum of Understanding with Boulder County Parks and Open Space, which specified that no more than 15 square meters was to be disturbed. Each grid was divided into seven 1x 0.5-meter units. Two grids were placed in the worker housing area. One was placed in an area thought to be a midden, the other was placed alongside one of the house foundations. The third grid was placed outside of the superintendent's house, while the fourth grid was placed outside of what we then thought was the boardinghouse. Excavation was conducted in 10-centimeter arbitrary levels. Each level was photographed before excavation began and after excavation of that unit was complete. Units were excavated in a checkerboard pattern to increase speed and efficiency and to limit subsurface disturbances. In Grid 4, additional units were opened in hopes of uncovering more of the supposed midden feature. All artifacts were collected and put in bags marked with the grid number, unit number, and level that they came from. All soil from each unit and level was screened using 1/8 inch mesh.

Figure 4-6: Aerial photo of the Industrial Mine Site with magnetometry maps, and ground penetrating radar slice maps. The linear red outlines show the locations of excavation trenches.

All artifacts were taken back to the archaeology lab at the University of Denver for analysis. We created a database and entered information about all artifacts, including those collected during surface survey, into the database. The database is a profile matrix. In this matrix we recorded the unique number that was assigned to each artifact, the grid number it came from (or whether it was collected during survey), the type and material of the artifact, its color, function, completeness, level of decoration, presence of a makers mark and a general description of the artifact. After processing, the artifacts will be returned to Boulder County Parks and Open Space, who will take over curation.

Surface Survey

Due to the intense rains of the previous spring and summer, the area of the Industrial Mine was overgrown with tall, lush grass when this project began. As a result, we could not see anything on the ground surface, and so we had to proceed with magnetometry and ground penetrating radar before undertaking surface survey. About half way through the excavation of the site, the grass died, and we could finally begin to see the ground surface and start our pedestrian survey.

We conducted a ground survey in which volunteers walked in 5 meter transects. Surface survey covered a much greater area than geophysical survey. Volunteers walked the edge of the slag heap on the east side of the site, past the land row of house on the west. A map of surface survey artifact density is shown below to highlight the extents of the survey. The volunteers placed pin flags wherever they found an artifact. Jenna and I followed with a Trimble Geoexplorer 6000. We examined the artifacts and collected the GPS coordinates of diagnostic artifacts. Diagnostic artifacts were defined as artifacts with

makers' marks, words, decoration, or marks indicative of manufacture, such as molded rims. Non-diagnostic artifacts were counted and tallied for later use in statistical analysis. Artifacts that were given GPS coordinates were collected for study in the lab.

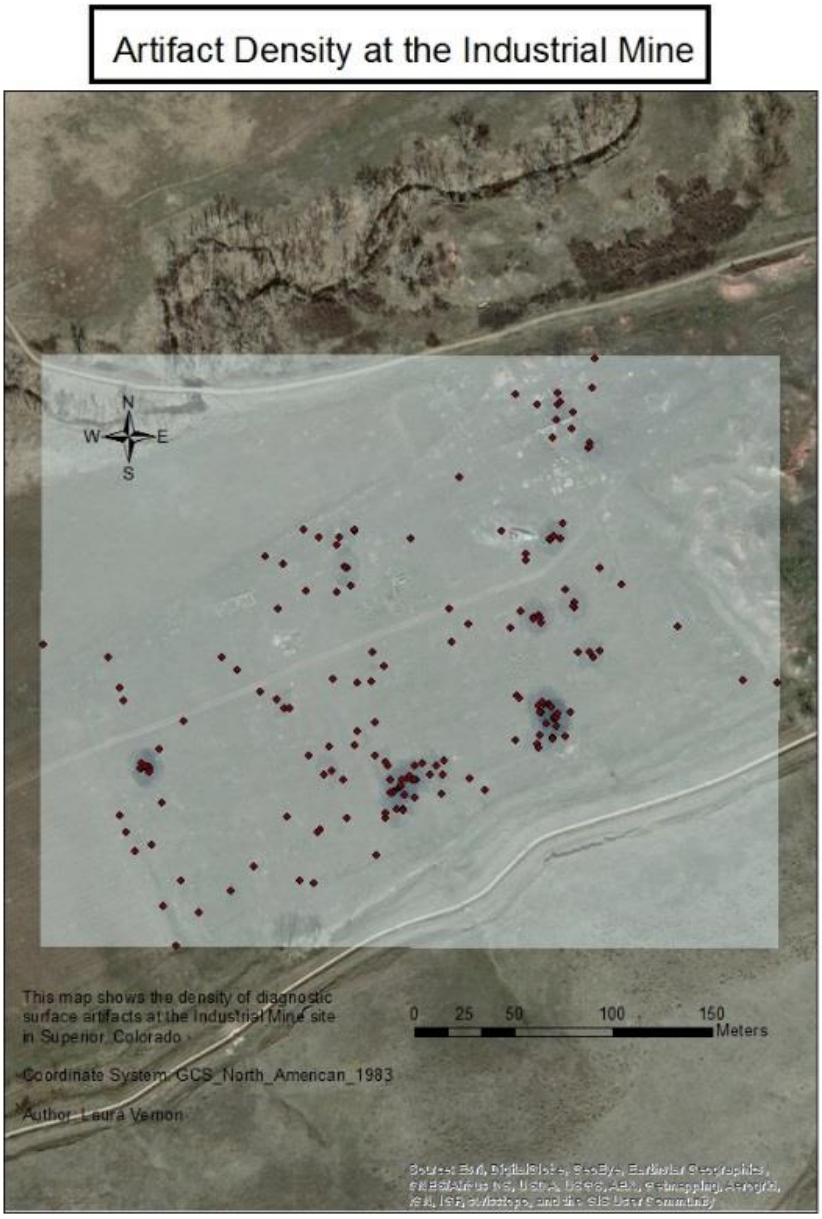

Figure 4-7: Map showing the density of surface artifacts collected during surface survey.

Historical Data

Archival data was used both to guide research and to answer research questions. A major source of historical data used is company records from the Rocky Mountain Fuel Company. These records were accessed from the Denver Public Library: Rocky Mountain Fuel Collection.

We also used records published by the Superior Historical Commission, which indicate that the mining camps had a total of 21 household structures for miners and their families, a supervisor's house, a boarding house for single miners, and a bathhouse. The miners' houses contained four rooms, had cold running water, but no indoor toilet. Records indicate that each household had a privy, and coal shed, and that some households may have had private gardens in their yards (Superior Historical Commission 2004).

Census data and company records were used to associate individual miners with specific households and provide vital information about the miners' families. Census data provides information on the gender, country of origin, and age of individuals within households, as well as information on duration of stay in the household.

Mail order catalogues from the time of occupation, such as Sears, Roebuck, and Co., were used after excavation to provide information on popular trends, and pricing of difference ceramics.

Laurie Wilkie notes that texts are not just sources information, but "are artefacts that have been produced in particular cultural-historical contexts for specific reasons." (Wilkie 2006:14) This thought was never far from our mind during the analysis of historic texts. Texts were not privileged over archaeological data or oral histories. John Moreland warns that too often historical archaeologist fall into two distinct camps: those too willing

to accept the authority of documents and those too quick to dismiss their reliability. Instead he suggests that archaeologists need to view the Object (artifacts), the Voice (oral histories), and the Word (historical documents) as tools that societies use to create systems of power. This framework applies to particularly well to my research goals, as the formation of power is at the heart of each of them (Moreland in Wilkie 2006).

Data Analysis

As mentioned in the excavation section above, once the artifacts were brought back to the lab, we created a database of information about all artifacts. The database is a profile matrix. In this matrix we recorded the unique number that was assigned to each artifact, the grid number it came from (or whether it was collected during survey), the type and material of the artifact, its color, function, completeness, level of decoration, presence of a makers mark and a general description of the artifact. This matrix can be seen in Appendix B.

We then grouped together artifacts by material type. The ceramic assemblage was further categorized based on form and decorative type, in an effort to group artifacts from least to most expensive. This assemblage was then compared directly to the Berwind assemblage.

The glass artifacts were also further categorized based on function, and analyzed primarily independently of other assemblages, though the Berwind collection is considered from time to time in the discussion of glass artifacts recovered from the Industrial Mine.

Chapter Five

Documentary Archaeology

Documentary Archaeology

This project was heavily influenced by the work of Laurie Wilkie, specifically her insights on documentary archaeology. In an essay entitled "Documentary Archaeology," Wilkie attempts to tackle the challenge set forth by Mary Beaudry that "Historical archaeologists must develop an approach towards documentary analysis that is uniquely their own" (Beaudry in Wilkie 2006:13). Wilkie notes that unlike our colleagues in prehistoric archaeology, historical archaeologists often have access to the wealth of sources beyond the material, including historical documents, letters, catalogues, and oral histories. This wealth of diverse information often creates its own set of challenges. Documentary sources and oral histories may cover much longer or shorter periods of time than the material sources uncovered during an excavation. Further, the scale of each source may vary radically, from statewide to household to individual (Wilkie 2006).

On top of issues of temporal and scalar resolution, these different sources may provide overlapping, conflicting, or completely different insights. Archaeologists must find a way to use these sources to create meaningful understandings of the past.

Like most historical sites, the Industrial Mine Camp has abundant documentary sources, as well as oral histories. Documentary sources vary in scale with oral histories which in turn vary with material culture uncovered during the 2015 excavation.

The excavation of the Industrial Mine Camp focused on one house within the workers housing, an area hoped to be a trash midden, the superintendent's house, and the bath house. Though two grids were placed by individual houses, disturbance by prairie dogs and years of cattle ranching necessitate an examination of the material culture at the level of the neighborhood. Additionally, no sealed deposits that were easily dated to specific periods in the mine's history were found. Therefore, we cannot make claims about changes or lack of changes before and after periods of striking. Documentary evidence associated with the mine camp vary in their scale. Maps depict the neighborhood or town scales, while most photographs provide information about households or individuals. Unlike the material culture uncovered, most photographs and maps have clear dates associated with them and depict a very narrow time frame.

The scope of oral histories includes the individual, the household and the neighborhood. The temporal scale of these sources varies from speaker to speaker. The diversity of scale and temporal resolution present in oral historical sources make them particularly suited to adding both depth and breadth to any documentary archaeological analysis.

Oral History

Most historical archaeologists agree that where oral history is available, it should be consulted and included in the analysis of historical sites. However, disagreements persist

about the analytical weight these sources should be given. Often, this question varies based on specific sites as well as the goals of the researcher. Kent Lightfoot addresses the challenge of oral sources in an article titled "Oral Traditions and Material Things: Constructing Histories of Native People in Colonial Settings." Lightfoot stresses the need to utilize oral traditions in historical archaeology. Oral narratives and archaeology are "two separate but overlapping ways of knowing the past" (Anyon in Lightfoot 2008: 274).

Lightfoot urges archaeologists to expand their use of oral narratives. He notes that often, archaeologists focus too much on the problematic side of oral narrative, instead of on the strengths of these sources. This is not to say that researchers should always privilege oral narratives over other available sources. Oral histories have interpretive pitfalls, but so do historical documents and material culture. "Oral traditions can never be taken at face value, but like any historical source, they must be critically examined and evaluated for veracity, internal consistency, and concordance with known historical events" (Lightfoot 2008: 272). In the case of oral traditions, archaeologists must separate fact from fiction. Where oral histories are concerned, memory may be unreliable. This is especially true of oral accounts given long after the events have taken place. Further, archaeologists must keep in mind that individuals may be less than accurate in their retelling of events for any number of reasons.

In his examination of race in New Philadelphia, Paul Shackel is hesitant to rely too heavily on oral historical accounts of town residents. Many of his informants are members of the New Philadelphia Association, a group which seeks to promote of vision of New Philadelphia as a place of racial harmony. As a result, these people attempted to downplay the racism that was present throughout the history of the town of New Philadelphia.

However, Shackel notes that the older generation, those informants well in the 7th and 8th decades of their lives, were far more willing to acknowledge the pervasive racism, and racial violence they witnessed in the town of New Philadelphia and its immediate surroundings. It is the younger generation, those in their 50s and 60s who insist that they grew up in a racially harmonious atmosphere. It should be noted that all of the informants who insist upon the racial harmony of their childhoods are white (Shackel 2011).

While oral history did help Shackel determine the location of several historical buildings, Shackel takes a wary approach to oral history, especially oral histories dealing with such a sensitive topic. Interestingly, though perhaps not uncommonly, Shackel must grapple with the relative weight, not just of archaeology and oral history, but also of conflicts between differences within the oral histories collected. Shackel must privilege one interpretation of the racial atmosphere of New Philadelphia and the surrounding communities over the other. Shackel gives more credence to the histories discussing racial disharmony and violence. Historical accounts note the presence of the Ku Klux Klan in Barry, Illinois, the presence of sun down towns, and black codes. This, in conjunction with oral history specifically addressing the Klan and sun down towns leads Shackel to err on the side of racial disharmony (Shackel 2011).

Lightfoot, as mentioned above, places greater faith in oral narratives. In examining life at Colony Ross, he values native oral traditions about Colony Ross more highly than many of the historical documents regarding the colony. Specifically, he notes that contemporary European accounts of Colony Ross deliberately filter out the destructive nature of Russian colonial practices. This is not to say that Lightfoot discounts all historical

documents. Indeed, he relies heavily on census data in his analysis of inter-ethnic households at Colony Ross (Lightfoot 2008).

Unlike Shackel, Lightfoot gives archaeology and oral narrative equal weight in his analysis. He notes that in both oral narratives and archaeology separate events become combined and smeared together.

Both Lightfoot and Shackel employ the sort of documentary archaeology proposed by Laura Wilkie. Both integrate diverse sources in creating a coherent, meaningful narrative. They privilege these sources in ways that best suit both their narratives, and the scales at which they examine their respective research sites (Wilkie 2006).

When archaeologists critically examine oral histories within the framework of their research, oral histories become a valuable resource. Oral narratives often provide a level of depth and context unavailable through material evidence and or even documentary sources. They can focus on a specific time or event, or span decades, depending on the memory of the speaker or the type of narrative provided.

Oral History at Industrial Mine

The Carnegie Branch of the Boulder Public Library houses the Maria Rogers Oral History Program. The program contains a collection of audio and video interviews with long-time residents and other knowledgeable people about the history of the city and county of Boulder Colorado. It is one of the largest collections of local oral history in the entire United States. The bulk of the recordings concerning the Industrial Mine and the town of Superior were collected in 2002. As a result, most informants were residents of the

mine when they were children in the 1930s and 1940s. The collection contains recordings of interviews as well as transcripts of those interviews. Interviewers posed questions about life in the mine camp and life in Superior more generally. They often made use of pictures or maps in their questioning.

The interviews cover a wide range of topics, from sleeping arrangements to school, to work their fathers performed. Given that the majority of informants were children during the time of interest, the interviews provide quite a bit of information on family and domestic life in the mine. Both Bob Morgan and the Acklin sibling describe the mine houses in detail.

> "Well it was a small house, four rooms, had a kitchen, had two bedrooms—two little bedrooms—and then it had a living room, basically—we didn't have a dining room—it was a living room. One thing about the Industrial Mine Camp was we had running water in it—not a bathroom, we did not have a bathrooms, we still had the outhouses, but we did have a water system where, you know—there was a sink in the kitchen, which had running water in it. We didn't have hot water [laughs], just running water…. We had a little enclosed porch in the entrance to the kitchen. There was an entrance to the west side of the house and on the east side of the house. And we had a garage on our house. Don't ask me why, most of the other ones didn't, but we did have a little garage on our house. We had, well of course, the outhouses, we had had one of those, and we had a chicken coop. And I remember the chicken coop because I had to clean the thing in the summer—not my favorite job [laughs]. My brother was born in our house. In 1938 he was born."

Further along in this description, Bob mentions that his family had a garage as well. According to Bob, most other houses did not have a garage. The Acklins give a similar description of their own home. Gennie describes where each member of the family slept. Her parents got one room, she got another, and Denzil had to sleep in the "front room" on a foldout bed. Gennie recalls that she had a closet in her room. The houses did not come

with closets, rather their father built one in each of the two bedrooms. In the springtime, Gennie would sleep with baby chickens in her room.

Both Gennie, and another informant, Jim Luxnor, describe the storage space in the houses. Gennie calls it a crawl spaces, while Jim refers to it as a cellar. Gennie remembers her family storing things that needed to be kept cool there, while Jim recalls his family storing canned goods. “Everybody had a cellar to keep their canned food in. I’d imagine there was lot of canning in those days.”

Other informants back up Jim’s statement about canning. The Acklins recall buying cucumbers to make pickles, picking and canning cherries, buying peaches for canning, and even canning meat. While Bob does not explicitly refer to canning he does detail a town-wide event for both women and children.

> “In the late summer whenever the fruit along Coal Creek would ripen, there was plums, wild plums, choke cherries, there were some apple trees up there. All the ladies, not just from the camp, but from town too, used to get together to make a day of it and go up to pick fruit, and us kids would go along too, because we had to help them out.”

The need to bring children to help suggests that women would return with an abundance of fruit and given that we know from Jim and Gennie how common canning was in the camp, it seems logical that many of the women would preserve at least part of what they collected.

Bob Morgan and the Acklin siblings all discussed how often their mothers would bake. Bob’s first memory of living in Superior is his mother baking. According to Gennie, “Mom always baked a lot.” But the best description of the work involved in running a

household at the Industrial Mine Camp is given by Mary Bell Morrison.

> "My mom was an awful good homemaker, house keeper, and she worked hard—did the old washing twice a week, baked bread, twice a week. She would bake about eight round loaves, about four long loaves, and a big pan of biscuits, twice a week. So she was busy all the time and, of course, every evening she was mending clothes. I can never remember an evening that she wasn't sitting in the rocking chair in the living room with the rest of the family"

Gennie also remembers her mother doing a lot of washing. She talks about it with an air of setting the record straight. "A lot of people think coal miners are dirty, but they are the cleanest people going." She talks about how her father would never bring his dirty clothes into the house until her mother was ready to wash them with Oxydol, bleach and Bluing.

One informant, Bill Autrey, did not live in the Industrial Mine Camp. His father worked at the company store. When Bill remembers his father, he calls him "softhearted," and says that he would sometimes subsidize some of the miners' bills. However, Bill recalls that he had trouble making friends with the kids who lived in the mine camp. He attributes this to his father's job. Bob Morgan provides more evidence of discord between the Superior residents who lived in town and those who lived in the Mine Camp. "A few people looked down on us for living in the camp, but we had running water." This seems to have been a point of pride among the residents of the camp.

Several informants give fairly detailed descriptions of the company store. The store was not located in or near the mine itself, but in town. Marge and Ted Machin note that it had a post office and butcher shop. Miners could get their mining tools and clothes there, as well as sundries. Earlier in the history of the mine, the miners were paid in scrip, which

was accepted only at the company store. Herbert Bell recalls the difficulties of such a system

> "I don't remember too awful much about them other than when I was fairly young I understand that the miners, much of the time were paid in scrip and the company store supplied all the groceries and clothes, so they would take the scrip and go to the company store and trade it for their supplies. They could trade back and forth. Sometimes they'd trade somebody that had a little bit of money, they'd trade scrip for money, and they could have a little bit of money then to go buy something outside of the company store. For quite a few years, I guess, it was fairly strict that way. Most of the time that I can remember, as a child, they got paid cash. The scrip was probably when I was awful young or before my time, maybe."

Even when the workers were paid in cash, the company store still operated on credit. Gennie Acklin discusses this when she recalls her father's views on the store. "He never believed in making a debt, and usually that's what they did. They make a debt in the summer time and pay it off in the winter. Dad wouldn't do that. If he didn't have the money, he wouldn't do it." Instead of going to the company store, the Acklins would instead go all the way to Boulder to do their shopping. Denzil notes that a lot of other families did make use of the company store, because even though it was more expensive, it was convenient. Further he notes that when "we first moved there, they had what you call the scrip, wasn't it? I remember a lot of people owed their life savings to the store."

When talking of company abuses, such as payment in scrip, and debt to the company store, several informants make a point to note that work conditions improved when the Rocky Mountain Fuel Company changed hands. "When Eleanor [sic. Josephine] Roche took over the coal mine—things changed for the better. She was a good woman. Even the conditions in the mine changed." Bob notes that she had a lot of sympathy for the

miners. Ted Machin notes that Ms. Roche was "one of the best mine owners to deal with the union workers." In fact, after the Rocky Mountain Fuel Company closed, Josephine Roche began to work for the United Mine Workers of America.

Despite seemingly having more money than the mine camp families, Bill describes his mother in much the same way as the children from the camp. She took care of the household, "Do the laundry all day, the same old thing—baking the next day." Bill's father died in 1937 and his mother had to find work to support herself and the family. Due to a technicality with his position, she did not get a pension from the mine, and because his father was not a miner, they received no help from the United Mine Workers of America. "Mother worked at a restaurant downtown Lafayette. She got a chance to be trained as an operator, telephone operator. In the process they provide you a house. The thing is right in the house, the switchboard. Except you have to be on duty day and night."

Conclusions

The lives of children can give researchers unique insight into the domestic sphere of working-class families. Children inhabit and play an important role in function of domestic life. While all of the informants fondly recall leisure activities, they also reveal the different ways in which they contributed to the functioning of the household. A common task for children seems to have been care of the family chickens. Gennie Acklin was responsible for raising the chicks, while Bob Morgan was responsible for feeding his family's chickens and cleaning the coop. Aside from household chores, children also combined work and play in ways which directly contributed to the household economy. According the oral history of Bob Morgan, children would routinely play on the slag heap

of the mine. The coal retrieved from the mine was sorted using a sifter, and as a result, small pieces of coal ended up on the slag heap. While playing on the large slag pile, children would collect these pieces of coal and bring them home to supplement to supply given to the families by the mine.

Aside from occasionally intersecting with economic contribution, children's play may also have helped to form or strengthen adult social networks. All of the informants were able to recall the names of other children they knew in the mine camps. The Acklin's and Bob Morgan were able to recall each other's houses. Denzil Acklin discusses a camping trip with his family and Kerr family. Interestingly, Mr. Kerr was at that time the mine superintendent. From this, it seems that friendships between both adults and children were capable of crossing socioeconomic boundaries. However, it appears such boundary crossings were on a case by case basis. While Denzil recalls Mr. Kerr as a "nice fellow" Bill Autrey recalls that miner's children would shun him as a direct result of his father's status and job at the company store.

Denzil recalls a cousin staying with his family one summer and spending time working on a farm in Superior. In her article, *"Several Paradise Ladies Are Visiting in Town": Gender Strategies in the Early Industrial West,* Margaret Purser details how social networks were formed between mining families and farming families to their mutual benefit. In these relationships, it was common for children in mining families to be sent to work on farms during the summer months. The farmers had an extra farm hand, while the mining families no longer had to worry about feeding everyone during the summer months when work was scarce.

The Acklin's oral testimony shows that when needed, gender roles had a certain amount of flexibility. When Gennie talks of her mother's illness and how her father dealt with it she says, "he was my mother and dad both for a long time." Unfortunately, she doesn't go into detail about the sort of tasks that he would perform that would lead her to make this pronouncement. She does, however, mention that at certain times the family had hired women to help their mother with the children and running the household. This may suggest that her father didn't completely take over household tasks during times of illness. However, Gennie seems to indicate that hired help was few and far between. Perhaps her father took on household duties in times when such help was unavailable.

Bill Autrey's account of his childhood shows that women often had to take on a breadwinning role in the event of the death of their husbands. Pensions were not always guaranteed, or available depending on a man's job. Bill's mother found work outside the home, as waitress and then as a phone operator. Mary Bell notes that her mother "farmed a lot." Mary's case is unique, however, as her family lived and worked on the farm even as her father worked as a miner in the Industrial Mine. Alice LeCompt Morrison grew up in a similar situation. Because both of their fathers would supplement the family income through mining, their mothers took on the bulk of the responsibility for running the farm.

The oral histories shed light on attitudes of the miners and the ways in which they resisted and embraced middle class values. The small size of the houses in the Industrial Mine demanded a certain amount of the conformity to doctrine of the nuclear family. Some families made an effort to modify their homes to reflect some level of individuality. The Acklins added closets to their homes, while the Morgan's had a garage. In addition, the oral testimony of Gennie Acklin in particular, shows that mining families would practice

conscious consumption choices as a means of resisting the mining company's financial hold over them.

The oral testimony of former residents of the Industrial Mine Camp and Superior more broadly paints a nuanced picture of growing up in a mining family. As always, the question becomes how much weight to give such sources. Lightfoot suggests embracing the nuance and richness offered by oral narratives, while Shackel approaches oral evidence with some skepticism. Most Industrial Mine informants freely admit that they do not recall certain events or activities. Further, almost all of the informants describe events and daily life from the perspective of children. While this perspective is immensely useful, it does call into question the veracity of a few statements. Gennie Acklin is adamant that her parents did not drink and that very little alcohol consumption took place in the mine camp. Parents often shield their children from activities and ideas that they believe are inappropriate for children. It is likely that alcohol would fall into this category. Gennie Acklin is certainly not lying when she tells the interviewer that not many people drank alcohol, and in fact her account is somewhat supported by archaeological data as discussed in chapter six. However, relying solely on a child's account of alcohol consumption practices would be unwise.

Despite the caveat above, I am inclined to follow the path set forward by Lightfoot. Unlike the case of New Philadelphia, these informants are not trying to hide a racially charged past. The inconsistencies in testimony come from failures of memory, and a knowledge and impression of life in the camp shaped by the perspective of children. Further, archaeological evidence supports the informant's discussions of life at the Industrial Mine in many cases. Several informants recalled their mothers canning food.

Canning jar lids were discovered during excavation. Gennie recalled helping her mother with the washing. Survey and excavation revealed a number of bleach bottles.

Most of the oral testimony focuses on the household of the speaker. As a result, the oral histories allow this study to delve into scale of the household. Instead of being stuck examining the Industrial Mine Camp from the neighborhood scale, this thesis can take a multiscalar approach to daily live at the Industrial Mine. The oral histories also cover multiple points in history. Bob Morgan has done his own research on the history of the mine and includes this in his interview. Gennie Acklin and Herbert Morrison recall changes in mine operations even during their own childhoods, specifically the shift from payment in scrip to payment by check.

The oral histories provided by the Maria Rogers Oral History program adds depth that cannot be gleaned from material culture alone. The informants paint a picture of a rich, full life in which their parents had to constantly grapple with various obstacles, in which they were expected to contribute to the household in meaningful ways, but in which most of their time was spent exploring the camp and the surrounding areas. Unlike material culture, which can often make archaeologists focus too much on specific functions and tasks, oral histories remind us that we are dealing with real people who lived complex lives. This reminder is particularly important in research that focuses on working-class families during times of class struggle. Oral histories shine light on the ways in which people dealt with financial struggles, but also highlight the daily joys that continue to exist in the face of such struggles.

Company Housing at Berwind

In the early 20th century, many industries provided housing for their work force. Such housing was often low cost and convenient for the workers, while allowing the companies to profit off the rent from their employees. Additionally, company housing ensured that workers were always on hand and allowed companies a level of control over the domestic lives of their workers. In this section. I compare the housing as it changed at Berwind with the housing as it emerged at the Industrial Mine.

Company housing functioned differently at the two mines. Prior to the Long Strike, houses at Berwind were a mixture of company-built housing and homes built by the miners themselves. The houses were on company land, so CF&I owned them, and miners paid rent to the company. Company-built housing followed a variety of similar floor plans and were evenly spaced in linear rows. In contrast, allowing miners to build their own homes resulted in unplanned communities with houses of various sizes, though most often they were rectangular in shape, a single story, and built with scraps of wood. Company built housing was constructed on flat areas of the camp housing, while vernacular housing, housing constructed by the workers, was often built on upward slopes in non-linear arrangements that conformed to the contours of the land. The existence of the two types of housing side by side created a visually irregular pattern that CF&I long felt reflected poorly on the company. Company homes in the pre-strike locus (a sealed deposit dating to the years before the Long Strike) were 810 square feet, 690 square feet and 672 square feet, depending on the type of house (Wood 2002).

Following the Ludlow Massacre and subsequent end to the Long Strike, John D. Rockefeller and the CF&I announced the Industrial Representation Plan. The IRP raised wages, gave lip service to the idea of unionization, and resulted in the construction of new housing throughout the CF&I owned mines. New housing also came with uniform orientation, spacing, and floor plans. Chicken coops, coal sheds, and outhouses were identical and uniformly spaced. Each house, old and new, was enclosed by fencing, which divided the lots into blocks of "private" property. The company hoped that the creation of identical homes with the illusion of private property would encourage miners to view themselves as individuals, rather than part of a collective group. Enclosing each lot with a fence was meant to promote care for the house, instill pride, and encourage residents to grow gardens. Awards were given for the best garden, which in addition to instilling notions of ownership, fostered a sense of competition between individuals. Indeed the sanctity of the individual and notions of personal autonomy is often powerfully associated with the spread of capitalist ideologies (Wood 2002, Wood 2009).

In addition to building new housing, the company also constructed a YMCA camp clubhouse for miners and their families. The construction of the YMCA falls into the category of "Welfare Capitalism" in which improving the conditions, or providing new amenities, is presented like gifts to the workers. The YMCA occupied one of the highest points of land in town and was situated at the entrance to the communities. This location reinforced the authority of the mine company and strengthened the notion of the company as the center of the community. While the YMCA could be used for community gatherings, United Mine Workers of America union organizers were barred from using the space for

meetings. Further, a recreation space provided by the company served to blur the lines between work and leisure, company and community.

Homes built in Berwind following the Ludlow Massacre and the implementation of the Industrial Representation Plan were in many ways a dramatic improvement on workers' living conditions. The Industrial Representation Plan provided real benefits to the workers and their families, but changes in spatial organization were well thought out and designed to promote the notion of the "corporate family." The corporate family started with the nuclear family. Nuclear families living in company housing formed the company family, which in turn formed the family of the nation (Wood 2002).

Notions of democracy and democratic relationships ran through ideas of the corporate family, the compassionate family, and the Industrial Representation Plan. The corporate family stemmed in large part from Rockefeller's belief that re-establishing personal relationships between workers and management was key to preventing future labor disputes. Everyone belonged to the corporate family and had a specific role to play. This manifested in the design of the new buildings at Berwind. Domestic structures were intended to foster a particular type of family organization that mirrored the image of the corporate family. Namely it encouraged mining families to conform to the ideal of the nuclear family. Links between family and company were further reinforced by stylistic similarities between homes and corporate funded public buildings (Wood 2009).

During the early 20th century, reformers began preaching a new ideal, the compassionate family. The compassionate family emphasized democratic family relations, partnership between husband and wife, and open discussion. However, powerful social conventions of the day still dictated wives be subservient to their husbands. As a result,

wives in such a family could discuss issues and offer their opinions, but their husbands were ultimately the sole decision makers. The compassionate family, then, mirrored Rockefeller's Industrial Representation Plan and Corporate Family ideals (Wood 2009).

Rockefeller insisted that communication, not pay and unsafe working conditions, was the root of labor unrest and the Industrial Representation Plan reflected this belief. It allowed workers to air their opinions and grievances but had no mechanism for worker oversight and management could override worker concerns at any time with no method for redress by workers (Wood 2009).

Rockefeller characterized the Industrial Representation Plan as a truly democratic solution to labor problems but did so by selectively defining democracy and other key terms. In board rooms and senate hearings in 1915 Rockefeller spoke of his support for collective bargaining and a company union. However, he defined "collective" as the company, "bargaining" as getting together to talk, and "union" as the corporate family, headed by management. Democratic Relations in this scheme, meant managers' willingness to simply interact with workers (Wood 2009).

By selectively defining democracy, Rockefeller cast the corporate structure of CF&I as innately American. The Industrial Representation Plan itself was based on notions of Industrial democracy and drew inspiration from the American system of government. The Industrial Representation Plan included an "Industrial Constitution" that created an "Industrial Republic." By equating the company with the United States government, CF&I made it very difficult for labor leaders and workers to criticize the company (Wood 2009).

The US entrance into World War I further pushed the idea that the interests of the company and the interests of the nation were the same. With the war effort underway,

mining companies were able to cast labor disputes and calls for strikes as unpatriotic and harmful to American interests. In an effort to present a united front, the US overlooked social issues of the day including, labor rights, women's rights, and poverty. This push for unification also gave rise to extreme xenophobia within the US. In this environment, it was very difficult for miners, who were often immigrants, to air grievances. In order to gain any ground, labor unions had to "out-American" the companies (Wood 2009).

The Industrial Representation Plan provided housing nearly identical to that already in use in the north. However, in addition to the housing, the IRP created a system of addressing grievances that did not actually allow for Unions or collective bargaining. Though many workers were pleased with the improved housing, miners in both the south and the north saw through the IRP and resented that the plan did not allow for a true airing of grievances. The long strike in the north ended up as a total loss. They won no increased pay and gained essentially nothing. Despite that, northern miners worried that the plan would eventually make its way to them.

Company Housing at Superior

Housing began at the Industrial Mine in a very different manner from the way in which it began at Berwind. For the first 10-15 years after the Industrial Mine began operation, there was no housing provided by the mine, nor were workers able to build houses on mine property. Miners during this early phase likely lived in the town of Superior itself. It is unclear when exactly the camp housing was constructed. A picture dated to 1904 shows the Industrial mine without the houses present, but the sale of the mine from

Northern Coal and Coke company to the Rocky Mountain Fuel Company in 1911 lists the houses as part of the sale. Historians on the Superior Historical Commission believe the houses were likely constructed around 1907 (Smith 1989, Conarroe 2001, Barthes 2018).

The Industrial Mine was a much smaller operation than the Berwind mine. The northern fields as a whole tended to function as clusters of small mines rather than a few large operations. Indeed, the size and the spatial proximity of the mines in Boulder County created a network of interdependent communities. At times throughout the life of the mines, they were unable to support full time work for all employees. Often, work at some mines was seasonal. Many men rotated between several mines, as well as taking on farm work when needed. Census records confirm changes in employment throughout the years. The same records also indicate that quite a few miners lived in the town of Superior rather than in the mine camp. Despite this, oral histories indicate a stark divide between town and camp (Superior Historical Commission, Census Data).

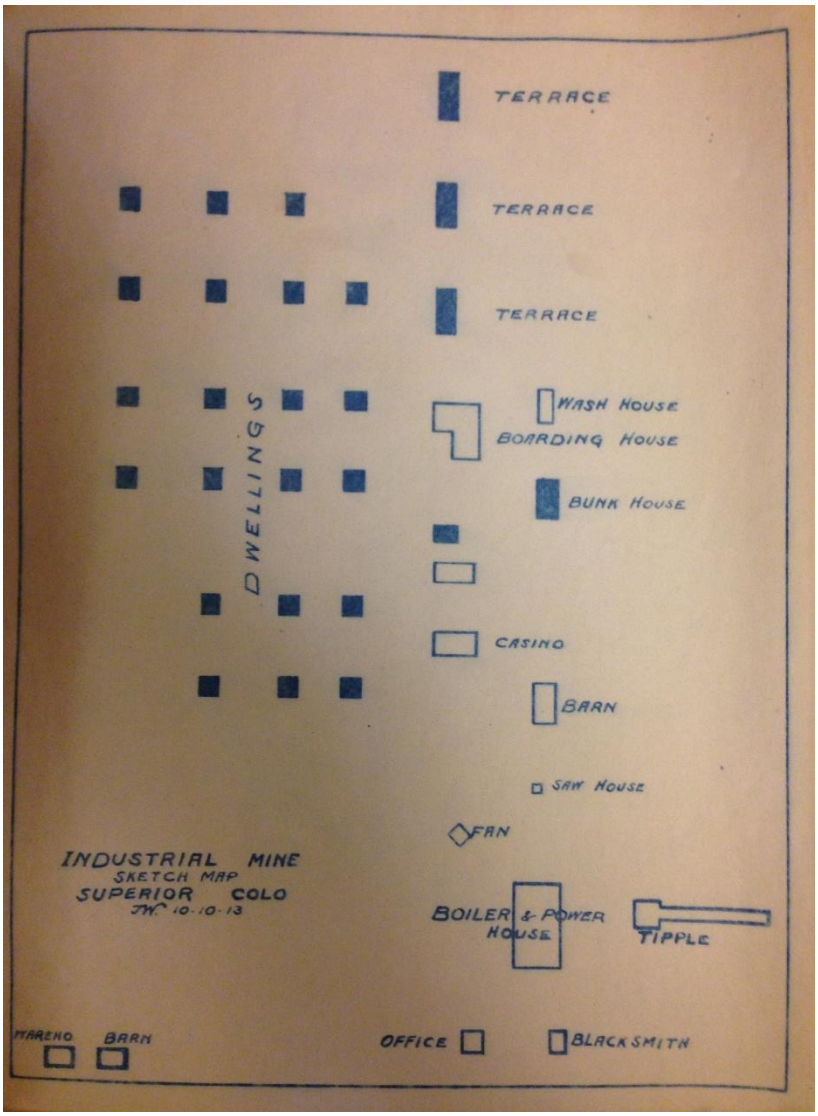

Figure 5-1: Historic map of the Industrial Mine Campus showing the residential homes as well as building related to mine operation.

Over 195 mines were opened in the Northern Field. Towns in the northern fields were not company towns in the traditional sense. Most did not have company stores. Superior is one exception to this. The history of striking in the northern fields is similar to that of the southern fields. Indeed, strikes in one region often led to strikes throughout the state. However, the northern field and the southern field were each dominated by different

coal companies, so the outcomes of each strike differed between the regions. In 1903, a strike in the Northern Field won the workers there a 15% pay increase. In 1908 Lafayette formed a grievance committee which organized a union (Smith 1989, Conarroe 2001).

Shortly thereafter, the Long strike began in the Northern Fields. Beginning in 1910, workers in the Northern Fields began demanding another 15% pay increase. The companies resisted, citing that miners in the northern fields already earned 20% more than their southern counterparts. Mining companies began to bring in strikebreakers or scabs. In some cases, the companies built housing to accommodate this new workforce. It is unclear whether housing at the Industrial Mine was built for such purposes. The only year in which census data clearly shows the mine camp is 1920. I have been unable to locate the camp in both the 1910 and 1930 census. Since we know that the mine camp existed in the 1930s, it is possible that it existed in 1910 as well but was not clearly demarcated by the census taker. In any case, sales records confirm that the camp existed when Northern Coal and Coke sold the Industrial Mine to the Rocky Mountain Fuel Company in 1911 (Smith 1989, Conarroe 2001).

Figure 5-2: Historical photograph showing three homes in the Industrial Mine Camp. There is a privy visible on the far right. A dog is visible on the left. Photo courtesy of the Superior Historical Commission

The Industrial Mine Camp consisted of 21 four room houses. All of the houses were identical, 672 square feet hipped box homes. The houses had two entrances and a small porch. Each lot had an associated privy. Oral historical evidence indicates that at least some families kept chickens. Gardens were encouraged as indicated by a competition for "best garden." (Superior Historical Commission 2004). In addition to the 21 miner's homes, the Industrial mine had a somewhat larger house for the mine Superintendent and his family. A boarding house also sat on the campus to house those miners without families or whose families had not yet joined them in Superior. For a time, the camp boasted a casino on the grounds, where miners could meet after shifts to relax, drink, and play pool. The Industrial Mine company store was not located on camp grounds, but in the town of Superior (Superior Historical Commission 2004).

Comparative Analysis

The layout of the Industrial Mine Campus, as well as the homes themselves, reveal some significant similarities to and difference from the arrangement of housing at post-strike Berwind. All 21 homes that the Industrial Mine provided for workers and their families were 4 room houses that totaled 672 square feet. As part of the Industrial Representation Plan, CF&I built new housing for workers in Berwind in 1915. Of 95 homes, 81 were four room houses with a square footage of 672. As previously mentioned, these new homes were all enclosed by fences, and in each yard stood a privy, a coal shed and a chicken coop. During this time in Berwind, the superintendent's house was located near the mine operation office and the YMCA, away from the miner's housing. In fact, this house and the area to the north which housed mine clerks, teachers, and other managers, was referred to as "elite Tobasco and Berwind." The clustering of the YMCA, the superintendent's house, and the mine operation office created something of a town center in this area. The YMCA, presented as a gift to the miners by the company, and particularly by John D. Rockefeller himself, acted as a community meeting place. In constructing these three buildings, the company became synonymous with the town (Wood 2002, Wood 2009).

The integration of town and coal company did not occur in the same manner with the Industrial Mine and the town of Superior. While the Industrial Mine was one of the few mines in the Northern Fields with a company store, the mine and town inhabited separate spaces. The town lay to the northeast of the mine, and the town center was some distance from the mine itself. With the start of strikes in the 1910s, the company erected fencing around the Industrial Mine, physically separating the mine from the town (Conarroe 2001).

Former residents of the Industrial Mine Camp noted the divide between town and mine permeated Superior. Bob Morgan's story involving running water in the company houses illustrates this. Morgan states that children who grew up in the mine were often mocked for being poor, and their access to indoor plumbing was something they could brag about in response. While the fence reinforced the physical distance, this story indicates a collective understanding of difference between town and mine (Morgan 2002).

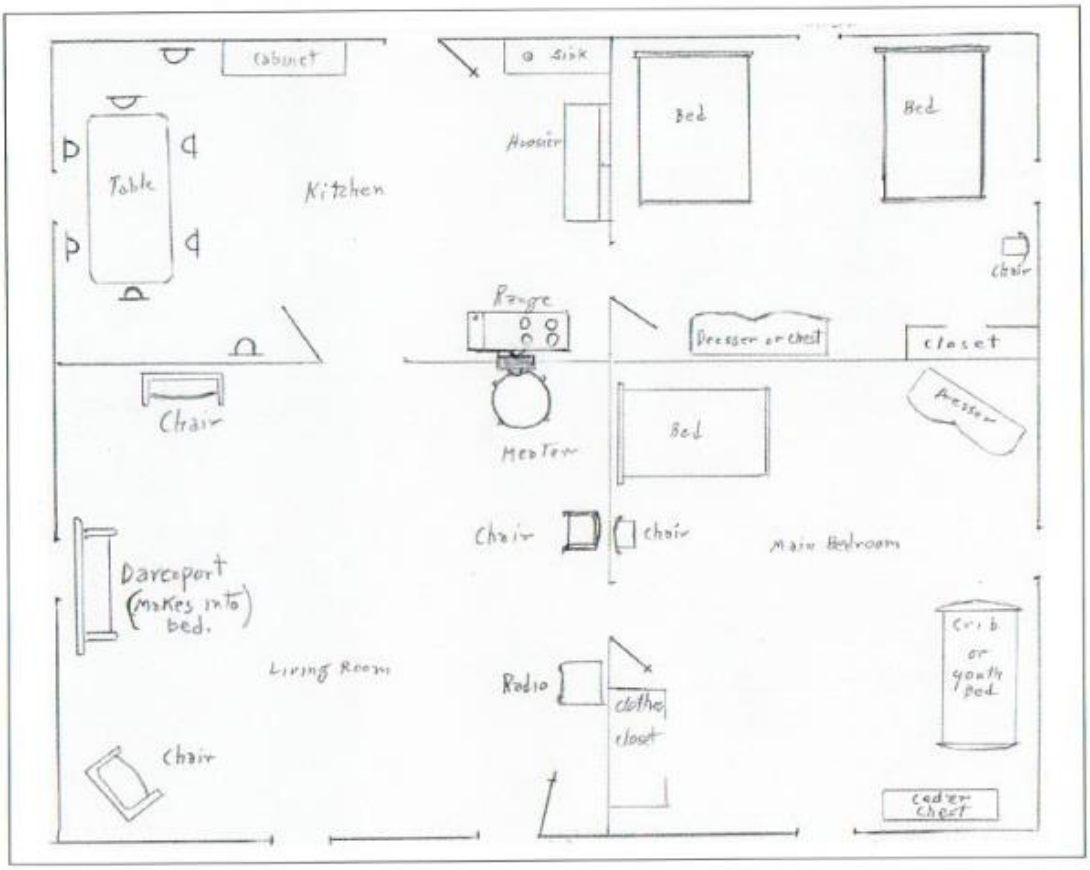

Figure 5-3: Drawing of the inside of a house at the Industrial Mine. This drawing was made by Herbert Morrison based his recollections of his childhood. It was provided by the Superior Historical Commission

As noted above, the size and layout of the houses in Berwind were carefully selected to promote individualism and the importance of the nuclear family among the miners. The small size of the houses discouraged the practice of taking in boarders, while the four rooms maximized privacy, therefore encouraging individualism among workers. These values were advanced in Berwind as a means of Americanizing the workforce, instilling middle class values in working class homes, and minimizing the desire for collective action among miners and their families (Wood 2002).

The Industrial Mine Camp housing predates the houses constructed at Berwind by a minimum of three years and may even predate the Long Strike in the northern fields. Their likeness to the Berwind homes suggests that Northern Coal and Coke may have had similar motives in creating housing for their workforce. If the houses were built prior to the long strike, the company may have been providing housing for a growing workforce. The identical four room houses would have been easy to construct quickly and at low cost, with the added benefit of uniformity. If they were built as a direct result of the strike, to house scabs, as some have theorized, the design of the housing may have been considered crucial in Americanizing a workforce that was likely heavily comprised of immigrants. Even if not provided to house scabs, Americanization could still have been a goal. According to census records from both 1910 and 1920, many miners were born abroad. Providing housing for families may also have drawn more people to work in an environment fraught with labor struggles. Regardless of whether the camp was constructed before or during the Long Strike, it is established that the use of housing to encourage certain behavior among miners occurred in the northern fields before being adopted by Rockefeller and the Colorado Fuel and Iron Company (Barthes 2007).

Housing and Women's Labor

At the start of the twentieth century, middle class households began to look down on the practice of taking in boarders. During this time, the ideal of the nuclear family rose to prominence, and led to the conflation of the family and the household. Households with boarders and extended families were no longer considered appropriate. Reformers of the day often spoke of the "lodger evil" (Wood 2002:143). This expressed the middle class ideal of a lodger-free household, which became associated with the upright, decent, American family. However, while the middle class embraced the notion of the nuclear family and rejected lodging arrangements, working class families began to take in more boarders. Women in the family were responsible for the care and work that went into providing room and board for all members of the household. As a result, by taking in boarders women contributed directly to the cash economy of the household. Boarding arrangements in the late 19th and early 20th century required that those providing the rooms provided food as well. The wives (and often children) in these living situations cooked meals for everyone and took care of all the washing. In fact, in such families, the income received from lodging arrangements often made women the primary income generators of their households. This was seldom recognized for several reasons. First, the nature of the work differed significantly from the work men did to earn wages. For men, the public and private spheres were more sharply delineated. Men worked in the public sphere and received wages for that work. For women, public and private space tended to blend together and be less distinct. The private home also served as their workspace. The same work they provided to boarders for wages, they also provided to their families. As a

result, it was difficult to quantify their work with wages. Second, the money women brought in by taking in boarders was consumed immediately. Consequently, women's contributions seemed less visible and less tangible (Wood 2002, Wood 2009).

With the rise of the nuclear family, middle class homes began to create specialized rooms. These rooms, such a parlors and dining rooms, were meant to reify the difference between family and "other." This pattern was not followed at Berwind, where the density of the living situation was extreme. Mining households did not have the square footage to justify such use of space. Rather, in these working-class households, the use of space was not defined by room type, but by space and time. The limited space meant that the purpose of rooms often shifted depending on the time of the day. Furthermore, homes were at best semi-private. The use of rooms for varying purposes meant that almost no space was fully private. Inviting boarders to live in homes literally conflated home and work life for the adult female residents (Wood 2002).

In the 1920s census, the only census for which there is a well-defined Industrial Mine Campus, it is clear that most mining families, regardless whether they lived in the town or the camp, were not taking in boarders. Interestingly, a higher percentage of mining families in the camp took in boarders.

Boarders tended to choose to live with families that shared their ethnicity. Some of this trend can be attributed to social networks which would have brought people with shared ethnic backgrounds together. Just as important, though, for boarders, was that living in a home with a family that shared their ethnicity would provide them with comfortable and familiar homes, food, and shared history. In this way, the practice of taking in boarders created and reinforced ethnic bonds (Wood 2002).

Company housing at the Industrial Mine followed middle class ideal of nuclear families, privacy, and individuality from the start. Four room houses were the norm, and unlike at Berwind, taking in boarders was not a common practice. Given boarders often chose to live with families that shared their ethnicity, it is probable that the lack of boarding relationships weakened ethnic bonds in the northern fields. However, this did not transfer to fewer labor disputes. Indeed, the Long Strike began in the north three years before the strike broke out in the South.

The road which lead to the Industrial Mine camp appears to have been unnamed. This has made it very difficult to determine which houses in various censuses fell within the mine camp. The census taker for Boulder County Precinct 35 in 1920, however, clearly noted this information by writing “Industrial Mine Campus” in the area dedicated to street name. I have identified 23 houses that the census taker marked as part of the Industrial Mine campus, as well as the boarding house. Maps from the Rocky Mountain Fuel Company as well as recollections of former residents, indicate that there were 21 houses for miners in the camp. There was also a superintendent's house. I have not yet been able to account for the extra household indicated on this census. Of these 23 households on the census, only two took in boarders, and both only took in one individual. However, several households relied on more than one income. In three households, sons or step-sons worked at the mine, or in one case as a truck driver. One household lists the “head” and “partner” both of whom worked as miners. A second listed “head” “brother in law” and “partner” as the occupants of the house. In total, 5 households relied on multiple incomes as documented by the census.

In all, only 8% of households took in boarders to make ends meet. This implies that households at the Industrial Mine lived by the Victorian American ideals of home as a place for the nuclear family. Mine wages during this time either had to cover the costs of supporting a families, or families had to find other ways of making ends meet. There is some evidence of home canning at the Industrial Mine. Gardens are well documented during the later part of the occupation of the camp housing and several oral historical accounts from children who grew up in the camp during the 1930s indicates that chickens were kept by some families. Women may have contributed financially in ways that are not visible on the census.

In Berwind, all vernacular housing was eliminated and replaced with standard company housing by 1921. Relatedly, by 1920 a drastic reduction in boarding occurred. In 1910, 44% of homes took in boarders. By 1920 only 6% of households did. This 6% of households more closely matches the 8% of boarding households found in the 1920s census of the Industrial Mine Camp. As the number of boarding households decreased, the number of nuclear families increased. In 1910, nuclear families accounted for only 25% of Berwind households. This number increased to 60% in 1920. The rise of nuclear families promoted new economic relations within the house. As previously mentioned, women could earn a substantial portion of the household income by taking in boarders. With the smaller homes, and shift to nuclear family arrangements, fewer women contributed cash to the household economy. Increased pay and subsidized housing compensated for the loss of women's labor. These same improved housing conditions also attracted more married workers, who at the time were considered a more reliable workforce.

All of the data regarding the increase in nuclear families and decrease in boarding households at Berwind come from 1920 census data, at which point nearly all of the old vernacular housing in the south was replaced. Without an income from providing boarding services, women began augmenting the household earnings by home canning their own food. The company promoted such practices by offering classes in food preservation.

Home canning became a cooperative activity among women. Pressure cookers were expensive, so it is likely that multiple households would contribute to the purchase of a single pressure cooker. Such cooperative activities would have allowed social bonds between mining families to form.

Oral accounts from former residents confirms the practice of home canning at the Industrial Mine Camp, as does archaeological evidence. The next chapter section will explore oral historical accounts of life in the Industrial Mine Camp.

Chapter Six

Data Analysis

Introduction

In previous chapters I discussed domestic life from the perspective of oral histories and societal and institutional views of working-class households. To shed additional light on the role women played in the mine camp, this chapter focuses on daily life at the Industrial Mine through material analysis. As noted in chapter three, practice theory asserts that structure in cultures comes from everyday lived experiences of individuals enacting their knowledge, rather than from strictly dictated, top down instruction. Culture is learned through example, and everyday routinized tasks transmit the structure of different cultures. Thus, the remains of these activities provide valuable insight into the production and reproduction of social structures. The artifacts collected from the Industrial Mine are the discarded and lost remains of daily activities that occurred in the camp.

Ceramic Analysis

The land on which the remains of the Industrial Mine and camp sit is owned jointly by the county and city of Boulder. The Boulder County Parks and Open Space department has leased the land to a local rancher for a number of years. The rancher uses the space as grazing land for cattle. Over time, the land has been thoroughly trampled. Additionally,

freeze thaw cycles have caused significant cryoturbation of the ground, and prairie dogs burrow throughout the site. The combination of freeze-thaw and prairie dog burrows have made it impossible to identify distinct stratigraphic layers and use those layers to determine the relative age of artifacts. Cryoturbation and prairie dogs both push buried artifacts to the surface, where they are often crushed by grazing cattle. As a result of the significant churning of artifacts, the analysis that follows necessarily takes place at the scale of the neighborhood. Household scale is discussed in general. Specific houses are discussed only where oral historical accounts make it possible.

I will start with an analysis of ceramics recovered from the site. This analysis primarily considers form rather than function, due to site formation processes discussed above. Ceramics were first analyzed to identify minimum number of vessels present. Then each vessel was placed into a ranking system influenced by Bonnie Clark's system, used in her study of La Placita, Colorado. The ranking system attempts to sort ceramics by type and decoration from least expensive to most expensive. Clark's ranking was influenced by Miller's Ceramic Index but updated for later (circa 1900) wares by using price information available through mail order catalogues such as Sears, Roebuck, and Company. The Miller's Index has often been used to assess the economic class position of a population. However, Clark points out that class position does not always dictate what types of ceramics individuals within a class will buy. The ranking system below will allow me to analyze the ways in which households in the mine camp were spending their hard-earned money and why they may have made such choices (Clark 2012). They are ranked from least to most expensive.

1. Undecorated wares-These wares are plain white ceramics, often thick and durable. They would have been cheap and easy to replace.
2. Molded wares-Wares in which the only decorative elements were machine molded.
3. Minimally decorated wares- Wares with a single decorative element, such as a band of color around the vessel.
4. Decal wares-Wares with additional decorative elements, that were not hand painted but mass-produced decals.
5. Finely decorated/porcelain wares-Highly decorated wares, these wares included hand painted items, items with gilding, and porcelain items.

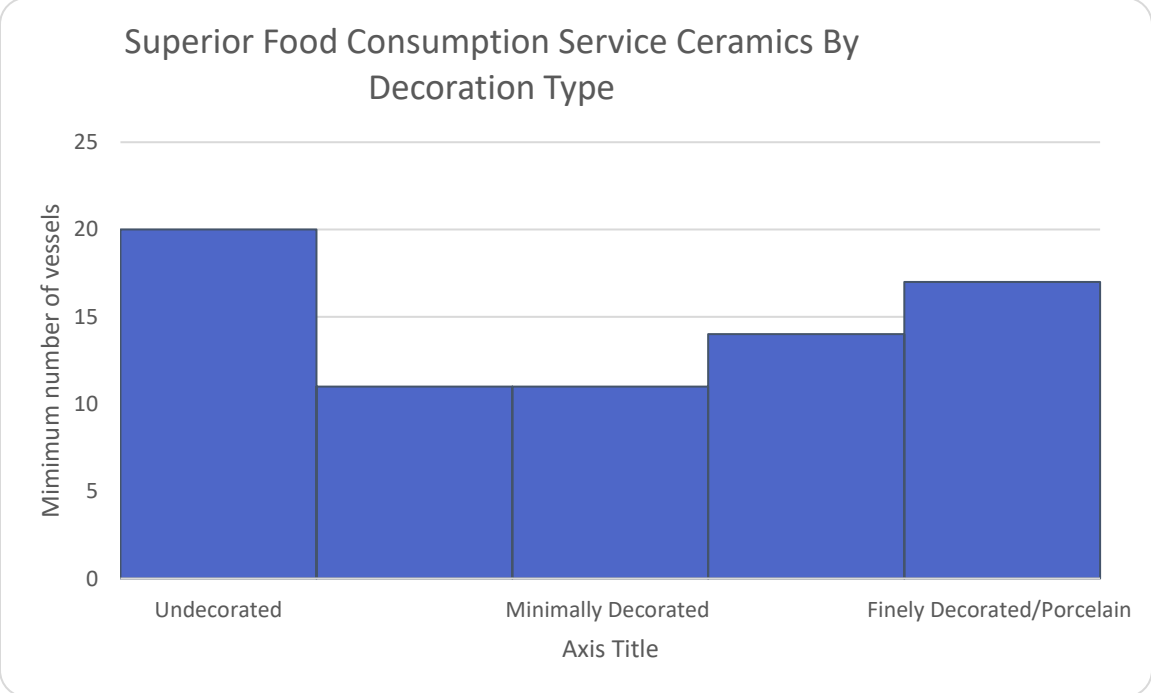

Table 6-1:This table shows the number of different ceramic decorative types found at the Industrial Mine Camp. The Table indicates that white wares and finely decorated wares were the two most popular categories in Industrial Mine

As illustrated in Table 1, undecorated, thick, functional pieces account for the greatest number of ceramics recovered from the Industrial Mine. This is not unexpected on a mine site. Cost was an important consideration for families relying on low wages. In addition to their low price, these ceramics were thick, sturdy and less likely to break than some of the high value items. Surface survey and excavation returned few molded and minimally decorated ceramics. These ceramics would fall in the mid-range category of tableware. They would have been nicer in appearance than their undecorated counterparts, but still relatively inexpensive. While the lack of these decorative types at the Industrial Mine Camp may be the result of preservation bias, the numbers suggest that families opted not purchase or use middle range options. Somewhat surprisingly, the ceramic assemblage contains a larger percentage of higher value ceramics than mid value ceramics. It seems that families at the Industrial Mine tended to stick to the extremes of this ceramic value scale. They may have purchased inexpensive, plain durable ceramics for everyday use. These ceramics would have saved money and been less likely to break. Instead of wasting extra money on more expensive, yet only slightly decorated wares, families may have been saving up to purchase finely made and decorated wares for special occasions.

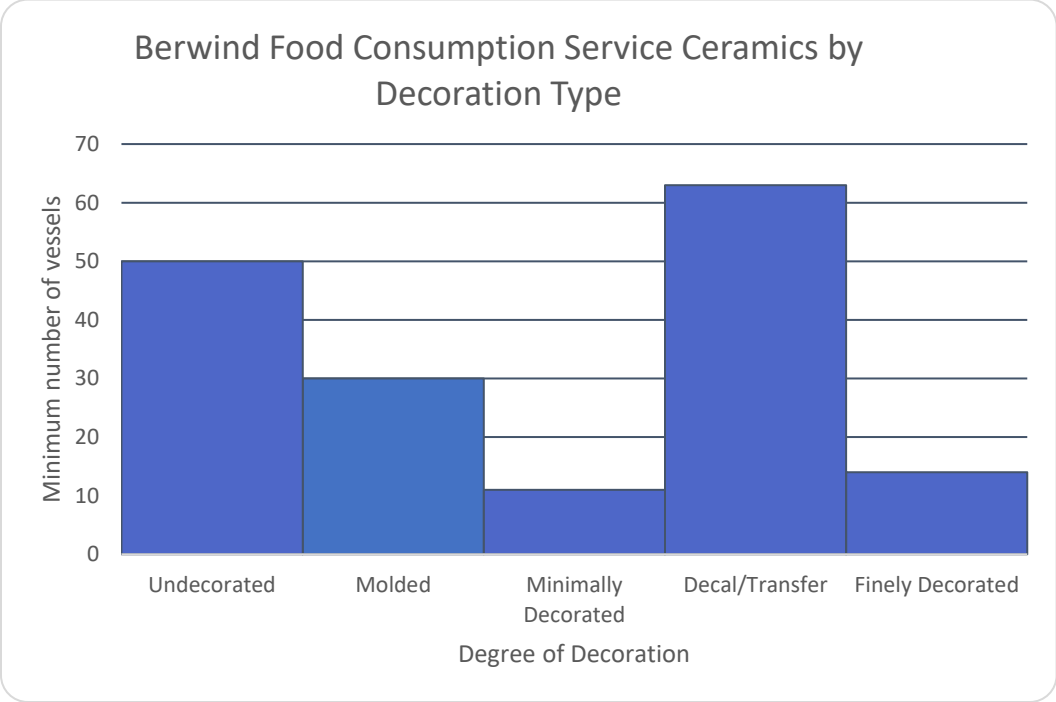

Table 6-2: This table shows the number of different ceramic decorative types found at pre-strike Berwind. The Table indicates that decal/transfer wares and undecorated wares were the most popular.

Table 6-2 shows the same breakdown of ceramic decorative types from Berwind. These numbers from Margaret Wood's dissertation. This assemblage comes from the pre-Strike locus at the Berwind and dates from approximately 1904 through 1918. Wood used slightly different decorative categories that included more groups in her analysis. In order to make the two assemblages comparable, I combined and renamed her groupings. For example, Wood had a separate category for decal and transfer ware. I combined those numbers for this analysis. At Berwind, the largest ceramic category is Decal/Transfer. These would have been the second most expensive type of ceramics available. The next largest category at Berwind is undecorated ceramics. As the cheapest, and often sturdiest option, these ceramics would have made both financial and practical sense for mining families. Interestingly, molded ceramics make up the third largest category in the

assemblage. Finely decorated ceramics account for only a small percentage of the Berwind ceramics. I performed chi square tests on the Berwind and Industrial Mine Collections to determine whether the assemblages are significantly different. The results indicate that they are highly significantly different (x^2=79.80 d.f.=4, see Appendix C). However, these extreme results are likely a cause of very small sample size in some of the categories of the Industrial Mine ceramic assemblage. That being said, we can still draw some insight from this test. The high number of highly decorated ceramics in the Industrial Mine assemblage is largely responsible for the significant difference between the two collections. Women in the Industrial Mine Camp chose to focus their purchasing power in very different ways than women in Berwind. The Berwind assemblage indicates a greater willingness to purchase mid-range products. It also seems that families at Berwind may have been less concerned about ceramic display (Wood 2002).

The time period of the Berwind assemblage predates the Industrial Mine assemblage. Changing ideas about household structure and domestic life may not have taken hold at this point in time. Further, Berwind was a larger camp, and in the period before the strike, many homes in the company town were not built by the mine owners. The houses were somewhat bigger than at the Industrial Mine, and mining families often took in boarders as way of gaining a second income. In this way, a household was more than the dwelling of individual families. It also acted at place of service. Choosing cheaper ceramics would allow women to buy the greater quantity needed to support their boarders. Plain, durable items were also easier and cheaper to replace than decorated wares. While taking in boarders would have created greater financial stability for mining families, attitudes regarding domesticity were changing. American Victorianism gained popularity

and middle-class values began to dictate that households should be seen as private spaces composed of nuclear families. In such settings, tableware gained an importance in the ritual of the family dinner. When guests were invited into the home for meals, finely made and decorated ceramics were used to signal status.

Since families at pre-strike Berwind were not adhering to the ideals of American Victorianism, it is likely they had less of a stake in acting out its values through ceramic consumption practices. On the contrary, most ceramics from the Industrial Mine Assemblage date to the 1920s and beyond. Further, the camp housing for the workers was constructed entirely by the Northern Coal and Coke company. The mine, rather than the workers, built these homes. They created 21 small, identical structures. The size of the houses likely limited the ability of the mining families to take in boarders, though some still did. Families at the Industrial Mine lived in small houses, primarily in nuclear units. They had small yards, porches, and were encouraged to garden. The later date of the assemblage might also mean that American Victorian ideals were more ensconced in the culture.

The women living in the Industrial Mine during this time likely purchased tableware items that aligned more fully with American Victorianism than their counterparts at Berwind. The earliest coal mines in Colorado date back to 1859 in Denver and Boulder Counties. By 1893 Colorado was the nation's leading coal-producer. As such, Colorado became home to a host of company towns. As discussed in chapter two, company towns are the product of more centralized control than voluntary towns, and therefore speak to how people negotiate life in settlements where their behavior is more restricted. In addition, most mines, and therefore company towns, were founded by Anglo-Americans, who

imported Victorian values. American Victorian Culture dominated the American cultural landscape from the end of the Civil War to the end of World War I. Most mining settlements in Colorado were founded during this time, including the Industrial Mine. As such, middle class values of temperance, emphasis on efficient use of time, conspicuous consumption, individual self-righteousness, and emphasis on natural laws of moral principles were imposed upon the working-class by the middle-class (Wood 2002, Clark and Corbett 2007, Baker, Smith and Sullenberger-Fry 2007).

Collection and ownership of finely made and decorated ceramics would have cost more money in households that, apart from rare cases, do not appear to have an additional source of income outside of mine work provided by the "head" of the household. The lack of the additional income provided by taking in boarders combined with the large number of more highly priced ceramics indicates that families placed great importance on the ownership of such items. Despite low pay, women and families were willing to spend extra money on high cost items, or willing to put in the time to find such items second-hand (Wood 2002).

While cost analyses like the one above are instructive, they don't allow for a glimpse of a fuller picture. Focus on vessel function, as well as style, allows for a more complete analysis. Unfortunately, a complete analysis of ware type is not possible with this assemblage due to the prevalence of small sherds without identifying characteristics. What follows is a partial qualitative analysis of the few identifiable forms.

Early attempts at an engendered historical archaeology often assigned certain artifact types as women's artifacts. Coffee and tea wares fall into this category, and they, along with other artifact types have been used to "find" women in archaeology. A search

for the mere presence of women in the archaeological record clearly does not add much in the way of analytical knowledge. However, documentary evidence does support the association of a greater emphasis on coffee and tea wares with the presence of women in working communities. Rather than simply "finding" women, these patterns can be used to explore women's purchasing patterns and how those might relate to their other activities (Wood 2002).

In her 1997 study of early to mid-nineteenth century middle class consumption patterns, Diana di Zerega Wall examined assemblages from upper and lower middle-class households. Wall argues that in tea rituals in which non-family members were entertained, styles of the ceramic tea wares played an important role in vying for class position. This study not only provided insight into the social relationships of the middle class, it also provided a model on how to examine "women's" artifacts in ways that consider the circumstance and social actors involved (Wall 1997).

Margaret Wood discusses the notion within archaeology that patterns are assumed to have meaning and plainness is assumed to be meaningless. In her discussion of Berwind, Wood posits that plainness was consistent, and therefore in a sense its own pattern. She uses the abundance of plain white ceramics at Berwind to argue that while families may not have been able to purchase full sets of decorated ceramics, they could have bought plain white wares, which have been both more durable and allowed for the easy and cheap replacement of any broken or lost items. She argues that working class families were creating their own matched sets of white tableware. Such place settings would also have promoted the family and the meal over the ritual of dining (Wood 2002).

In her work on African American Mothering, Wilkie also suggests that plain white ceramics were intended as matched sets by an African American household in Mobile, Alabama. Wilkie argues that plain white tablewares are themselves matched sets, which come with their own symbolism. White wares emphasize motherhood, and purity and sanctity of the household. The consumption of plain wares essentially became a way to express Victorian respectability on a budget.

Like at Pre-Strike Berwind, plain white ceramics make up the largest proportion of the Industrial Mine ceramic assemblage. Due to the site formation processes, as well as the trampling by cattle, the assemblage contains mostly small fragments, many of which cannot be classified as a specific vessel type, such as bowl, saucer, or plate. As such, a detailed analysis of dinnerware versus tea and coffee wares is impossible. However, some ceramics have been identified as other than dinner wares.

Figure 6-1: These sherds are decorated in the willow ware style. They are part of the lid of a sugar bowl

Figure 6-2: These sherds are delicately decorated. The rim diameter indicates that this vessel was very small. It appears to have two handles, indicating that it could likely have been used in the consumption of tea or coffee as a sugar bowl, or creamer

These artifacts include the lid of a sugar bowl, fragments of a small vessel that appears to have handles on each side, and a few fragments of cups. The lid of the sugar bowl is decorated in the willow ware style that became popular in the 19th century and remained into the 20th century. Sugar bowls, as today, were used primarily in drinking coffee and tea. Given the dual handles on the artifact shown in Figure 6-2 above, it is likely that this was also a vessel used in the consumption of tea or coffee.

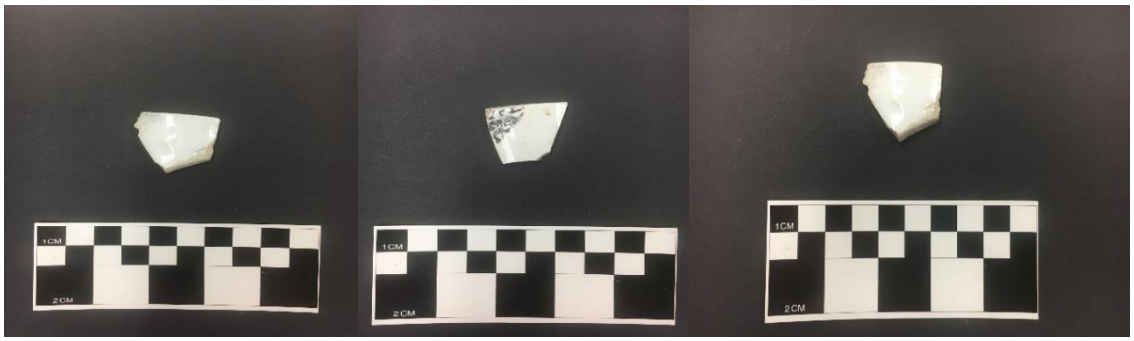

Figure 6-3: These small sherds are all rim pieces. Based on the diameter of the rims, they were likely mugs. All are decorated plainly, indicating that they would have been used primarily for coffee rather than tea consumption.

Of the ceramic fragments that are likely cups, only one is decorated, and minimally at that. The families at Superior may not have consumed much tea, as tea wares are typically assumed to be highly decorated. Tea drinking is associated with formality, and among middle class families was often used to show status at gatherings. Drinking coffee, as today, was much more casual. Coffee shared between neighbors was not a structured event at which hosts jockeyed for social position. Rather coffee was a drink shared between friends that often facilitated the formation and strengthening of social relationships. Coffee cups tend to be less highly decorated and more utilitarian. It is likely that the cup fragments

recovered from the Industrial Mine were used for the consumption of coffee rather than tea.

In her thesis, "Contested Ideals: Cultural Citizenship at the Ludlow Tent Colony," Anna Gray makes the same argument (2005). Gray focused her analysis on a single household in the Ludlow tent colony. She notes that while this household possessed the material culture associated with symbolic tea rituals, those materials may not have been used solely, or even primarily for tea consumption. She cites the recovery of several demitasses as evidence of coffee consumption. Additionally, Gray uses oral historical data to show that mining families regularly shared coffee. Gray concludes that this particular household used fine tea ware to convey the symbols of gentility, while maintaining a preference for coffee.

The Industrial Mine collection contains some larger ceramic artifacts which would have been involved in food production and storage rather than consumption. At least two large stoneware jars, or crocks, were recovered from the site, one with a 3-quart capacity and the other with a 4-quart capacity. Such items would have been used for storing butter, salted meats, and even alcohol. They were also used for brining and pickling vegetables. Before canning jars with glass and zinc seals became prevalent, they were also used in the food preservation process. Given the date of the Industrial Mine artifacts, it is unlikely, though possible, these crocks could have been used in this manner.

The ceramic assemblage also contains fragments of two small saucers. The size of these saucers clearly indicates that they were part of child's tea set. The differing sizes of the two fragments, as well as the style of their bases, shows that they did not come from the same tea set. As discussed above, matched sets were an important part of the American

Victorian ideal. While working class families did not always adhere to this ideal, they often made efforts to do so. This could have extended to children's tea sets and it is not unlikely that children would have had mismatched sets bought secondhand. However, these two artifacts were found in different locations on the site. Therefore, it is likely that at least two households had tea sets as toys for their children.

The material remains of childhood are an understudied subject in archaeology. In prehistoric archaeology it is often difficult to identify objects related to play. Studies of childhood in prehistory necessarily rely on children's graves as the most reliable source of data. Objects of childhood are more easily recognized and defined in historical archaeology. Once mass-produced goods enter the record, this ease of recognition only increases (Moore 2009).

Figure 6-4: This picture shows sherds from two different saucers that were from a child's tea set. The two saucers are different sizes and have different bases, indicating that they were not from the same set.

The study of childhood, and in particular, toys, can reveal a great deal about the culture in which those toys were made, purchased, and used. Childhood play often acts as practice for life in the social world of adults. Toys purchased by parents reveal information about the values and behaviors they want to instill in their children.

Toy tea sets were originally marketed to the middle class and taught girls proper ways to behave in society. From the mid-nineteenth to the early twentieth century, Victorians placed increased importance on values such as balance, order, and temperance. Mothers were tasked with transmitting these values to their children. As addressed above, possession and display of symbolically appropriate items was also a necessary component in middle class Victorian homes. Toys purchased for their children, like tea sets, and porcelain dolls, would have followed this pattern (Moore 2009).

The toy tea wares collected from the Industrial Mine site are plain and devoid of makers marks, so an exact date of production is impossible to find. These ceramics likely date to the later end of the occupation of the mine, from 20s-30s, falling a bit past the American Victorian Period. In the article "Working Parents and the Material Culture of Victorianism: Children's Toys at the Ludlow Tent Colony," Summer Moore notes that toys symbolized working class notions of success at this time, and often expressed a hope for social mobility for their children. Working class families relied on Victorian-esque forms, even after some aspects of Victorianism fell out of favor with the middle class, to make statements about their own perceived prosperity (Moore 2009).

The presence of toy tea wares, therefore, does not necessarily indicate that adults were taking part in middle class Victorian tea drinking. Rather, such toys would have taught children, particularly girls, how to host events, and engage in appropriate social behaviors. Such skills may not have been strictly necessary in the mine camp but would have allowed for the social mobility of young women.

Somewhat surprisingly the Industrial Mine assemblage contains only one example of bric-a-brac. Bric-a-brac items were readily available during this time and were quite cheap. Paul Mullins discusses bric-a-brac in his analysis of African American consumption patterns in turn of the century Annapolis. In this context, bric-a-brac items were near ubiquitous. Mullins notes that most bric-a-brac items retailed for a nickel or less, so they were not ideal items to display wealth. Mullins argues that the popularity of such items was the result of allowing consumers to be symbolic participants in affluent, industrial America. According to Mullins, "Such objects defied valuation like purchase price or utility, instead serving as vehicles of consumers' desire to see themselves within an idealized society and

world" (Mullins 1999:186). They were also found at Berwind, and even in the tent encampments at Ludlow. The lack of such items here is therefore noteworthy.

Glass Analysis

Glass artifacts at this site are mass produced and for the most part intended for immediate consumption. These types of artifacts can therefore reveal information about

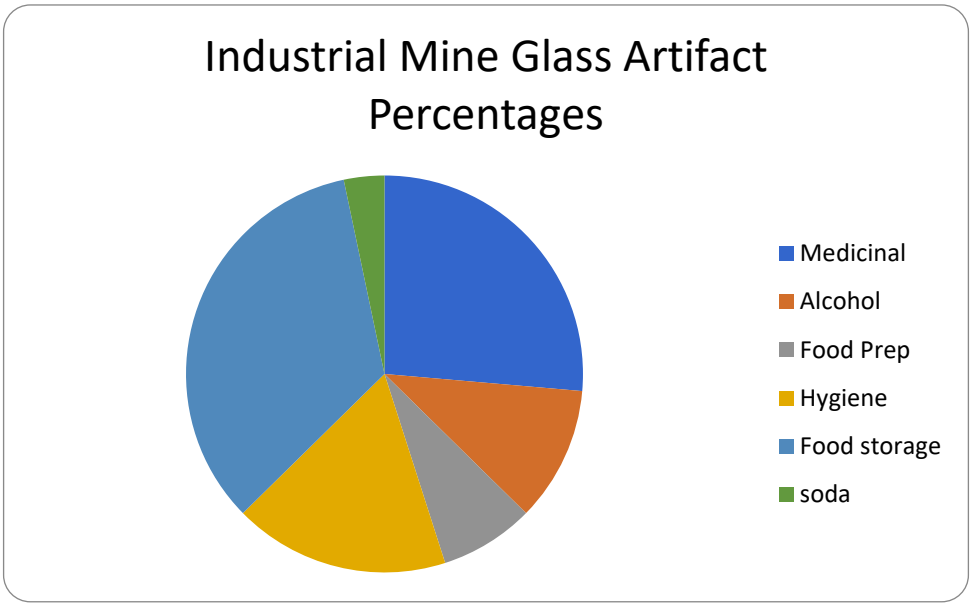

Table 6-3: This table shows the percentage of glass artifacts by use category at the Industrial Mine. Notice that food storage makes up a large part of the assemblage, while alcohol is the second smallest category.

the everyday consumption habits of Industrial Mine families. While the ceramic assemblage reveals information about dining habits and symbolic display, these glass artifacts highlight the day to day food preparation activities, drinking habits, and medical needs of the Industrial Mine families. We collected 519 glass sherds from the Industrial Mine camp. In order to analyze this assemblage, we categorized the glass as food storage, hygiene, food preparation, alcohol, medicinal, or soda. Miscellaneous unidentifiable bottle glass was not included in this breakdown.

This breakdown of the glass assemblage includes only those glass artifacts that could be positively identified as belonging to a category. There is a significant amount of miscellaneous bottle glass that was not counted in this breakdown. Most of those artifacts either lacked identifying brand names or makers marks. Nevertheless, the breakdown above provides compelling information about life in the Industrial Mine camp. Food storage artifacts make up the largest category in the glass assemblage. These artifacts consist of jar glass and milk glass lids used in home canning. The large number of these artifacts supports the notion that women in the camp preserved perishable goods as a means of contributing to the household economy.

The conspicuous absence of boarders and the demand for high cost items further suggests that families needed to find ways to cut costs elsewhere. Several artifacts related to home canning were recovered from the Industrial Mine site, either during surface survey or excavation. Unlike women at Berwind, wives in Superior did not need to spend a great deal of time caring for the needs of paying tenants. This extra time could be spent canning fruits and vegetables and tending to gardens. Additionally, oral historical evidence indicates that women and children would gather together to pick wild growing fruits. Though much of this harvest was likely consumed fresh, women would have had the ability and the incentive to preserve at least some of it.

The next largest category contains medicinal artifacts. This category includes items such as a bottle that once contained cod liver oil, Vicks VapoRub, and bottle marked with symbol that indicated a “physician’s sample.” These three examples alone cover dietary supplements, decongestants, and medical drugs. Cold cream jars were also included in this category. In fact, of the 24 vessels in this category, 5 are cold cream jars. Cold cream jars

are not uncommon on mines sites and are not necessarily artifacts associated with women, as such products likely would have provided relief from blisters, dry and cracked skin and other minor ailments that result from hard labor. Additionally, there is some evidence that cold cream was used in place of shaving cream (Fits-Gerald 2015).

Most of the artifacts that fall within the hygiene category are bleach bottles. It is unsurprising that mining households would rely heavily on bleach to clean their clothes and their homes, especially in light of Gennie Acklin's testimony regarding the cleanliness of mining households. What is surprising is the next category: alcohol. Glass artifacts associated with alcohol consumption account for only 11% of the glass assemblage. In her study of domestic life at Berwind, Margaret Wood does not discuss those glass artifacts associated with alcohol. As such I have no direct comparison for that site. However, Claire Horn utilized a similar breakdown of glass artifacts for the Ludlow assemblage. Her analysis shows that alcohol accounts for 23% of glass artifacts.

As with ceramics, I also performed a chi square test on the glass assemblages at the two cites. The same caveat regarding small sample size applies with in this test, which also showed a highly significant difference between the two collections. Within this test, the high number of food storage artifacts in the Industrial Mine assemblage is major driving force. The lack of glass related to alcohol consumption also contributes to the significant differences between the assemblages (x^2=56.03 d.f.=5, see Appendix C). This difference is not unexpected given the nature of the two sites. The Ludlow encampments were temporary structures where miners lived during the Long Strike. Labor unrest necessitated solidarity between workers, and alcohol often played a role in bringing people together. Additionally, the Ludlow tent colony was occupied during the year of 1914, before

prohibition was enacted. Most artifacts from the Industrial Mine site date to the 1920s, right in the middle of prohibition. This does not necessarily mean that the residents of the Industrial Mine Camp followed the letter of the law. Rather mass produced and bottled alcohol would have been scarce, and the archaeological record likely reflects this. The lack of alcohol vessels, however, may indicate that heavy drinking was not a part of everyday life at the Industrial Mine. This notion is supported by oral historical accounts from former residents of the mine. In chapter five one former resident, Gennie Acklin, is noted as saying that her parents did not drink alcohol. She further states that very little alcohol consumption took place within the camp as a whole. While the archaeological evidence does show that drinking did take place on the camp, the low percentage of artifacts related to this habit may reflect that Gennie Acklin was not a naive child unaware of the alcohol habits of the adults that surrounded her but recalling accurately the details of life in the mine (Horn 2009).

There are very few glass artifacts associated with food preparation and consumption at the Industrial Mine. There is evidence of serving platters and bowls, brightly colored and molded to look like cut glass or crystal. These account for only a small portion of the glass assemblage. Cut glass was a cheap way to mimic crystal. It provided the look of opulence without the price tag. The lack of such items suggests a lack of interest in trying to mimic middle class life. Very few glass display items in conjunction with the lack of ceramic bric-a-brac items indicates that families in the Industrial Mine camp were not seeking out items for display. The small size of the homes meant that space available for such items was severely limited. Only two rooms could be considered communal, the kitchen and the sitting room. Oral histories indicate that the sitting room was often

converted into a bedroom at night. Given this, it is not surprising that families in the camp focused their resources on purchasing fine ceramics, which could be displayed in the kitchen and during meals.

Closing Thoughts

Households in the Industrial Mine Camp made specific choices about which aspects of American middle-class values to adopt and which to reject. In some ways women in the mine camp ascribed to purchasing patterns that would have conformed to middle class values of fine dining. The Industrial Mine assemblage contains a much greater percentage of finely decorated ceramics than the Berwind assemblage, indicating that these women went out of their way to purchase such goods. There is some evidence of attempts to match these sets. The assemblage contains several examples of willow wares or blue and white patterned ceramics. At the same time, there is little evidence of tea wares, indicating that these families were not concerned with conspicuous display in the same way that middle class families often were.

The glass assemblage of the Industrial Mine indicates that home canning and food preservation was an important part of life. Oral historical evidence further supports this. The oral histories additionally suggest that some aspects of canning, such as gathering wild growing fruits, may have been cooperative. Margaret Wood discusses the expense that a pressure cooker would have incurred for a single family at this time. Though there is no material evidence of pressure cookers at the Industrial Mine, the amount of canning goods makes it likely that a pressure cooker would have been sought after. This too suggests cooperative networks among families.

Women in the Industrial Mine began in households designed to mimic middle class values. Additionally, workers in the northern fields were paid about 20% more than their southern counterparts. As a result, it is likely that women in these households conformed to more aspects of middle-class ideals than women in Berwind. However, while pay was greater, these women didn't have the space to turn to boarding for additional income. Instead, families at the Industrial Mine relied on home canning, gardening, and keeping their own chickens. Families, with women as the primary purchasers, were picking and choosing which middle-class values to conform to in order to meet their economic needs and position themselves socially within the larger town of Superior. Such positioning may also have given them greater bargaining power in labor negotiations.

Just as important are the ways that women and families in the mine camp resisted middle class norms. The lack of tea wares suggests that Industrial Mine families weren't concerned with overt displays of social position. They appear to have preferred coffee, a drink strongly associated with friendship rather than competition. Women and children worked cooperatively in canning. The lack of overt evidence of alcohol consumption may indicate that women's social networks, more than men's, created the solidarity necessary for labor resistance.

Chapter Seven

Conclusion

Women as Agents of Labor Struggles

Several notable women acted to gain labor rights in the northern coal fields. The most well-known and well-loved of these women was Josephine Roche, who gained control of the Rocky Mountain Fuel Company in the late 1920s, shortly after the Columbine Massacre. Roche's progressive ideals soon won her the loyalty and appreciation of the miners. Even people who were children during this time period seem to speak of her fondly, suggesting that their parents must have held her in some esteem. Josephine Roche could affect change due almost entirely to her economic status and family relationships. Working-class women couldn't affect labor in the same way, so they had to turn to other avenues.

In first chapter, I laid out four questions that served to guide this research.

- To what extent were the women of the Industrial Mine Camp conforming or not conforming to gendered expectations of Victorian womanhood prevalent at the time?
- How do the lives of women in the mining camp compare to those of the women in Berwind?

- How do the consumption patterns of Superior homes compare to those of similar working-class household of the time?
- To what extent were women in the Industrial Mine Camp manipulating gender and class expectations?

I designed these questions to help me discover if and how working-class women in the Industrial Mine camp played a role in labor struggles. Through this work I found that women in the Industrial Mine camp embraced many aspects of American Victorianism. For the most part, families in the mine camp did not take in boarders. Women in these families supplemented their husbands' wages not with paid labor from providing room and board, rather they took up home canning and gardening to stretch paychecks further. Children often took charge of caring for chickens. Households in the mine camp followed middle class ideals, whether it was their choice, or dictated by housing size, of lodger free dwellings and largely followed the model of the nuclear family.

The ceramic assemblage recovered from the site indicates that women at the Industrial Mine sought out decorated and well-made ceramics. It seems families in the mine camp were both aware of middle-class norms and seeking to emulate them, at least as far as dinnerware was concerned. The presence of toy tea sets also suggests a desire, if not to conform to middle class ideals, to at least promote social mobility among their children. Though decorative wares are common in the assemblage, identifiable cups are rare. Those that do exist appear plain, suggesting use for coffee rather than tea. The lack of definitive tea wares indicates that women in Superior were not attempting to emulate the formal, performative ritual of tea drinking. Further, the glass assemblage shows little in the way of

cut glass. Colorful pieces mimicking crystal are scarce. Families were not purchasing pieces for display.

Oral histories provide evidence that Industrial Mine camp residents worked to change the built environment where possible. Gennie Acklin notes that her father built closets into the bedrooms of their home, while Bob Morgan notes that their house was one of the few with a garage. In her discussion of the built environment in Paradise, Nevada, Margaret Purser notes that architectural embellishments became a way to participate in Victorian culture. She specifically notes that those who could not afford to make large scale changes often added small parlors and closets. Many of the oral histories available also mention the presence of chicken coops and cellars. It is clear that many if not all households were equipped such spaces. What is not clear is whether the houses came with cellars and chicken coops or whether the residents added them on. The cellars were located outside of the houses, with no access from inside the home. Given this, it is possible that residents added on cellars themselves. Chapter four contains a discussion regarding the location of the cellar on one house within the Industrial Mine Camp. Resident Denzil Acklin recalls that the cellar was on the west side of the house. However, ground penetrating radar evidence indicates the presence of a cellar on the east side of the house. There is some evidence of cellar in the area where Acklin recalls. This could indicate that at one point throughout the life of the house, some resident added a second storage space.

Families also grew gardens around their homes. Such gardens would have allowed households to stretch their income by supplementing diets with home grown foods. It is likely that maintaining gardens would have been encourage by the company as means of instilling “ownership” over property in much the same way as occurred in Berwind. The

Superior Historical Commission notes in their book "Lost Superior" that competitions for best garden were held in the mine campus. With the advent of World War I, the growing of gardens became associated with patriotism as citizens were encouraged to grow food to support the war effort. Gardens could help position miners as patriotic Americans and good workers, while also allowing them more freedom to participate in other aspect of consumer culture.

Superior residents' changing of the built environment allowed them to participate more fully in the dominant middle class culture. However, such changes should not be read solely as conformity to middle class values. Changing the existing structures in very highly structured environment afforded Industrial Mine residents a level of agency within their restricted environment.

Women in the Industrial Mine and women in Berwind made different choices when it came to provisioning their homes with ceramics and other daily necessities. While women in Berwind, especially pre-strike, focused their efforts on wage earning through boarding, women in the Industrial Mine camp chose home canning. These choices were not made in a vacuum. Pre-strike housing at Berwind was, on average, larger than the homes at the Industrial Mine. Northern field mine workers were paid about 20% more than their southern counterparts. Families in the Industrial Mine camp had an income that could better support purchases like finely decorated ceramics.

As noted in chapter five, housing in the Industrial Mine began as small, four room structures. This model was introduced in Berwind post-strike as a means of promoting middle class values among the working-class miners. Women in the Industrial Mine camp felt these pressures from the beginning.

The high number of finely decorated ceramics could indicate that families in the Industrial Mine were participating to some extent in performative dining rituals. Diana Di Zerega Wall discusses ceramic dinnerware and teaware from upper middle class and lower middle class contexts. She notes that while both households used white ironstone wares with paneling, the upper middle class household had teawares that were much more finely decorated than the wares from the lower middle class context. Wall suggests that the plain white dinnerwares used during family meals elevated the substance of the meal and time spent with family over the form of the dishes. In contrast, upper middle class tea parties were rituals that women would participate in with their peers. In this context, ceramic teawares were used to display social status. In the Industrial Mine Camp, the largest category of ceramics are plain white wares. These were likely used for everyday meals with family in much the same way Wall describes in her essay. As noted above there is a lack of highly decorated tea ware. Therefore, it is unlikely that women in the Industrial Mine were participating in upper middle class afternoon tea rituals. However, it is likely that they would share meals with neighbors and friends from time to time. The Industrial Mine assemblage lacks artifacts related to outward display such as cut glass and bric-a-brac. This is likely related to the somewhat extreme lack of space within houses. As a result, women in the Industrial Mine likely invested in kitchen wares for display. Highly decorated ceramics could have been used when entertaining guests in much the same way that upper middle class families used highly decorated teawares. Several of the most highly decorated artifacts are objects such a sugar bowls, which may have sat on kitchen tables or shelves and therefore served double duty as both a useful object and display item (Wall 1991).

Mining families in the Industrial Mine camp were picking and choosing aspects of the dominant middle-class culture in which to participate. Women, as the primary purchasers of domestic goods, would have played a large role in making these decisions. Adhering to mainstream ideals may have increased the bargaining power for mining families. Choosing to buy more expensive ceramics may have allowed these families to demonstrate their gentility, and as a result, potentially garner more sympathy and support from the company and the surrounding town.

Women may also have taken up home canning not just to contribute to the household economy, but to position their families as American. The 1920 census, the only census which designates the Industrial Mine campus, shows that over half of the households were inhabited by at least one person born in another country. Though I could not find the Industrial Mine camp in the 1910 census, looking at just at men whose occupation was listed as "miner" shows that the majority of mining families were immigrant families. In the early 1900s, anti-immigrant sentiments were on the rise. During the World War I, home canning came to be seen as crucial to the war effort. So much so that community centers throughout Colorado, and the U.S. more broadly, offered classes. These same places, like the YMCA in Berwind, also had America First Societies.

The added benefit of home canning, aside from stretching the family income, is that it fostered social relationships between women. The oral historical data indicates that women and children would gather every year to harvest wild growing fruits. This data also shows that at least one family canned many types of food, from fruits and pickled vegetables to meats. These families wouldn't have needed a pressure cooker for pickling vegetables and canning fruits and jams. However, canning meat would have required a

pressure cooker. Margaret Wood suggests that that women in Berwind would likely have split the cost of a pressure cooker in order to overcome the financial burden of such a high cost device. This practice would have further linked households together through women's social relationships. The same practice of splitting costs could have been present at the Industrial Mine.

The labor movement during the long strike made clear that positioning workers as patriotic Americans was essential to the success of striking miners. Miners and the UMWA did what they could to emphasize the Americanness of the strikers. Women in mining camps would have seen the association of home canning with patriotism and could have used the task both to stretch the household economy and to position their largely immigrant families as truly American.

Heritage

From the very beginning, this project was rooted in community involvement. Superior resident, and member of the Superior Historical Commission, Kathryn Barthes, brought the project to Dean Saitta. She had attended a lecture Dean gave on the Ludlow and Berwind sites in the southern coalfields and felt that Superior and the Industrial Mine were also worthy of archaeological investigation. Dean brought the project to me and Jenna Wheaton. We first met with Kathryn at the Industrial Mine site. She brought former Industrial Mine resident, Bob Morgan with her. He walked the site with us and pointed out his childhood home. Unlike many of the rest of the houses, the foundations of the Morgan house were still visible. He pointed out the superintendent's house and spoke about playing in Coal Creek and walking by the train tracks.

Archaeologists have been aware for some time that we need to present our findings to our stakeholders. However, only recently has archaeology as a discipline began to truly collaborate with them. Collaborative work opens archaeologists to a broader range of ideas and exposes us to notions we many never have considered. Meeting Bob at the start of this project and listening to him talk about his childhood immediately centered children in this research in a way that adds complexity, richness, and more reliable data.

The collaborators in this thesis include community members who have never met us, or even interacted personally with the project, especially members of the Superior community have been engaging in heritage conservation for years. The Superior Historical Commission has collected items related to the mining industry, but they have also tracked down an original house from the Industrial Mine camp. The Historical Commission purchased the house and restored it to its original dimensions (an addition had been added after the house was bought and moved). They placed the house in a park in town where it became the Superior History Museum. Visitors can walk through the 4-room structure and get a sense of what it would have been like to live at the Industrial Mine with their families.

The Boulder County Library engaged in heritage preservation with the recording and collection of oral accounts of life in the Industrial Mine and the town of Superior more generally.

Bonnie Clark notes that, “Collaborative archaeology is by its nature an exploration of the past and of the concerns of the present.” (Clark 2017: 4) The Superior Historical Commission came to us with this project out of concern that the Industrial Mine is being forgotten. During our fieldwork, we could see active development of new neighborhoods very close to the site. I believe if the site were privately owned, it too would be sold to

make way for additional housing. Even now, there is no signage to indicate that the crumbling foundations are part of a mining operation largely responsible for the existence of the town itself.

Despite this, through the collaborative aspects of this project, we found that there is still significant interest among the residents of Superior today. We had a crew of volunteers, many of whom found out about the project through a newsletter put out by the historical commission. At the end of our excavation, we held a "public day." We brought artifacts, let visitors walk through the site, and left one excavation unit opened to allow people to see the process. The turnout exceeded our expectations.

Engaging in heritage allows for a more reciprocal exchange of information. Our stakeholders were able to learn from the work we did, while we were able to crowdsource information from former residents, local historians, and even regular citizens who took an interest, if only for a day.

On a local level, this project brought awareness back to the mining history of the town of Superior. Through excavation, presentations, and public days, stakeholders were able to interact with their own heritage and to not only reflect on their history but add to the discourse.

On a broader scale, our work also allowed for an analysis of the dynamics of collective action versus corporate control. It's no secret the writing of this thesis took some time. In that time, the United States has seen a resurgence in collective action. There have been several successful teachers strikes, including locally in Denver, as well as a mining strike in Virginia. This thesis serves as a testament to the fact that women have always been integral to the success of labor movements.

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Appendix A: MOU with Boulder County

BOULDER COUNTY
MEMORANDUM OF UNDERSTANDING

ERIN ARSENAULT OPEN SPACE
INDUSTRIAL COAL MINE AND MINING CAMP ARCHAEOLOGY PROJECT

THIS Memorandum of Understanding, hereinafter referred to as the "MOU", is between the **COUNTY OF BOULDER**, a body corporate and politic, State of Colorado, acting by and through its Board of County Commissioners, hereinafter referred to as the "County", and the **COLORADO SEMINARY**, which owns and operates the University of Denver, 2199 South University Boulevard, Suite 414, Denver, Colorado, 80208, a Colorado private nonprofit corporation, doing business as the University of Denver, hereinafter referred to as the "University" (collectively the County and University hereinafter referred to as "the Parties").

RECITALS:

A. **The** County is the owner of the Erin Arsenault Open Space property located in Section 24, Township 1 South, Range 70 West of the 6th P.M., County of Boulder, State of Colorado.

B. **The** County currently leases the property to Albert and Leo Hogan for agricultural farming operations.

C. **The** County, in a separate Lease Amendment, has obtained the permission of the current Lessees to allow the University to excavate the property for the purpose of archaeological investigations in fulfillment of requirements for two Master of Arts in Archaeology degrees at the University.

D. **The** Parties desire to enter into this MOU in a joint effort to preserve historical and cultural artifacts from the past mining operations.

E. **The** Parties desire to enter into this MOU in an effort to preserve the heritage and to provide historical interpretation to the County regarding the current community/residents.

F. **The** official dates for the Industrial Coal Mine and Mining Camp Archaeology Project shall be held between the dates of Friday, July 31, 2015, continuing through Wednesday, September 30, 2015.

1

shared with all Single Tree and Meadowlark Trail public users on a first come first serve basis.

2.10 To limit the ground disturbance area to a maximum of fifteen (15) square meters.

2.11 To provide a rigid 24"w x 18"h sandwich style sign board or similar sized sign board, with the following text "Parks and Open Space permitted project currently underway." The sign board shall be placed just to the west of the Meadowlark Trail and be present during working hours throughout the duration of the project.

2.12 To access the project site only during sunrise to sunset hours, Sunday through Saturday.

2.13 To maintain site control by tracking all student, faculty, visitor and volunteer names and hours with sign-in sheets provided by the University. The sign-in sheets shall be available for Boulder County to review upon request.

2.14 To solely at their own cost, pay for materials and the labor for the installation of a metal fence to keep livestock out of the excavation units. Sand bags may be used to anchor the fence, but if additional anchoring is necessary, steel posts driven into the fence corners is acceptable. Boulder County agricultural staff will advise, inspect and approve the installation, but will not be responsible for installing or dismantling the metal fence.

2.15 To follow soil handling guidelines (Exhibit "F") provided by Boulder County Parks and Open Space Plant Ecology staff.

2.16 To avoid placing excavation units in two (2) areas (Exhibit "G") identified by Plant Ecology staff as restricted areas and discuss onsite with Plant Ecology staff the possible restrictions on the western third of the largest proposed excavation area south of the dirt track road.

2.17 To have onsite during working hours a first-aid medical kit.

2.18 To prepare a site safety and health plan (Exhibit "H") and submit to Boulder County prior to the commencement of the project.

2.19 To prepare a site security plan (Exhibit "I") detailing steps that will be taken to secure the project area during non-working hours.

County, in writing. The MOU shall be in full force and effect, subject to the Termination provisions as set forth in paragraph 6.3 of this MOU.

5. Payment: Neither Party, the County nor the University shall be responsible for any payment between the Parties for the work described as the Erin Arsenault Open Space Industrial Coal Mine and Mining Camp Archaeology Project.

6.0 Miscellaneous Provisions:

6.1 Public Safety: The University agrees to maintain and operate all archaeological related activities in a manner which protects public health, welfare, and safety, and complies with state and local laws and regulations. It is further agreed that the County, may temporarily halt or suspend activities that do not comply with the Project, or which is unduly hazardous or dangerous.

6.2 Insurance Requirements: The University shall procure and maintain at its own expense, and without cost to the County, the following kinds and minimum amounts of insurance for purposes of insuring the liability risks which the University has assumed until this MOU has expired or is terminated:

a. Commercial General Liability.

This coverage should be provided on an Occurrence Form, ISO CG001 or equivalent, with Minimum limits of $1,000,000 Each Occurrence, $2,000,000 General Aggregate and $2,000,000 Products Completed Operations Aggregate.

b. Automobile Liability.

Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of the MOU. Minimum limits $1,000,000 Each Accident.

c. Workers' Compensation and Employer's Liability.

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of $100,000 Each Accident/$500,000 Disease-Policy Limit/$100,000 Disease-Each Employee.

d. Accident Volunteer Liability.

Minimum limits are required to be $5,000.00 for Accidental Death and $25,000.00 Maximum Excess Medical.

in default of the terms herein contained. Notices shall be mailed to the designated parties as specified in paragraph 6.4.

6.4. Notices: For purposes of the notices required to be provided under paragraphs 6.2, and 6.3, all such notices shall be in writing, and shall be either sent by Certified U.S. Mail - Return Receipt Requested, Electronic Mail (Email) or hand-delivered to the following representatives of the parties at the following addresses:

For the County:

Parks and Open Space Department
Attention: Renee Bookless
5201 St. Vrain Road
Longmont, CO 80503
rbookless@bouldercounty.org

For the University:

Órla McInerney,
Assistant to the Chair,
Department of Anthropology,
University of Denver,
Sturm Hall 145,
2000 E. Asbury Avenue
Denver, CO 80208
orla.mcinerney@du.edu

In the event a notice is mailed pursuant to the provisions of this paragraph, the time periods specified in paragraph 6 shall commence to run on the day after the postmarked date of mailing.

6.5. Amendments: This MOU may be altered, amended or repealed only on the mutual agreement of the County and the University by a duly executed written instrument.

6.6. Assignment: This MOU shall not be assigned or subcontracted by the University without the prior written consent of the County.

6.7. Benefit to Successors and Assigns: This MOU shall be binding upon the successors and assigns of the parties.

6.8. Governing Law: The laws of the State of Colorado shall govern the interpretation and enforcement of this MOU. Any litigation that may arise between the parties involving the interpretation or enforcement of the terms of this MOU shall be initiated and pursued by the parties in the Boulder Courts of the 20th Judicial District of the State of Colorado and the applicable Colorado Appellate Courts.

EXHIBIT "A"

Industrial Mine in Superior Project
Scope of Work

This project will culminate in two theses done in fulfillment of requirements for a Master of Arts in Archaeology at the University of Denver. Laura Vernon will concentrate on the daily lives of working class women in the Industrial Mine Camp with a specific focus on the ways that these women contributed to the long strike of 1910-1914. Jenna Wheaton will study how working class identity integral to resistance of the mining company's policies is negotiated and revealed through material and spatial remains at the Industrial Mine. We propose to use a multi-method approach to accomplish our research goals.

Research Questions

Working Class Identity

- How do the material conditions of domestic spaces reveal expressions of working class identity?
- How do actions and behaviors of the mining company, the community, and the miners themselves influence the material aspects of miners' possessions in domestic sphere?
- Does identity expression in material objects show resistance to the mining company or union?
- What sort of access to goods did miners have in Superior and how does this shape expression of identity?

Women's Lives

- How do the lives of women in the mining camp compare to those of the women in Berwind?

Industrial Mine in Superior Project
Scope of Work

- How do the access to goods and the consumption patterns of Superior homes compare to those of similar working class household of the time?
- How did women contribute to the labor movement of 1910-1914?

Magnetometry.

A Bartington Grad 601 dual sensor magnetometer will then be used to perform geophysical analysis on areas GPS revealed as having artifact of interest concentrations. Magnetometers map variations of the magnetic fields in the near surface and subsurface of the ground. Contrast become apparent between archaeological features and the natural setting due to the difference in magnetic intensity of heat-modified or ferrous features (Kvamme 2006:206). Magnetometry is very useful since it allows large areas to be surveyed in a relatively short amount of time. Grids of 20 by 20 meters with half-meter transects will be used to examine all areas chosen to investigate. The magnetometer records 8 samples per meter along each transect.

Since we are looking for disposed materials, Magnetometry can help to reveal where the most lucrative areas to perform excavation units will be due to many common waste items being magnetic on historical sites. These item include tin cans, silverware, mining equipment, and metallic items of personal adornment to name a few. We are especially interested in evidence of cellars and areas of trash disposal, and magnetometry will help to reveal these areas without exhaustive and destructive shovel testing.

Ground-penetrating Radar.

Positioning System (GPS) unit. Surface items will not be collected unless identifying markers, such as maker's marks or evidence of modification, can be found. GPS maps will be created to show the spatial distribution of these artifacts and will be analyzed to reveal any concentrations of artifacts.

Excavation.

Areas to excavate will be determined from the results of the GPS and magnetometry spatial analysis. Units of one-by-one-square meter will be excavated in 10-centimeter arbitrary levels within natural strata. Once either a depth of 10 centimeters or a new stratum is reached, the surface will be mapped and photographed. All soil from each stratum will be screened and all artifacts will be collected, mapped, and photographed by stratum.

All artifacts collected from excavation will be catalogued, processed, and analyzed at the University of Denver. After processing, the artifacts will be returned to Boulder County Parks and Open Space. Exact dates of excavation will be determined upon project approval by Boulder County. Four weeks of excavation are planned however, a six week window will be reserved in case of weather related delays. No more than two areas at time will be opened. Once those areas have been fully investigated, they will be closed, and project participants will move on to two more areas. It should take about a week to two weeks (depending on the density of artifacts) to open and close an area. Therefore, 2-4 areas totaling to no more than 15 square meters will be opened over the course of the project. Areas will be chosen based on Magnetometry and GPR data.

Industrial Mine in Superior Project
Scope of Work

Project Schedule

Date	Activity
May 24	Magnetometry Survey
June 29-July 4	GPR Survey
July-August. Exact dates to come upon project approval.	Excavation
September 1	Project Concluded

EXHIBIT "C"

Boulder County Open Space Special Use Permit #186

Name *	Jennifer Wheaton
Organization Type *	Non-Profit (and not a government agency)
Organization Name	University of Denver
Address *	2000 E. Asbury Room 146 Devner, CO 80208 United States
Email *	wheaton.jenna@gmail.com
Phone Number (cell preferred) *	(719) 237-7509
Fax Number	
Park or Open Space Requested *	Erin Arsenault
Will your activity occur on more than one day?	Yes
Date of Your Activity *	Friday, July 31, 2015
Dates of Your Activity List all the dates your activity will occur or provide a range of dates *	This permit is valid July 31 through September 30, 2015. See MOU agreement.
Start Time *	7:30 AM
End Time *	Sunset
Specific Time Before and/or After Sunset *	
Purpose of Your Activity Commercial activity such as races, events, filming movies or commercials, equipment demonstrations, etc are not permitted *	Archaeological excavation
Will you charge a fee to the people attending your activity? *	No
Number of People Expected *	10
Number of Vehicles Expected *	6
Detailed Description of Your Activity *	The anticipated start date of the project is August 1, 2015 but that date will be subject to the MOU between Boulder County Parks & Open Space and the University of Denver being executed. The end date will be September 13, 2015. We plan to archaeological investigate the Industrial Coal Mining camp on the site using surface survey and excavation, disturbing no more than 15 square meters of surface and adhering to all stipulations in the MOU. See the attached Scope of Project file for more details.

7/16/2015 11:51 AM

EXHIBIT "D"

HISTORY Colorado

No. 2015-96

STATE OF COLORADO ARCHAEOLOGICAL PERMIT

Issued under the authority of the Colorado Historical, Prehistorical, and Archaeological Resources Act, CRS 1973 24-80-401 *et seq.*, and under the procedures of the State Administrative Procedures Act, CRS 1973 24-4-101 *et seq.*

THIS IS TO CERTIFY that: Dean Saitta *(Principal Investigator[s])* and

same plus Jenna Wheaton *(Project Archaeologists)*

of: Dept. of Anthropology, Sturm Hall 105, 2000 E. Asbury Ave., Denver, CO 80208

representing: University of Denver

has/have been found to be qualified for the conduct of Archaeological studies and is/are hereby authorized to conduct archaeological investigations as described below, subject to: (a) the terms and conditions listed below, and (b) the Rules and Procedures published by the Colorado State Archaeologist.

Nature of investigation and location: Archaeological Excavation at Industrial Mining Camp, site 5BL9032, Boulder County only

Disposition of materials collected (subject, however, to such reservation as the State Archaeologist may impose under CRS 1973 24-80-406d):

Boulder County Parks and Open Space-Longmont, CO

Other condition(s):

Issued this 26th day of June, 2015.

The Permit is valid through February 29, 2016.

NOTE: Keep a copy of this Permit in your field possession.

Kevin D. Black
Acting State Archaeologist of Colorado

Rev. 9/11

History Colorado, 1200 Broadway, Denver, CO 80203 HistoryColorado.org

EXHIBIT "E"

Parks and Open Space
5201 St. Vrain Road • Longmont, Colorado 80503
303.678.6200 • Fax 303.678.6177 • www.bouldercounty.org

June 15, 2015

Dean J. Saitta
Professor and Chair, Department of Anthropology
University of Denver
Sturm Hall 146-S
2000 East Asbury Street
Denver, CO 80208

Dear Mr. Saitta:

This is a site-specific curation agreement between Boulder County and the University of Denver concerning the proposed Industrial Mine archaeology project on the Erin Arsenault Open Space.

Boulder County will accept properly packaged and documented cultural materials from the archaeological excavation from the above mentioned project from the University of Denver.

Your signature to this letter serves as your consent to the curation agreement and obligates your submission of cultural materials in accordance with generally accepted requirements for collection organization and packing.

This agreement is effective once Boulder County has received this signed original letter and a signed copy of your Colorado state excavation permit at 5BL.9032.

Sincerely,

Carol Beam
Historic Preservation Specialist
Boulder County Parks and Open Space

I have read the above letter and agree to comply with the stipulations of this agreement.

[signature] Name 6/17/15 Date

PROFESSOR Title

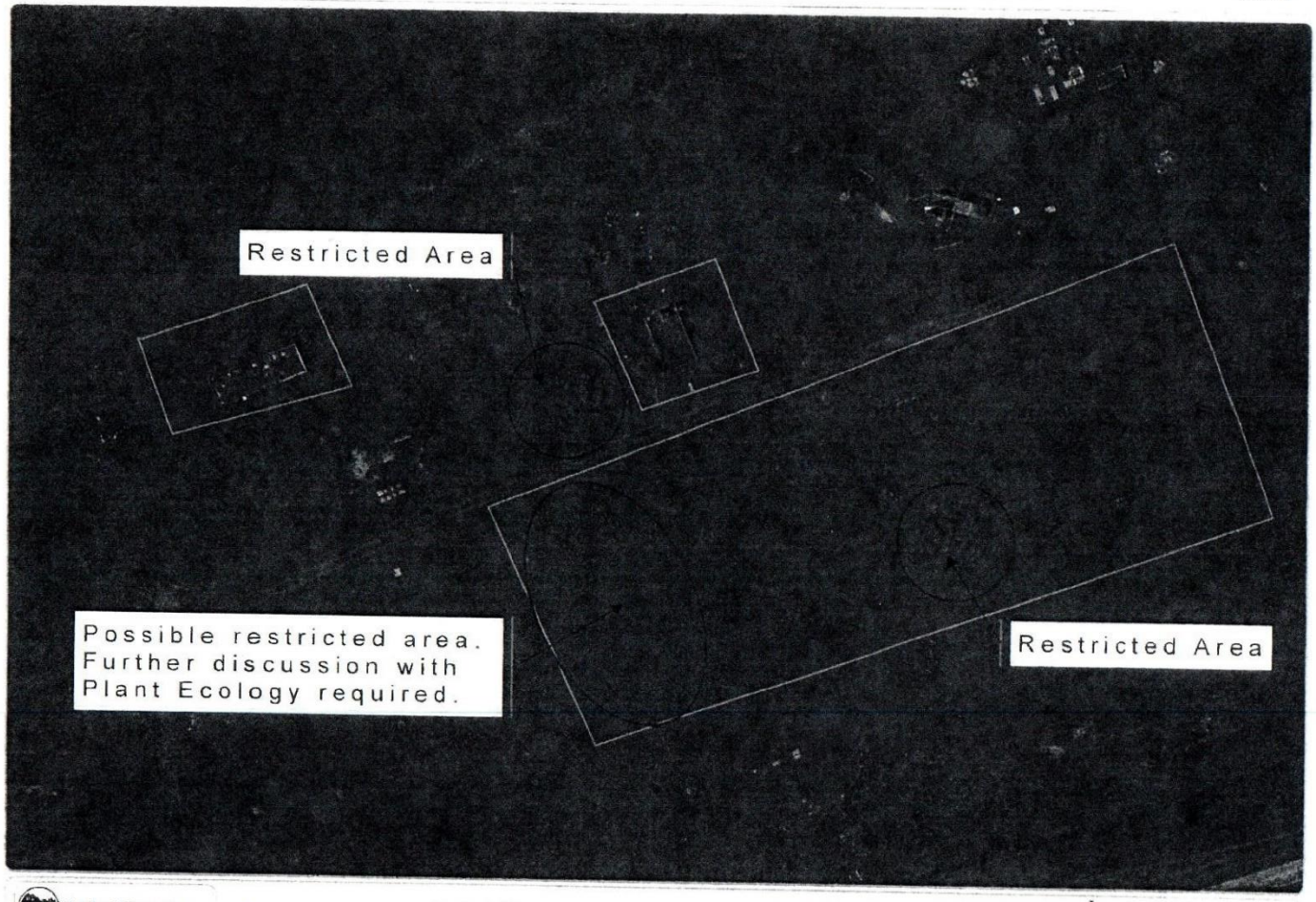
To activate this agreement, please sign this original letter and return it to Boulder County Parks and Open Space, 5201 St. Vrain Road, Longmont, CO 80503.

Cindy Domenico Deb Gardner Elise Jones

Industrial Mine - Plant Ecology Restricted Areas

EXHIBIT "G"

2015



Parks & Open Space

Scale 1:1000

EXHIBIT "I"

Industrial Mine in Superior Project
Security Plan

The site will be fenced off using temporary fencing with sandbags, or metal posts, to secure the fence in place. Orange safety fencing will be used to secure individual trenches. At the end of each day, artifacts will be removed from the site and taken to the University of Denver, where they will be processed and analyzed before they are turned over to Boulder County. The temporary fencing will be secured with a padlock. All valuable equipment will be removed from the site at the end of each day. Some equipment of lesser value, such as shovels, pin flags, wooden stakes, etc., may be left at the site. These materials will be left inside the padlocked fence. For the security and safety of volunteers, work will only be conducted during daylight hours.

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 7/31/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Arthur J. Gallagher Risk Management Services, Inc.
6399 S. Fiddlers Green Cir
Suite 200
Greenwood Village CO 80111

CONTACT NAME: Anita Bruner
PHONE (A/C, No, Ext): 303-889-2574 FAX (A/C, No): 303-889-2575
E-MAIL ADDRESS: anita_bruner@ajg.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : United Educators Ins	10020
INSURER B : Pinnacol Assurance Company	41190
INSURER C : Hartford Casualty Insurance Company	29424
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Colorado Seminary which owns and operates the
University of Denver,Department of Risk Management
2199 S. University Blvd. #414
Denver CO 80208

COVERAGES **CERTIFICATE NUMBER:** 1887065855 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:	Y		CGL201500069200	7/1/2015	7/1/2016	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$1,000,000 $1,000,000 $ $1,000,000 $3,000,000 $1,000,000 $
C	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS			34UENVT9228	7/1/2015	7/1/2016	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$1,000,000 $ $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $			GLX201500069200	7/1/2015	7/1/2016	EACH OCCURRENCE AGGREGATE $	$2,000,000 $2,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			2224632	7/1/2015	7/1/2016	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Dates: 08/03/2015 to 11/03/2015
County of Boulder, State of Colorado, a body corporate and politic are an Additional Insured as respects General Liability policy, pursuant to and subject to the policy's terms, definitions, conditions and exclusions.

CERTIFICATE HOLDER

Boulder County
Attn: Risk Manager
PO Box 471
Boulder CO 80306

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

ACORD 25 (2014/01)

Appendix B: Industrial Mine Artifact Catalogue

FA/ FS	Grid or Survey	Unit	Level	Material	Color	Function	% Complete	Decoration	Maker's Mark	Description	Value Rank
*FA 109	Survey		Surface	Ceramic	White	Saucer	<25%	Yes	No	FA109- PORCELAIN FRAGMENT RED DEC. Porcelain but with overlaid decoration "cheap porcelain". 2 ceramic porcelain pieces. 1 with red decoration. 1 with floral decoration, possibly hand-painted	3
*FA 135	Survey		Surface	Glass	Clear	Unknown	<25%	No	Yes	FA135- CERAMIC WITH WRITING. 1 - 2 pieces of clear glass with white label reading "ow pipe ano...to get g.." and "add...ood". 2 - White ceramic with leaf molding	1
*FA 137	Survey		Surface	Glass	Clear	2 bottle bases, 2 unknown	<25%	Yes	Yes	FA137- BOTTLE FRAGMENTS WITH MM. Base 1 "PAT PE" T below. Base 2 line 1 "NE" line 2 ".169344" Line 3 "3" B in a circle. 64 13.	2

										Unknown piece 1 is textured. Unknown peice two is decoration with green and may have a "C" on it.	
*FA 166	Survey		Surface	Glass	Brown	Bottle Base (2)	<25% (both)	No	Yes	FA166-AMBER CLORAX BOTTLE. One. "R" "CLO" inside a diamond. Two." D-1" in a circle. 72 above circle. N in a square to the left of the circle. 49 below circle.	1
*FA 37	Survey		Surface	Ceramic	White	Toy	>75%	No	No	FA37-SMALL CERAMIC SAUCER FRAGS. 1 - White ceramic toy tea saucer. 2 - White ceramic with pastel floral decoration	2
*FA 46	Survey		Surface	Ceramic	White	Lid	<25%	Yes	No	FA46-PAINTED CERAMIC FRAGMENT. 1 - blue stripe painted rim. 2 - flatware with painted floral pattern	2
*FA 95	Survey		Surface	Glass	Clear	Bottle bases(2)	<25%	No	Yes	FA95-CLEAR GLASS BOTTLE BASE MM. Base 1 Ohio Illinois makers	3

										mark. 5 below mark. Base 2 -67	
FA 1	Survey		Surface	Glass	Amber	Jug	<25%	No	Yes	"FA1-GLASS BOTTLE NECK WIH HANDLE" MM reads "HFlex". Seams up over lid on 2 sides.	1
FA 1.1	Grid 1	Surface	Surface	Glass	Clear	Bottle	25-50%	No	Yes	1 small rectangular glass bottle base with partial MM reading "S PAT. "925" "13"	3
FA 1.10	Grid 1	Surface	Surface	Plastic (?)	Black	Unknown	unknown	No	No	Small black possible plastic with a potential square impressed pattern	0
FA 1.11	Grid 1	Surface	Surface	Plastic	Green	Unknown	Unknown	No	No	Small light green plastic fragment	0
FA 1.12	Grid 1	Surface	Surface	Shell	White	Button	25-50%	No	No	Pearlescent white button fragment	1
FA 1.13	Grid 1	Surface	Surface	Metal	Silver	Watch band	>75%	No	No	Possible modern silver watchband with rectangular slanted links	3
FA 1.14	Grid 1	Surface	Surface	Glass	Amber	Bottle	<25%	Yes	Yes	Found 5.3 meters east of Grid 1 on the surface. Base of a brown amber oval bottle with MM reading "M REG US. PAT. OFF." "PAT PENDING" Ohio/Illioni	3

										s MM symbol. Decoration is also on the base of the body reading "ONE PINT" with a branch and leaf pattern underneath and a "17" between 2 branches	
FA 1.15	Grid 1	Surface	Surface	Glass	Amber	Bottle	<25%	Yes	No	Found 1.77 meters east-south-east of Grid 1 on the surface. Base of the body of an amber bottle with branch and leaf decoration. Possibly part of the same bottle as FA 1.14.	3
FA 1.16	Grid 1	Surface	Surface	Ceramic	White	Unknown	unknown	No	Yes	Large ceramic fragment, possibly related to plumbing, with a MM reading "JESI" and "S" "98"	0
FA 1.17	Grid 1	Surface	Surface	Ceramic	White and blue	Flatware	<25%	Yes	No	1 porcelain rim fragment with molded flower decoration and blue paint at the scalloped rim edge.	3
FA 1.18	Grid 1	Surface	Surface	Ceramic	White	Flatware	<25%	Yes	No	5 hotelware fragments, one with a slightly scalloped rim and one	1

										base fragment with a thin silver stripe decoration	
FA 1.19	Grid 1	Surface	Surface	Glass	Clear	Bottle	<25%	No	No	Large solarized jug bottle rim with two small handles on each side of the mouth	1
FA 1.2	Grid 1	Surface	Surface	Glass	Clear	Bottle	25-50%	Yes	No	Clear glass bottle fragments including a warped screw top rim, a partial base but with no MM, a body piece with measuring marks reading "-16", and 27 small body fragments	2
FA 1.20	Grid 1	Surface	Surface	Ceramic	white	unknown	unknown	No	No	Large ceramic fragment, possibly realted to plumbing	0
FA 1.21	Grid 1	Surface	Surface	Ceramic	White	flatware	<25%	No	No	1 hotelware rim sherd	1
FA 1.22	Grid 1	Surface	Surface	Ceramic	white	handle	<25%	Yes	No	3 small ceramic handle fragments with faded blue decoration	2
FA 1.23	Grid 1	Surface	Surface	Ceramic	white	unknown	<25%	Yes	No	1 small hotelware sherd with blue decoration	2
FA 1.24	Grid 1	Surface	Surface	Ceramic	White	Electrical	unknown	No	No	1 ceramic fragment, likely related to electrical purposes	0
FA 1.25	Grid 1	Surface	Surface	Metal	Rust	multiple	unknown	No	No	1 large wire fragment, multiple	0

										nails, and 1 possible casing	
FA 1.26	Grid 1	Unit 116b	surface	Metal	Rust	Wire	Unknown	No	No	Multiple fragments of rusted wire of which two pieces are wrapped around each other.	0
FA 1.27	Grid 1	Unit 116b	surface	Ceramic	White	Flatware	<25%	No	No	Rim fragement of a white glazed stoneware	1
FA 1.28	Grid 1	Unit 116b	surface	Ceramic	White	Flatware	<25%	No	No	Procelain flatware fragment with foot	2
FA 1.29	Grid 1	Unit 116b	surface	Glass	Clear	Bottle	<25%	No	No	15 pieces of clear glass fragments.	1
FA 1.3	Grid 1	Surface	Surface	Glass	Clear	Bottle	25-50%	No	No	1 partial glass base, no MM, and 1 partial screw rim	2
FA 1.30	Grid 1	Unit 116b	surface	Glass	Clear	Bottle	Unknown	Yes	No	1 fragment of clear glass with square textured grid impressed pattern.	1
FA 1.31	Grid 1	Unit 116b	surface	Glass	Purple	Unknown	<25%	No	No	1 fragment of solarized glass.	1
FA 1.32	Grid 1	Unit 116b	surface	Glass	Green	Bottle	<25%	No	No	1 fragment of green glass	1
FA 1.33	Grid 1	Unit 117b	Surface	metal	rust	wire	unknown	no	no	Fragments of metal wire.	0
FA 1.34	Grid 1	Unit 117b	Surface	ceramic	white	unknown	unknown	no	no	3 fragments of white ceramic. One fragment is fairly thick, the other two do not appear to be very high quality, the fragments are flaking.	1

FA 1.35	Grid 1	Unit 117b	Surface	glass	brown	unknown	unknown	no	no	1 fragments of brown glass	1
FA 1.36	Grid 1	Unit 117b	Surface	glass	clear	unknown	Unknown	no	no	5 fragments of clear glass	0
FA 1.37	Grid 1	Unit 117b	Surface	glass	green	bottle	<25%	no	yes	Green bottle base with Ohio Illinois maker's mark. Also appears to say "Duraglass" The the left of the maker's mark is a 3. There is also a 3 underneath the mark.	2
FA 1.4	Grid 1	Surface	Surface	Glass	Clear	Bottle	25-50%	No	No	1 partial glass base, no MM, and 1 partial screw rim	2
FA 1.5	Grid 1	Surface	Surface	Glass	Aqua	Unknown	<25%	No	No	4 small flat, glass fragments	0
FA 1.6	Grid 1	Surface	Surface	Milk Glass	White	Mason Jar	25-50%	No	Yes	Milk glass mason jar lid with MM reading "OR MASON" and "N"	2
FA 1.7	Grid 1	Surface	Surface	Glass	Clear	Bottle	<25%	No	No	Partial clear glass bottle base	2
FA 1.8	Grid 1	Surface	Surface	Glass	Stripped brown	Unknown	Unknown	No	No	3 partial stripped brown flat glass fragments. Potential outhouse glass	0
FA 1.9	Grid 1	Surface	Surface	Glass	Amber	Bottle	<25%	No	No	4 small amber glass bottle fragments	2
FA 10	Survey		Surface	Glass	Clear	Bottle Neck	<25%	No	No	FA10-BOTTLE NECK. Bottle neck and rim;	2

										seams run vertically over top of rim	
FA 100	Survey		Surface	Glass	Yellow	Unknown	<25%	No	No	FA100-YELLOW GLASS BASE	1
FA 102	Survey		Surface	Milk Glass	White	Jar	25-50%	No	Yes	"FA102-MILK GLASS JAR WITH PONDS" MM "PONDS"	3
FA 103	Survey		Surface	Glass	Amber	Bottle Rim	<25%	No	No	FA103-BROWN GLASS BOTTLE NECK SM. Twist neck small bottle.	3
FA 104	Survey		Surface	Glass	Clear	Unknown	<25%	Yes	Yes	FA104-CLEAR GLASS BASE WITH MM. Lined and bubbled up from base. MM "CHICA"	2
FA 105	Surface	Surface	Surface	metal and plastic	rust	can	<100 %	no	no	Appears to be a flattened airsol spray can of some sort.	0
FA 108	Survey		Surface	Glass	Clear	Bottle	<25%	Yes	Yes	FA108-COKE BOTTLE FRAGMENT WRITI. Bottle with bubbled verticle lines; MM of "Cola" "REGISTERED" "6 FL. OZS."	2
FA 110	Survey		Surface	Ceramic	White	Handle	<25%	Yes	No	FA110-CERAMIC HANDLE BLUE STRIPE.	1
FA 112	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA112-CERAMIC MOLDED	

										DECORATED. Molded srtipe and wave design near rim	
FA 113	Surface	Surface	Surface	glass	clear	bottle	<25%	No	yes	Marker's mark appears to be in shape of shield (unclear as only partially visible) Letter "P" is visible, as well as a line across the top of the "shield"	0
FA 114	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA114-PORCELAIN FRAGMENT DECORAT. Blue pattern. Partial foot rim present	3
FA 115	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA115-BLUE CERAMIC FRAGMENT. Ombre from light to dark blue going towards rim	2
FA 116	Survey		Surface	Ceramic	White	Electrical	<25%	No	Partial	FA116-CERAMIC 250 V. "250 V" on outside "42" on inside	0
FA 117	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA117-CERAMIC MOLDED DECORATED. Floral molding near rim	2
FA 119	Survey		Surface	Metal	Grey	Tag	100%	No	Yes	"FA119-METAL TAG 189" 1 oval metal tags with 2 holes on each side	0

										and "189" in the center	
FA 120	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA120-CERAMIC WITH FLOWER PATTER. Possible sponge (transfer print?) floral design	3
FA 121	Survey		Surface	Glass	Clear	Bottle Base	<25%	No	Yes	FA121-BOTTLE BASE WITH MAKERS MA. MM "B"	1
FA 122	Surface	Surface	Surface	glass	purple	bottle	<25%	no	no	Purple bottle neck/mouth. No threads for cap, seam scars reach to the top of bottle mouth	1
FA 123	Survey		Surface	Milk Glass	White	Canning lid	25-50%	No	Yes (partial)	FA123-MILK GLASS JAR LID WRITING. "E BOY"	2
FA 125	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA125-MOLDED HOTELWARE RIM. Molded ivy design near rim	1
FA 127	Survey		Surface	Ceramic	White	Electrical	25-50%	No	Partial	FA127-CERAMIC CYLINDER. "REG US PAT. G"	0
FA 129	Survey		Surface	Glass	Clear	Bottle Base	<25%	No	Yes	FA129-GLASS BASE WITH MM. MM "DESIGN" "S3 63" "8" "PATENTED"	2
FA 13	Survey		Surface	Glass	Clear	Bottle Base	<25%	Yes	Partial	FA13-TEXTURE	1

										GLASD. Textured decoration.unreadable portion of makers mark.	
FA 130	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA130-CERAMIC WITH PAINT. Floral pastel pattern	2
FA 131	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	Partial	FA131-PAINTED CERAMIC WITH MM. Bright floral pattern. Partial maker's mark on base "IN U.S.A. ARAT GO"	2
FA 133	Survey		Surface	Glass	Clear	Bottle	100%	No	Yes	"FA133-SMALL WHOLE BOTTLE" Small clear glass bottle with metal cap with MM "DES PAT 109513" "M (within a circle)" "R.D.NO.82 "	3
FA 138	Surface	Surface	Surface	Glass	brown	jug	<25%	yes	yes	Two large fragments of brown glass. One fragment appears to be the base of a vessel with partial maker's mark. Letters "EG" and "U.S." visible. Number 8 visible. The other fragments	1

										appears to be from the top of a jug, and includes a portion of a handle. Both fragments have decorative textured stippling. There is a seem running up the handle of the jug.	
FA 139	Survey		Surface	Glass	clear	bottle	<25%	Yes	Yes	FA139- CLEAR GLASS BASE WITH MM. Bottom is texture. Ohio Illinois Maker's mark. Word "Duraglas." 5 sherds	2
FA 143	Survey		Surface	Milk Glass	White	Jar	<25%	No	Yes	FA143- MILK GLASS JAR WITH MM. MM "HOLATUM" "REG." "ADE" "TRA" "MAR"	3
FA 145	Survey		Surface	Glass and metal	clear and silver	Bottle neck	<25%	No	Yes	FA145- CLEAR BOTTLE NECK WITH CAP. Styalized "s" in a circle. "eagra" Probabaly says "Seagrams."	2
FA 150	Survey		Surface	Glass	Amber	Bottle Rim	<25%	No	No	FA150- AMBER GLASS NECK	3

										(FA149 in attribute).	
FA 151	Surface	Surface	Surface	Glass	clear	bottle	<25%	no	yes	Oval bottle base with makers mark, and pontil scar. Mark is "717" inside a diamond.	1
FA 152	Surface	Surface	Surface	glass	clear	jar	<25%	no	no	Clear glass rim fragment with threads for jar lid.	1
FA 159	Survey		Surface	Glass and Metal	Clear/ silver	Bottle neck	<25%	Yes	Yes	FA159-CLEAR GLASS NECK WITH LID. Pressed images with corn in the middle and wheat on either side. "National Distillers." "U.S. 1,771,034" Above image. "1,875,431 PATS." Below image.	2
FA 16	Surface	Surface	Surface	glass	clear	bottle	<25%	no	no	Bottle neck and mouth. With seems on either side, no threads for a cap.	1
FA 165 *	Survey		Surface	Glass	Amber	Bottle	<25%	Yes	Yes	FA165-2 AMBER GLASS WITH MM. 1) Orange peel texture on base with MM 2)Orange peel texture on large base with MM	1
FA 167	Survey		Surface	Glass	Amber	Jug	<25%	No	No	FA167-AMBER JUG WITH	1

										HANDLE. Twist rim with jug handle.	
FA 169	Surface	Surface	Surface	glass	brown	large vessel	<25%	no	yes	3 framents, likely from 2 vessels. Two fragments are from the top of a large jug. They do not fit together. The third is from the base of a bottle. The makers mark is Ohio Illinois, there is textured stippling on the base.	0
FA 17	Survey		Surface	Milk Glass	White	Lid	<25%	No	Yes	FA17-MILK GLASS FRAGMENT WITH WR. MM "FOR M"	2
FA 170	Survey		Surface	Ceramic	White	Electrical	50-75%	No	No	FA170-POSSIBLE PIPE. No. Electrical	0
FA 171	NE side of worker housing	Surface	Surface	glass	clear	bottle	100%	no	no	complete bottle. Small, no makers mark	2
FA 172	NW side of non supervisors house	surface	surface	glass	blue	unknown	<25%	no	yes	Small round base, probably a bottle. Triangle in the center with letters around the outside. Visible letters are "VA-TRO-NOL"	2
FA 173	Surface artifact non-	surface	surface	metal	Grey/ silver	metal can tab	100%	no	no	Pull tab for a can, like soda, beer, etc	2

	grid along 2 track road										
FA 174	non-grid surface artifact near partial foundation on N side	surface	surface	shell	white	button	75%	no	no	small white buttom, likely shell as indicated by flaking.	2
FA 175	Surface artifact non-grid between supervisor's house and boarding	surface	surface	glass	clear	bottle	<25%	no	yes	Rectangular bottle base with distinctive maker's mark showing a man in a hat holding a giant fish.	2
FA 176	Surface artifact non-grid NW of supervisor's house	surface	surface	ceramic	white	Vessel	50%	yes	no	12 pieces of white ceramic, likely all from the same vessel, at most two vessels. There are two sets of two peices that fit together. decorations include green trees, reddish cabin, a girls face with a red hat. The vessel appears to have handels, and a small lip.	3
FA 177	surface artifact along 2 track road	surface	surface	glass	clear	bottle	<25%	no	yes	Hexagonal bottle base with maker's mark. Mark looks like an "A"	2

										nestled in an "H" where the cross bar of the "H" is like a roof over the "A". Below the mark is alpha numeric code "K-946" and above is "3-7"	
FA 178	Surface artifact non-grid along 2 track road near worker housing	surface	surface	ceramic	white, blue, green	unknown	<25%	yes	yes	two ceramic fragments, white with blue decoriation, stippling dots, and what look like branches. On the back is green writing, but it can't be read. The quality of the ceramic is poor	2
FA 179	surface artifact non-grid along 2 track road N of worker housing	surface	surface	glass	green	bottle	<25%	no	yes	Round bottle base with maker's mark, and "I" in a circle. There is a 9 to the left and a 6 8 to the right. There is a 12 below. The glass is quite thick, the bottle may have contained household goods, or liquor	1
FA 18	Survey		Surface	Ceramic	White	Toy Saucer	50%	No	No	FA18-SMALL CERAMIC BASE SAUCER	2

FA 180	surface artifact in worker housing area on SE side of site	surface	surface	glass	purple	bottle	<25%	no	yes	Purple bottle base with maker's mark. Mark is the numner 30 inside of a diamond.	1
FA 181	surface artifact non-grid on 2 track road near entrance to trail.	surface	surface	glass	brown	bottle	<25%	no	yes	Ohio Illinois makers mark on brown bottle base. Also has D 11 in center, underneath that is 56-59	1
FA 182	surface artifact non-grid, along 2 track road N of worker housing	surface	surface	glass	clear	bottle	<25%	no	no	bottle lip fragments, clear glass. 14 total fragments.	1
FA 2.1	Grid 2	Surface	Surface	ceramic	orange	structural	unknown	no	no	Large pieces of organge ceramic, very coarse cross section. Perhaps from ceramic pipes?	0
FA 2.2	Grid 2	Surface	Surface	Ceramic	Orange	Structural	Unknown	No	No	4 pieces of large orange ceramic, very coarse cross section Perhaps from ceramic pipes?	0
FA 2.23	Grid 2	Unit 215	Level 1	Glass	Clear	Unknown	<25%	No	No	60 pieces of clear glass. Some fragments of molded ridges and stippling. May be	2

										related to glass found in Grid 2 surface.	
FS 4.42	Grid 4	Unit 414	Level 1	Glass	clear	unknown	unknown	yes	no	18 pieces of clear glass. Some fragments of molded ridges and stippling. May be related to glass found in Grid 2 Unit 215 level 1.	2
FA 2.4	Grid 2	Surface	Surface	glass	blue	unknown	unknown	no	no	1 small fragment of light blue glass	0
FA 2.5	Grid 2	Surface	Surface	glass	brown	unknown	unknown	no	no	2 fragments of brown glass	0
FA 20	Survey		Surface	Glass	Clear	Bottle Neck	<25%	No	No	FA20-GLASS BOTTLE NECK. Bottle neck and rim, textured under rim	2
FA 21	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA21-MOLDED CERAMIC FRAGMENTS. Molded vine/floral pattern near rim	1
FA 22	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA22-MOLDED CERAMIC. Molded dots near rim with light pink pate also near rim	2
FA 24	Survey		Surface	Blue Glass	Blue	Bottle neck	<25%	No	No	FA24-COBALT GLASS RIM. Bottle rim.	3
FA 26	Survey		Surface	Milk Glass	Green	Unknown	unknown	No	No	FA26-GREEN MILK GLASS FRAGMEN	2

										T. Green flat milk glass. Maybe a bowl or plate?	
FA 27	Survey		Surface	Ceramic	White	Flatware	<25%	No	No	FA27-PORCELAIN PLATE BASE.	2
FA 29	Survey		Surface	Glass	Pink	Unknown	<25%	Yes	No	"FA29-FLOWER PATTERN GLASS" 3 Pink glass fragments with molder flower pattern	2
FA 3	Survey		Surface	Ceramic	White	Toy	>75%	No	No	FA3-TOY HORSE. Porcelain toy horse	2
FA 3.1	Grid 3	Surface	surface	metal	rust	nail and unknown	100%	no	no	1 large nail and 1 fragment of metal, perhaps from metal can.	0
FA 3.2	Grid 3	Surface	surface	glass	white	jar lid	<25%	no	yes	milk glass canning jar lid fragment. Letters "BOY" visible	1
FA 3.3	Grid 3	Surface	surface	ceramic	white	vessel	<25%	no	no	Three pieces of white ceramic. One peices is very thin, and flat, likely from a plate and likely more expensive. One pieces is thicker, but still higher quality. The third and smallest piece is somewhat thin, with cracked	2

										glass and looks to be of poor quality.	
FA 3.4	Grid 3	Surface	surface	glass	Clear	unknown/ jar	unknown	no	yes	38 peices of clear glass. Makers mark fragments with number.	0
FA 3.5	Grid 3	surface	surface	glass	brown	unknown	unknown	no	no	5 pieces of brown glass.	1
FA 3.6	Grid 3	surface	surface	glass	clear	bottle	unknown	yes	yes	3 fragments clear glass. Very thin, appears to have part of the "duraglass" on it. Decorated with stars	1
FA 3.7	Grid 3	surface	surface	glass	blue	unknown	unknown	no	no	1 fragment of blue glass	0
FA 3.8	Grid 3	surface	surface	glass	aqua	unknown	unknown	no	yes	1 fragment of aqua glass with letters "RO" visible.	1
FA 31	Survey		Surface	Glass	Blue	Unknown	<25%	No	Yes	FA31- COBALT GLASS BASE WITH MAKE. MM on base of 2 concentric triangles on base	3
FA 33	Survey		Surface	Glass	Clear	Bottle Base	<25%	No	No	FA33- CLEAR GLASS BASE.	1
FA 34	Survey		Surface	Ceramic	White	Bowl	<25%	Yes	No	FA34- PORCELAIN fragment DESIGN. Molded swirl design near rim	2
FA 35	Survey		Surface	Ceramic	White	Cup and Saucer	<25%	No	No	FA35- CERAMIC HANDLE & BASE	1

FA 36	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA36- PAINTED CERAMIC FRAGMENT. Art deco painted ceramic rim fragment	3
FA 38	Survey		Surface	Glass	Amber	Bottle Base	<25%	Yes	Yes	FA38- AMBER BASE WHITE MAGIC. MM "WHITE MAGIC" "20 1" "2910-A" "REG. GAL." XXXX design around circumference of base.	1
FA 39	Survey		Surface	Ceramic	White	Unknown	<25%	Yes	NO	FA39- GREEN PAINTED PORCELAIN. Blue/green glaze on outside	1
FA 4.1	Grid 4	Surface	Surface	Metal	Rust	Nail	100%	No	No	1 wire nail	0
FA 4.2	Grid 4	Surface	Surface	Ceramic	Green	vessel	<25%	Yes	No	7 sherds of a stoneware vessel with a green exterior and interior glaze, including 1 rim fragment.	1
FA 4.3	Grid 4	Surface	Surface	Glass	Clear	Bottle	<25%	No	No	Clear bottle glass base with no MM	1
FA 4.4	Grid 4	Surface	Surface	Glass	Clear	Bottle	<25%	No	Yes	20 fragments of clear glass including 1 base with "D-892"	1
FA 4.5	Grid 4	Surface	Surface	Glass	Amber	Bottle	<25%	No	No	1 fragment of amber glass	1

FA 41	Survey		Surface	Glass	Clear	Jug	<25%	No	No	"FA41- CLEAR GLASS NECK WITH HANDL"	1
FA 42	Survey		Surface	Ceramic	White	Electrical	>75%	No	Yes	FA42- INDUSTRIAL CERAMIC WRITING. "GE CO USA"	0
FA 42	Survey		Surface	Ceramic	White	Bowl	<25%	Yes	No	FA4- CERAMIC RIM SCALLOPED. Molded scalloped rim, molded floral design on outside of rim, and molded stripes towards center	2
FA 43	Survey		Surface	Milk Glass	White	Unknown	<25%	Yes	No	FA43- MOLDED PORCELAIN fragment. Ribbed design	2
FA 48	Surface	Surface	Surface	glass	purple	bottle	<25%	No	yes	Purple bottle base with makers mark. Mark is "905" inside a diamond. On the side of the base part of the word "QUART" is visible. Words "FULL" "CAPACITY" and "QUART" Are visible on bottom of base. Pontil Scar on base.	0
FA 50	Survey		Surface	Glass	Clear	Bottle	<25%	No	Yes	FA50- AQUA	2

										GLASS WITH WRITING. MM "RADE MARK" "UN. CONTENT "	
FA 51	Survey		Surface	Glass	Clear	Bottle	25-50%	No	No	"FA51- MASON JAR RIM FRAGMENTS" 14 clear glass mason jar fragmens with screw lid fragments	2
FA 52	Survey		Surface	Ceramic	White	Unknown	<25%	Yes	No	FA52- GREEN CERAMIC FRAGMENTS. White paste with green glaze on both size	1
FA 53	Survey		Surface	Glass	Amber	Bottle	<25%	Yes	Yes	FA53- AMBER GLASS WITH MARKINGS. Horse with rider. Orange peel textured decoration. MM "S". 5 total fragments.	3
FA 55	Surface	Surface	Surface	glass	brown	large vessel	<25%	no	yes	only one large "X" visible on the bottom. This is a very thick fragment, indicating that it came from a large bottle likely containing bleach, or something similar	0
FA 56	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA56- CERAMIC FRAGMEN	2

										TS PAINTED. Rim fragment, waved rim, red paint pattern	
FA 57	Survey		Surface	Glass	Clear	Bottle	<25%	No	Yes	FA57- AQUA GLASS FRAGMENT WRITING. MM "D" "BO"	2
FA 58	Survey		Surface	Ceramic	White	Bowl	<25%	Yes	No	FA58- CERAMIC WITH DECORATIVE. Decoration of verticle bumps inset with yellow lines	1
FA 59	Survey		Surface	Glass	Clear	Bottle	<25%	No	Yes	FA59- CLEAR GLASS WITH WRITING. MM "ED" "ER SOLO"	2
FA 6*	Survey		Surface	Glass	Clear	Unknown	<25%	No	No	FA6- GLASS fragment BASE. Solarized glass. 1) Angled base. 2) Clear solarized glass fragment	3
FA 64	Survey		Surface	Milk Glass	White	Bottle	<25%	No	No	FA64- MILK GLASS MASON JAR RIM. Twist rim	2
FA 65	Survey		Surface	Ceramic	White	Unknown	<25%	Yes	No	FA65- CERAMIC WITH GREEN DECORATI. Green floral (possibly	2

										Asian?) design	
FA 68	Surface	Surface	Surface	glass	clear	bottle/drinking glass	<25%	yes	no	Clear base fragment of bottle or drinking glass. The vessel was paneled, making the bottom a polygon?	0
FA 7	Survey		Surface	Ceramic	White	Unknown	<25%	No	Yes	FA7-CERAMIC FRAGMENTS	1
FA 71	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA71-MOLDED CERAMIC WITH PAINT. Molded floral rim with blue and green (also floral?) paint	2
FA 72	Survey		Surface	Glass	Amber	Bottle	<25%	No	No	FA72-AMBER GLASS BOTTLE NECK. Large bottle neck with seam	1
FA 74	Survey		Surface	Glass	Clear	Jug	<25%	No	No	"FA74-CLEAR GLASS JUG NECK & HAND"	1
FA 75*	Survey		Surface	Glass	Clear	Jug	<25%	No	No	"FA75-CLEAR GLASS JUG NECK & HAND" 1) Clear glass jug with handle and partial base with MM "2 0"; 2) Milk glass mason jar lid with MM "MASON JAR CA"	1

										"T-N022" "1910"	
FA 77	Survey		Surface	Milk Glass	White	Jar/bowl base	<25%	No	No	FA77- MILK GLASS FRAGMENT CUP. Either a jar or a small bowl (perhaps for candy?"	2
FA 78	Survey		Surface	Milk Glass	White	Jar	<25%	Yes	No	FA78- MILK GLASS JAR WITH DESIGN. Geometric design pressed into glass.	3
FA 8	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA8- CERAMIC FRAGMENTS MOLDED. Molded rim, center circle line, possible serving jug	1
FA 81	Survey		Surface	Ceramic	White	Unknown	<25%	Yes	NO	FA81- CERAMIC FRAGMENTS WITH patt. Blue glazed pattern	3
FA 82	Survey		Surface	Ceramic	White	Flatware	<25%	Yes	No	FA82- PAINTED CERAMIC. Blue glazed on inside	1
FA 83	Survey		Surface	Ceramic	White	Unknown	<25%	Yes	No	FA83- CERAMIC WITH RED STRIPE. Red stripe on rim	1
FA 85	Surface	Surface	Surface	glass, metal, plastic	Clear, black	unknown	unknown	no	no	A glass fragent attached to metal wire, which is then attached to black plastic. It may be	0

										electrical in function	
FA 86	Survey		Surface	Glass	Clear	Bottle Base	<25%	Yes	Yes	FA86- CLEAR GLASS BASE WITH MAKER. Ohio Illinois makers mark. Scalloped decoarion on the sides. "E 1081" on the side. 9 to left of makers mark. 10 below mark. 7 to right of mark.	2
FA 87	Survey		Surface	Ceramic	White	Flatware rim	<25%	Yes	No	FA87- MOLDED PORCELAIN FRAGMENT. Molded swirl near rim and scalloped rim	2
FA 9	Survey		Surface	Glass	Clear	Bottle Base	<25%	No	No	FA9- GLASS BASE.	1
FA 92	Survey		Surface	Glass	Brown	Bottle base	<25%	No	Yes	FA92- BROWN GLASS WITH WRITING. "IH" OR "HI" 9 or 6 underneath.	2
FA 93	Survey		Surface	Ceramic	White	Plumbing ?	unknown	No	No	FA93- LARGE WHITE CERAMIC. Possibly related to plumbing?	0
FA 94	Surface	Surface	Surface	metal	rust	can	~100%	no	no	Short metal can. Lid appears to have been pry-off, like modern paint cans.	0

FA 96	Survey		Surface	Glass	Clear	Bottle Base	<25%	Yes	Yes	FA96- BOTTLE BASE WITH MAKERS MAR. Textured decoration. Ohio Illinois makers mark. "Duragla" 7 to the left of the mark. 9 below mark. 2 to right of mark.	3
FA 99	Survey		Surface	Ceramic	White	Flatware	<25%	No	No	FA99- CERAMIC PLATE /PLATTER	1
FS 1. 10	Grid 1	Unit 116	Level 1	Unknown	Black	Unknown	<25%	No	No	Miscellanio us objects including a possible tar piecie with screw holes adn cement fragments	0
FS 1.1	Grid 1	Unit 116	Level 1	Ceramic	White	Unknown	<25%	No	No	Possible for plumbing or electric	0
FS 1.10 0	Grid 1	Unit 114	Level 1	glass	brow n	unknown	unknown	no	no	1 fragments of brown glass	0
FS 1.10 1	Grid 1	Unit 114	Level 1	glass	dark green	unknown	unknown	no	no	1 fragment of dark green glass	0
FS 1.10 2	Grid 1	Unit 114	Level 1	glass	light green	unknown	unknown	no	no	2 fragment of light green glass	0
FS 1.10 3	Grid 1	Unit 114	Level 1	chalk	white	unknown	unknown	no	no	2 fragments of chalk/calciu m	0
FS 1.10 4	Grid 1	Unit 114	Level 1	glass	clear	unknown	unknown	no	no	11 clear glass fragments	0
FS 1.10 5	Grid 1	Unit 114	Level 1	glass	clear	unknown	unknown	no	no	2 fragments of clear frosted glass. Can't tell if the frosting is intentional or the result of	0

										deterioration	
FS 1.106	Grid 1	Unit 114	Level 1	glass	clear	unknown	unknown	yes	no	1 fragment of clear glass with textured molded ridges	0
FS 1.107	Grid 1	Unit 114	Level 1	glass	white and tan	unknown	unknown	no	no	1 fragment of marbled milk glass, white and tan	0
FS 1.108	Grid 1	Unit 114	Level 1	glass	light purple	unknown	unknown	no	no	1 fragment of light purple glass. Purple hue may be the result of sun exposure.	0
FS 1.109	Grid 1	Unit 114	Level 1	glass	dark green	unknown	unknown	no	no	1 fragment of dark green glass. The glass is triangular and resembles a projectile point. It most likely that it is bottle glass that broke into this shape.	0
FS 1.11	Grid 1	Unit 116	Level 1	Metal	Grey	Unknown	>75%	No	No	Miscellanious object, possibly electrical, including a cap	0
FS 1.12	Grid 1	Unit 116	Level 1	Cement	White	Unknown	<25%	No	No	Cement mortar fragment	0
FS 1.13	Grid 1	Unit 116	Level 1	Ceramic	White	Unknown	<25%	No	No	1 thick hotelware, possibly stoneware, rim fragments	1
FS 1.14	Grid 1	Unit 116	Level 1	Ceramic	Pink	Unknown	<25%	No	No	3 think pink ceramic hotelware fragments	1
FS 1.15	Grid 1	Unit 116	Level 1	Milk Glass	White	Flatware	<25%	Yes	No	2 molded decorated rim	1

										fragments and 1 base	
FS 1.16	Grid 1	Unit 116	Level 1	Ceramic	White	Flatware	<25%	Yes	No	1 hotelware frangment with a painted leaf pattern	2
FS 1.18	Grid 1	Unit 117b	Level 1	Slag	Grey	Slag	100%	No	No	Slag piece	0
FS 1.19	Grid 1	Unit 117b	Level 1	Chalk	White	Chalk	<25%	No	No	3 chalk fragments	0
FS 1.2	Grid 1	Unit 116	Level 1	Metal	Brown	Nails and Wire	>75%	No	No	4 heavily rusted metal nails of various sizes and 1 metal wire piece	0
FS 1.20	Grid 1	Unit 117b	Level 1	Charcoal	Black	Charcoal	100%	No	No	1 charcoal fragment	0
FS 1.21	Grid 1	Unit 117b	Level 1	Metal	Reddish brown	Metal	Unknown	No	No	1 small metal strip, possibly from a pull tab	0
FS 1.22	Grid 1	Unit 117b	Level 1	Plaster	White	Unknown	Unknown	No	No	1 small plaster piece, ridged	0
FS 1.23	Grid 1	Unit 117b	Level 1	Ceramic	White	Unknown	<25%	No	No	7 white glazed ceramic sherds	1
FS 1.24	Grid 1	Unit 117b	Level 1	Ceramic	Pink	Unknown	<25%	No	No	1 small pink ceramic sherd	1
FS 1.25	Grid 1	Unit 117b	Level 1	Metal	Rust	Wire	Unknown	No	No	11 thin wire fragments, heavily rusted	0
FS 1.26	Grid 1	Unit 117b	Level 1	Metal	Rust	Unknown	Unknown	No	No	14 miscellaneous metal fragments, heavily rusted	0
FS 1.27	Grid 1	Unit 117b	Level 1	Metal	Rust	Unknown	Unknown	No	No	Many small, heavily rusted metal fragments	0
FS 1.28	Grid 1	Unit 117b	Level 1	Ceramic	Orange	Unknown	<25%	No	No	Ceramic - possibly a terracotta pot, possbily a pipe	0
FS 1.29	Grid 1	Unit 117b	Level 1	Glass	Amber	Bottle	<25%	No	Yes	Amber bottle glass fragment	2

										with partial MM ". M0"	
FS 1.3	Grid 1	Unit 116	Level 1	Glass	Clear, Green, Amber	Unknown	<25%	No	No	29 clear, 3 green, 1 blue, and 7 amber glass shards from small to medium size	0
FS 1.30	Grid 1	Unit 117b	Level 1	Glass	Aqua	Unknown	Unknown	No	No	4 aqua glass fragments	0
FS 1.31	Grid 1	Unit 117b	Level 1	Glass	Green	Unknown	Unknown	No	No	2 green glass fragments	0
FS 1.32	Grid 1	Unit 117b	Level 1	Glass	Clear	Mason Jar	<25%	No	No	7 thick clear glass fragments including a mason jar rim fragment	2
FS 1.33	Grid 1	Unit 117b	Level 1	Glass	Clear	Unknown	Unknown	No	No	1 clear flat glass fragment	0
FS 1.34	Grid 1	Unit 117b	Level 1	Glass	Clear	Bottle	<25%	No	No	16 clear bottle glass fragments	2
FS 1.35	Grid 1	Unit 117b	Level 1	Brick and Mortar	Orange and Grey	Unknown	Unknown	No	No	17 brick and mortar fragments	0
FS 1.36	Grid 1	Unit 116b	Level 1	Glass	White	Flatware	25-50%	Yes	No	5 fragments of milkglass flatware with scalloped edges.	3
FS 1.37	Grid 1	Unit 116b	Level 1	Ceramic	White	unknown	<25%	No	No	1 white ceramic fragment, thick, lipped, appears not to be slipped/painted on the bottom.	1
FS 1.38	Grid 1	Unit 116b	Level 1	Glass	Clear	Bottle	25-50%	No	Yes	21 glass fragments. 1 large bottle base with Ohio-Illinois makers mark and a number, potentially a 2 or 8.	2

FS 1.39	Grid 1	Unit 116b	Level 1	Glass	Green	bottle	<25%	No	No	Three fragments of green bottle glass.	2
FS 1.4	Grid 1	Unit 116	Level 1	Glass	Clear	Bottle	<25%	No	No	Clear, small glass bottle	2
FS 1.40	Grid 1	Unit 116b	Level 1	Glass	Brown	Bottle	<25%	No	No	Three small fragments of brown bottle glass	2
FS 1.41	Grid 1	Unit 116b	Level 1	Glass	Aqua	Unknown	<25%	No	No	1 aqua glass fragment	2
FS 1.42	Grid 1	Unit 116b	Level 1	Glass	White	Unknown	<25%	No	No	5 tiny milk glass fragments	2
FS 1.43	Grid 1	Unit 116b	Level 1	Ceramic	White	Unknown	<25%	No	No	2 tiny ceramic fragments	2
FS 1.44	Grid 1	Unit 116b	Level 1	Glass	Green	Bottle	25-50%	No	Yes	Half of a bottle base with Ohio-Illinois makers mark. The number 1 is visible.	2
FS 1.45	Grid 1	Unit 116b	Level 1	Metal	greenish/silver	button	100%	No	No	1 copper? button.	2
FS 1.46	Grid 1	Unit 116b	Level 1	Metal	rust/gray	unknown	unknown	No	No	1 thin, flat metal fragments	0
FS 1.47	Grid 1	Unit 116b	Level 1	Glass	Clear	Bottle	<25%	No	No	Very small lip of a bottle. Likely medicinal	3
FS 1.48	Grid 1	Unit 116b	Level 1	Metal	rust	Unknown	unknown	No	No	About 25 pieces of thin flat metal.	
FS 1.49	Grid 1	Unit 116b	Level 1	Metal	Rust	unknown	unknown	No	No	9 pieces of thin, flat metal	0
FS 1.5	Grid 1	Unit 116	Level 1	Glass	Clear	Bottle	<25%	Yes	No	1 small clear glass bottle shard with molded decoration	2
FS 1.50	Grid 1	Unit 116b	Level 1	Metal	green/white	pencil eraser	75%	No	No	Flattened, rust end metal portion of a pencil eraser	1
FS 1.51	Grid 1	Unit 116b	Level 1	Misc.	Various	unknown	unknown	No	No	A bag of miscellaneous items	0

										that mostly rocks and roots that LGV thought was important for some reason. Whoops	
FS 1.52	Grid 1	Unit 116b	Level 1	brick and Mortar	white/ gray	structural	unknown	No	No	A portion of brick and mortar. This excavation area was away from the housing area.	
FS 1.53	Grid 1	Unit 116b	Level 1	Metal	rust	nails	100%	No	No	2 8d pennyweigh t nails	0
FS 1.54	Grid 1	Unit 116b	Level 1	metal	rust	nails	100%	No	No	1 4d pennyweigh t nail.	0
FS 1.55	Grid 1	Unit 116b	Level 1	Metal	rust	nails	100%	No	No	2 2d pennyweigh t nails	0
FS 1.56	Grid 1	Unit 116b	Level 1	metal	rust	nail	100%	No	No	1 very small nail. Smaller than 2d.	0
FS 1.57	Grid 1	Unit 116b	Level 1	metal	rust	unknown	unknown	No	No	3 small fragments of metal.	0
FS 1.58	Grid 1	Unit 116b	Level 1	metal	rust	nail	100%	No	No	1 10d pennyweigh t nail.	0
FS 1.59	Grid 1	Unit 116b	Level 1	Metal	rust	wire and nail	unknown	No	No	Many fragments of wire, or wire nails.	0
FS 1.6	Grid 1	Unit 116	Level 1	Glass	Clear	Bottle	<25%	Yes	No	1 small clear glass bottle shard with molded decoration	2
FS 1.60	Grid 1	Unit 116b	Level 1	metal	rust	railway tie	100%	No	No	1 large railway tie	0
FS 1.61	Grid 1	Unit 110	Level 1	Brick	Red/ Brow n	structural	unknown	no	no	1 large brown piece (may be a rock) 3 small peices that are definitely brick	0
FS 1.62	Grid 1	Unit 110	Level 1	Metal	rust	structural	100%	no	no	5 complete nails. Size 8d.	

FS 1.63	Grid 1	Unit 110	Level 1	Metal	gray	clothing?	100%	no	no	1 very small circular object. May be a grommet for shoes or clothes.	1
FS 1.64	Grid 1	Unit 110	Level 1	Metal (copper)	gray	penny	100%	Yes	Yes	1 wheat penny dated 1927	2
FS 1.65	Grid 1	Unit 110	Level 1	glass	clear	unknown	unknown	no	no	16 fragments of clear glass	0
FS 1.66	Grid 1	Unit 110	Level 1	glass	white	unknown	unknown	no*	no	1 small fragment of milk glass with striations. These are likely scratches, but may be decorative.	
FS 1.67	Grid 1	Unit 110	Level 1	ceramic	brown and tan	Vessel	unknown	yes	no	Small ceramic fragment. Fragment is a rim piece. Paint appears to have been on both sides of vessel. Vessel could have been a cup or bowl. The rim portion is dark brown and transitions into tan.	2
FS 1.68	Grid 1	Unit 110	Level 1	glass	clear	unknown	unknown	no	no	12 fragments of clear glass	0
FS 1.69	Grid 1	Unit 110	Level 1	glass	brown	unknown	unknown	no	no	3 fragments brown glass, likely bottle glass, based on stippling on two fragments.	1
FS 1.7	Grid 1	Unit 116	Level 1	Glass	Clear	Bottle	<25%	Yes	No	1 small clear glass	2

										bottle shard with molded fish scale decoration	
FS 1.70	Grid 1	Unit 110	Level 1	glass	white	unknown	unknown	no	no	1 fragment milk glass	0
FS 1.71	Grid 1	Unit 110	Level 1	glass	aqua	unknown	unknown	no	no	2 fragments aqua glass.	0
FS 1.72	Grid 1	Unit 117	Level 1	coal	black	fuel	n/a	n/a	n/a	fragments of coal* two bags	0
FS 1.73	Grid 1	Unit 117	Level 1	metal	rust	wire	unknown	no	no	Fragments of metal wire.	0
FS 1.74	Grid 1	Unit 117	Level 1	glass	blue	unknown	unknown	no	no	One fragment of blue glass	1
FS 1.75	Grid 1	Unit 117	Level 1	glass	clear	unknown	unknown	no	no	Two fragments of clear glass with stippling. Fragments have an orange tinge to them that me be the result of close proximity to rusting metal	0
FS 1.76	Grid 1	Unit 117	Level 1	glass	clear	unknown	unknown	no	no	Seven fragments of clear glass	0
FS 1.77	Grid 1	Unit 117	Level 1	glass	aqua	unknown	unknown	no	no	1 fragment of aqua glass	0
FS 1.78	Grid 1	Unit 117	Level 1	ceramic	white	unknown	unknown	no	no	2 fragments of thin white ceramic. Mid range quality	0
FS 1.79	Grid 1	Unit 112	Level 1	Ceramic	White	Flatware	<25%	No	No	1 sherd of plainware with a white exterior glaze	1
FS 1.8	Grid 1	Unit 116	Level 1	Metal	Rust	Cap	>75%	No	No	Metal bottle cap, heavily rusted	0
FS 1.80	Grid 1	Unit 112	Level 1	Metal	Rust	Nail & Wire	Unknown	No	No	1 wire cut nail and one piece of wire	0

FS 1.81	Grid 1	Unit 112	Level 1	Slag	Gray	Slag	Unknown	No	No	1 chunk of slag	0
FS 1.82	Grid 1	Unit 1	Level 1	Milk Glass	Tan	Unknown	<25%	No	No	1 fragment of milk glass marbeled tan and white	0
FS 1.83	Grid 1	Unit 1	Level 1	Glass	Aqua	Bottle	<25%	No	No	1 fragment of aqua glass	0
FS 1.84	Grid 1	Unit 1	Level 1	Glass	Clear	Bottle	<25%	No	No	8 fragments of clear glass	0
FS 1.85	Grid 1	Unit 116	Level 2	Bone	Bone	Bone	Unknown	No	No	1 bone fragment, possibly prairie dog	0
FS 1.87	Grid 1	Unit 116	Level 2	Misc.	-----	Unknown	Unknown	No	No	Slag fragments, 1 piece of mortar, and 3 pieces of unidentified material (possibly metal?)	0
FS 1.88	Grid 1	Unit 116	Level 2	Metal	Rust	Unknown	Unknown	No	No	10 pieces of unidentified metal fragments	0
FS 1.89	Grid 1	Unit 116	Level 2	Glass	Clear	Bottle	<25%	No	No	4 pieces of clear glass	0
FS 1.9	Grid 1	Unit 116	Level 1	Metal	Rust	Unknown	<25%	No	No	Miscellanious metal pieces including nails, wire, and washers	0
FS 1.90	Grid 1	Unit 116	Level 2	Glass	Aqua	Bottle	<25%	No	No	2 aqua glass fragments	0
FS 1.91	Grid 1	Unit 116	Level 2	Milk Glass	Tan	Unknown	unknown	No	No	7 fragements of flat milk glass marbeled tan and white	0
FS 1.92	Grid 1	Unit 116	Level 2	Ceramic	White	vessel	<25%	No	No	1 ceramic sherd, hotelware, with interior and exterior white glaze	1
FS 1.93	Grid 1	Unit 116	Level 2	Ceramic	Grey	vessel	<25%	No	No	1 ceramic sherd, stoneware, with interior	1

										and exterior grey glaze	
FS 1.94	Grid 1	Unit 114	Level 1	Bone	tan	food	unknown	no	no	I piece of butchered bone.	0
FS 1.95	Grid 1	Unit 114	Level 1	Metal	rust	structural	100%	no	no	1 large nail. 1 10d, 1 8 d, 3 2d nails. Two wire fragments, 1 nut/washer (very small) and 1 metal fragment.	0
FS 1.96	Grid 1	Unit 114	Level 1	Ceramic	orang e	unknown	unknown	no	no	3 pieces of orange-red, unslipped/gl ased ceramic.	0
FS 1.97	Grid 1	Unit 114	Level 1	Ceramic	White and black	cup/bowl	<25%	yes	no	Thin white ceramic fragment with black decoration on outside. Rim fragment. Difficult to tell what decoration is.	2
FS 1.98	Grid 1	Unit 114	Level 1	Ceramic	pink	unknown	unknown	yes	no	1 small pink ceramic fragment. Decoration faded red blue and green. Back of fragment has flaked off.	2
FS 1.99	Grid 1	Unit 114	Level 1	Glass	clear	unknown	unknown	no	no	12 fragments of clear glass.	0
FS 2.1	Grid 2	Unit 211	Level 1	Metal	Rust	2 nails	100%	No	No	2 metal nails. 20d, and 10d common nails. Heavily rusted	0
FS 2.10	Grid 2	Unit 213	Level 1	Metal	Grey	Unknown	Unknown	No	No	1 round metal fragment possibly a tag, with a wire ring	0

FS 2.11	Grid 2	Unit 213	Level 1	Ceramic	Red	Unknown	unknown	No	No	1 fragment of red ceramic/brick. Function unknown.	0
FS 2.12	Grid 2	Unit 213	Level 1	Ceramic	White	Unknown	Unknown	No	No	2 small ceramic white fragments with a white interior glaze.	1
FS 2.13	Grid 2	Unit 213	Level 1	Glass	Clear	Bottle	<25%	No	No	5 fragments of clear glass	1
FS 2.14	Grid 2	Unit 214	Level 1	ceramic	white and blue	vessel	<25%	yes	no	Thin ceramic rim fragment with blue decoration around the rim, and white flowers. It appears the blue decoration was also present thoughout the vessel.	3
FS 2.15	Grid 2	Unit 214	Level 1	metal	rust	safety pin	100%	no	no	1 broken safety pin	0
FS 2.16	Grid 2	Unit 214	Level 1	glass	clear	unknown	unknown	no	no	3 small fragments of clear glass	0
FS 2.17	Grid 2	Unit 214	Level 1	brick and Mortar	orange and white	structural	unknown	no	no	six brick fragments and 13 mortar fragments.	0
FS 2.18	Grid 2	Unit 216	Level 1	glass	clear	unknown	unknown	yes	no	13 clear glass fragments. 1 fragment has 4 lines molded in, as well a stippling. A second fragment just has the stippling texture.	0
FS 2.19	Grid 2	Unit 216	Level 1	ceramic	orange	unknown	unknown	no	no	2 pieces of orange, unslipped, unglazed	0

										ceramic. Maybe structural, or related to gardening (from a pot)	
FS 2.2	Grid 2	Unit 211	Level 1	Brick	Orange	brick	<25%	No	No	3 pieces of brick fragments.	0
FS 2.20	Grid 2	Unit 215	Level 1	Ceramic	Red	Marble	100%	No	No	One 1/2 inch diameter clay marble	2
FS 2.21	Grid 2	Unit 215	Level 1	Glass	Aqua	Unknown	<25%	No	No	3 pieces of aqua glass	0
FS 2.22	Grid 2	Unit 215	Level 1	Glass	Clear	Mason Jar	<25%	No	No	14 fragments of clear mason jar glass including screw lip fragments	1
FS 2.23	Grid 2	Unit 212	Level 1	glass	clear	unknown	unknown	no	no	8 fragments of clear glass	0
FS 2.24	Grid 2	Unit 212	Level 1	metal	rust	structural	100%	no	no	1 size 2 d nail	0
FS 2.25	Grid 2	Unit 212	Level 1	shell	white	unknown	unknown	no	no	1 shell fragment. It is very small and could possibly have been from a button.	0
FS 2.26	Grid 2	Unit 212	Level 1	Ceramic	orange	unknown	unknown	no	no	1 piece of unslipped/glass orange ceramic	0
FS 2.27	Grid 2	Unit 212	Level 1	ceramic	orange/brown	unknown	unknown	no	no	1 peice of orange/brown ceramic unslipped/glazed with linear ridges on one side	0
FS 2.28	Grid 2	Unit 212	Level 1	ceramic	white and blue	vessel	<25%	yes	no	2 white ceramic fragments with blue decoration in the "willow ware" sytle. Ceramic is thin and may have	3

										been from a cup.	
FS 2.3	Grid 2	Unit 211	Level 1	Ceramic	Orange	pot/pipe	<25%	No	No	5 orange unglazed ceramic fragments. May be part of a flower pot, or a pipe.	0
FS 2.4	Grid 2	Unit 211	Level 1	Glass	Amber	Bottle	<25%	No	No	1 piece of brown glass. Very small.	2
FS 2.5	Grid 2	Unit 211	Level 1	Glass	Clear	Bottle	<25%	No	No	2 small clear glass fragments	2
FS 2.6	Grid 2	Unit 211	Level 1	Metal	Gray	Unknown	Unknown	Yes	No	1 small metal fragment with pressed rectangular impression.	0
FS 2.7	Grid 2	Unit 211	Level 1	Bone	Bone	Bone	100%	No	No	1 piece of professionally butchered bone. Likely cow bone.	0
FS 2.8	Grid 2	Unit 211	Level 2	Metal	Rust	Nail	100%	No	No	One nail	0
FS 2.9	Grid 2	Unit 211	Level 2	Ceramic	Red	Unknown	Unknown	No	No	Unidentified ceramic or brick material of unknown function.	0
FS 3.0	Grid 2	Unit 309	Level 0	Ceramic	White	Flatware	unknown	No	No	1 large and several small charcoal fragments	0
FS 3.1	Grid 3	Unit 310	Level 1	Ceramic	White	Flatware	<25%	No	No	1 white glazed ceramic sherd with partial base	1
FS 3.10	Grid 3	Unit 310	Level 1	Metal	Rust	Unkown	<25%	No	No	1 small heavily rusted metal fragment. Possible handle?	0
FS 3.11	Grid 3	Unit 316	Level 1	Brick	Orange	Brick	<25%	No	No	7 brick fragments, possibly from the shale layer	

FS 3.12	Grid 3	Unit 316	Level 1	Glass	Clear	Bottle	<25%	Yes	No	7 small clear glass bottle sherds, one is textured	2
FS 3.13	Grid 3	Unit 316	Level 1	Glass	Green	Bottle	<25%	No	Yes	1 small, thick green glass fragment with partial letters, possibly "S"	1
FS 3.14	Grid 3	Unit 310	Level 2	Metal	Rust	Nails	100%	No	No	22 nails of various size, heavily rusted	0
FS 3.15	Grid 3	Unit 310	Level 2	Metal	Rust	Screws	100%	No	No	2 heavily rusted screws	0
FS 3.16	Grid 3	Unit 310	Level 2	Metal	Rust	Unknown	Unknown	No	No	3 heavily rusted metal fragments of unknown function	0
FS 3.17	Grid 3	Unit 310	Level 2	Metal	Grey	Unknown	100%	Yes	No	Possible metal button or clothing fastener	0
FS 3.18	Grid 3	Unit 310	Level 2	Metal	Copper	Wire	Unknown	No	No	Copper wire fragments wrapped around themselves	0
FS 3.19	Grid 3	Unit 310	Level 2	Ceramic	White	Unknown	<25%	No	No	Once white glazed hotelware fragment	1
FS 3.2	Grid 3	Unit 310	Level 1	Ceramic	Pink	Unknown	<25%	No	No	1 small pink ceramic glazed sherd	1
FS 3.20	Grid 3	Unit 310	Level 2	Unknown	Pink	Unknown	Unknown	No	No	8+ fragments of crumbly, delicate pink pigment over dirt clods	0
FS 3.21	Grid 3	Unit 310	Level 2	Metal	Grey	Unknown	Unknown	No	No	Grey metal bar fragment	0
FS 3.22	Grid 3	Unit 310	Level 2	Metal	Grey	Unknown	100%	No	No	Small grey metal cap	0
FS 3.23	Grid 3	Unit 310	Level 2	Mortar	White	Structural	Unknown	No	No	1 large mortar fragment	0

FS 3.24	Grid 3	Unit 310	Level 2	Glass	Clear	Unknown	Unknown	No	No	21 clear glass fragments including a mason jar rim fragment	2
FS 3.25	Grid 3	Unit 310	Level 2	Glass	Clear	Unknown	Unknown	Yes	No	1 clear glass fragment with orange peel decoration	0
FS 3.26	Grid 3	Unit 310	Level 2	Glass	Amber	Unknown	Unknown	Yes	No	No 1 amber glass fragment with gold inset on both sides, one side with a circle, one side with 2 streaks	0
FS 3.27	Grid 3	Unit 313	Level 2	Rubber (?)	Black	Unknown	Unknown	No	No	12 possible rubber fragments	0
FS 3.27	Grid 3	Unit 313	Level 2	Bone	Bone	Bone	100%	No	No	Large butchered bone fragment	0
FS 3.28	Grid 3	Unit 313	Level 2	Burned wood	Black	Unknown	Unknown	No	No	Many burned wood fragments	0
FS 3.29	Grid 3	Unit 313	Level 2	Metal	Rust	Nails	100%	No	No	5 heavily rusted metal nails of various size	0
FS 3.3	Grid 3	Unit 310	Level 1	Ceramic	Brown	Bead?	100%	No	No	1 small brown cylindrical	2
FS 3.30	Grid 3	Unit 313	Level 2	Metal	Grey	Unknown	Unknown	No	No	Many small metal bar fragments	0
FS 3.31	Grid 3	Unit 313	Level 2	Metal	Rust	Can lid	>75%	No	No	Heavily rusted can lid with a screw top	0
FS 3.32	Grid 3	Unit 313	Level 2	Mortar	White	Structural	Unknown	No	No	4 mortar fragments	0
FS 3.32	Grid 3	Unit 313	Level 2	Asphalt (?)	Black	Unknown	Unknown	No	No	Many small fragments of possible tar paper	0
FS 3.33	Grid 3	Unit 313	Level 2	Coal	Black	Coal	Unknown	No	No	1 pieces of coal	0
FS 3.34	Grid 3	Unit 313	Level 2	Glass	Clear	Jar	25-50%	Yes	Yes	42 clear glass fragments	2

										with major jar rim fragments	
FS 3.35	Grid 3	Unit 313	Level 2	Glass	Clear	Bottle	<25%	Yes	Yes	Partial clear glass base with rippled sides and MM reading "Dura" on the bottom of the side and "GN PATE" around the base	2
FS 3.36	Grid 3	Unit 313	Level 2	Glass	Amber	Bottle	<25%	No	No	1 amber glass fragment	2
FS 3.37	Grid 3	Unit 311	Level 1	metal	rust	nails	75%-100%	no	no	6 complete nails ranging in size frin 6d to 30d. 3 imcomplete nails	0
FS 3.38	Grid 3	Unit 311	Level 1	metal	rust	nails	100%	no	no	3 very small nails.	0
FS 3.39	Grid 3	Unit 311	Level 1	metal and plastic	rust and black	fastener?	unknown	no	no	metal screw with plastic knob	0
FS 3.4	Grid 3	Unit 310	Level 1	Metal	Rust	5 nails	100%	No	No	5 metal nails, heavily rusted. 3 - 10d, 2 - 3d, 1 broken	0
FS 3.40	Grid 3	Unit 311	Level 1	metal	rust	screws	100%	no	no	2 small screws	0
FS 3.41	Grid 3	Unit 311	Level 1	metal	rust	unknown	unknown	no	no	metal fragments	0
FS 3.42	Grid 3	Unit 311	Level 1	metal	rust	unknown	unknown	no	no	metal fragments	0
FS 3.43	Grid 3	Unit 311	Level 1	metal	silver/ rust	unknown	unknown	no	no	1 circular piece of metal with two holes in it. It may be a keyhole of some sort, or used to hang objects on walls.	1
FS 3.44	Grid 3	Unit 311	Level 1	Wood	brown	unknown	unknown	no	no	3 pieces of wood.	0
FS 3.45	Grid 3	Unit 311	Level 1	Glass	frosted/clear	unknown	unknown	no	no	12 glass fragments, which	2

										appear to be frosted. They also have a distinct shape. It appears the vessel they came from was paneled, perhaps from a stein?	
FS 3.46	Grid 3	Unit 311	Level 1	Glass	clear	Vessel	unknown	no	no	5 fragments of glass. 3 fragments have writing. Appears to say "PINT", there is also an "L" as well as two more undetermined letters.	1
FS 3.47	Grid 3	Unit 311	Level 1	Glass	clear	unknown	unknown	no	no	30 fragments of clear glass.	0
FS 3.48	Grid 3	Unit 311	Level 1	ceramic	white	unknown	unknown	yes	no	4 ceramic fragments, may not all be from same vessel. One fragments has a green leave decoration.	3
FS 3.49	Grid 3	Unit 313	Level 1	Glass	clear	unknown	unknown	no	no	92 fragments of clear glass. At least one piece looks like the mouth of a jar.	0
FS 3.5	Grid 3	Unit 310	Level 1	Metal	Rust	5 flat fragments	<25%	No	No	5 heavily rusted flat metal fragments	0
FS 3.50	Grid 3	Unit 313	Level 1	ceramic	white	unknown	<25%	no	no	small ceramic rim fragment. Very thin.	2

FS 3.51	Grid 3	Unit 313	Level 1	glass and metal	clear and rust	bottle	<25%	no	no	Bottle top with lid. Lid is too rusted to see makers mark.	1
FS 3.52	Grid 3	Unit 315	Level 1	Glass	Green	Unknown	Unknown	No	No	Melted green glass	0
FS 3.53	Grid 3	Unit 315	Level 1	Glass	Aqua	bottle	<25%	No	No	Bottle base fragment	1
FS 3.54	Grid 3	Unit 315	Level 1	Glass	Clear	Unknown	<25%	No	Yes	23 pieces of clear glass, 3 with a ridge.	1
FS 3.55	Grid 3	Unit 315	Level 1	Metal	Grey	Unknown	Unknown	No	No	One heavily rusted metal rod with two circular washers at each end.	0
FS 3.56	Grid 3	Unit 315	Level 1	Glass	Amber	Bottle	<25%	No	No	One fragment of amber glass.	1
FS 3.57	Grid 3	Unit 315	Level 1	Glass	Green	Bottle	<25%	No	No	One fragment of green glass.	1
FS 3.6	Grid 3	Unit 310	Level 1	Glass	Clear	Bottle	<25%	Yes	No	12 clear glass bottle fragments. 1 pieces is textured	2
FS 3.7	Grid 3	Unit 310	Level 1	Glass	Aqua	Bottle	<25%	No	No	2 aqua glass fragments	2
FS 3.8	Grid 3	Until 310	Level 1	Glass	Blue	Unknown	<25%	No	No	1 small blue glass fragment	0
FS 3.9	Grid 3	Unit 310	Level 1	Glass	Amber	Bottle	<25%	No	No	1 small browl glass bottle fragment	2
FS 4.1	Grid 4	Unit 410	Level 1	Glass	Clear/ Aqua	Uknown	<25%	No	No	16 small glass fragments, clear/aqua in color. Very flat.	0
FS 4.10	Grid 4	Unit 410	Level 1	Metal	Rust	Unknown	Uknown	No	No	Many small heavily rused metal fragments. Found in North end of the unit. Potentially related to FS 4.9.	0
FS 4.11	Grid 4	Unit 410	Level 1	Wood	Brown	Unknown	Unknown	No	No	Wood fragments	0

FS 4.12	Grid 4	Unit 410	Level 1	Slag	Gray	By product	Unknown	No	No	Potential fragment of slag. By product of coal mining.	0
FS 4.13	Grid 4	Unit 410	Level 1	Concrete	White /gray	Structural	Unknown	No	No	Portion of concrete, likely from the bathhouse collapse	0
FS 4.14	Grid 4	Unit 410	Level 1	Charcoal	Black	Charcoal	Unknown	No	No	Several chunck of charcoal	0
FS 4.15	Grid 4	Unit 410	Level 1	Concrete	White /gray	Structural	Unknown	No	No	4 pieces of flat concrete fragments	0
FS 4.16	Grid 4	Unit 410	Level 1	Brick	Orange	Unknown	<25%	No	No	2 brick fragments.	0
FS 4.17	Grid 4	Unit 410	Level 1	Rocks and mortar	Gray	Structural	Unknown	No	No	4 rocks with mortar on them. Likely part of the structure of the bathhouse.	0
FS 4.18	Grid 4	Unit 410	Level 1	Mortar	White	Structural	Unknown	No	No	Mortar fragments	0
FS 4.19	Grid 4	Unit 410	Level 1	Ceramic	Brown	Large pipe	<25%	No	No	Small brown fragment of large pipe. There is a line running through the inside. This is likely functional rather than decorative. May have been plumbing pipe.	0
FS 4.2	Grid 4	Unit 410	Level 1	Glass	Clear	Bottle	<25%	No	No	13 small clear glass fragments.	2
FS 4.20	Grid 4	Unit 410	Level 1	Ceramic	White	Unknown	<25%	No	No	3 white ceramic fragments. Very small. Not necessarily from the same object.	1
FS 4.21	Grid 4	Unit 410	Level 1	Metal	Rust	Unknown	Unknown	No	No	Many fragments of heavily	0

										rusted metal.	
FS 4.22	Grid 4	Unit 410	Level 1	Metal	Rust	Nails	100%	No	No	28 nails of different sizes and makes.	0
FS 4.23	Grid 4	Unit 416	Level 1	Plaster	White	Structural	Unknown	No	No	Many fragments of plaster	0
FS 4.24	Grid 4	Unit 416	Level 1	Plastic (?)	White	Unknown	Unknown	No	No	Small object, potentially plastic. Long and triangular in shape.	0
FS 4.25	Grid 4	Unit 416	Level 1	Coal	Black	Heating/byproducti	Unknown	No	No	Many coal fragments.	0
FS 4.26	Grid 4	Unit 416	Level 1	Metal	Rust	Unknown	Unknown	No	No	Several (6) small metal fragments. One of these fragments may have been a nail.	0
FS 4.27	Grid 4	Unit 416	Level 1	Metal	Rust	Unknown	Unknown	No	No	2 large metal fragments. Both are the same shape.	0
FS 4.28	Grid 4	Unit 416	Level 1	Ceramic	Brown	Pipe	<25%	No	No	5 fragments of large pipes, likely plumbing related.	0
FS 4.29	Grid 4	Unit 416	Level 1	Brick	Red/orange	Brick	Unknown	No	No	12 brick fragments of varying sizes	0
FS 4.3	Grid 4	Unit 410	Level 1	Glass	Aqua	Bottle	<25%	No	No	1 small aqua glass fragment.	2
FS 4.30	Grid 4	Unit 416	Level 1	Brick	Red	Brick	<25%	No	No	Brick fragment with striations across it. These are likely utilitarian rather than decorative.	0
FS 4.31	Grid 4	Unit 416	Level 1	Glass	Aqua	Unknown	Unknown	No	No	1 small, very thick fragment of aqua glass.	0
FS 4.32	Grid 4	Unit 416	Level 1	Glass	Clear	Unknown	Unknown	No	No	2 small fragments	0

										of clear glass, though they appear to have a pinkish tint.	
FS 4.33	Grid 4	Unit 416	Level 1	Glass	Clear	Unknown	Unknown	No	No	2 small fragments of clear glass.	0
FS 4.34	Grid 4	Unit 416	Level 1	Glass	Green	Unknown	Unknown	No	No	1 fragment of green glass.	0
FS 4.35	Grid 4	Unit 416	Level 1	Glass	Brown	Bottle	<25%	Yes	No	1 small piece of brown glass with two partial letters.	2
FS 4.36	Grid 4	Unit 416	Level 1	Ceramic	White	Vessel	<25%	No	No	1 piece of white hotelware, potentially a bowl.	1
FS 4.37	Grid 4	Unit 416	Level 1	cement	Gray	Unknown	Unknown	No	No	2 pieces of cement	0
FS 4.38	Grid 4	Unit 414	Level 1	Glass	brown	unknown	Unknown	no	no	1 fragment of brown glass	0
FS 4.39	Grid 4	Unit 414	Level 1	Metal	rust	unknown	unknown	no	no	4 fragments of semi-flat metal	0
FS 4.4	Grid 4	Unit 410	Level 1	Coal	Black	coal	Unknown	no	no	1 tiny peice of coal	0
FS 4.40	Grid 4	Unit 414	Level 1	charcoal	black	charcoal	n/a	n/a	n/a	1 piece of charcoal	0
FS 4.41	Grid 4	Unit 414	Level 1	glass	clear	unknown	unknown	no	no	2 clear glass fragments	0
FS 4.5	Grid 4	Unit 410	Level 1	Glass	Clear	Unknown	Unknown	No	No	4 small clear glass fragments. They are flat.	0
FS 4.6	Grid	Unit 410	Level 1	Metal	Rust	Unknown	Unknown	No	No	Many small metal fragments.	0
FS 4.7	Grid 4	Unit 410	Level 1	Metal	Rust	Unknown	Unknown	No	No	Many small, heavily rusted metal fragments	0
FS 4.8	Grid 4	Unit 410	Level 1	Metal	Rust	Unknown	Unknown	No	No	Many small, heavily rusted metal fragments. All from same large object.	0

FS 4.9	Grid 4	Unit 410	Level 1	Metal	Rust	Uknown	Uknown	No	No	Many small heavily rused metal fragments. Found in North East Corner of unit.	0
FS Auger 1	Grid 1	Unit 117b	Auger	mixed	-----	-----	-----	no	no	2 fragments of clear glass, brick fragments.	0
FS Auger 2	Grid 1	Unit 1	Auger	mixed	-----	-----	-----	no	no	brick and mortar fragments	0

Appendix C: Chi-Square Charts for Ceramic and Glass assemblages at the Industrial Mine and Berwind

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	Idustrial	Berwind	total	Industrial adjusted
Undecorated	20	50	70	46.02739726
Molded	11	30	41	25.31506849
Minimally Decorated	11	11	22	25.31506849
Decal/Transfer	14	63	77	32.21917808
Finely Decorated/Tranfer	17	14	31	39.12328767
Total	73	168	241	168

Table 4: Table showing raw ceramic numbers in the Industrial and Berwind assemblages. The final column shows the number of Industrial ceramics normalized for the chi-square test shown below

	Industrial	Berwind	Industrial-Berwind	squared	/Berwind
Undecorated	46.02739726	50	-3.97260274	15.78157253	0.315631451
Molded	25.31506849	30	-4.684931507	21.94858322	0.731619441
Minimally Decorated	25.31506849	11	14.31506849	204.921186	18.62919872
Decal/Transfer	32.21917808	63	-30.78082192	947.4589979	15.03903171
Finely Decorated/ Transfer	39.12328767	14	25.12328767	631.1795834	45.08425596
Total					
					79.79973729

x^2=79.80 d.f.= 4

	Industrial	Berwind	Total	Industrial adjusted
Medicinal	24	45	69	54.85714286
Alcohol	10	48	58	22.85714286
Food Prep/cons	7	30	37	16
Hygiene	16	21	37	36.57142857
Food Storage	31	45	76	70.85714286
Soda	3	19	22	6.857142857
Total	91	208		208

Table 5: Table showing the raw glass number in the Industrial and Berwind assemblages. The final column shows the number of Industrial glass artifact counts normalized for the chi-square test below.

	Industrial	Berwind	Industrial-Berwind	squared	/Berwind
Medicinal	54.85714286	45	9.857142857	97.16326531	2.159183673
Alcohol	22.85714286	48	-25.14285714	632.1632653	13.17006803
Food Prep	16	30	-14	196	6.533333333
Hygiene	36.57142857	21	15.57142857	242.4693878	11.54616132
Food Storage	70.85714286	45	25.85714286	668.5918367	14.85759637
Soda	6.857142857	19	-12.14285714	147.4489796	7.76047261
					56.02681534

x^2=56.03 d.f.=5