FINAL REPORT ON
DATA RECOVERY INVESTIGATIONS
OF THE 1850-1920 FEATURES
FOR THE PROPOSED
NATIONAL GEOSPATIAL INTELLIGENCE AGENCY WEST TRACT,
CITY OF ST. LOUIS, MISSOURI

Prepared for:
Stantec, St. Louis Development Corporation,
and the City of St. Louis

For submittal to the
U.S. Army Corps of Engineers, Kansas City

Prepared By:
Archaeological Research Center of St. Louis, Inc.
2812 Woodson Road
St. Louis, Missouri 63114
Phone: 314-426-2577, Fax: 314-426-2599
Email: arc@arcstl.com
Web Site: arc-stl.com

Principal Investigator:
Joe Harl

Cartography:
John Klein and Jeffery D. Kruchten

Research Report #801 October, 2018
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Research Questions</td>
<td>12</td>
</tr>
<tr>
<td>Data Recovery Methodology</td>
<td>15</td>
</tr>
<tr>
<td>Excavation Blocks</td>
<td>15</td>
</tr>
<tr>
<td>Feature Excavations</td>
<td>19</td>
</tr>
<tr>
<td>Building Remains</td>
<td>19</td>
</tr>
<tr>
<td>Yard Features</td>
<td>25</td>
</tr>
<tr>
<td>Artifact Collection</td>
<td>32</td>
</tr>
<tr>
<td>Laboratory Analysis</td>
<td>32</td>
</tr>
<tr>
<td>Cleaning</td>
<td>32</td>
</tr>
<tr>
<td>Cataloging</td>
<td>37</td>
</tr>
<tr>
<td>Results of Data Recovery Field Investigations</td>
<td>41</td>
</tr>
<tr>
<td>Building Investigations</td>
<td>56</td>
</tr>
<tr>
<td>Privy Vaults</td>
<td>156</td>
</tr>
<tr>
<td>Water Closets</td>
<td>184</td>
</tr>
<tr>
<td>Cisterns</td>
<td>218</td>
</tr>
<tr>
<td>Wells</td>
<td>250</td>
</tr>
<tr>
<td>Pit Features</td>
<td>257</td>
</tr>
<tr>
<td>Ash Pits</td>
<td>280</td>
</tr>
<tr>
<td>Middens</td>
<td>291</td>
</tr>
<tr>
<td>Unknown Features</td>
<td>301</td>
</tr>
<tr>
<td>Artifact Analysis</td>
<td>304</td>
</tr>
<tr>
<td>Prehistoric Artifacts</td>
<td>304</td>
</tr>
<tr>
<td>Artifacts from Clay Mine Pits and Midden 1850-1880</td>
<td>305</td>
</tr>
<tr>
<td>Dining Activities</td>
<td>305</td>
</tr>
<tr>
<td>Kitchen Artifacts</td>
<td>315</td>
</tr>
<tr>
<td>Beverage Artifacts</td>
<td>319</td>
</tr>
<tr>
<td>Health Care Artifacts</td>
<td>324</td>
</tr>
<tr>
<td>Personal Care and Adornment Artifacts</td>
<td>325</td>
</tr>
<tr>
<td>Household Artifacts</td>
<td>329</td>
</tr>
<tr>
<td>Artifacts Associated with Early Residential Use, 1850-1890</td>
<td>332</td>
</tr>
<tr>
<td>Dining Artifacts</td>
<td>332</td>
</tr>
<tr>
<td>Ironstone Vessels</td>
<td>333</td>
</tr>
<tr>
<td>Nonvitreous Wares</td>
<td>352</td>
</tr>
<tr>
<td>Porcelain Vessels</td>
<td>354</td>
</tr>
<tr>
<td>Utensils</td>
<td>358</td>
</tr>
<tr>
<td>Faunal and Floral Remains</td>
<td>358</td>
</tr>
<tr>
<td>Kitchen Artifacts</td>
<td>359</td>
</tr>
<tr>
<td>Vessels Associated with Preparing Foods and Drinks</td>
<td>359</td>
</tr>
<tr>
<td>Food Storage Vessels</td>
<td>361</td>
</tr>
<tr>
<td>Condiments</td>
<td>369</td>
</tr>
<tr>
<td>Beverages</td>
<td>378</td>
</tr>
<tr>
<td>Health Care Products</td>
<td>390</td>
</tr>
<tr>
<td>Personal Care and Adornment</td>
<td>405</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS, continued

Artifact Analysis

Artifacts Associated with Early Residential Use, 1850-1890
  Personal Items ............................................................................................................................... 413
  Fire Arms ....................................................................................................................................... 437
  Household Objects .......................................................................................................................... 438
  Transportation Items ...................................................................................................................... 464

Artifacts Associated with the Height of Residential Use, 1890-1920 ................................................. 467

Dining Artifacts ............................................................................................................................. 471
  Ironstone Vessels ................................................................................................................... 471
  Nonvitreous Yellowwares ...................................................................................................... 571
  Semi-Vitreous Stoneware ...................................................................................................... 575
  Hotelwares ............................................................................................................................. 576
  Porcelain Vessels ................................................................................................................... 581
  Glassware ............................................................................................................................... 612
  Utensils .................................................................................................................................. 628
  Faunal and Floral Remains ........................................................................................................ 628

Kitchen Artifacts ........................................................................................................................... 630
  Vessels Associated with Preparing Foods and Drinks ........................................................... 630
  Food Storage Vessels ............................................................................................................. 654
  Commercially Prepared Condiments and Food Jars ............................................................... 670
  Food Containers ....................................................................................................................... 699

Beverage Artifacts ......................................................................................................................... 708
  Health Care Products ............................................................................................................... 764
  Personal Care and Adornment ....................................................................................................... 813
  Personal Items ................................................................................................................................. 856
  Fire Arms .................................................................................................................................. 908
  Household Objects ......................................................................................................................... 909

Transportation Object .................................................................................................................... 1015

Discussion of Research Questions ......................................................................................................... 1019
  1. Prehistoric Use ....................................................................................................................... 1019
  2. Evidence of the French/Spanish Colonial Inhabitants ............................................................. 1019
  3. Earliest Use of NGA Tract ........................................................................................................ 1020
  4. Early Residential and Commercial Use of the NGA Tract, 1850-1890 .................................. 1022
  5. Largest Occupation at the NGA Tract, 1890-1920 .................................................................. 1025
  6-8 NGA Tract Between 1920 and 1965 ....................................................................................... 1034

Conclusion ..................................................................................................................................................... 1035

References Cited in Text .......................................................................................................................... 1038

References Cited in Tables ............................................................................................................................ 1072

Appendix A: Feature Locations Within Each Excavation Block on 1895 Whipple Maps .................. 1089

Appendix B: Feature Locations Within Each Excavation Block on 1909 Sanborn Maps .................. 1103
INTRODUCTION

Plans have been proposed to move the National Geospatial-Intelligence Agency (NGA) to a 97 acre tract located on the near northern portion of the City of St. Louis, Missouri (Figure 1). This tract is within Township 46 North, Range 7 East, as depicted on the Granite City 7.5’ USGS quadrangle (Figure 2). Specifically, it is bounded by Cass Avenue on the south, 22nd Street on the east, Jefferson Avenue and Parnell Street on the west, and the alley just north of Montgomery Street (Figure 3). The U.S. Army Corps of Engineers (USACE), Kansas City District, who is managing the Section 106 consultation on behalf of NGA, and the Missouri Department of Natural Resources, State Historic Preservation Office (SHPO), requested that data recovery investigations be conducted at the NGA tract prior to construction activity to prevent the inadvertent destruction of any significant cultural resources.

Phase I cultural resource investigations for 135 acres of the original proposed NGA tract were conducted by Brockington and Associates, Inc. (Pritchard and Pritchard 2015). This included the present 97 acres and an additional 36 acres located south of Cass Avenue where a portion of Pruitt-Igoe Housing Project was once located. The Phase I report provided a review of archaeological investigations conducted within a one mile radius around the proposed NGA location. They found that no cultural resources have been previously identified and no previous cultural resource investigations have been conducted within the tract. Pritchard and Pritchard (2005:15) concluded “a standard archaeological survey is not an appropriate way to search for archaeological sites within the tract since it is within an urban setting. Instead, an intensive archival review was needed and mechanical stripping used to search for intact cultural remains.”

The intensive archival review was prepared by the Archaeological Research Center of St. Louis, Inc. (Harl 2016A). By that time, the NGA tract had been reduced to its present 97 acres. The review revealed that the proposed tract was located within the prairie uplands with the nearest permanent source of water over one mile away. This portion of St. Louis City had a karst topography. Although several sink holes existed outside the NGA tract, no sink holes have been identified within this area. As a result, there appeared to be only a low chance of prehistoric use of the NGA development area other than possible remains associated with temporary hunting or extraction camps.

Historically, the area was used by the French Colonial settlers of St. Louis as the original common field, known as Prairie St. Louis (Figure 4). It was divided into long strips of lands, with each strip given to a French Colonial family for agricultural production. Since these fields were used for agriculture, buildings would not have been constructed and few remains would have been left here. However, during the 1780 raid on St. Louis by the British and their Native American supporters, some people were caught in the common fields outside of St. Louis’ defenses and were killed. It is possible that portions of human remains resulting from this event could exist within the NGA tract.
Figure 1: Location of the NGA Tract Within the City of St. Louis, Missouri
Figure 3: NGA Tract
Figure 4: 1847 Atlas of St. Louis Showing Common Fields

1847 Atlas of St. Louis, Missouri (Hutawa 1847)
This area was used for agriculture until the 1850s when the new St. Louis City water reservoir was completed immediately to the east in 1855 (Primm 1981:59) (Figure 5). This portion of St. Louis was probably selected for the reservoir due to its elevation above the rest of the city. Stone quarries and borrows used to remove soils, for the construction of the reservoir, existed within the NGA tract. The removal of soils would have destroyed any earlier prehistoric or historical remains that may have existed within those areas. The quarries and borrows continued to be used after the reservoir was completed providing stones and clay for the manufacture of bricks used in the construction of buildings. A few homes existed within this area, mostly associated with the stone quarry and brick works. During the 1860s and 1870s, residences had been established, predominately on the north end of the tract, representing the earliest homes and businesses. Between 1880 and 1900, the various stone quarries and clay pits had been filled in; homes and businesses were constructed across the rest of the NGA tract (Figure 6).

From the start, the settlement pattern used in this area matched that used across a large portion of St. Louis during the 19th-20th century. On the eastern and western ends of the blocks, middle class families established businesses (Figure 7). They either lived above their business or in an adjacent residence. The middle portions of blocks were occupied mostly by unskilled or skilled working class families. Although some families did own domestic dwellings, most families rented residences or flats occupied by two to four, or sometimes more families. Most of these working class families lived within the NGA tract for only a few years, with many having moved by the time of the next census.

The earliest residents were predominately German immigrants, although a cluster of Irish immigrants lived along the southern portion of the tract. By the turn of the century, a greater number of families came from Eastern Europe. A small number of African American families lived within this area prior to the mid-twentieth century. This occurred despite the segregation laws that were passed by St. Louis during the early 1900s.

With the earliest development of this tract, social institutions were established during the 1870s. Four churches were constructed here, including the Evangelische Zions Kirche (German Evangelistic Zion Church) along with a rectory and school, the Olivet Mission Baptist Church (later Second Baptist German Church), and St. Leo’s Catholic Church along with a temperance hall, and school (Figures 5 – 7). An African American Church and school was located on the northeastern edge of the tract. In addition to the religious schools, Howard Public School was constructed where the Baptist church existed sometime prior to 1895. The Homeopathic Medical College of Missouri was moved to Benton Street and Jefferson Avenue in 1886. This college was unique in that it trained both male and female students unlike many other medical colleges. Just to the north at North Market was the Henry Leidner, Son, and Company Livery and Undertaking, which operated at the end of the nineteenth century. In addition, the NGA tract also had a motion picture building and a bowling alley constructed just before 1895. Both buildings had halls that could be rented and saloons. The bowling alley had been constructed where the African American church and school originally existed.
Figure 5: 1875 Compton and Dry Map of St. Louis City

- African American Church & School
- Olivet Mission Baptist Church
- Zion German Evangelistic Church
- Water Reservoir
Figure 6: 1895 Whipple Fire Insurance Map of St. Louis City
Figure 7: 1909 Fire Insurance Maps of St. Louis City
In 1948, the Supreme Court ruled that racially based restrictive covenants were not unconstitutional, but federal enforcement of the covenant was, and the Federal Fair Housing Act of 1968 finally made racial covenants illegal. As a result, African American families could purchase some homes within the NGA tract during the 1950s and 1960s. Some of these families were drawn to this area after the development of the Pruitt-Igoe housing experiment in the mid-1950s, just to the south (Figure 8). Others represented families from Pruitt-Igoe, who were able to purchase their own homes and move out of the public facility, which was poorly funded and not well maintained. After the 1970s, people began moving out of this neighborhood leaving vacant homes and businesses behind. Many of these were torn down by the city over the years because they became a public health concern. However, some families remained in the area until their homes were recently purchased by the city to build the NGA facility.

*Figure 8: 1950s Aerial Photograph of Pruitt-Igoe and the NGA Tract, North to Right*

Although there is plenty of archival documents on the late 19th and early 20th century for St. Louis City, the truth is that we know very little about the daily lives of working class and middle class citizens, who comprised the bulk of the people living in St. Louis. Especially, little is known about the lives of arriving immigrant families during this time. People tended to write about unusual events and did not bother to describe mundane events associated with daily existence. What plates they selected to use, what condiments they preferred, what foods they regularly ate, what drinks they regularly consumed, what medicines they preferred and what ailments they suffered from, what jewelry they wore, and how they decorated their homes typically were not documented. Most writings during this time are by wealthier citizens; who employed these individuals to work in their factories. The employers looked down upon their laborers. Social reformers who wrote about the blight of the working class often looked down upon them as well, who they viewed as poor unfortunates.
As all police detectives, psychologists, social workers, pollsters, historians, anthropologists, and other social scientists know, how people record events often does not match what actually took place. For this reason, psychologists ask the same question in various ways to get a better understanding of what people are thinking. So do detectives, who also rely on crime scene investigators who use the physical remains to understand how a crime took place and ultimately who committed it. Historical archaeologists do rely on written and other documents from the past. However, working like crime scene investigators, archaeologists use the material remains and even more importantly, the association of these remains, to understand what daily life was like in the past. Was everyday a struggle to survive or did the material richness, brought on by the beginnings of the industrial age, rapidly change people’s lives (or at least make them believe that they were better off than they really were)? Did immigrants quickly become assimilated into American culture or did they alter this culture to meet their own beliefs? It is by understanding these aspects of daily life that archaeologists gain a better appreciation of these people. Even more importantly, since our beliefs, desires, and fears are based on our past experiences, we gain a better understanding of who we are today.
RESEARCH QUESTIONS

The archival review (Harl 2016A) suggested there was only a slight chance of prehistoric cultural resources existing within the NGA tract. However, there was a better chance of historic cultural resources existing. Most of these resources were associated with the Victorian Era (1850-1890) and the Consumer/Industrial Age (1890-1930). The latter period of history has begun to attract a great deal of research interest as little archaeology work has been conducted on these sites. There are a wide range of potential research questions that could be addressed by the data recovery investigations at the NGA tract. A few of these research questions include the following:

1. Prehistoric use of the NGA project area.
   a. Is there any evidence of a prehistoric use of this area?
   b. Were these limited to only short term extraction and hunting camps, or was there a residential use?
   c. Is there any evidence of ritual use, possibly associated with sink holes located just outside the tract?

2. Are there any cultural resources associated with the French Colonial common fields? Does the ground show evidence of distinctive plow marks made during that time?

3. Any evidence for the first historic use of this area, during the mid-1800s?

4. Are there any differences in the objects used during the time when homes and businesses first started being placed in this area between 1850 and 1890?

5. Are there any differences in objects being used during the period that this area was most heavily occupied between 1890-1920?

6. The 1920s represented a period of economic prosperity. Is this reflected in the objects left in this area at that time?

7. The 1930s represented the Great Depression. How is this reflected in the objects and what impact did this have on the local residents?

8. There was a gradual decline in the number of homes, businesses, and social institutions located in this area after 1940. Is there any differences in the objects used between 1940 and the early 1960s?

9. General research questions that could be addressed:
   a. The area is well documented with historic maps and other sources that indicate historic land use and occupancy. Do the excavations verify the existence of these remains and how the land was used over time?
   b. Past investigations in St. Louis suggested that competitive dining was common during the late 1800s among wealthy families. They would throw elaborate dinner parties to impress guests. However, working class families within St. Louis, removed from their relatives and friends to get better jobs in the city, also practiced competitive dining on a limited scale. This practice was used to impress their coworkers and new friends. Is there evidence of competitive dining with the families in the NGA tract, or was this practiced more by the wealthier families?
   c. After 1900, working class families tended to purchase predominately American made dinner settings, while wealthier families tended to purchase a larger percentage of English wares, which were more expensive at that time. This could reflect the expendable income of the wealthier versus working class...
families. However, it also could reflect the “buy American products first” movement, especially as practiced by the working class, who were protecting their jobs. Does a similar pattern exist between the working class and middle class families within the NGA tract?

d. Previous archaeological investigations suggested that both working class families and wealthier families acquired more expensive porcelain vessels. But, it appears that wealthier families purchased a greater percentage of porcelain and these came from a wider variety of foreign countries. Is this due to wealthy families being able to afford porcelain vessels or is there some other reason why working class families acquired fewer porcelain vessels? Does a similar pattern exist between the working class and middle class families of the NGA tract? Although working class families acquired fewer porcelain vessels, what types of vessels did they obtain?

e. What types of foods did the occupants of this portion of St. Louis consume and did these change over time? Also did the foods consumed vary for the middle class and working class families? Does it vary for immigrant versus U.S. born families?

f. Can the artifacts associated with the families be tied to goods being sold by a particular grocery or dry goods company in the area?

g. Previous excavations suggested that working class families purchased a larger percentage of alcoholic versus non-alcoholic drinks than wealthier families. Does a similar pattern exist at this location?

h. There was a soda manufacturer at the southeastern portion of the NGA tract. Unfortunately, this location was contaminated so it could not be excavated. Were most of the soda bottles used within the excavation blocks from this manufacturer or sodas produced across St. Louis?

i. Is there a difference in the types of alcohol being consumed by the middle class and working class families? For example, did working class families acquire more beer and wealthier families more wine?

j. Previous investigations suggested that wealthier families acquired a greater percentage of medicines from pharmacies than working class families indicating a greater reliance on doctors versus using home remedies (Harl et al. 2011, 2012). Does a similar pattern exist at this location?

k. Did the families use medicines from the local drug stores in Block 3, 18, and 23 or did they get drugs from other drug stores? Did the families prefer commercially produced patent medicines versus the ones dispensed by the drug stores?

l. Both working class and wealthier families fell prey to the claims made by patent medicine manufacturers. These medicines did not cure any diseases but were filled with large quantities of alcohol, or now illicit drugs, providing only temporary relief from the symptoms. Previous investigations, however, suggested that wealthier families tended to purchase patent medicines that supposedly cured specific diseases, while working class families purchased medicines that supposedly cured a wide range of diseases (Machiran and Harl 2014; Harl et al. 2011, 2012). Does a similar pattern exist at the NGA tract?

m. Hygiene products became more popular with people by 1900, which was an outgrowth of older Victorian beliefs that a person’s appearance reflected their
work ethic as well as their morality (Harl et al. 2003; Harl 2011, 2012; Machiran and Harl 2014; Wnuk 2000). Is there a similar increase in hygiene products at this location after 1900? What types of hygiene products were acquired? Do these differ for the middle class and working class families?

n. Personal items consist predominately of clothing among the working class, while a greater percentage of other personal items was used by wealthier families. Does a similar pattern exist between the middle class and working class families of this area?

o. By 1900, a greater array of household cleaning products was introduced to ease the efforts of the housewives to keep their homes free from clutter and filth (Machiran and Harl 2014). As an outgrowth of the Victorian Era, an unclean house was perceived as having harmful impact on a family’s health and could even impact their morality. Is there a greater percentage of household cleaning products after 1900 to aid housewives in their daily chores?
DATA RECOVERY METHODOLOGY

Excavation Blocks

It was not feasible to conduct archaeological investigations across the entire 97 acre tract; therefore, Excavation Blocks of selected locations were examined. These blocks represented 5% (just under 5 acres) of the proposed NGA tract. Excavation Block locations were determined based on information from the archival review to achieve a sampling of the various residences, businesses, and social institutions that existed across the tract. The placement of the blocks and their sizes were based on historic maps, fire insurance maps, and information obtained from the city directories and census. Further, the Excavation Blocks were scattered across the entire tract to search for any prehistoric cultural resources. Also, locations that were shown on the 1875 Compton and Dry map as having been used for historic quarrying, which could have destroyed any prehistoric and early historic remains, were avoided. Initially, 25 Excavation Blocks were selected to be excavated (Figure 9).

There were other limitations as to where the Excavation Blocks could be placed. Several locations were determined to have hazardous chemicals that posed a health risk based on an environmental study of the NGA tract undertaken by the City of St. Louis (Figure 10). These represented 15% of the overall NGA tract. Therefore, Excavation Blocks could not be placed at these locations because of the potential harm to the archaeological field crew.

Another limitation was the City of St. Louis did not own some locations within the NGA tract at the time of the archaeological investigations therefore, these locations were not available for excavation (Figure 11). Other properties had buildings standing on them, which would have to be razed that was not scheduled until after the archaeological investigations. Most of the properties not presently available were avoided for excavation but some were determined to be at critical locations. Excavation Blocks were planned at some of these locations (Figure 9, shown in red), with the hope that they could be examined after the city obtained the property, but avoiding the standing buildings.

Data recovery investigations were overseen by an Archaeological Committee. The committee principally was composed of Russell Halliday of MWH (now Stantec), Christopher Koenig of the St. Louis District of the USACE, Laurie Farmer of the Kansas City District of the USACE, Judith Deel and Heather Gibb of SHPO, Dr. Andrea Hunter of The Osage Nation, and a few other individuals who periodically filled in for one of these committee members or whose input was needed. The committee reviewed progress of the data recovery investigations and made decisions pertaining to any changes in the original research design based on the field investigations.
Figure 9: Locations of the Initial 25 Excavation Blocks
Figure 10: Contaminated Areas Within the NGA Tract
Figure 11: Parcels Owned by City of St. Louis and Those Still Privately Owned
**Feature Excavations**

Overall, investigations concentrated primarily on identifying yard features. Since buildings stood for many years, in some cases nearly 100 years, a mixture of artifacts would be associated with them. Most materials dated to the time that the buildings were razed after 1970. Yard features were used for shorter durations and potentially contained temporally discrete artifacts.

During excavations associated with improvements to Poplar Street Bridge in St. Louis City, Michael Meyer (2013) found that more recent historic buildings tended to preserve older deposits. Below these buildings he uncovered remains of original French Colonial buildings and features, which contained early historic artifacts. However, that area was one of the oldest portions of St. Louis. The archaeological deposits within the NGA tract were not as deep, and many of the residences and businesses had cellars that would have destroyed older deposits. Therefore, the Excavation Blocks were placed to uncover features within the yard area, extending from the back portions of building foundations to their alleys. These areas could potentially have less disturbed soils and prehistoric remains could exist.

A trackhoe with a smooth bucket was used to remove the soils and expose features (Photos 1 and 2). Utilizing a smooth bucket made it easier to identify unlined historic features or any prehistoric features. The trackhoe operator carefully removed the fill, with the excavations observed by at least one archaeologist from the Archaeological Research Center of St. Louis (ARC). All the Excavation Blocks were dug down to culturally sterile subsoils. Various historic features were uncovered during the data recovery investigations that were excavated using different methodologies. The excavations continued until no further historic features were present and no prehistoric features were likely.

**Building Remains**

Typically, only the back portion of a building’s foundation was exposed to establish its location on the various fire insurance maps. Foundations were assigned a Feature Number, which was recorded on a Feature Log and each building was assigned a Building Number. The tops of foundations were cleaned for documentation purposes (Photos 3 and 4). Their location within the Excavation Block was established by using a Total Station (Photos 5 and 6). Foundations with cellar entrances or additions were mapped on graph paper to record more detail (Photo 7). The foundations also were photographed. If possible, photographs were taken from an elevated position, such as from a back dirt pile, to get the best overall view of the foundation (Photo 8). As the building foundations were being exposed, the fill inside the cellars were examined. Most of the cellar fill examined consisted of construction debris (Photos 9 and 10), although some artifacts were present. Most of these materials were modern and left inside the buildings when they were abandoned and razed. No attempt was made to recover this material, but information concerning the foundation’s size and construction were noted on a Feature Form.
Photo 1: Trackhoe with a Smooth Bucket
Exposing Building Foundation in Block 10, Facing North

Photo 2: Exposed Building Foundations in Block 23, Facing Northwest
Photo 3: Cleaning Top of Foundation in Block 23, Facing North

Photo 4: Cleaning West Foundation Associated With St. Leo Catholic Church Rectory, Feature 300 in Block 1, Facing North
Photo 5: Using Total Station to Map the Locations of Building Foundations in Block 10, Facing Southwest

Photo 6: Mapping Location of an Outbuilding Foundation, Feature 66, Building 25, in Block 2, Facing Northeast
Photo 7: Mapping Foundation of Feature 181, Building 72, in Block 10, Facing West

Photo 8: Photographing Foundation Associated with Feature 181, Building 72, in Block 10, Facing West
Photo 9: Feature 16, Building 6, Cellar Filled with Construction Debris and Modern Artifacts in Block 23, Facing South

Photo 10: Feature 49, Building 21, Cellar Filled with Construction Debris and Modern Artifacts in Block 2, Facing North
Yard Features

It was anticipated that most of the yard features would date between the 1850s and the
1930s. After 1940, regular trash pickup appears to have taken place across the city and fewer
remains were left in yards. What was left behind represented sporadic trash dumped in the
backyards. These materials tended to be mixed with older and newer artifacts. However, if a
yard feature was found containing artifacts dating to the 1940-1960s, it was excavated and
analyzed in the same fashion as other pit features.

Once a pit feature was identified, the trackhoe operator carefully exposed its top. It was
assigned a Feature Number and recorded on a Feature Log. A pen flag was left next to the
feature that had the Feature Number identified on the flag with a permanent marker. The
feature’s location within the Excavation Block was mapped using a Total Station (Photo 11) and
was covered with a black polyethylene tarp preventing its fill from drying out until the
archaeological field crew could begin excavations (Photo 12).

Once an archaeological crew was available, the feature’s top was cleaned off and notes
were taken on its construction, which was recorded on a Feature Form. A detailed drawing of
the feature’s top was made on graph paper (Photo 13) and photographs were taken. Due to time
limitations, most features were cut in half using the trackhoe since they had the potential to be
very deep (Photo 14). It would be time consuming and possibly dangerous due to collapsing
walls to hand dig the entire fill of the features. As the trackhoe removed the fill, a portion of the
archaeological field crew monitored the exposed feature fill for artifacts, while others examined
the back dirt for artifacts which was spread out by the trackhoe operator (Photo 15 and 16). The
trench leading to the base of each feature was sloped and the side walls stepped to prevent them
from collapsing, therefore, making it safer and easier to excavate the feature. Historic features
that appeared to be shallower or unlined pits were completely excavated by hand. This
prevented inadvertently cutting into any potential prehistoric features with the trackhoe. During
these excavations, fill was removed first from one half of the feature with shovels and processed
through ¼ inch wire cloth screens to recover smaller artifacts (Photo 17).

For all yard features, the resulting wall profile (Photo 18) was examined for various
zones of fill, which were drawn on graph paper and photographed (Photos 19 and 20). A Feature
Form was partially completed. The second half of deeper pits was removed by the trackhoe and
the fill spread out for the field crew to examine for artifacts. Shallower features were hand
excavated by natural strata or in arbitrary 20-cm levels. Once an excavation level was
completed, excavators completed a Level/Stratum Form and began a new level and
Level/Stratum Form. Excavated fill was processed through ¼-inch wire mesh screen to recover
buttons, pins, and other small artifacts.

All artifacts were placed into appropriately marked bags with the project name, site
number, block number, feature number, strata and level number, date, name of excavators, and
bag number. A Bag Check List was maintained for each feature which listed the bag numbers,
provenience information and indicated what was generally in each bag. A flotation sample was
taken from the lowest portion of the feature, or in particular food rich zones, to recover
information on inhabitants’ diet (Photo 21).
The excavations continued until the bottom of the feature was encountered or to a maximum depth of six feet. If the fill continued deeper, then the trackhoe was brought back and the walls around the upper portion of the feature were removed and sloped so that excavations could be conducted safely at deeper depths. Once feature excavation was accomplished, the finished feature was photographed (Photo 22) and the Feature Form was completed.

*Photo 11: Mapping Location of Features with a Total Station in Block 24, Facing North*

*Photo 12: Features 174 and 188 Covered by 4 Mil Black Polyethylene Tarp and Marked by Red Pen Flags, Block 10, Facing West*
Photo 13: Drawing Planview of Feature 177 in Block 10, Facing South

Photo 14: Trackhoe Cutting East Half of Water Closet, Feature 64 in Block 2, Facing Southwest
Photo 15: Trackhoe Spreading Fill from Feature 213 in Block 25, for Crew to Monitor for Artifacts, Facing Northeast

Photo 16: Crew Inspecting Removed Fill for Artifacts, Facing Southwest
Photo 17: Crew Screening Hand Excavated Fill from Feature 146 in Block 19, Facing Northwest

Photo 18: Trackhoe Cut Exposing Western Half of Water Closet, Feature 58 in Block 2, Facing West
Photo 19: Mapping Top of Strata 2 in Wall Profile of Feature 62 in Block 2, Facing South

Photo 20: Mapping Feature 214 Profile and Preparing for Photograph, Facing Northeast
Photo 21: Collecting Flotation Sample from Bottom of Privy, Feature 74 in Block 8, Facing North

Photo 22: Completed Excavation of Feature 64 in Block 2, Facing West
Artifact Collection

Originally, it was planned to collect all habitational debris from features that were over 50 years old (Harl 2016B). However, once excavations were underway larger quantities of discovered artifacts were being recovered than originally anticipated, including many diagnostic artifacts (e.g., whole bottles and ceramic vessels). In fact, so many artifacts were being collected from some features, the materials were not bagged but instead placed in boxes with two bags placed inside the box with provenience information. It immediately became apparent that the artifact collection plan needed to be addressed and updated. After consultation with the Archaeology Committee and as outlined in the Modified Collection Plan (Harl 2016C), it was agreed that plain, ceramic sherds and bottle body fragments would no longer be collected but noted on the Feature Forms. Rims and bases from these vessels were saved, allowing the vessel type to be identified and providing an estimation on the minimum number of vessels. However, when features were small and the artifact density sparse, at least a sample of plain ceramics and bottle body sherds were collected to gain some insights into when the feature was utilized.

As originally proposed in the Data Recovery Plan (Harl 2016B), unidentifiable pieces of rusted metal were not saved. Further, most construction debris was not collected including bricks, limestone slabs, nails, window glass, and drainage pipes. Although window glass and nails could provide some insights into when buildings were constructed or features were used, the archival review provided better information on when buildings were built and how they were constructed. Thus, collecting these artifacts would not be very useful and would increase the cost of curation. Construction debris observed during the excavations were noted on the Feature Forms. Some construction elements were kept, including: hinges, door hardware, gas or electrical fixtures, and unique ornamental pieces.

Laboratory Analysis

Cleaning

Artifacts were sent to ARC’s laboratory but so many boxes of artifacts were collected during this project, (nearly 600 boxes) that additional space was needed. The City of St. Louis provided a warehouse for the temporary storage of the materials until they could be processed by ARC staff at their laboratory.

Laboratory work began with cleaning the artifacts (Photo 23). These were placed on trays, along with the bags containing their provenience information (Photo 24). The trays were put on racks to dry (Photo 25). Once the artifacts were dried, they were replaced into the original bags or new bags were created containing their provenience information. These bags then were placed into boxes according to feature number, and by stratum and level for larger features. Boxes from the same feature were stored together to make cataloging the artifacts easier. Flotation samples were processed using a Flote-Tech Model A machine (Photo 26). This device allowed for the recovery of small seeds and bones as well as delicate pieces such as fish scales and egg shells. These types of materials would have been lost by only screening the soil through 1/4 inch mesh. The flotation samples were separated into light fractions consisting mostly of seeds, other carbonized plant remains, fish scales, and some light bones (Photo 27), and heavy fractions consisting of bigger bones and artifacts. More common in the heavy fractions was coal clinker. The only way to separate the coal clinker from the bones and artifacts was picking them out by hand.
Photo 23: Washing Artifacts

Photo 24: Washed Artifact Tray with Bag Displaying Provenience Information
Photo 25: Racks of Drying Artifacts
Photo 26: Putting Float Sample into the Flote-Tech Device

Photo 27: Light Fraction Consisting of Seeds and Small Animal Remains
Once the flotation samples dried, the light fractions were placed into bags containing provenience information. The heavy fractions were placed through a series of sieves consisting of 0.5 mm (0.0197 inches), 0.2 mm (0.0787 inches), and less than 0.2 mm (Photos 28). Artifacts, including animal bone, were collected from the 0.5 mm screen and placed into appropriately labeled bags to be cataloged.

*Photo 28: Picking Artifacts Out of Greater than 0.5 mm Sample of Heavy Fraction And Remains in Sieve Less than 0.5 mm*
One of the warehouses that contained 113 boxes waiting to be returned to ARC’s office for cataloging required asbestos remediation. The boxes were originally placed within the warehouse by Excavation Block and by feature. They were subsequently displaced by the asbestos remediation crew, along with office materials left by the previous warehouse occupants, were placed into a large pile. Several of the boxes had fallen over mixing artifacts. Further, the location where the boxes were placed had standing water on the floor from a recent rainstorm. The wet bags and boxes were replaced with new ones before being returned to ARC’s laboratory for cataloging.

In addition, someone had broken into the building and it was apparent they had gone through the boxes removing artifacts. Empty boxes and bags were subsequently discovered on the floor. Loose isolated artifacts had been placed on shelves, furniture, or on the floor. Using the bag and box check list maintained during the field investigations, it was determined that 5 boxes and 34 bags were missing. Another 5 boxes and 79 bags had some artifacts removed from them as they were less than half full. The stolen artifacts are not known because they had not been cataloged yet. Furthermore, 13 boxes contained artifacts which had been dumped out of bags and the materials mixed with two or more features. Another 20 boxes contained artifacts from different strata or levels, but these came from the same feature and could be cataloged. These events resulted in 15 features having 5 to 50% of their artifacts lost or displaced (Feature 54, 55, 56, 58, 59, 62, 153, 155, 172, 289, 290, 292, 296, 298, and 299). One feature, Feature 65 a cistern in Excavation Block 2 located behind a general store, artifacts were completely lost.

Cataloging

Artifacts were cataloged by sorting them into categories so that they could help answer the various research questions:

1.) Initially, objects were divided into broad categories reflecting their material composition (bone, ceramic, glass, metal, etc.).
2.) Next, they were placed into categories based on morphological attributes, consisting of:
   a.) Dining Pieces
       i) Various ceramic dinner settings
       ii) Serving vessels
       iii) Tea sets
       iv) Utensils
       v) Foods consumed represented by animal bones and ethnobotanical samples
   b.) Kitchen Objects
       i) Various storage vessels
       ii) Cooking vessels
       iii) Utensils used for cooking
       iv) Condiment bottles
   c.) Recreational Drinking
       i) Baby bottles
       ii) Milk bottles
       iii) Juice bottles
       iv) Mineral water bottles
       v) Beer bottles
vi) Wine bottles
vii) Liquor bottles
viii) Tumblers, Beer mugs, and Wine glasses
d.) Health Care Products
   i) Pharmacy bottles
   ii) Patent medicine bottles
   iii) Homeopathic bottles
   iv) Syringes
e.) Personal Care and Adornment
   i) Cosmetic jars
   ii) Lice combs
   iii) Hair care products and combs
   iv) Perfume and cologne bottles
   v) Tooth brushes and tooth powder bottles
   vi) Mouthwash bottles
   vii) Razors and shaving mugs
   viii) Jewelry
   ix) Hair combs
f.) Personal Objects
   i) Buttons and Collar studs
   ii) Shoes
   iii) Clothing fragments
   iv) Jewelry and pocket watches
   v) Pocket knives
   vi) Musical instruments and records
   vii) Gaming pieces
   viii) Children objects
       (1) Doll parts
       (2) Toy tea sets
       (3) Marbles
       (4) Toys
g.) Household Goods
   i) Flower pots and jardinières
   ii) Chamber pots
   iii) Wash basins and pitchers
   iv) Cleaning products
   v) Shoe polish
   vi) Household keys
   vii) Furniture parts and ornamentation
   viii) Batteries
   ix) Clocks
   x) Mirrors
   xi) Lamp chimneys, hardware, and shades
h.) Transportation Items
   i) Wagon and buggy parts
   ii) Saddle and tack hardware
   iii) Bicycle parts
i.) Firearms
   i) Lead shot and bullets
   ii) Shell casings
   iii) Gun parts
j.) Construction Debris
   i) Electrical insulators
   ii) Cabinet hardware
   iii) Door knobs and hardware

3.) Each of these categories was further divided into smaller classes based on finer physical attributes resulting from manufacture, decoration, or use.

a.) Dinner settings
   i) Manufacture
      (1) Whiteware
      (2) Ironstone
      (3) Hotelware
      (4) Porcelain
   ii) Decoration
      (1) Undecorated
      (2) Molded
      (3) Painted
      (4) Transfer Print - British patterns had to be registered and these patterns were referenced in various pattern books and the Transferware Club website to determine when the pattern was made, who manufactured it, and where it was produced.
      (5) Flow Blue Print
      (6) Decals
   iii) Manufacturing Marks used to determine who, when, and where pieces were produced.

b.) Kitchen wares
   i) Manufacturing
      (1) Redware
      (2) Stoneware
      (3) Ironstone
      (4) Graniteware
      (5) Metal
   ii) Decoration
      (1) Undecorated
      (2) Molded
      (3) Painted
      (4) Annularware
      (5) Various glazes
c.) Various bottle glass
   i) Manufacture
      (1) Free blown
      (2) Blown into mold
      (3) Semi-automatic
      (4) Fully automatic
   ii) Type of Finish- which could reflect the product that was present within the bottles and date of use.
   iii) Embossed Lettering and Paper Labels- used to determine the products sold in the bottle, who manufactured it, when it was sold, and where it was made.
   iv) Manufacturing Mark- used to determine who made the bottle, where it was produced, and when it was made.

d.) Other artifacts will be documented in a similar fashion as ceramics and bottle glass.

4.) Minimum number of vessels that these various artifacts represented was determined based on the whole pieces, and rim sherds, bottle finishes, or other identifiable fragments. Bases of vessels also were used to determine this number as well. Various rim sherds were examined to determine if they matched. For rims from the same types of vessels, of the same size, and decoration, they were assumed to be from the same vessel even if they did not mend together. Plain body sherds and bottle glass could not be used to determine the minimum number of vessels. Due to changes in the collection strategy during the field work (Harl 2016C), the Archaeological Committee concurred, and as outlined in Clarification of Artifact Analysis (Harl 2016D), these nondiagnostic pieces were not cataloged and were discarded unless they were the only objects obtained from a feature and provided general insights into when it was used. It was not possible to match buttons to a particular piece of clothing so they were counted as separate minimum numbers. The size of the buttons and their attachment was cataloged.

5.) After the artifacts had been presorted, another portion of the crew researched manufactures’ marks or products indicated on various artifacts. This information was obtained from various publications or internet sources. The internet sources were not randomly utilized but after reviewing several sources, the ones that seemed to be the most reliable were chosen. This is no different than selecting a reliable publication. Internet sources also complied with standards for publication established by the Society of Historical Archaeology and the Society for American Archaeology.

6.) Then the artifact attributes were cataloged on a Microsoft Excel worksheet. The spreadsheet minimally contained the catalog number, location information, material composition, objects function, any modifications or decorations, portion of artifact recovered, count, weight, and additional comments. Other attributes, such as manufacturer’s marks, embossed or impressed lettering, and designs, were recorded as well.

7.) Materials then were compared to similar artifacts found during past archaeological investigations conducted within the City of St. Louis and surrounding region. These remains provided insights into human activity conducted on this tract and could
reflect the broader American at various times. They also were used to address the various research questions outlined in the Mitigation Plan.

8.) All materials uncovered during the testing operations were packaged according to Federal guidelines as outlined in 36 Part CFR 79. Artifacts were placed into 4-mil, zip-lock polyethylene bags labeled with provenience information as were interior tags. These were placed in boxes, with less than 25 pounds of artifacts. The boxes were labeled with appropriate catalog numbers, site number, and other appropriate provenience information. A copy of the database was prepared listing all the artifacts within each box.

9.) These collections, along with all field notes, forms, photographs, drawings, and two copies of the report were sent to the University of Missouri, Museum Support Center in Columbia, Missouri, for permanent curation.
RESULTS OF DATA RECOVERY FIELD INVESTIGATIONS

The data recovery investigations of the NGA tract were initiated on June 1, 2016 and completed on October 27, 2016. This work was conducted by the Archaeological Research Center of St. Louis, Inc. The field crew consisted of:

Principal Investigator: Joe Harl
Field Director: Meredith Hawkins Trautt
Asst. Field Directors: John Klein and Jeffrey Kruchten
Field Crew: Kimberly Byrnes, Sandy Dalzotto, Corey Fitzpatrick, Corrinne Harvey, Courtney Hayden, Caleb Klingler, Maudie R. Knicley, Corri Mader-Twillmann, Deborah Lyn Neidich, Kyle Potter, Jacob Province

Temperatures were warm with highs between 80 and 105 degrees Fahrenheit, but it was cooler during the month of October. The summer of 2016 was wetter than most and rains prevented field work on 16 days. When it rained, the clays of the subsoil became very slick making walking and climbing in and out of the trenches very difficult. For the safety of the crew, field work generally was not resumed until 24 hours after a heavy rain to give the Excavation Blocks some time to dry. The clays were not permeable, so rain water sat on the bottom of the excavations (Photo 29) until it was removed by the trackhoe (Photo 30). Despite being covered with tarps, mud washed on top of some of the partially excavated features. These deposits had to be removed from the top of the features by shovels to prevent the inadvertent mixture of artifacts that were washed in with the mud (Photos 31 and 32).

Initially, 25 Excavation Blocks were proposed, but the blocks completed during the data recovery investigations were larger than anticipated. As a result, 16 Excavation Blocks were investigated across the proposed NGA tract (Figure 12), representing 4.95 acres, or 5% of the original 97 acres, which complied with the Programmatic Agreement (2016, on file at SHPO). Some blocks near highly important archaeological resources could not be investigated, such as the water closets and other yard features associated with the St. Leo Catholic Church, Temperance Hall, and school because they were under buildings or parking lots that could not be removed during the time of the archaeological investigations. The configuration of the Excavation Blocks and the locations of features in relation to historic buildings are indicated on the 1895 (Appendix A) and 1909 (Appendix B) fire insurance maps.
Photo 29: Pool of Water in Excavation Block 10, Facing North

Photo 30: Mud After Removal of Water in Block 10, Facing Northeast
Photo 31: Removing Washed in Mud Covering Feature 167 in Block 10, Facing North

Photo 32: Removing Mud Washed in Over Lower Portion of Feature 75 in Block 8, Facing South
Figure 12: Completed Excavation Blocks within the NGA Tract

Total Acreage For Blocks Completed: 4.95
The archaeological investigations did reveal that a larger portion of the NGA tract had been used for the mining of clay than was depicted on the 1875 Compton and Dry map. Filled in clay mines (Figure 13) were found in all the Excavation Blocks except for Blocks 7, 12, 13, 24, and 25, which contained a natural subsoil of a yellowish brown (10YR5/4) clay (Photo 33), approximately 60 cm (2 feet) below the modern grade. Blocks 10 and 21 had mostly natural soils (Photos 34), but clay mines existed at the eastern edges of these blocks (Photos 35 and 36). In addition, the eastern half of Block 23 contained a natural soil with a clay pit on the western half (Photo 38, Figure 14). Clay pits that existed within the blocks varied in depth from 1.66 meters (5 1/2 feet) to 3.7 meters (12 feet) below the modern grade, with an average depth of 234 meters (7 3/4 feet) (Table 1). A relatively clean soil was used to fill in most of the clay mines prior to construction of homes and businesses (Photos 37 and 38, Figures 13 and 14), but some fragments of brick, limestone, and mortar was mixed in with the fill. A few thin lenses of historic debris were present within some of the fill. However, St. Leo Church had been constructed into the bottom of a clay mine and the surrounding area filled with rubbish that appeared to have been cleaned out of privy vaults and dumped at this location by wagons. Most of this material dated to the 1880s and was likely dumped here just prior to or during the construction of the church. The lower portions of all the clay mines contained a dark grayish brown (10YR4/2) (Figure 13, Strata 7) to gray (2.5YR5/0) (Figure 14, Strata 7) gleied soils. This would suggest that water had sat on the bottom of the clay mines. Plant remains were mixed in with this soil still giving it a smell of wet decaying vegetation.

<table>
<thead>
<tr>
<th>Block</th>
<th>Depth of Clay Mine Fill Below Modern Grade in cm (feet)</th>
<th>Depth of Features Below Modern Grade in cm (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>310 (10 1/4)</td>
<td>30-50 (1-1 3/4)</td>
</tr>
<tr>
<td>2</td>
<td>166 (5 1/2)</td>
<td>40-60 (1 1/2-2)</td>
</tr>
<tr>
<td>3</td>
<td>170 (5 3/4)</td>
<td>60 (2)</td>
</tr>
<tr>
<td>7</td>
<td>--</td>
<td>20-40 (3/4-1 1/3)</td>
</tr>
<tr>
<td>8</td>
<td>180 (6)</td>
<td>30-60 (1-2)</td>
</tr>
<tr>
<td>9</td>
<td>250 (8 1/4)</td>
<td>42-94 (1 1/2-3)</td>
</tr>
<tr>
<td>10</td>
<td>190 (6 1/4)</td>
<td>30-100 (1-3 1/3)</td>
</tr>
<tr>
<td>12</td>
<td>--</td>
<td>30-50 (1-1 3/4)</td>
</tr>
<tr>
<td>13</td>
<td>--</td>
<td>30-50 (1-1 3/4)</td>
</tr>
<tr>
<td>14</td>
<td>370 (12)</td>
<td>40-60 (1 1/2-2)</td>
</tr>
<tr>
<td>18</td>
<td>142 (4 1/2)</td>
<td>60 (2)</td>
</tr>
<tr>
<td>19</td>
<td>214 (7)</td>
<td>60 (2)</td>
</tr>
<tr>
<td>21</td>
<td>210 (7)</td>
<td>30-66 (1-2)</td>
</tr>
<tr>
<td>23</td>
<td>280 (9 1/4)</td>
<td>60 (2)</td>
</tr>
<tr>
<td>24</td>
<td>--</td>
<td>30 (1)</td>
</tr>
<tr>
<td>25</td>
<td>--</td>
<td>60-70 (2-2 1/3)</td>
</tr>
</tbody>
</table>
Photo 33: Deep Trench 1 in Block 7 with Only Natural Soil Consisting of a Yellowish Brown (10YR5/4) Clay, Facing East
Photo 34: Natural Soils in Deep Trench 1 within Block 10, Facing South
Photo 35: Mixed Fill at Edge of Clay Mine on Southeastern Edge of Block 10
With Features 185 and 187 at Base of Fill, Facing South

Photo 36: Mixed Fill Within a Clay Mine at the Southeastern Edge of Block 21, Facing North
Photo 37: Mixed Fill over a Clay Mine in the Center of Block 19, Facing North
Figure 13: West Profile of Clay Mine Fill, Center of Block 19

KEY:
- Limestone
- Strata 1 10YR3/1 black cindery silt
- Strata 2 10YR4/6 dark yellowish brown clay mixed with 10YR3/2 very dark grayish brown silt and limestone
- Strata 3 10YR4/6 dark yellowish brown clay mixed with 10YR3/2 very dark grayish brown silt with several pieces of limestone
- Strata 4 10YR5/6 yellowish brown clay
- Strata 5 & 6 10YR3/2 very dark grayish brown silt
- Strata 7 10YR4/2 dark grayish brown silt with pieces of limestone, brick, and mortar
- Strata 8 10YR5/4 yellowish brown clay natural subsoil
Photo 38: Mixed Fill Over Clay Mine in Southwestern Portion of Block 23, Facing East
Figure 14: East Profile of Clay Mine Fill on Southwest Portion of Block 23

Key:
- Strata 1 10YR3/3 Dark Brown Silt and Cinders
- Strata 2 10YR4/4 Dark Yellowish Brown Clay
- Strata 3 10YR3/2 Very Dark Grayish Brown Silt and Ash
- Strata 4 10YR2/1 Black Cinder
- Strata 5 10YR4/4 Dark Yellowish Brown Clay
- Strata 6 10YR3/2 Very Dark Grayish Brown Silt
- Strata 7 2.5YR5/0 Gray Clay
- Strata 8 10YR5/4 Yellowish Brown Clay
Features existed between 20 and 94 cm (3/4 to 3 feet) below the modern grade, but most of the remains were encountered around 60 cm (2 feet) (Table 1). A total of 306 features were identified within the 16 Excavation Blocks. All these represented the historic use of the NGA tract; no prehistoric features and only one displaced prehistoric flake was identified. Various types of historic features were uncovered. During the excavations, it soon became apparent that the proposed excavation methodology (Harl 2016B) needed to be amended in order to safely excavate some of the features, which was proposed (Harl 2016C) and approved by the Archaeology Committee. These modifications will be described in the feature sections below.

At least one demolition trench was uncovered in every block investigated. These trenches were dug 2 to 4 meters (6 1/2 to 13 feet) below the surface and were used to dump construction debris from buildings razed after 1970 (Photos 39-41). The demolition trenches, however, did destroy or partially impact several yard features (Photo 39).

Photo 39: Water Closet, Feature 9, in Block 23 (on Right) Partially Cut By Demolition Trench (on Left), Facing North
Photo 40: Trackhoe Exposing Top of Demolition Trench in Block 21, Facing West

Photo 41: East Portion of Demolition Trench in Block 21 Removed; Trench Extended to Bedrock, Facing North
Building Investigations

A total of 128 features represented remains associated with 102 buildings. The construction of the building foundations was noted and described in Table 2. Most of the buildings had cellars with outside entrances. The cellars were filled with construction debris from the razed buildings and typically modern objects that had been left inside the buildings when they were abandoned. No attempt was made to recover this modern material (less than 50 years old) or to further investigate the cellars. The buildings shapes, however, were compared to the fire insurance maps and used to determine where they were located within the Excavation Blocks.

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Building #</th>
<th>Length in cm (feet)</th>
<th>Orientation</th>
<th>Width in cm (feet)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Excavated Or Not</th>
<th>Feature Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>3</td>
<td>1</td>
<td>650 (21 ½)</td>
<td>E-W, continues east</td>
<td>120 (4)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>6</td>
<td>2</td>
<td>740 (24 1/3)</td>
<td>E-W</td>
<td>400 (13)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>10</td>
<td>3</td>
<td>385 (12 ½)</td>
<td>E-W</td>
<td>178 (6)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>13</td>
<td>4</td>
<td>500 (16 ½)</td>
<td>E-W</td>
<td>295 (9 ¼)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>14</td>
<td>5</td>
<td>280 (9 ⅓)</td>
<td>E-W</td>
<td>230 (7 ⅗)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>16</td>
<td>6</td>
<td>800 (26 1/3)</td>
<td>N-S, continues north</td>
<td>420 (14)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>23</td>
<td>21</td>
<td>7</td>
<td>710 (23 1/3)</td>
<td>N-S</td>
<td>415 (13 ¼)</td>
<td>E-W</td>
<td>limestone piers</td>
<td>Yes</td>
<td>floor of outbuilding</td>
</tr>
<tr>
<td>23</td>
<td>22</td>
<td>8</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>9</td>
<td>986 (32 ⅓)</td>
<td>N-S, continues north</td>
<td>31 (1)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>east foundation of moving picture theatre</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>10</td>
<td>2100 (69)</td>
<td>N-S, continues north</td>
<td>78 (2 ½)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>east foundation of outbuilding &amp; retaining wall</td>
</tr>
<tr>
<td>7</td>
<td>32</td>
<td>10</td>
<td>945 (31)</td>
<td>E-W</td>
<td>46 (1 ½)</td>
<td>N-S</td>
<td>concrete</td>
<td>No</td>
<td>south foundation of outbuilding</td>
</tr>
<tr>
<td>7</td>
<td>33</td>
<td>10</td>
<td>1530 (50 ¼)</td>
<td>N-S</td>
<td>78 (2 ½)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>west foundation of outbuilding</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>9</td>
<td>1415 (46 ½)</td>
<td>E-W</td>
<td>35 (1)</td>
<td>N-S</td>
<td>concrete</td>
<td>No</td>
<td>south foundation of moving picture theatre</td>
</tr>
<tr>
<td>7</td>
<td>37</td>
<td>9</td>
<td>1015 (33 1/3)</td>
<td>N-S, continues north</td>
<td>32 (1)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>west foundation of moving picture theatre</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>7</td>
<td>38</td>
<td>11</td>
<td>700 (23)</td>
<td>E-W</td>
<td>350 (11 ½)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>12</td>
<td>330 (11)</td>
<td>E-W, continues west</td>
<td>244 (8)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>13</td>
<td>825 (27)</td>
<td>N-S</td>
<td>103 (3 ½)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>14-19</td>
<td>1915 (63)</td>
<td>N-S</td>
<td>315 (10 ½)</td>
<td>E-W, continues west</td>
<td>limestone</td>
<td>No</td>
<td>cellars</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
<td>20</td>
<td>495 (16 ½)</td>
<td>N-S, continues south</td>
<td>400 (13)</td>
<td>E-W, continues west</td>
<td>limestone</td>
<td>No</td>
<td>cellar of drug store</td>
</tr>
<tr>
<td>2</td>
<td>49</td>
<td>21</td>
<td>700 (23)</td>
<td>N-S, continuous south</td>
<td>289 (9 ½)</td>
<td>E-W, continues west</td>
<td>limestone</td>
<td>No</td>
<td>cellar of store</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>22</td>
<td>320 (10 ½)</td>
<td>E-W</td>
<td>80 (2 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
<td>23</td>
<td>340 (11)</td>
<td>N-S, continues south</td>
<td>240 (8)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>2</td>
<td>52</td>
<td>24</td>
<td>350 (11 ½)</td>
<td>E-W</td>
<td>280 (9 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>2</td>
<td>66</td>
<td>25</td>
<td>285 (9 ½)</td>
<td>E-W</td>
<td>278 (9)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>outbuilding foundation</td>
</tr>
<tr>
<td>8</td>
<td>68</td>
<td>26</td>
<td>960 (31 ½)</td>
<td>N-S</td>
<td>480 (15 ¼)</td>
<td>E-W</td>
<td>2 bricks thick with wood floor</td>
<td>Yes</td>
<td>cellar &amp; chimney base</td>
</tr>
<tr>
<td>8</td>
<td>70</td>
<td>27</td>
<td>340 (11)</td>
<td>E-W, continues west</td>
<td>130 (4 1/3)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>71</td>
<td>28</td>
<td>540 (17 ¼)</td>
<td>E-W</td>
<td>210 (7)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>76</td>
<td>29</td>
<td>910 (30)</td>
<td>N-S</td>
<td>280 (9 ½)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>79</td>
<td>30</td>
<td>480 (15 ½)</td>
<td>E-W</td>
<td>174 (5 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>80</td>
<td>31</td>
<td>330 (11)</td>
<td>E-W</td>
<td>92 (3)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>82</td>
<td>32</td>
<td>680 (22 1/3)</td>
<td>E-W</td>
<td>110 (3 ½)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>8</td>
<td>85</td>
<td>33</td>
<td>480 (15 ½)</td>
<td>E-W</td>
<td>380 (12 1/2)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------------</td>
<td>--------------------</td>
<td>-------------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>24</td>
<td>87</td>
<td>34</td>
<td>1500 (49 ¼)</td>
<td>N-S, continues south</td>
<td>625 (20 ½)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>88</td>
<td>35</td>
<td>905 (29 ¾)</td>
<td>E-W</td>
<td>100 (3 1/3)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>94</td>
<td>36</td>
<td>425 (14)</td>
<td>E-W</td>
<td>400 (13)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>95</td>
<td>37</td>
<td>695 (23)</td>
<td>E-W</td>
<td>500 (16 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>96</td>
<td>38</td>
<td>232 (7 ¾)</td>
<td>E-W</td>
<td>230 (7 ¾)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>99</td>
<td>39</td>
<td>720 (23 ¾)</td>
<td>E-W</td>
<td>140 (4 ¼)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>24</td>
<td>101</td>
<td>40</td>
<td>535 (17 ½)</td>
<td>E-W, continues east</td>
<td>250 (8 ¼)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>107</td>
<td>41</td>
<td>192 (6 1/3)</td>
<td>N-S</td>
<td>126 (4)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>108</td>
<td>41</td>
<td>204 (6 3/8)</td>
<td>N-S</td>
<td>114 (3 3/8)</td>
<td>E-W</td>
<td>limestone</td>
<td>Yes</td>
<td>cellar stair entrance</td>
</tr>
<tr>
<td>12</td>
<td>109</td>
<td>42</td>
<td>580 (19)</td>
<td>E-W</td>
<td>428 (14)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>110</td>
<td>42</td>
<td>206 (7)</td>
<td>N-S</td>
<td>206 (7)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar stair entrance</td>
</tr>
<tr>
<td>12</td>
<td>112</td>
<td>43</td>
<td>680 (22 1/3)</td>
<td>N-S</td>
<td>440 (14 1/2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>113</td>
<td>44</td>
<td>360 (12)</td>
<td>N-S</td>
<td>290 (9 3/8)</td>
<td>E-W</td>
<td>brick</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>116</td>
<td>45</td>
<td>700 (23)</td>
<td>N-S</td>
<td>450 (15)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>121</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td>N-S, continues north</td>
<td></td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>123</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td>N-S, continues north</td>
<td></td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>12</td>
<td>126</td>
<td>48</td>
<td>595 (19 ½)</td>
<td>N-S</td>
<td>150 (5)</td>
<td>E-W, continues to west</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>13</td>
<td>132</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>13</td>
<td>134</td>
<td>50</td>
<td>600 (19 ¾)</td>
<td>N-S, continues north</td>
<td>590 (19 ½)</td>
<td>E-W, continues west</td>
<td>limestone, later modified with concrete on south foundation</td>
<td>No</td>
<td>livery stable &amp; undertaking</td>
</tr>
<tr>
<td>13</td>
<td>137</td>
<td>51</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>13</td>
<td>139</td>
<td>52</td>
<td>260 (8 1/4)</td>
<td>N-S</td>
<td>60 (2)</td>
<td>E-W, continues west</td>
<td>limestone</td>
<td>No</td>
<td>store cellar</td>
</tr>
<tr>
<td>19</td>
<td>140</td>
<td>53</td>
<td>2400 (78 ¾)</td>
<td>N-S</td>
<td>1300 (42 ¾)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>German Church cellar</td>
</tr>
<tr>
<td>19</td>
<td>142</td>
<td>54</td>
<td>405 (13 1/3)</td>
<td>N-S</td>
<td>210 (7)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar entrance to rectory</td>
</tr>
<tr>
<td>19</td>
<td>143</td>
<td>54</td>
<td>2150 (70 ½)</td>
<td>N-S</td>
<td>750 (24 ¾)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>rectory cellar</td>
</tr>
<tr>
<td>19</td>
<td>144</td>
<td>55-60</td>
<td>3500 (115)</td>
<td>E-W</td>
<td>100 (3 1/3)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>single foundation for 6 domestic dwellings</td>
</tr>
<tr>
<td>19</td>
<td>147</td>
<td>61</td>
<td>700 (23)</td>
<td>N-S</td>
<td>120 (4)</td>
<td>E-W, continues west</td>
<td>limestone</td>
<td>No</td>
<td>cellar</td>
</tr>
<tr>
<td>9</td>
<td>151</td>
<td>62</td>
<td>500 (16 ½)</td>
<td>E-W</td>
<td>220 (7 ¾)</td>
<td>N-S</td>
<td>brick</td>
<td>No</td>
<td>school addition</td>
</tr>
<tr>
<td>9</td>
<td>152</td>
<td>62</td>
<td>2160 (71)</td>
<td>E-W</td>
<td>1000 (33)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>school foundation</td>
</tr>
<tr>
<td>9</td>
<td>157</td>
<td>63</td>
<td>1140 (37 ½)</td>
<td>N-S</td>
<td>60 (2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>bakery foundation</td>
</tr>
<tr>
<td>9</td>
<td>158</td>
<td>64</td>
<td>620 (20 ½)</td>
<td>E-W</td>
<td>190 (6 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>bakery foundation</td>
</tr>
<tr>
<td>9</td>
<td>159</td>
<td>62</td>
<td>720 (23 ½)</td>
<td>E-W</td>
<td>410 (13 ½)</td>
<td>N-S</td>
<td>brick</td>
<td>No</td>
<td>school addition</td>
</tr>
<tr>
<td>9</td>
<td>160</td>
<td>62</td>
<td>340 (11)</td>
<td>N-S</td>
<td>260 (8 ½)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>school porch</td>
</tr>
<tr>
<td>9</td>
<td>161</td>
<td>63</td>
<td>200 (6 ½)</td>
<td>N-S, continues south</td>
<td>60 (2)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>bakery foundation</td>
</tr>
<tr>
<td>9</td>
<td>162</td>
<td>65</td>
<td>200 (6 ½)</td>
<td>N-S, continues south</td>
<td>100 (3 1/3)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>10</td>
<td>163</td>
<td>66</td>
<td>1720 (56 ½)</td>
<td>N-S</td>
<td>760 (25)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>bakery outbuilding</td>
</tr>
<tr>
<td>10</td>
<td>164</td>
<td>67</td>
<td>1040 (34)</td>
<td>N-S, continues north</td>
<td>760 (25)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>bakery foundation</td>
</tr>
<tr>
<td>10</td>
<td>‘170</td>
<td>68</td>
<td>1050 (34 ½)</td>
<td>N-S</td>
<td>470 (15 ½)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>house cellar</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>------------</td>
<td>--------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>171</td>
<td>69</td>
<td>450 (15)</td>
<td>N-S</td>
<td>240 (8)</td>
<td>E-W</td>
<td>brick</td>
<td>No</td>
<td>outbuilding foundation</td>
</tr>
<tr>
<td>10</td>
<td>173</td>
<td>68</td>
<td>210 (7)</td>
<td>E-W</td>
<td>180 (6)</td>
<td>N-S</td>
<td>concrete</td>
<td>No</td>
<td>house porch</td>
</tr>
<tr>
<td>10</td>
<td>174</td>
<td>70</td>
<td>950 (31 ¾)</td>
<td>N-S, continues north</td>
<td>510 (16 ¾)</td>
<td>E-W</td>
<td>limestone piers, dirt floor</td>
<td>Yes</td>
<td>house cellar</td>
</tr>
<tr>
<td>10</td>
<td>179</td>
<td>71</td>
<td>720 (23 ¾)</td>
<td>N-S, continues north</td>
<td>420 (14)</td>
<td>E-W</td>
<td>limestone</td>
<td>Yes</td>
<td>house cellar</td>
</tr>
<tr>
<td>10</td>
<td>181</td>
<td>72</td>
<td>780 (25 ¾)</td>
<td>E-W, continues west</td>
<td>460 (15)</td>
<td>E-W</td>
<td>concrete</td>
<td>Yes</td>
<td>outbuilding foundation</td>
</tr>
<tr>
<td>10</td>
<td>182</td>
<td>73</td>
<td>420 (14)</td>
<td>E-W, continues west</td>
<td>130 (4 1/3)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>10</td>
<td>192</td>
<td>71</td>
<td>250 (8 ½)</td>
<td>N-S</td>
<td>100 (3 1/3)</td>
<td>E-W</td>
<td>brick walls, dirt base</td>
<td>Yes</td>
<td>cellar addition</td>
</tr>
<tr>
<td>10</td>
<td>196</td>
<td>74</td>
<td>530 (17 ½)</td>
<td>E-W</td>
<td>240 (8)</td>
<td>N-W, continues north</td>
<td>limestone</td>
<td>No</td>
<td>house cellar</td>
</tr>
<tr>
<td>10</td>
<td>199</td>
<td>75</td>
<td>1000 (33)</td>
<td>E-W</td>
<td>910 (30)</td>
<td>N-S</td>
<td>concrete</td>
<td>No</td>
<td>outbuilding foundation</td>
</tr>
<tr>
<td>25</td>
<td>202</td>
<td>76</td>
<td>1000 (33)</td>
<td>N-S</td>
<td>600 (20)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>store cellar</td>
</tr>
<tr>
<td>25</td>
<td>205</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>limestone, No</td>
</tr>
<tr>
<td>25</td>
<td>206</td>
<td>78</td>
<td>1200 (39 ½)</td>
<td>E-W</td>
<td>330 (11)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>dwelling cellar</td>
</tr>
<tr>
<td>25</td>
<td>211</td>
<td>79</td>
<td>200 (6 ½)</td>
<td>E-W, continues east and west</td>
<td>130 (4 1/3)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>cellar entrance to dwelling</td>
</tr>
<tr>
<td>25</td>
<td>212</td>
<td>80</td>
<td>460 (15)</td>
<td>N-S, continues south</td>
<td>420 (14)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>cellar addition to flat</td>
</tr>
<tr>
<td>25</td>
<td>217</td>
<td>81</td>
<td>520 (17)</td>
<td>E-W</td>
<td>150 (5)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>25</td>
<td>218</td>
<td>82</td>
<td>528 (17 1/3)</td>
<td>E-W</td>
<td>375 (12 1/3)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>one story addition foundation</td>
</tr>
<tr>
<td>25</td>
<td>222</td>
<td>83</td>
<td>1070 (35)</td>
<td>N-S</td>
<td>550 (18)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>25</td>
<td>224</td>
<td>84</td>
<td>900 (29 ½)</td>
<td>N-S</td>
<td>465 (15 1/3)</td>
<td>E-W</td>
<td>cedar posts</td>
<td>Yes</td>
<td>cellar dwelling</td>
</tr>
<tr>
<td>25</td>
<td>228</td>
<td>85</td>
<td>530 (17 ½)</td>
<td>N-S</td>
<td>400 (13)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>store cellar</td>
</tr>
<tr>
<td>25</td>
<td>229</td>
<td>86</td>
<td>360 (12)</td>
<td>E-W</td>
<td>260 (8 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>230</td>
<td>87</td>
<td>675 (22)</td>
<td>N-S</td>
<td>600 (20)</td>
<td>E-W</td>
<td>limestone</td>
<td>Yes</td>
<td>outbuilding</td>
</tr>
<tr>
<td>1</td>
<td>232</td>
<td>88</td>
<td>770 (25 1/3)</td>
<td>N-S</td>
<td>585 (19 1/4)</td>
<td>E-W</td>
<td>concrete</td>
<td>Yes</td>
<td>outbuilding</td>
</tr>
<tr>
<td>1</td>
<td>234</td>
<td>89</td>
<td>500 (16 1/2)</td>
<td>E-W</td>
<td>300 (10)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>rectory addition</td>
</tr>
<tr>
<td>1</td>
<td>235</td>
<td>89</td>
<td>1680 (55)</td>
<td>E-W</td>
<td>52 (2)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>rectory north foundation</td>
</tr>
<tr>
<td>1</td>
<td>236</td>
<td>90</td>
<td>3180 (104 1/3)</td>
<td>E-W</td>
<td>40 (1 1/3)</td>
<td>N-S</td>
<td>limestone</td>
<td>Yes</td>
<td>church outer north foundation</td>
</tr>
<tr>
<td>1</td>
<td>240</td>
<td>90</td>
<td>1580 (52)</td>
<td>E-W</td>
<td>510 (17)</td>
<td>N-S</td>
<td>early concrete &amp; limestone</td>
<td>No</td>
<td>church front entrance foundation</td>
</tr>
<tr>
<td>1</td>
<td>241</td>
<td>90</td>
<td>190 (65 1/3)</td>
<td>N-S</td>
<td>150 (5)</td>
<td>E-W</td>
<td>limestone</td>
<td>Yes</td>
<td>church northeast corner buttress 1</td>
</tr>
<tr>
<td>1</td>
<td>244</td>
<td>90</td>
<td>1840 (60 1/2)</td>
<td>E-W</td>
<td>60 (2)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>church inner north foundation</td>
</tr>
<tr>
<td>1</td>
<td>245</td>
<td>90</td>
<td>140 (4 1/2)</td>
<td>N-S</td>
<td>100 (3 1/3)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 2</td>
</tr>
<tr>
<td>1</td>
<td>246`</td>
<td>90</td>
<td>190 (6 1/2)</td>
<td>N-S</td>
<td>110 (3 1/2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 3</td>
</tr>
<tr>
<td>1</td>
<td>247</td>
<td>90</td>
<td>90 (3)</td>
<td>N-S</td>
<td>50 (1 1/2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 4</td>
</tr>
<tr>
<td>1</td>
<td>248</td>
<td>90</td>
<td>110 (3 3/4)</td>
<td>N-S</td>
<td>80 (2 3/4)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 5</td>
</tr>
<tr>
<td>1</td>
<td>249</td>
<td>90</td>
<td>1400 (48)</td>
<td>E-W</td>
<td>60 (2)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>church inner south foundation</td>
</tr>
<tr>
<td>1</td>
<td>250</td>
<td>90</td>
<td>140 (4 1/2)</td>
<td>N-S</td>
<td>120 (4)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 6</td>
</tr>
<tr>
<td>1</td>
<td>251</td>
<td>90</td>
<td>80 (2 3/4)</td>
<td>N-S</td>
<td>60 (2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church buttress 7</td>
</tr>
<tr>
<td>1</td>
<td>252</td>
<td>90</td>
<td>2500 (82)</td>
<td>E-W</td>
<td>60 (2)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>church south outer foundation</td>
</tr>
<tr>
<td>1</td>
<td>253</td>
<td>90</td>
<td>1640 (54)</td>
<td>E-W</td>
<td>50 (1 1/4)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>church south addition foundation</td>
</tr>
<tr>
<td>1</td>
<td>254</td>
<td>89</td>
<td>1180 (39)</td>
<td>E-W</td>
<td>50 (1 1/4)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>rectory south foundation</td>
</tr>
<tr>
<td>1</td>
<td>255</td>
<td>90</td>
<td>2240 (73 1/2)</td>
<td>N-S</td>
<td>60 (2)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>church west foundation &amp; rectory east foundation</td>
</tr>
<tr>
<td>1</td>
<td>256</td>
<td>90</td>
<td>310 (10 1/2)</td>
<td>NW-SE</td>
<td>310 (10 1/2)</td>
<td>NE-SW</td>
<td>limestone</td>
<td>No</td>
<td>church tower foundation in southeast corner</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Building #</td>
<td>Length in cm (feet)</td>
<td>Orientation</td>
<td>Width in cm (feet)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Excavated Or Not</td>
<td>Feature Type</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------</td>
<td>------------------</td>
<td>-------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>257</td>
<td>90</td>
<td>700 (23)</td>
<td>E-W</td>
<td>60 (2)</td>
<td>N-S</td>
<td>concrete</td>
<td>No</td>
<td>church outer southwest foundation</td>
</tr>
<tr>
<td>1</td>
<td>258</td>
<td>90</td>
<td>240 (8)</td>
<td>N-S</td>
<td>180 (6)</td>
<td>E-W</td>
<td>concrete</td>
<td>No</td>
<td>church concrete block</td>
</tr>
<tr>
<td>1</td>
<td>259</td>
<td>90</td>
<td>580 (19)</td>
<td>NW-SE</td>
<td>80 (2 ¾)</td>
<td>NE-SW</td>
<td>limestone</td>
<td>No</td>
<td>church outer western tower foundation</td>
</tr>
<tr>
<td>1</td>
<td>300</td>
<td>89</td>
<td>2400 (79)</td>
<td>E-W</td>
<td>350 (11 ½)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>rectory west foundation</td>
</tr>
<tr>
<td>21</td>
<td>266</td>
<td>91</td>
<td>1440 (47 ¼)</td>
<td>N-S</td>
<td>620 (20 ½)</td>
<td>E-W</td>
<td>limestone</td>
<td>Yes</td>
<td>flat cellar</td>
</tr>
<tr>
<td>21</td>
<td>267</td>
<td>92</td>
<td>1020 (33 ½)</td>
<td>E-W</td>
<td>510 (17)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>21</td>
<td>268</td>
<td>93</td>
<td>530 (17 ½)</td>
<td>E-W</td>
<td>480 (16)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>store cellar</td>
</tr>
<tr>
<td>21</td>
<td>269</td>
<td>92 &amp; 98</td>
<td>520 (17)</td>
<td>N-S</td>
<td>390 (13)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>addition to flats</td>
</tr>
<tr>
<td>21</td>
<td>270</td>
<td>94-96</td>
<td>2210 (72 ½)</td>
<td>E-W</td>
<td>40 (1 1/3)</td>
<td>N-S, continues north</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>21</td>
<td>271</td>
<td>94-96</td>
<td>2210 (72 ½)</td>
<td>E-W</td>
<td>150 (5)</td>
<td>N-S</td>
<td>brick</td>
<td>No</td>
<td>addition to flats</td>
</tr>
<tr>
<td>21</td>
<td>272</td>
<td>94</td>
<td>220 (7 ¼)</td>
<td>E-W</td>
<td>160 (5 ¼)</td>
<td>N-S</td>
<td>limestone</td>
<td>No</td>
<td>porch placed on piers</td>
</tr>
<tr>
<td>21</td>
<td>273</td>
<td>97</td>
<td>500 (16 ½)</td>
<td>N-S, continues north</td>
<td>60 (2)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>21</td>
<td>274</td>
<td>97</td>
<td>280 (9 ¼)</td>
<td>E-W</td>
<td>220 (7 ¼)</td>
<td>N-S</td>
<td>brick</td>
<td>No</td>
<td>porch</td>
</tr>
<tr>
<td>21</td>
<td>275</td>
<td>92 &amp; 98</td>
<td>520 (17)</td>
<td>N-S</td>
<td>180 (6)</td>
<td>E-W</td>
<td>brick</td>
<td>No</td>
<td>porch</td>
</tr>
<tr>
<td>21</td>
<td>277</td>
<td>99-100</td>
<td>765 (25)</td>
<td>N-S, continues south</td>
<td>40 (1 1/3)</td>
<td>E-W, continues east</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
<tr>
<td>21</td>
<td>278</td>
<td>99-100</td>
<td>515 (17)</td>
<td>N-S</td>
<td>200 (6 ½)</td>
<td>E-W</td>
<td>brick</td>
<td>No</td>
<td>porch</td>
</tr>
<tr>
<td>18</td>
<td>293</td>
<td>101</td>
<td>520 (17)</td>
<td>E-W, continues east</td>
<td>350 (11 ½)</td>
<td>N-S, continues south</td>
<td>limestone</td>
<td>No</td>
<td>saloon cellar</td>
</tr>
<tr>
<td>18</td>
<td>294</td>
<td>102</td>
<td>700 (23)</td>
<td>N-S, continues north</td>
<td>620 (20 ½)</td>
<td>E-W</td>
<td>limestone</td>
<td>No</td>
<td>flat cellar</td>
</tr>
</tbody>
</table>
Further investigations were conducted on 12 buildings because they appeared to have been razed prior to 1940 (Table 3). These buildings were completely or partially exposed. Of these, 6 buildings had artifacts dating to the late 1800s to early 1900, and their cellars were completely excavated.

In Block 23, the remains of an outbuilding, Feature 21, Building 7, was discovered. It consisted of a rectangular depression, measuring 720 cm (23 1/3 feet) north-south by 415 cm (13 ¾ feet) east-west, identified by a fill with a black (10YR2/1) silt (Photo 42). Remains of limestone piers were found near three of the corners (Figure 15:A). This indicated that the building sat on piers and not a continuous stone foundation. There were the remains of a brick walkway (Feature 20) along the west side of the outbuilding (Photos 43-45, Figure 15:A). This walkway was 100 cm (3 1/4 feet) wide, and could suggest that the building served as a business. Several businesses were documented near the alleys, but none at this location.

The outbuilding remains were cut in half by the trackhoe to determine if it had a cellar. The fill was spread out so that artifacts could be collected from this cut fill. Since there was a mixed soil used to fill in the clay pit beneath the feature, a portion of this area was excavated to the base of the clay mine to substantiate that the outbuilding did not extend deeper (Photo 46, Figure 15:B). These excavations revealed that the fill extended only to a depth of 40 cm (1 1/3 feet), with the mixed sediments of the filled clay mine beneath the feature. The southern half of the feature fill was hand excavated and processed through ¼ inch screens to recover artifacts. The wide brick walkway appeared to suggest that this building may have served as a business, but domestic debris was recovered indicating that it served as a residence. The artifacts further suggest that the residence was most likely used between 1870 and 1895. It is shown as a shed on the 1895 fire insurance map and may have been razed before the map was produced (Figure 16). A number of domestic artifacts were associated with this cellar suggesting that it was a residence and not a business or just a shed.

Photo 42: Exposed Top of Feature 21 in Block 23, Notice Limestone Piers at Northeast and Southeast Corners, Facing Northwest
### Table 3: Summary of Buildings Excavated containing Historic Artifacts

<table>
<thead>
<tr>
<th>Block</th>
<th>Feature #</th>
<th>Building #</th>
<th>Length in cm (feet)</th>
<th>Orientation</th>
<th>Width in cm (feet)</th>
<th>Orientation</th>
<th>Depth in cm (feet)</th>
<th>Foundation</th>
<th>Floor</th>
<th>Approximate Date of Artifacts</th>
<th>Building Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>20 &amp; 21</td>
<td>7</td>
<td>710 (23 1/3)</td>
<td>N-S</td>
<td>415 (13 ½)</td>
<td>E-W</td>
<td>40 (1 1/3)</td>
<td>limestone piers</td>
<td>dirt</td>
<td>late 1800s</td>
<td>outbuilding, possibly used as a business</td>
</tr>
<tr>
<td>8</td>
<td>68</td>
<td>26</td>
<td>960 (31 ½)</td>
<td>N-S</td>
<td>480 (16)</td>
<td>E-W</td>
<td>295 (10)</td>
<td>2 courses of bricks</td>
<td>wood</td>
<td>1890-1900</td>
<td>domestic dwelling</td>
</tr>
<tr>
<td>19</td>
<td>140</td>
<td>53</td>
<td>2400 (79)</td>
<td>N-S</td>
<td>1300 (42 ¾)</td>
<td>E-W</td>
<td>N.A.</td>
<td>limestone</td>
<td>concrete</td>
<td>modern</td>
<td>German church cellar</td>
</tr>
<tr>
<td>19</td>
<td>142 &amp; 143</td>
<td>54</td>
<td>2150 (70 ½)</td>
<td>N-S</td>
<td>750 (24 ¾)</td>
<td>E-W</td>
<td>N.A.</td>
<td>limestone</td>
<td>concrete</td>
<td>modern</td>
<td>German church rectory cellar</td>
</tr>
<tr>
<td>9</td>
<td>151, 152, 159, &amp; 160</td>
<td>62</td>
<td>2160 (71)</td>
<td>E-W</td>
<td>1000 (33)</td>
<td>N-S, continues south</td>
<td>N.A.</td>
<td>limestone</td>
<td>unknown</td>
<td>unknown</td>
<td>Howard school foundation</td>
</tr>
<tr>
<td>10</td>
<td>174</td>
<td>70</td>
<td>670 (22)</td>
<td>N-S</td>
<td>450 (15)</td>
<td>E-W</td>
<td>95 (3)</td>
<td>limestone piers</td>
<td>wood</td>
<td>1920s-1930s</td>
<td>domestic dwelling</td>
</tr>
<tr>
<td>10</td>
<td>179 &amp; 192</td>
<td>71</td>
<td>720 (23 1/4)</td>
<td>N-S, continuous north</td>
<td>420 (14)</td>
<td>E-W</td>
<td>170 (5 ½)</td>
<td>limestone &amp; brick</td>
<td>dirt</td>
<td>1920s-1930s</td>
<td>domestic dwelling</td>
</tr>
<tr>
<td>25</td>
<td>224</td>
<td>84</td>
<td>900 (29 ½)</td>
<td>N-S</td>
<td>465 (15 1/3)</td>
<td>E-W</td>
<td>110 (3 ¾)</td>
<td>cedar posts</td>
<td>dirt</td>
<td>1920s-1930s</td>
<td>domestic dwelling</td>
</tr>
<tr>
<td>1</td>
<td>230</td>
<td>87</td>
<td>675 (22)</td>
<td>N-S</td>
<td>600 (20)</td>
<td>E-W</td>
<td>30 (1)</td>
<td>limestone slab</td>
<td>dirt</td>
<td>late 1800s</td>
<td>St. Leo Church outbuilding</td>
</tr>
<tr>
<td>1</td>
<td>232</td>
<td>88</td>
<td>770 (25 1/3)</td>
<td>N-S</td>
<td>585 (19 ¼)</td>
<td>E-W</td>
<td>10 (1/3)</td>
<td>concrete</td>
<td>concrete</td>
<td>modern</td>
<td>St. Leo Church outbuilding (garage)</td>
</tr>
<tr>
<td>1</td>
<td>234, 235, 254, 300</td>
<td>89</td>
<td>1680 (55)</td>
<td>N-S</td>
<td>2400 (79)</td>
<td>E-W</td>
<td>N.A.</td>
<td>limestone</td>
<td>concrete</td>
<td>modern</td>
<td>St. Leo Church rectory</td>
</tr>
<tr>
<td>1</td>
<td>236-240, 241, 244-253, 256-259</td>
<td>90</td>
<td>3180 (104 1/3)</td>
<td>E-W</td>
<td>2240 (73 ½)</td>
<td>N-S</td>
<td>300 (10)</td>
<td>limestone</td>
<td>concrete</td>
<td>modern</td>
<td>St. Leo Church cellar</td>
</tr>
</tbody>
</table>
Figure 15: Planview and South Profile of Outbuilding (Building 7) Feature 21 and Walkway Feature 20 in Block 23

A. Planview

B. South Wall Profile

KEY:
- Strata 1: 10YR2/1 black silt with artifacts, Feature 21
- Strata 2,4,&6: 10YR3/2 very dark grayish brown silt with cinder
- Strata 3: 10YR5/4 yellowish brown clay
- Strata 5: 10YR5/1 gray clay
- Strata 7: 2.5YR5/0 Gray Clay
- Strata 8: 10YR5/4 Yellowish Brown Clay
Photo 43: Dark Fill of Feature 21, An Outbuilding, and Feature 20, a Brick Sidewalk on the West Side, Facing Northwest

Photo 44: Feature 20, Sidewalk Exposed on the West Side of the Outbuilding Remains, Feature 21, Facing North
Photo 45: Closeup of Brick Sidewalk, Feature 20, Facing West

Photo 46: Feature 21, Trackhoe Cut on North Half
Revealing Mixed Soils Below Outbuilding Associated with Filled Clay Mine,
and Hand Excavated South Half, Facing South
Figure 16: 1895 Fire Insurance Map Showing Feature 21, Building 7, Within Excavation Block 23, as a Shed
Feature 68, Building 26, in Block 8 represented a cellar under a residence. Numerous artifacts were exposed on the top of the cellar fill, which were collected (Photo 47). These appeared to date to the turn of the 20th century so it was decided that this building should be documented. The south half of the cellar previously had been cut down about 120 cm (4 feet) (Photo 48) and bricks from the razed building where dumped into this area (Photo 49). Fortunately, the base of the cellar was still intact (Photo 50). Overall, the cellar measured 960 cm (31 ½ feet) north-south by 480 cm (16 feet) east-west (Figure 17:A). Its walls were constructed of bricks, 2 courses thick (Figure 17:B), with a thin mortar lining the interior wall (Photo 51). Just off the center of the cellar was the base of a chimney made of dry lain limestone slabs (Figure 17:A; Photos 51 and 52). It measured 125 cm (4 feet) north-south by 105 cm (3 ½ feet) east-west.

Fill from the south half of the cellar was removed with the trackhoe and a collection of artifacts was taken during these excavations. The cut revealed that the fill was 140 cm (4 ¾ feet) deep (Photo 52). There were the remnants of wood lining the floor (Figure 17B). A 2 x 1 meter unit was excavated in the fill just east of the chimney base to recover a sample of smaller artifacts (Figure 17:A; Photo 51). Then, the north half of the fill was removed with the trackhoe and the fill examined by the archaeological crew for artifacts (Photo 53).

Most of the artifacts collected from Feature 68 had manufacturing dates that intersected between 1890 to 1910, but the residence could have been used as early as 1880 based on some of the artifacts. It should be noted that the building is not shown on the 1895 or the 1909 fire insurance maps (Figures 18-19). However, it may have been overlooked by the map makers because the 1900 census does indicate that a flat existed on the back portion of the lot that was rented by three families. These include George and Emma Hartmann along with their two children. George worked as a laborer in a brick yard. A widow, Katherine Bray, lived here with three of her children, one had died. She was not listed with a job. The third family was John and Lelea Hughes, who lived at this location with John’s uncle, who immigrated from Ireland in 1860, and a sister in law. The Hughes had one child who had died. Only John was listed with a job serving as a phonograph agent.
Figure 17: Planview and North Profile of Feature 68, Building 26, in Block 8

A. Planview

B. North Profile
Photo 48: Top of Feature 68, Domestic Dwelling Cellar, Facing North

Photo 49: Bricks from the Razed Building Placed into the Southern Cut Half of the Cellar, Feature 68. Facing Southeast
Photo 50: Top of Feature 68 Cleared of Debris Showing Previously Cut Cellar on South Side, Facing North

Photo 51: Unit 1 Excavated into the Cellar Fill of Feature 68, Showing Mortar Lined Brick Wall on Right and Limestone Slab Chimney Base on Left, Facing North
Photo 52: Feature 68, Building 26, North Profile, with Base of Chimney in Center, Facing North

Photo 53: Excavated North Half of Feature 68, Domestic Dwelling Cellar and Base of Limestone Slab Chimney, Facing Southeast
Figure 18: Location of Feature 68, Building 26, Within Excavation Block 8 on the 1895 Fire Insurance Map
Figure 19: Location of Feature 68, Building 26 on the 1909 Fire Insurance Map

Block 8

Feature 68

0 25 50 75 100 125 Feet
0 5 10 15 20 25 30 35 Meters

Legend:
- Privy
- Concrete Square
- Water Closet
- Demolition Trench
- Cistern
- Foundation
- Midden
- Excavation Block

N. Market St.
Feature 174, Building 70, in Block 10, represented a cellar of a domestic dwelling that was placed next to the alley (Figures 21-22). According to the fire insurance maps, this was a wood frame building. It did not have a continuous foundation, but was placed on limestone piers (Figure 20A). This building measured 670 cm (22 feet) north-south by 450 cm (15 feet) east-west. There was a cellar entrance measuring 150 x 150 cm (5 x 5 feet) extending north off the northeast corner (Figure 20A; Photo 54). The east and west walls of the cellar entrance were lined with limestone slabs and there were limestone steps leading down into the cellar. A lining of brick measuring 110 cm (3 ¾ feet) north-south and 40 cm (1 1/3 feet) east-west, existed 90 cm (3 feet) north of the southeast corner (Figure 20A). This likely represented the base of a chimney.

Fill from inside this feature was removed with a trackhoe and examined for artifacts. These dated to the 1920s-1930s suggesting that the building was razed at that time. The cellar was 80-90 cm (2 3/4 - 3 feet) deep and contained various layers of fill likely used to cover over this pit (Figure 20B; Photo 55). The excavations also uncovered a sewer pipe that had been placed 14 cm (1/2 foot) under this cellar (Photo 56). It is unclear if this sewer line was placed under the cellar before the residence was constructed or after it had been built. A concrete ash pit, Feature 188, was later placed over the southwest corner of the building.

*Photo 54: Feature 174, Domestic Dwelling, Fill on Top of Cellar with a Cellar Entrance on the Northeastern Side, Facing South*
Figure 20: Planview and North Profile of Feature 174, Building 70, in Block 10

A. Planview

B. Feature 174 North Wall Profile

Key:
- Strata 1: 10YR7/1 light gray mortar
- Strata 2: 10YR2/2 very dark brown silty cinder with charcoal and limestone fragments
- Strata 3: 10YR3/2 very dark grayish brown cindery silt
- Strata 4: 10YR2/1 black cindery silt
- Strata 5, 6, & 7: 10YR5/4 yellowish brown mixed with 10YR3/4 dark yellowish brown clay and charcoal
Photo 55: North Profile of Feature 174 Showing Mixed Fill, Facing North

Photo 56: Sewer Line Under Feature 174 Cellar Floor, Facing Northeast
Artifacts associated with Feature 174 dated between the 1890s and 1930. There is a wood frame domestic dwelling depicted at this location on both the 1895 and 1909 fire insurance maps (Figures 21-22). According to the 1900 census, the property was rented by Arthur and Roberta Smith. They had no children and Arthur worked as a molder. The residence is no longer listed by the time of the 1930 census and was likely razed around that time. The 1910 census indicated that this rear residence was being rented by James H. and Mary Checketts. Living with them was their 2 year old son. James worked as a brass worker for a faucet company, but was out of work for 6 weeks during 1909. In 1920, the house was rented by Clarence E. and Maud G. Carlin. Three of Maud’s children from a previous marriage lived with them. Clarence worked as teamster for a drayage (shipping) company and Maud worked in a shoe factory, probably one of those nearby.
Figure 21: Location of Features Within Block 10, as Depicted on the 1895 Fire Insurance Map

Montgomery St.

Block 10

Features 179 & 192

Feature 174

alley
Figure 22: Location of Features Within Block 10, as Depicted on the 1909 Fire Insurance Map

Montgomery St.
Also in Block 10 was a limestone lined cellar, Feature 179, with a brick walled addition, Feature 192 (Figures 21-23, Photo 57). These were associated with a domestic dwelling, Building 71. The exposed portion of Feature 179 measured 720 cm (23 ¾ feet) north-south, but continued to the north and this cellar was 420 cm (14 feet) wide east-west (Figure 23, Photo 58). The fill was removed by a trackhoe and the backdirt examined for artifacts, which dated between 1900-1930. This would suggest that the building was torn down or at least the cellar closed and filled with debris at that time.

The addition, Feature 192, attached to the southeast corner was narrow, only 100 cm (3 1/3 feet) wide east-west. It was 250 cm (8 1/3 feet) long, north-south. There was a dark stain of a steep wooden stairway on the southern end of the addition (Figure 24, Photo 59). This stairway provided access from outside the building to the cellar. Artifacts within this portion of the cellar also dated between 1900 and 1930. It could have been used as a root cellar.

There was a small cistern, Feature 193, off the southeast corner of Feature 192 (Figure 23). The cistern was 50 cm (1 ¾ feet) in diameter and 172 cm (5 ¾ feet) deep. The upper portion of the cistern was lined with bricks and mortar, with only mortar, about 2 cm (1/2 inch) thick, on the lower 52 to 88 cm (1 3/4 to 3 feet) (Photo 60, Figure 25). The only artifact found in this feature was an olive oil bottle. Cisterns will be described in more detail below.

Photo 57: Excavated Cellar of Domestic Dwelling, Feature 179, with Brick Lined Addition, Feature 192, Off the Southeast Corner Still Containing a Dark Fill, Facing South
Figure 23: Planview of Features 179, 192, and 193
Figure 24: Western Wall of Feature 192 with Stain of Wooden Stairs

Photo 58: West Brick Wall of Excavated Addition, Feature 192, With a Black Stain of a Wooden Stairway on the Left, Facing West
Photo 59: Close-up of Dark Stain of Stairway on the West Brick Wall of Feature 192 and Step on Floor of Cellar, Facing West

Photo 60: West Wall Profile of Cistern, Feature 193, Attached to Southeast Corner of Feature 192, Building 71, Facing West
Figure 25: West Wall Profile of Cistern, Feature 193

Key:
- Mixed Yellowish Brown (10YR5/6) Silty Clay and Brown (10YR5/3) Silty Clay with Patches of Mortar and Charcoal
- Black (10YR2/1) Clay
These features are part of Building 71, which was a wood frame domestic dwelling attached to the back portion of a 2 story flat at 2336 Montgomery Street on both the 1895 and 1909 fire insurance maps (see Figures 21-22). Artifacts within Features 179, 192, and 193 date between 1900 and 1920. William and Emily Haberbeck owned the flat just to the north and lived at that location according to the 1900 census. Also living within the flat as renters were Charles and Annie Dodge. Originally missed but later added to the 1900 census was the family of H. Paul and Mary Boeger, who were listed as renting 2336 Montgomery Street. This may have been Building 71 in the back of the flat. They had been married for only 2 years and had no children. Paul worked as a street car conductor. The 1910 census indicated that the Haberbeck family were living in the two story flat and another family was renting the same building. However, a residence in the rear of this property, where the frame dwelling of Building 71 existed, was rented by Henry and Emma Meyer. Living with them were two children, a third child had previously died. The census indicated that Henry did “Any kind” of work. His son, age 21, worked for a shoe factory and his daughter, age 19, sewed for a shirt factory. The Haberbeck family is listed as living at this location on the 1920 census along with another family who was renting the brick flat. The artifacts would suggest that the frame dwelling on the back of the flat had been torn down about this time.

Within Block 25, the remains of another cellar, Feature 224, Building 84 was identified. During the early removal of the fill, it became apparent that this building did not have a stone foundation, but was supported on upright rounded cedar posts in the typical French Colonial style (Photos 61-63). The posts were placed just inside the rectangular hole dug into the ground for the cellar, which measured 900 cm (29 ½ feet) by 465 cm (15 1/3 feet), and was 110 cm (3 ¾ feet) deep (Figure 26). Several of the posts were later reinforced by bricks or limestone placed around their bases (Photo 64-65). The southeast corner of the building had a remnant of a brick wall that measured 275 cm (9 feet) long east to west and was 7 courses tall (Photos 66-67). A base of another brick wall extended 305 cm (10 feet) south of the west end of this wall. This wall was only 2 courses high. At its south end, another wall was placed toward the west to the edge of the cellar (Figure 26, Photo 66). This portion was 280 cm (9 feet 2 inches) long east-west and was only 1 course high. It is unclear as to why the brick walls were placed in this configuration, unless they were added later to reinforce the floor joists above the cellar. Also, the wall along the south edge of the southeast corner may have been built to prevent waste from the privy, which was only 60 cm (2 feet) to the south, from entering the cellar (Photo 67). A similar limestone wall was constructed next to water closet (later destroyed by a demolition trench) on the east wall in the northeast corner of the building (Photo 68).

Although the building appears to have originally been constructed in the French Colonial style, it became apparent during the removal of the fill that it had been razed in the 1930s based on the numerous artifacts recovered. The fill from the cellar was removed by trackhoe and it was spread out for the crew to inspect for artifacts. Soils around the cedar posts were hand excavated and screened in an attempt of find older materials and to determine when this building was constructed (Photo 68-69). However, only 20th century artifacts were found in this area as well. A recent demolition trench had been dug into the northeastern portion of the cellar, which contained construction debris and modern remains, such as tires (Photo 70, Figure 26). Only a black fill with 1920s-1930s artifacts were discovered within this cellar and no older lenses were identified (Photo 71). Among this material was 1904 World’s Fair memorabilia.
Photo 61: Overview of Feature 224, Building 84, Showing tops of Cedar Posts Supporting the Walls, Facing North

Photo 62: Cedar Posts Along the Northern Portion of East Wall, Facing North
Photo 63: Overview of Excavated Cellar, Feature 224 Showing Cedar Posts Reinforced with Limestone and Bricks, Facing Northeast

Figure 26: Planview and Profile of Feature 224

Planview
Photo 64: Feature 224 with Reinforced Cedar Posts, Facing East

Photo 65: Feature 224 Cedar Post Reinforced with Bricks and Concrete, Facing West
Photo 66: Feature 224, Bricks Lining Southeast Wall and Southwest Portion of Cellar, Facing South

Photo 67: Feature 224, Bricks in Southeast Wall, Separating the Privy, Feature 204, Facing North
Photo 68: Limestone Along Northeast Edge Between the Cellar, Feature 224 and Water Closet, Feature 225, Facing East

Photo 69: Hand Excavation of Fill Along the East Wall of Feature 224, Building 84, Facing South
Photo 70: Demolition Trench with Modern Debris in the Southeast Corner of the Building Facing South

Photo 71: Feature 224, West Profile, Facing West
A wood frame domestic dwelling is indicated at this location on both the 1895 and 1909 fire insurance maps (Figures 28 and 29). It is shown near the alley behind a 2 story brick flat at 2207 Montgomery. It is unclear as to when this building was constructed, but it is shown on the 1875 Compton and Dry map of St. Louis (Figure 27) and this depiction also seems to suggest that it was a vertical post construction.

A deeds search indicated that on March 15, 1850, John Shepley sold a large portion of this area for $10 to his partners, Albert Todd and Benjamin Dayton, who were forming the Union Addition (St. Louis Recorder of Deeds 1850). The price would suggest that this property was not developed at that time. The Union Addition was subdivided, but it was developed slowly. On May 28, 1868, this lot was sold to Adolph and Sophia Hoelscherm, who in turn, on June 23, 1868, sold the lot to Frank Krenning (variously spelled over the years Kraning, Krynneng) (St. Louis Recorder of Deeds 1868). Frank Krenning and his wife, Charlotte, built the cedar post residence sometime after June and were occupying this property by the 1870 Census. Although this census does not list street names, they are listed as owning a residence in the rear of 2207 Montgomery Street on the 1900 census. In 1870, Frank was 30 and Charlotte 26, and Frank worked as a salesman. They had moved to St. Louis from Hanover. Living with them were two children, Frank age 4 and Fred age 2, both of them born in Missouri. The 1870 census did indicate that Frank owned real estate valued at $4000 and he had $200 in personal assets. The real estate value was about average for the people living in this area, which ranged from $2000 to $8000. His personal assets, however, was low for this area as most of the real estate owners had assets of $500 to $1000. Even people who did not own homes but rented had assets between $100 and $600, but most of them had $300.

The 1900 census revealed that Frank had come to the U.S. in 1855 and his wife in 1861. They married in 1864. They had five children, but one had died in childhood. Over the years, Frank had various low paying jobs including a painter and a porter, but in 1910, he was listed as living on his own income. The 1900 census also indicated that their son, Frederich (Fred), continued to live with the family. He was about 32 years old and single. He worked as a cabinet maker, although he was out of work 6 months that year. Also living with the family was one of their single daughters, Olinda, who worked as a seamstress. By 1910, only Frederich remained at home still working as a cabinet maker for a furniture house.
Figure 29: Location of Feature 224, Building 84. Within Excavation Block 25 on 1909 Fire Insurance Map
Living with the Krenning family in 1900 and 1910 was Frederick and Emma Overbeck, who rented. Frederick had come from Germany in 1873 and his wife was born in Missouri to German immigrant parents. They had married in 1893 and may have rented from the Krenning family sometime shortly afterwards. Two sons lived with the Overbecks. Frederich worked as a carpenter. However, by 1910, Emma had divorced Frederick. She and her two children continued to rent from the Krenning family, however, the 1920 census indicated that she was the Krenning’s daughter. By that time, Frank Krenning had died and Charlotte and her son, Frederich, and Emma lived at this location. Frederich continued to be a cabinet maker and Emma worked as a seamstress in a tailor shop.

By the 1930 census, the Krenning family had left and the residence was being rented by a widow, Mable Gase, age 52. Also at the residence was her son George, age 28, and her mother, age 70. Mable worked at a swing factory and a thermometer was recovered during the excavations from the Rock-A-Bye swing company. Her son was a construction laborer.

The 1940 census does not indicate a building at the rear of the property anymore. However, it does list Sam Mazzola, an Italian immigrant, as owning the flat near the road and living there with his family. Julius and Rose Weiss were renting from him and living within the flat. However, there is a second person renting 2207 Montgomery, but it is unclear if this is the old frame residence behind the flat near the alley or if she just lived within the flat. Lillie Grom, 73 years old, was listed as married, but she was living alone. She was renting for only $5, which was low even at the end of the Depression and lived off a pension. The residence at the rear of 2207 Montgomery may have still been standing at this time, but it likely was razed shortly afterward 1930 according to the artifacts.

The trackhoe was used to expose the foundations of the Evangelische Zions Kirche, also known as German Evangelistic Zion Church, (Building 53) along with the rectory (Building 54), and St. Leo Catholic Church (Building 90) and rectory (Building 89). The soils near the Olivet Mission Baptist Church (later Second Baptist German Church) and the Howard School also were removed with the trackhoe. While the north portion of the school (Building 62) could be exposed, the area of the Baptist Church, just to the west, was determined to likely have contaminated soil and could not be investigated. No features dating to the time of the church were identified, but features associated with the school were present.

The foundation associated with the German Evangelistic Zion Church was exposed. It was made of limestone slabs, and measured 2400 cm (79 feet) north-south by 1350 cm (44 feet) east-west (Figure 30, Photo. 72). The southern portion of the western foundation, however, was destroyed by a demolition trench (Photos 73-74). The north foundation contained a limestone slab base that extended 225 cm (7 ½ feet) north of the foundation and was 525 cm (17 feet) long east-west (Photo 75-76). Two slanted limestone buttresses were placed on the east and west ends of this slab within the church cellar. The buttresses measured 360 cm (12 feet) north-south by 195 cm (6 ½ feet) east-west. These likely served as added support for the bell tower. There is a limestone base that extended from the northwest corner north to the Benton Street. This extension was approximately 375 cm (12 feet) long. It appears to have been added later because it is not visible on the 1895 fire insurance map (Figure 31) but is present on the 1909 map (Figure 32). Its purpose is unclear.
The rectory is located about 1 meter (3 feet) west of the church, and measured 2150 cm (70 ½ feet) north-south by 750 (24 ½ feet) east-west (Figure 30). The cellar walls were made of limestone slab (Photo 77). There is a limestone base for a stoop and stairs to enter this building (Photo 78) near the northwest corner that measured 150 by 150 cm (5 by 5 feet). An exterior entrance to the rectory cellar was near the southwest corner. The walls of this stairway were made of limestone, which measured 335 cm (11 feet) north-south by 240 cm (8 feet) east-west (Photo 79). Its base had been replaced with concrete floor as has the rectory cellar floor (Photo 80).

*Figure 30: Zion Evangelistic Church (Building 53) and Rectory (Building 54)*
Photo 72: Limestone Slab East Foundation from Northeast Corner of German Zion Church, Facing South

Photo 73: South Limestone Foundation Near Southwest Corner of German Zion Church, West Foundation was Destroyed by a Demolition Trench, Facing East
Photo 74: Cut Portion of Western Foundation by a Demolition Trench
At Southwest Corner of German Zion Church, Facing Northeast

Photo 75: North Limestone Foundation at Northeast Corner of German Zion Church,
Showing Limestone Slab Base of Steeple Tower and Buttress On Inside of Church Cellar,
Facing West
Photo 76: Closeup of Limestone Slab Base of Steeple and Buttresses
On Inside of Zion Evangelistic Church Cellar,
and Limestone Extension off Northwest Corner in Background, Facing Northwest
Figure 31: German Zion Evangelistic Church Within Excavation Block 19 on the 1895 Fire Insurance Map
Figure 32: German Zion Evangelistic Church Within Excavation Block 19 on 1909 Fire Insurance Map
Photo 77: West Limestone Foundation of Zion Church Rectory, Facing North

Photo 78: Base of Stoop Near Northwest Corner of Rectory, Facing West
Photo 79: Outside Cellar Entrance, Feature 142, Near Southwest Corner of Rectory, (Limestone Foundation to Corner on Left), Facing North

Photo 80: Concrete Floor to Outside Cellar Entrance and Concrete on Floor of Rectory (in Foreground), Facing South
Only modern artifacts were associated with the church and rectory. No materials were recovered outside these buildings. Also, the water closet (Feature 141) for the church had been severely impacted by the later excavation of a demolition trench and only a few objects were found within that feature. The Zion German Evangelical (Lutheran) Church may have been constructed by 1858 to serve the growing German immigrant population in the neighborhood (St. Louis Genealogical Society 2016). At that time, this was at the southwestern corner of Benton Street and 20th Ave (Figure 33), the latter street name was changed to 25th Ave. between 1881 and 1895 (Figure 31). The church continued to exist at this location until sometime prior to 1962 when the congregation was moved, and a new church established at this location, the New Jerusalem (Baptist) church. However, this church also was closed by 1970 and the building was razed shortly afterwards.

*Figure 33: Location of Zion German Evangelical Church in 1875 (Compton and Dry 1875)*
The St. Leo Catholic Church and Rectory also were investigated. Although this church was torn down in the 1970s, it was investigated because it could have catacombs where human remains were once placed. To be certain that no parts of human remains may exist at this location the church cellar walls were excavated. The block containing the church was empty at the start of investigations (Photo 81). It became the heart of the protest by some of the local residents who were against being moved for the NGA construction (Photo 82). The original corner stone had been left at this location after the church was razed and was meant to be a permanent reminder of the church (Photo 83-86). The corner stone was made of a polished granite, with the top unpolished with chisel marks present. Even though this portion was meant to have stones of the church placed over it, there was a cross chiseled into it as well. It’s front side (southwest side) was inscribed with “Behold The Tabernacle Of God With Men” (Photo 83). On the southwest side was inscribed a cross (Photo 84), and the northeast side was inscribed with “Dom. XII Post Pent. Sept. 1889” and a cross was etched into it as well (Photos 85-86). This corner stone was given to the archdiocese and was moved to another location prior to the start of NGA construction.

Limits of the church and rectory were exposed using a trackhoe. These revealed that the original church measured 43.60 meters east-west by 18.50 meters north-south (143 feet by 61 feet). Photographs of the church indicated that it originally was built in the Gothic style with walls supported by exterior buttresses (Figures 34 and 35). But the building later was enlarged to the north and south, and the buttresses subsequently hidden (Figure 36). This is reflected in the archaeological investigations as portions of the original north and south walls, along with their buttresses, were covered by a straighter limestone slab foundation enlarging the church to 21.8 meters (72 feet) north-south (Figure 37, Photos 87-90). The spaces between the buttresses and new foundation were filled with debris. One of these identified as Feature 303 was excavated (Photos 91-92). Additional artifacts were collected from the top of the fill between bastions identified as Feature 301 and 302 (Figure 37). Artifacts within this fill dated between 1914 and 1929, representing materials that may have been associated with the use of the church. Surface artifacts also were collected from the top of the fill between the original foundation and the later foundation placed on the southeast sides of the church, which was identified as Feature 304 (Figure 37, Photo 88). Unfortunately, these materials were not temporarily diagnostic, but a prescription bottle used by the “W. H. Crawford, Druggist, St. Louis, MO” was discovered. He operated this drug store at least between 1861 and 1885. This could suggest that these artifacts were associated with a midden placed at this location prior to the construction of the church.

Other parts of the church were exposed. These include the base of the bell tower (Feature 256) that was placed at the southeast corner of the church (Figure 37), near the intersection of Mullanphy and N. 23rd (Figures 35-36). This foundation was made of limestone slabs (Photo 93), and measured 6.2 meters (20 feet) southeast-northwest by 5.2 meters (17 feet) southwest-northeast.
Photo 81: Vacant Lot Where St. Leo Catholic Church Once Stood, Facing Southwest

Photo 82: Protest Signs Placed by Some Local Residents Opposed to Their Forced Removal for the NGA Facility, Facing Northwest
Photo 83: Front (Southeast Side) of Corner Stone, Facing Northwest

Photo 84: Southwest Side of Corner Stone, Facing Northeast
Photo 85: Northeast Side of Corner Stone, Facing Southwest

Photo 86: Closeup of Corner Stone with Date of 1889, Facing Southwest
Figure 34: St. Leo Catholic Church Prior to 1909
(Archdiocese of St. Louis 2017)
Figure 35: 1895 Whipple Fire Insurance Map of St. Leo Catholic Church Within Excavation Block 1
Figure 36: 1909 Sanborn Fire Insurance Map of St. Leo Catholic Church
Figure 37: Features Associated with St. Leo Catholic Church and Rectory
Photo 87: Original Foundation (Right) and Later Foundation (Left) on South Portion of St. Leo Church, Facing Southwest

Photo 88: Closeup of Original Foundation (Right) and Later Foundation (Left) on South Portion of St. Leo Church, Facing West
Photo 89: Original Foundation with Buttresses (on Right) and Later Foundation by 1909 (on Left), Northeast Portion of St. Leo Church, Facing East
Photo 90: Closeup of Buttresses Associated with Original Church and Later Foundation Used to Cover Them (on Left) Facing East
Photo 91: Crew Examining Top of Fill Between Buttresses, Facing Southeast

Photo 92: Closeup of Excavated Portion of Fill on Northeast Side of Church, Feature 303, Original Buttresses to Right and Left, and Window Seal Associated with Original Church Still in Place, Facing South
Just east of the bell tower was the foundation associated with the main entrance of the church along 23rd Avenue, identified as Feature 240 (Figure 37). The entrance was 5 meters (16 ½ feet) wide, and consisted of a series of limestone slab foundations associated with three arched doorways and additional foundations that extended to the bell tower and the original buttress on the northeast corner of the building (Figure 34). The southern two spaces between the foundations near the bell tower and under one of the arched doorways were excavated with the trackhoe to a depth of 300 cm (10 feet) (Photos 94A-B). Only a few artifacts were recovered, but these suggested that they were associated with a midden placed at this location prior to the construction of the church in 1888-1889. One of the concrete staircases, associated with the front entrance was found within the rubble of the church (Photo 95).
Photo 94A: Front Entrance to St. Leo Church, Feature 240, Showing Portion Excavated, Facing North

Photo 94B: Front Entrance to St. Leo Church, Feature 240, Showing Portion Excavated, Facing East
According to a 1903 parish booklet on the church (Archdiocese of St. Louis Archives 1903) and St. Leo’s Parish history written by Sister Mary Xavier McTique in 1950, Reverend Jeremiah James Harty was moved from St. Bridget’s Church by Archbishop Peter Richard Kenrick on November 10, 1888 to establish a new church and parish to serve the growing Irish, Polish, and German Catholics moving into this portion of the City of St. Louis. A lot at the corner of 23rd and Mullanphy was purchased from Elizabeth B. DeNue on December 8, 1888. A temporary wood frame church was constructed in the northeast portion of the lot and dedicated on December 16, 1888 (Figure 38). It held 700 parishioners and had 80 pews. The 1895 fire insurance map does not show this building (Figure 35), but it has been pasted over sometime after 1907, and the original church is barely visible under the paste over, just north of the church.

Ground for the permanent church was broken on March 19, 1889 and the corner stone placed on September 1, 1889 with much fanfare, despite the rainy day. On June 2, 1889, the first mass was held in the church even though it was not completed. The finished building was constructed in Gothic style with a bell tower that extended 182 feet high (Figure 39). It had a limestone slab foundation, with a hydraulic pressed brick walls that were 29 feet tall. Extending to a maximum height of 65 feet, the oak roof was covered by Maine slate. The pews and confessionals also were made of oak. The church could seat 1000 people but could be expanded to accommodate up to 1200 (Figure 40). It was unique in that the church had auditorium type slanted flooring because as described by Father Harty, “he wished that all might see the altar of the Lord and that he found it quite impossible with the ladies and their high hats” and this was one of the first church’s in St. Louis without interior pillars (McTique 1950:13-14).
Figure 38: Temporary St. Leo Catholic Church
(Archdiocese of St. Louis Archives 1903)
Figure 39: St. Leo Catholic Church Shortly After Construction in 1889
(Archdiocese of St. Louis Archives n.d.)
St. Leo had a basement with a chapel that had a seating capacity of 1000 parishioners. This lower portion of the church was used for daily masses, and for large meetings, entertainments, and banquets. An airshaft, 15 feet deep, was placed along the south and north sides of the church to provided ventilation to the lower level. This passage was protected by a 4 foot safety fence, but it did not prevent people from occasionally falling into it resulting in harm and even death.

After the completion of the church, the original frame church was used as a school in 1896. With tin covered walls, it was commonly referred to as the “Old Tin Shop”. It was staffed by the Sisters of St. Joseph of Carondelet. This frame building was redesigned to hold 600 students. It soon became evident to Father Harty that this building was too small and poorly constructed to serve as a proper school and a new building was needed. The corner stone for the new school was laid in June 1902, at the northeast corner of Mullanphy and 25th (Figure 36), where the playground once existed of the original school. This new school was first used in October, 1903 (Figure 41). Unfortunately, remains of the new school were located in the Faultless company parking lot that was scheduled to be used into 2017, so the school area could not be investigated.
The old frame building was occasionally utilized for meetings. Among the groups was the St. Leo’s Council No. 28 of the Knights of Father Matthew, which was organized only 2 months after the dedication of the first church. As stated by McTique (1950:6) “Total abstinence is the cornerstone of this organization. All members are to appear in uniform on public occasions and are to be thoroughly drilled.” After movement of the school into a new building, the original frame church was falling into disrepair and was razed in 1904. A new meeting hall was arranged in the basement of the church for groups but as memberships grew in the various catholic societies sponsored by the church, it became apparent that a new building was required. The construction of the Leo’s Temperance Hall was begun in October 1906 and completed in September 1907. This 3 story building was located between the school and the church. According to McTique (1950:29-30):

The basement is arranged with large gymnasium, modern apparatus, and a swimming pool, besides a large kitchen, serving pantry, and dining room. The first story contains two large lodge halls, anterooms, and large beautiful parlors.
The second story is taken up almost entirely with the grand hall, floored with polished hard maple suitable for dancing and high-class gymnastic performances. The stage can accommodate a chorus of one hundred persons.

In September of 1933, St. Leo’s Temperance Hall was the headquarters of the newly formed Catholic Charities. In 1936, the temperance hall was renamed St. Leo’s Center, whose focus was on the recreational and social needs of the neighborhood children and adults. Unfortunately, the remains of this building could not be investigated because it also was beneath the Faultless company parking lot that was still being utilized at the time of the data recovery investigations.

The parish reached its height in 1905. Over the years several renovations were required, including the filling in of the air passage on the north and south sides of the church. Although the 1909 fire insurance map suggests that this renovation had taken place at that time, this was only a later paste over (Figure 36). McTigue (1950:43) indicated that this renovation took place in 1932. At that time, the iron fencing had deteriorated, and passage posed a severe hazard. Further, with the completion of the temperance hall and school, meetings were no longer being conducted within the church basement so the entrances to the basement were sealed. As shown on Figure 42, the church was in decline by 1950. In 1963, due to a further declining membership, the congregation was merged once again with St. Bridget’s Church from which it originally was established, and St. Leo’s Church was razed in 1978 (Figure 43).

*Figure 42: St. Leo Church and School Statistics (McTigue 1950:53)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Parishioners</th>
<th>Families</th>
<th>Baptisms</th>
<th>Children Attending Parish School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888</td>
<td>400</td>
<td>130</td>
<td>12 - 2</td>
<td>----</td>
</tr>
<tr>
<td>1896</td>
<td>2,500</td>
<td>750</td>
<td>187 - 13</td>
<td>524</td>
</tr>
<tr>
<td>1900</td>
<td>3,700</td>
<td>820</td>
<td>154 - 6</td>
<td>512</td>
</tr>
<tr>
<td>1905</td>
<td>3,785</td>
<td>1000</td>
<td>109 - 18</td>
<td>815</td>
</tr>
<tr>
<td>1909</td>
<td>2,000</td>
<td>500</td>
<td>93 - 9</td>
<td>880</td>
</tr>
<tr>
<td>1914</td>
<td>1,500</td>
<td>500</td>
<td>123 - 5</td>
<td>660</td>
</tr>
<tr>
<td>1919</td>
<td>1,500</td>
<td>300</td>
<td>59 - 5</td>
<td>650</td>
</tr>
<tr>
<td>1920</td>
<td>1,500</td>
<td>300</td>
<td>76 - 6</td>
<td>644</td>
</tr>
<tr>
<td>1923</td>
<td>2,032</td>
<td>500</td>
<td>85 - 8</td>
<td>730</td>
</tr>
<tr>
<td>1926</td>
<td>1,500</td>
<td>425</td>
<td>84 - 12</td>
<td>650</td>
</tr>
<tr>
<td>1932</td>
<td>2,000</td>
<td>560</td>
<td>69 - 10</td>
<td>531</td>
</tr>
<tr>
<td>1938</td>
<td>1,500</td>
<td>410</td>
<td>67 - 5</td>
<td>422</td>
</tr>
<tr>
<td>1944</td>
<td>1,000</td>
<td>300</td>
<td>45 - 12</td>
<td>350</td>
</tr>
<tr>
<td>1950</td>
<td>1,000</td>
<td>300</td>
<td>93 - 21</td>
<td>370</td>
</tr>
</tbody>
</table>

Baptisms * Children ** Adult
The inside edges of St. Leo’s cellar were investigated to determine if any crypts, possibly still having human remains, existed within this building. Similar crypts existed at St. Bridget’s, once located less than a half mile to the south along Jefferson Avenue. The trackhoe was used to remove the fill along the walls. No crypts were found, but as described above, the area of the filled in air passage contained late 1800s to early 1900s debris. Also investigated was the area under the altar. At one time, the lower portion of the building was used in weekly service, so it was expected that remains of an altar would exist in this area. However, instead this portion of the church had been turned into a bathing room (Photos 96-97). There were two changing rooms with pipes for a toilet on either sides (Photo 98).

During the excavations, some architectural elements were encountered. These were photographed, but not kept (Photo 100). They reflected the elaborate decorations that were used in the construction of the church. Evidently, the church had problems with rats as a rat trap was recovered during the excavations (Photo 99). It had hand written inspection dates of the early 1940s suggesting that these pest became a problem not long after the airshafts were filled in and the basement was used less often.
Photo 96: Bathing Room Where Altered Once Existed in the Basement of St. Leo’s Church. Rubble Filled Entrance to Changing Rooms Right of Center, Facing North

Photo 97: Tile in Bathing Area
Photo 98: Wood Framing and Pipes for Toilet in Room Adjacent Bathing Facility, Facing South

Photo 99: Rat Trap Found During Excavations
Photo 100: Architectural Elements Identified During Excavations
Attached to the west, apse side of the church, was the rectory, Building 89 (Figure 37). The limestone slab for this foundation measured 20.6 meters (68 feet) north-south by 14.8 meters (49 feet) east-west at its widest point (Photos 101-104). There was a foundation for a room attachment on the north side of the building. This attachment measured 5 meters (16 ½ feet) east-west by 3 meters (10 feet) north-south. On the 1895 fire insurance map, the rectory is shown to be 2 story tall (Figure 35) and the excavations revealed that it had a basement. There were two narrow entrances that allowed access into the rectory cellar and there likely was access to the apse as well. An outside cellar stair entrance, lined with limestone, was attached to the northwest corner of the rectory. This entrance measured 5.2 meters (17 feet) north-south by 1.7 meters (5 ½ feet) east-west (Photos 104-105). The 1895 and 1909 fire insurance maps (Figures 35 and 36) indicated that there was a boiler in the basement of this building where steam heat was produced to heat both the rectory and the church. Although the boiler likely originally burned coal, it was later converted to diesel fuel as a storage tank (Feature 283) was discovered buried into the ground, just west of the rectory in Excavation Block 14 (Figure 44, Photo 106).

The rectory was made of bricks. A photograph of the rectory indicated that it was not only 2 story, but the attic was utilized as well (Figure 45). The priest lived at this location according to the U.S. census. However, local residents revealed that the building later served as a sisters’ house. In 1947, the Sisters of St. Joseph needed to move out of their convent. Since the school only had 405 children, approximately, half of the number that the school could accommodate, the third floor of the school was turned into a convent. Likely during the last years of the church, after 1950, the convent was moved to the rectory.

Photo 101: Limestone Foundation on South Side of Rectory. Facing Northwest
Photo 102: Limestone Foundation on West Side of Rectory Facing North

Photo 103: Limestone Foundation on West Side of Rectory and Stairway to Cellar Right Bottom, Facing South
Photo 104: Foundation on North Side of Rectory with A Room Attachment and Stairway to Cellar on Bottom Left, Facing East

Photo 105: Closeup of Cellar Stairway to Rectory, Facing North
Figure 44: Additional Features Outside of St. Leo Church and Rectory
Figure 45: St. Leo Rectory (Archdiocese of St. Louis Archives 1903)
Foundations associated with other structures and buildings were discovered near the church. These include four limestone piers (Features 238, 239, 242, and 243) located 2 meters (2 ½ feet) north of the central portion of the church (Figure 44, Photo 107). The piers form a square 4 meters (13 feet) wide. These may have supported a grotto, an arbor, or a small gazebo.

North of the rectory was a limestone foundation associated with a building (Building 87, Feature 230) that measured 6.75 meters (22 feet) north-south by 6 meters (20 feet) east-west (Figure 44, Photo 108). Artifacts found just under the floor of this building dated between 1900 and 1920s, indicating that it was constructed after this time. The 1951 Sanborn map revealed that this was a garage.

The remains of a second building (Building 88, Feature 232) were identified about 1 meter (3 feet) to the west (Figure 44). This building measured 7.7 meters (25 feet) north-south by 5.85 meters (19 feet) east-west. It had a concrete floor and part of the cinder block wall on the west side was still intact (Photo 109). Its foundation also was made of concrete and it tapered outward on the inside portion. The fill under the concrete floor was removed with a trackhoe. This indicated that the foundation was 96 cm (3 feet) deep (Photo 110). Only an ink well and a glass lamp shade were found beneath the floor. These dated between 1910 and the 1930s. The 1962 Sanborn map revealed that this building also served as an automobile garage. It was constructed sometime after 1951.
Photo 107: Closeup of Square Stone Pier (Feature 239) North of Church, Facing North

Photo 108: Foundation Associated with Garage, Building 87, Feature 230, Facing Southwest
Photo 109: Concrete Floor and Portion of Cinder Block Wall Associated with Building 88, Feature 232, Facing Southwest

Photo 110: Soil Removed to Base of Tapered Foundation of Building 88, Feature 232, Exposing Top of Midden, Feature 233C, Facing Southwest
Remains of a privy or water closet associated with the church were not identified. The 1895 and 1909 fire insurance maps suggest that these buildings may have been located northwest of the church/rectory, within Excavation Block 14 (Figures 35-36). However, this area could not be investigated because there were a series of cinder block garages, probably constructed in a similar fashion as Building 88, still standing at the north end of this lot (Photo 111). At the time of excavations, ARC was not allowed to remove these buildings. A portion of a water closet, Feature 231, was exposed between the garages, Buildings 87 and 88. The western half of this feature was destroyed by the construction of the later garage Building 88 (Photo 112). Regardless the water closet was small and likely only used by the priest who lived in the rectory. Unfortunately, the fill within Feature 231 had been disturbed and no artifacts were recovered from it.

Photo 111: Standing Garages North of Excavation Block 14, Facing North
In addition, no evidence of the original temporary church was discovered on the northeast corner of the lot. However, during the initial investigations within Excavation Block 1, it was discovered that a midden existed approximately 1 meter beneath the surface between the garages, Buildings 87 and 88 (Photo 113). This portion of the midden was identified as Feature 233A (Figure 44). A 2 by 1 meter excavation unit was placed into this midden to determine when it was deposited (Photo 114). The unit was excavated to a depth of 120 cm (Photo 115), but it became apparent that this fill would go much deeper. Unit excavations stopped and the trackhoe were used to expose the rest of the midden. This midden existed across the entire area of Excavation Block 1, but also extended west into Excavation Block 14. The midden was divided into various sections in case the fill was different, as shown in Figure 44.

| Feature 233A | Area between Buildings 87 and 88 |
| Feature 233B | Area between Building 87 and the rectory, Building 89 |
| Feature 233C | Area below Building 88 |
| Feature 233D | Area between the rectory, Building 89, and the alley |
| Feature 233E | Area between the church, Building 90, and the alley |
| Feature 233F | Area between the church and Mullanphy Street |
| Feature 233G | Area between the rectory and Mullanphy Street |
| Feature 233H | Area within Excavation Block 14 |
Photo 113: Midden, Feature 233A Exposed Between Building 87 (Left) and Building 88 (Right), Facing South

Photo 114: Unit Placed in Midden Feature 233A, Facing North
The trackhoe was used to dig Trench 1 into the midden associated with Feature 233D. The trench was placed next to the garage foundation, Feature 230, Building 87, and it extended 6 meters (20 feet) to the east and 2.5 meters (8 feet) north-south. This trench revealed that the midden reached a depth of 2 meters (6 ½ feet). It was composed of various soils from black (10YR2/1) to a reddish brown (5YR4/4) cindery fill (Photo 116, Figure 46). This soil contained numerous artifacts and they appeared to have been spread across the ground likely deposited by loads being dumped by bottom opening wagons. Some large pieces of ceramics were shattered in place further suggesting that they were crushed by wagons bringing other loads to this location. Many of the metal pieces were rusted revealing that they had sat in water. It is likely that the artifacts represented debris removed from privies, although it is unclear if the privies were from nearby homes or across the city. Mixed in with this fill were thin lenses of a dark yellowish brown (10YR4/4) silty clay, representing a culturally sterile soil. Beneath the midden was an aromatic olive brown (3.5YR4/4) silty clay that represented a gleied soil. Water had sat at the bottom of this pit and it still smelled of rotting vegetation. This lens was about 15-20 cm (1/2 to 3/4 feet) thick.
Photo 116: Profile of Trench 1 within the Midden Associated with Feature 233D, Facing South

Figure 46: Wall Profile of Trench 1 in Feature 233D

- Dressed Limestone
- Building 87
- Rough Cut Limestone
- Feature 230
- Feature 233D
  10YR2/1 black cinder with numerous artifacts
- 10YR4/4 dark yellowish brown silty clay
- 10YR4/4 redish brown clay with numerous artifacts
- Gley Soil
  3.5YR4/4 olive brown silty clay
- 10YR5/3 yellowish grayish brown clay
Similar to other locations within the NGA tract, these remains suggest that a large clay mine had existed at this location. The 1875 Compton and Dry map does show a large pit where the church was later constructed (Figure 47). In addition, McTique (1950:6) writes:

The site, on the northwest corner of 23rd & Mullanphy Streets, marked the location, some years earlier, of a sizable pond, ‘The Old Sink Hole,’ where the boys of the neighborhood spent many, though perhaps dangerous, hours of sport. This deep hollow, which facilitated excavation for a building foundation, was advantageously situated in the center of the parish territory.

A second trench was excavated near the northeast corner of the church and extended 16 meters (52 ½ feet) north to the alley. The trench was 5 meters (16 ½ feet) wide, from the sidewalk along 23rd Street to the west completely exposing the buttress on the northeast corner of the church (Figure 44, Photo 117). As suggested by McTique, the base of the church foundation was placed just below the gleied soil making the bottom of the clay mine. Outside the foundation was filled in with an artifact rich midden, identified as Feature 233E. This trench more clearly showed the lensing of the fill further indicating that artifacts likely from privies and clean fill were dumped at this location by bottom opening wagons (Photo 118). Trench 2, as suggested by the 1875 map, was at the eastern edge of the clay mine as the fill sloped downward from east to west (Photo 119). Also as can be seen in the photograph, there was no evidence of the temporary church that was razed in 1904.

Photo 117: Buttress on Northeast Corner of St. Leo Church and Foundation Under the Entranceway Exposed at South End of Trench 2, Facing Southwest
Figure 47: 1875 Compton and Dry Map Showing Future Location of St. Leo Church Lot
Photo 118: Buttress Placed at Bottom of Clay Mine Below Bluish Gray Gleied Soil and Various Lenses Used to Fill in Clay Mine Outside of Church, Facing Southwest

Photo 119: Sloping Fill from East to West North End of Trench 2, Facing North
Another deep trench was excavated into the midden west of the church and rectory, within Block 14. This trench measured 5 meters (16 ½ feet) east-west by 1 meter (3 feet) north-south. It revealed that a midden was located 42 cm beneath the surface (Photo 120, Figure 48). This midden contained a lighter colored soil than typically associated with Feature 233 so it was identified as Feature 285 in case it was deposited later. It contained a dark yellowish brown (10YR4/4) clayey silt that was mixed with ash, cinder, and bricks. A number of artifacts also were associated with this midden. At 232 cm (7 ½ feet) beneath the surface, the dark brown (10YR3/3) cindery silt associated with Feature 233 was identified. This portion of the midden within Block 14 was identified as Feature 233H. It was only 68 cm deep. A similar large number of artifacts was recovered from this midden. After laboratory analysis, it was determined that both middens (Features 285 and 233H) were likely deposited about the same time when the church was being constructed. There was a narrow lens, 30 cm (1 foot), near the base of the clay mine consisting of a dark yellowish brown (10YR4/4) clayey silt (Figure 48). No artifacts were found within this fill. Beneath this was the wet bottom of the clay mine, with decaying vegetation, which was 60 cm thick (2 feet).

Artifacts were recovered across the area outside of the church. Both middens (Features 285 and 233H) were removed separately within Excavation Block 14, using the trackhoe and collecting artifacts (Photo 121). However, around the church only the top of the midden, Feature 233, was exposed and samples of artifacts collected (Photo 122). Two ceramic concentrations were identified (Figure 44), one just north of the church (Feature 237) (Photos 122-124) and the other just north of it in Excavation Block 14 (Feature 286) (Photo 12, 125-126). A sample of artifacts were collected from both concentrations. These contained a number of similar vessels and seem to have come from stores where crates of ceramics were dropped or sets discarded. It is unclear as to why rubbish was used to fill in this clay mine as oppose to clean soils used in the other clay mines. However, at those locations, homes and businesses were constructed and needed a stable soil, while the area outside the church was not intended for buildings. By the time the church was being building in 1889, most of the area around NGA had already been converted into homes and businesses as reflected in the 1895 fire insurance map, and there may not have been dirt locally available to fill in the clay mine. Father Harty may have wished to save money for the construction of the church by not paying to have fill dirt hauled from another location and allowing the area to be used to deposit rubbish from the city’s privies/water closets.
Photo 120: Profile of Trench 3
Within Excavation Block 14, Facing West

Figure 48: Profile of Trench 3 Within Block 14

10YR3/3 brown silt

Fea 285
10YR4/4 dark yellowish brown clayey silt
with ash, and cinder, brick and historic artifacts

Fea 233H
10YR3/3 dark brown silt
with artifacts

10YR4/4
dark yellowish brown clayey silt

Gley Soil
3.5YR4/4 olive brown silty clay

10YR5/2
yellowish brown clay
Photo 121: Removing Fill from Feature 233H in Foreground and Ceramic Concentration, Feature 286, in Center, Facing West

Photo 122: Top of Midden, Feature 233E Exposed Between Alley and Church, Facing East
Notice Ceramic Concentration (Feature 237) on Right Near Three Pin Flags.
Photo 123: Ceramic Concentration, Feature 137, First Being Exposed, Facing East

Photo 124: Full Extent of Ceramic Concentration, Feature 237, Between the Four Flags, Facing South
Photo 125: Ceramic Concentration, Feature 286, Being Prepared for Mapping, Facing South

Photo 126: Large Quantity of Ceramics in Screen from Feature 286
Another five buildings, within the Excavation Blocks, were thought to be older, but produced only modern artifacts. Among these was a rectangular feature, Feature 108 in Excavation Block 12, that was lined with limestone slabs and measured 204 by 114 cm (6 ½ by 3 ¾ feet). It was placed adjacent a building (Feature 107) but appeared to be a water closet (Photo 127). However, hand excavation and screening revealed that Feature 108 was a cellar entrance, with a limestone slab stairway (Photo 128). Only modern debris was recovered within this entrance.

Photo 127: Top of Feature 108 at Northeast Corner of Feature 107, an Outbuilding Foundation, Facing Northeast
Feature 181 in Block 10 had a concrete foundation that measured 780 by 460 cm (25 ½ by 15 feet). There was a rectangular attachment on its south side that extended inside the building instead of outside of it as would be typical of a cellar entrance (Photo 129). The fill was removed by the trackhoe, but it was only 62 cm (2 feet) deep. The function of this attachment could not be ascertained and no artifacts were found in this building. Due to its location, it likely served as a 20th century outbuilding associated with the store just to the north.

Photo 129: Feature 181 Concrete Foundation to Outbuilding, Facing South
Fill also was removed inside a cellar (Feature 266) which had a limestone slab foundation that measured 1.44 meters (47 feet) north-south by 6.2 meters (20 feet) east-west (Photo 130). This foundation was associated with a brick flat that was located behind another flat at 2330 Mullanphy within Excavation Block 21 (Figure 49). Brick debris and early 1900s artifacts surrounded these remains (Feature 262/264) suggesting that the building was torn down by the 1930s. However, only brick rubble and modern debris was uncovered within the cellar (Photo 131).

Photo 130: Top of Feature 266, a Cellar to a Flat with an Exterior Entrance on Lower Left, Facing West

Photo 131: Brick Rubble and Modern Debris in Cellar of Feature 266, Facing West
Figure 49: Brick Flat, Building 91, Feature 266, Within Excavation Block 21 on the 1909 Sanborn Fire Insurance Map
Privy Vaults

A total of 153 yard features were uncovered within the Excavation Blocks, with 18 (11.8%) of these representing privy vaults (Table 4). The vaults once were under wooden outhouses that no longer exist. Most of the vaults were rectangular (N=16), measuring 93 to 260 cm (3 to 8 ½ feet) long, with an average length of 182.75 cm (6 feet). Widths varied between 70 and 210 cm (2 ¼ to 7 feet), with an average of 126.1 cm (4 feet). Three features (117, 133 and 176) had square vaults that ranged in size from 150 and 92 cm (5, 5 1/10, and 3 feet), respectively, or having an average size of 120 cm (4 feet).

Vaults varied widely in depth from 45 to 306 cm (1 ½ to 10 feet) (Figure 50), with an average depth of 151.2 cm (5 feet). Two pits, Features 130 (Photo 132-133) and 299 (Photo 134) were not included in this total since they had been nearly completely destroyed by demolition trenches, with only their lower 43 and 20 cm (1 ½ and ½ feet) intact, respectively. The northeast portion of Feature 299 was disturbed when a sewer line was placed through it (Photo 135).

Figure 50: Number of Privies at Various Depths
<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>4</td>
<td>rectangular</td>
<td>260</td>
<td>N-S</td>
<td>208</td>
<td>E-W</td>
<td>wood lined</td>
<td>deep straight walls, flat base</td>
<td>266</td>
<td>85</td>
<td>1,767.55</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>23</td>
<td>rectangular</td>
<td>238</td>
<td>N-S</td>
<td>84</td>
<td>E-W, continues east</td>
<td>wood lined</td>
<td>straight walls, floor slants north-south</td>
<td>162</td>
<td>356</td>
<td>5,537.30</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>rectangular</td>
<td>212</td>
<td>E-W</td>
<td>156</td>
<td>N-S</td>
<td>limestone</td>
<td>straight walls, no floor</td>
<td>176</td>
<td>2,644</td>
<td>48,188.80</td>
<td>previously dug by looters only 20 cm at base intact</td>
</tr>
<tr>
<td>12</td>
<td>117</td>
<td>square</td>
<td>150</td>
<td>N-S</td>
<td>150</td>
<td>E-W</td>
<td>brick</td>
<td>straight walls, flat base</td>
<td>132</td>
<td>277</td>
<td>9,930.30</td>
<td>previously excavated by looters</td>
</tr>
<tr>
<td>12</td>
<td>120</td>
<td>rectangular</td>
<td>177</td>
<td>E-W</td>
<td>135</td>
<td>N-S</td>
<td>wood lined</td>
<td>inslanted walls, flat base</td>
<td>110</td>
<td>0</td>
<td>0.00</td>
<td>cut by demolition trench</td>
</tr>
<tr>
<td>12</td>
<td>130</td>
<td>rectangular</td>
<td>112</td>
<td>E-W</td>
<td>108</td>
<td>N-S</td>
<td>wood lined</td>
<td>straight walls, flat base</td>
<td>43</td>
<td>69</td>
<td>1,107.80</td>
<td>previously dug by looters few artifacts left in undisturbed lower fill</td>
</tr>
<tr>
<td>13</td>
<td>133</td>
<td>square</td>
<td>92</td>
<td>E-W</td>
<td>90</td>
<td>N-S</td>
<td>limestone</td>
<td>straight walls, no floor</td>
<td>130</td>
<td>16</td>
<td>773.10</td>
<td>previously dug by looters only lower 18 cm intact</td>
</tr>
<tr>
<td>13</td>
<td>135</td>
<td>rectangular</td>
<td>130</td>
<td>N-S</td>
<td>120</td>
<td>E-W</td>
<td>wood lined</td>
<td>straight walls, no floor</td>
<td>88</td>
<td>24</td>
<td>632.00</td>
<td>previously dug by looters only lower 18 cm intact</td>
</tr>
<tr>
<td>10</td>
<td>167</td>
<td>rectangular</td>
<td>142</td>
<td>N-S</td>
<td>120</td>
<td>E-W</td>
<td>wood lined</td>
<td>straight walls, flat base</td>
<td>105</td>
<td>194</td>
<td>1,503.90</td>
<td>only one barrel mustard jar recovered</td>
</tr>
<tr>
<td>10</td>
<td>168</td>
<td>rectangular</td>
<td>134</td>
<td>E-W</td>
<td>122</td>
<td>N-S</td>
<td>wood lined</td>
<td>inslanted walls, flat base</td>
<td>45</td>
<td>420</td>
<td>19,686.40</td>
<td>top destroyed during construction of Building 75</td>
</tr>
<tr>
<td>10</td>
<td>176</td>
<td>square</td>
<td>93</td>
<td>E-W</td>
<td>80</td>
<td>N-S</td>
<td>brick</td>
<td>straight walls, flat base</td>
<td>46</td>
<td>1</td>
<td>169.20</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>200</td>
<td>rectangular</td>
<td>180</td>
<td>N-S</td>
<td>108</td>
<td>E-W</td>
<td>wood lined</td>
<td>straight walls, flat base</td>
<td>164</td>
<td>39</td>
<td>2,893.50</td>
<td></td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Planview Shape</td>
<td>Length (cm)</td>
<td>Orientation</td>
<td>Width (cm)</td>
<td>Orientation</td>
<td>Wall Construction</td>
<td>Profile Shape</td>
<td>Depth (cm)</td>
<td>Total Number of Artifacts</td>
<td>Weight in Grams</td>
<td>Comments</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
<td>-------------</td>
<td>------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>------------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td>25</td>
<td>204</td>
<td>rectangular</td>
<td>156</td>
<td>N-S</td>
<td>130</td>
<td>E-W</td>
<td>brick upper level, rest limestone</td>
<td>straight walls, no floor</td>
<td>126</td>
<td>478</td>
<td>13,356.15</td>
<td>Artifacts suggest that feature was looted sometime in the past and has a mixed fill dating from the 1930s-1960s.</td>
</tr>
<tr>
<td>25</td>
<td>220</td>
<td>rectangular</td>
<td>250</td>
<td>E-W</td>
<td>210</td>
<td>N-S</td>
<td>wood lined</td>
<td>straight walls, no floor</td>
<td>275</td>
<td>599</td>
<td>19,153.60</td>
<td>top cut by demolition trench.</td>
</tr>
<tr>
<td>25</td>
<td>221</td>
<td>rectangular</td>
<td>250</td>
<td>N-S</td>
<td>112</td>
<td>E-W</td>
<td>wood lined</td>
<td>straight walls, no floor</td>
<td>126</td>
<td>239</td>
<td>3,078.60</td>
<td>top cut by demolition trench.</td>
</tr>
<tr>
<td>21</td>
<td>282</td>
<td>rectangular</td>
<td>240</td>
<td>N-S, continues south</td>
<td>70</td>
<td>E-W</td>
<td>wood lined</td>
<td>straight walls, no floor</td>
<td>162</td>
<td>32</td>
<td>274.60</td>
<td>mostly destroyed by construction of water closet, Feature 281.</td>
</tr>
<tr>
<td>18</td>
<td>289</td>
<td>rectangular</td>
<td>220</td>
<td>E-W</td>
<td>135</td>
<td>N-S</td>
<td>wood lined</td>
<td>straight walls, flat base</td>
<td>306</td>
<td>189</td>
<td>11,311.40</td>
<td>west end of feature cut by water closet, Feature 289. Missing 2 bags and 2 boxes, &amp; 1 mixed after warehouse looting.</td>
</tr>
<tr>
<td>18</td>
<td>299</td>
<td>rectangular</td>
<td>130</td>
<td>E-W</td>
<td>120</td>
<td>N-S</td>
<td>wood lined</td>
<td>straight walls, flat base</td>
<td>20</td>
<td>24</td>
<td>457.30</td>
<td>only lower 20 cm of vault not destroyed by demolition trench. Missing 1 bag after warehouse looting.</td>
</tr>
</tbody>
</table>
Photo 132: Wood Lined Privy, Feature 130, Found at Base of Demolition Trench, Facing North

Photo 133: East Wall Profile of Remaining Portion of Privy, Feature 130, Facing East
Photo 134: Lower Portion of Wood Lined Privy, Feature 299, Left Intact Under a Demolition Trench, Facing Northwest

Photo 135: Remaining Portion of Privy, Feature 299, Excavated, and A Sewer Line Placed Through the Northeast Portion of the Feature, Facing West
The walls of most of the vaults (N=13, 68.4%) were lined with wooden boards (examples shown in Photos 136-139). Three of wood lined vaults (Features 120, 168, and 200) had instlanted, not straight walls similar to the other privy vaults (Photos 140-143). Two other privy vaults, Features 117 and 176, had brick lined walls. Feature 117 was square shaped (Photo 144), and had been previously excavated, likely by looters (Photo 145). Fortunately, they left the bottom 20 cm (1/2 foot) of the original fill, which contained a large amount of seeds (Photos 146-147). Feature 176 was intact, although its upper portion had been cut during demolition of buildings in the area (Figure 148-149). Two other privies, Feature 74 (Photo 150) and Feature 133 (Photo 151), had limestone lined vault walls. Feature 133 had been excavated, probably by looters in the past and only traces of the original fill along with a few artifacts clung to the east wall of this feature. One privy vault, Feature 204, was lined with brick to a depth of 60 cm (2 feet), with the rest of the vault lined with limestone slabs to the base of the feature, at 126 cm (4 feet) (Photo 152-153). However, the northern wall had been removed and sheet metal placed at this location. This privy would have partially been under the porch of the cedar post house, Feature 224 (Building 84), described above.

*Photo 136: Top of Wood Lined Privy Vault, Feature 23, Block 7, Facing East  
Note Privy Extends Beneath Modern Concrete Sidewalk*

*Photo 137: East Profile of Wood Lined Privy Vault, Feature 23, Facing East*
Photo 138: Top of Wood Lined Privy Vault, Feature 221 in Excavation Block 25 Being Exposed, Facing South

Photo 139: West Profile of Wood Lined Privy Vault, Feature 221, Facing West
Photo 140: Top of Wood Lined Privy Vault, Feature 168, Facing East

Photo 141: West Profile of Wood Lined Privy Vault with Inslanted Walls, Facing West
Photo 144: Top of Square Brick Lined Privy Vault, Feature 117, in Foreground, Facing South

Photo 145: West Profile of Brick Lined Privy Vault, Feature 117, Showing Upper Disturbance by Looters, Facing West
Photo 146: Intact Lower Portion of Privy Vault, Feature 117, With Large Quantities of Seeds, Facing South

Photo 147: Remaining Portion of Privy, Feature 117, After Excavations, Facing West
Photo 150: Limestone Lined Privy Vault, Feature 74, After Excavations, Facing North

Photo 151: Traces of the Original Fill Left Remaining after Past Looting of Limestone Lined of Privy Vault, Feature 133, Facing East
Photo 152: Brick Lined Top of Privy Vault, Feature 204, Facing East

Photo 153: Brick Lined Top and Lower Limestone Slab Wall of Privy Vault, Feature 204 North Portion had been Removed and Sheet Metal Inserted at that Location, Facing West
Note Top Course of Bricks had been Removed to Make the Excavations Safer.
Privies generally were located at the back of lots, near the alleys (Figure 51 and 52). At times, this resulted in some privies being placed immediately adjacent the neighbors building. For example, privy vault Feature 4 in Excavation Block 23, associated with a drug store and flats, was placed against the foundation of a neighboring flat (Photo 154. Figure 53). The brick and limestone lined vault, Feature 204 in Excavation Block 25, was placed near the south side of the cedar post dwelling, Building 84, Feature 224, described above (Photo 155. Figure 54). The privy likely was originally constructed when the flat was built south of this dwelling near Montgomery Street.

*Figure 51: Location of Privy Vault, Feature 74, In Excavation Block 8*
Figure 52: Location of Privy Vaults Within Excavation Blocks 12 and 13
Photo 154: Base of Privy, Feature 4 in Excavation Block 23, Placed, Against Foundation of a Neighboring Flat, Facing South

Figure 53: Location of Privy Vault, Feature 4, In Excavation Block 23 Next to Flat on 1909 Sandborn Map
Photo 155: Privy Vault Feature 204, Placed Near Cedar Post of Porch
Associated with Cedar Post Building 84, Feature 224 in Excavation Block 25,
Facing North
Only five (27.8%) of the privy vaults, Features 4, 23, 74, 131, and 108, were undisturbed. As indicated above, Features 130 (see Photos 132-133) and 299 (see Photos 134-135), had been severely impacted and nearly destroyed by demolition trenches dug during the razing of the buildings within past 40-50 years. However, another three privy vaults, Features 167, 220, and 221, had at least the top portion of their fills removed by demolition trenches.

Another six privy vaults had been previously excavated, possibly by looters, Features 117, 120, 133, 135, 176, and 204. No artifacts were found in Feature 120 (Photos 156-157) and only one barrel mustard jar in Feature 176 (see Photos 148-149). Other features were left partially intact. For example, privy vault, Feature 135 in Excavation Block 13, near the livery stable and undertakers, had most of its fill removed but the lower 18 cm (7 inches) was still intact (Photos 158-160). Feature 117 in Block 12, described above, still had its lower 20 cm (8 inches) intact, which included a large quantity of seeds (see Photos 144-147).
Photo 156: Top of Privy, Feature 120, Facing South

Photo 157: Privy, Feature 120, Previously Dug by Looters, Facing North
Photo 158: Top of Wood Lined Privy Vault, Feature 155 in Block 13, Facing East

Photo 159: East Profile Showing Privy, Feature 135, Nearly Completely Destroyed by Looters But Note Darker Fill of Intact Soil at Base of Feature, Facing East
Other features were disturbed by historic construction. For example, the top of privy vault, Feature 200, was destroyed by the later construction of Building 75, Feature 199 (Photo 161, Figure 55). This building had a concrete foundation and was constructed between 1900 and 1909. The upper west side of Feature 289 in Excavation Block 18 (Photos 162-163) and nearly all of Feature 282 (Photos 164-165, Figure 56) were destroyed by the construction of water closets during the last decades of the 1800s.
Photo 161: Person Standing at Location of Privy Vault, Feature 200, Beneath Building 75, Feature 199, in Block 10, Facing Northeast

Figure 55: Location of Privy Vault Feature 200, Beneath Construction for Building 75, Feature 199 (Sanborn Map Company 1909)
Photo 162: Block 18, Privy Vault, Feature 289, Dark Rectangular Stain Left of Sign to Edge of Excavations and Water Closet, Feature 296, Behind Sign, Facing West

Photo 163: South Profile of Wood Lined Privy Vault, Feature 289, and Removed Portion of Water Closet, Feature 296, (to Left) that Cut Into the Top West Side of Privy, Facing South
Photo 164: Privy Vault, Feature 282 Found Under Water Closet, Feature 281, Facing South

Photo 165: South Profile of Brick Water Closet, Feature 281, and Privy Vault, Feature 282, Facing South
Note Wooden Edge of Feature 282 on Left Side of Feature 281
Figure 56: Profile of Privy Vault Cut by Later Construction of Water Closet, Feature 281

KEY:

Feature 281
- 10YR3/2 Very Dark Grayish Brown Clay
- Bricks

Feature 282
- 10YR2/1 Black Cinder and Ash
- 10YR5/6 Yellowish Brown Clay
- 2.5YR3/3 Dark Olive Brown Clay

Clay Mine Fill
- Brick Rubble & 10YR5/6 Yellowish Brown Clay
- 10YR4/4 Dark Yellowish Brown Clay
As early as 1836, the City of St. Louis passed ordinances requiring the construction of privies at all venues where money is won or lost. These places could be inspected by constables to be certain that no “nuisances exist” (Board of Alderman 1836:108). At this time, private families also likely had privy vaults under outhouses as well. By 1850, inspections of privies remained on the books. Further laws also were imposed, including those prohibiting the disposal of waste from privies on city grounds and limiting when privies could be cleaned out from September 15th through June 15th, between the hours of 7 PM and 3 AM. In this way the unpleasant odors would not be smelled by surrounding residents during the hottest months of the year and during waking hours (Krum 1850:308). Victorian views of sanitation were based on the idea of “out of sight, out of mind”. As stated by Stottmann (2000), it was believed that if something was not seen it was safe and that disease was spread by the foul smells associated with privies. The bottoms of privies were left open so that liquids would seep out into the ground. City officials across the U.S. regulated the depth of privies to prevent the waste from being seen and to limit their smells. For example, the 1850 St. Louis ordinance mandated that tenements should have a “suitable privy” that was at least 10 feet (about 3 meters) deep, with walls constructed of brick or stone (Krum 1850:305-306). While this law only applied to the larger, multi-family residences, single family homes that were using tubs or other vessels must empty them into a privy at least every two days.

During the 1800s, there was no regular system for collecting trash. As a result, privy vaults were used as a place to discard this rubbish. When the vaults were cleaned out, the trash also would be hauled away. The 1850 ordinance did prohibit the disposal of privy waste on city grounds (Krum 1850) but sink holes, vacant private lots, and local farms were used. It was thought the waste would fertilize the land.

It is commonly believed by bottle collectors that the older privy vaults were constructed of board formed walls, with limestone and brick walls being constructed after the 1850s. Previous archaeological investigations within the City of St. Louis, however, has shown that wood lined privies were used as late as the 1880s (Machiran and Harl 2014). The investigations at the NGA tract indicated that wood line privies were constructed throughout the second half of the 1800s, with the earliest one, Feature 130 in Block 12 dating between the 1850s and 1860s, but three features, Features 4, 167, and 289, dated after the 1880s. Most of the wood lined features appear to date between the 1860s and 1880s. This would indicate that board formed privy vaults were utilized up until at least the 1880s. Although the lowest levels of the limestone lined privy vault, Feature 74, had artifacts dating to the 1850s-1870s and Feature 133 had artifacts dating between 1880s and 1890s. The third limestone lined privy vault, which also had bricks at the top, Feature 204, had been looted and contained a mixture of artifacts dating as late as the 1950s and 1960s. The two brick lined privies, Feature 120 and 186, only had artifacts dating to the 1880s-1900.
Table 5: Approximate Age of Privies

<table>
<thead>
<tr>
<th>Block</th>
<th>Feature</th>
<th>Wall</th>
<th>Approximate Artifact Dates</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>4</td>
<td>wood lined</td>
<td>1880-1910</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>23</td>
<td>wood lined</td>
<td>1870s-1880s</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>limestone</td>
<td>Stratum 1, 1890s-1910 Stratum 5 1850s-1870</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>117</td>
<td>brick</td>
<td>1880s-1900</td>
<td>looted</td>
</tr>
<tr>
<td>12</td>
<td>120</td>
<td>wood lined</td>
<td>no artifacts</td>
<td>looted</td>
</tr>
<tr>
<td>12</td>
<td>130</td>
<td>wood lined</td>
<td>1850s-1870s</td>
<td>cut by demolition trench</td>
</tr>
<tr>
<td>13</td>
<td>133</td>
<td>limestone</td>
<td>1880s-1890s</td>
<td>looted</td>
</tr>
<tr>
<td>13</td>
<td>135</td>
<td>wood lined</td>
<td>1870s-1906</td>
<td>looted</td>
</tr>
<tr>
<td>10</td>
<td>167</td>
<td>wood lined</td>
<td>1880s-1890s</td>
<td>cut by demolition trench</td>
</tr>
<tr>
<td>10</td>
<td>168</td>
<td>wood lined</td>
<td>1870-1890s</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>176</td>
<td>brick</td>
<td>1880-1910s</td>
<td>looted</td>
</tr>
<tr>
<td>10</td>
<td>200</td>
<td>wood lined</td>
<td>1874-1895</td>
<td>top destroyed during construction of Building 75</td>
</tr>
<tr>
<td>25</td>
<td>204</td>
<td>brick upper level, rest limestone Stratum 1, 1937-1963 Stratum 2, 1920s-1930s, but some artifacts 1940s-1950s</td>
<td>looted</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>220</td>
<td>wood lined</td>
<td>1860s-1880s</td>
<td>top cut by demolition trench</td>
</tr>
<tr>
<td>25</td>
<td>221</td>
<td>wood lined</td>
<td>1870s-1880s</td>
<td>top cut by demolition trench</td>
</tr>
<tr>
<td>21</td>
<td>282</td>
<td>wood lined</td>
<td>1870-1900</td>
<td>mostly destroyed by construction of water closet, Feature 281</td>
</tr>
<tr>
<td>18</td>
<td>289</td>
<td>wood lined</td>
<td>1880s-1900s</td>
<td>west end of feature cut by water closet, Feature 296</td>
</tr>
<tr>
<td>18</td>
<td>299</td>
<td>wood lined</td>
<td>1860s-1880s</td>
<td>cut by demolition trench</td>
</tr>
</tbody>
</table>
Water Closets

A total of 59 water closets, representing 38.6% of the yard features, was identified (Table 6). Water closets were associated with outhouses similar to privy vaults. However, instead of allowing liquids to seep into the surrounding soils, water closets were completely enclosed with two courses of bricks. There was an upper pipe which brought either rain or waste water from the home into the water closet vault. A lower outlet pipe would have carried the wastewater to a connecting sewer line (Photo 40), which emptied into the main sewer line under the roads or alleys.

Water closets were constructed in a variety of shapes including circular, oval, oblong, and square (Table 7, Figure 58, Photos 166-177). These were similar in size, averaging about 157.4 to 188.6, or 5 to 6 feet long. However, most of the water closets (75%) were rectangular shaped (Table 7, Figure 58). Water closets were typically twice as long as they were wide (Photo 178-181), but those associated with businesses and social institutions were longer. For example, two water closets (Features 28 and 34), near the moving picture building in Excavation Block 7, were nearly three times as long as they were wide (Photo 182), and the water closet (Feature 141) associated with the German Zion Church in Excavation Block 19 was nearly four times as long as wide (Photo 183). The longer water closets were used to accommodate more than just one or two people. Unfortunately, much of the German Church water closet had been destroyed by a demolition trench and only its lower 60 cm remained intact.
<table>
<thead>
<tr>
<th>Excavation Block</th>
<th>Feature</th>
<th>Planview</th>
<th>Planview Length (in cm)</th>
<th>Orientation</th>
<th>Planview Width (in cm)</th>
<th>Orientation</th>
<th>Profile</th>
<th>Depth (in cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight (in gram)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>9</td>
<td>rectangular</td>
<td>365</td>
<td>N-S</td>
<td>190</td>
<td>E-W</td>
<td>inslanted walls, convex base</td>
<td>83</td>
<td>302</td>
<td>13,038.88</td>
<td>west side disturbed by demolition trench</td>
</tr>
<tr>
<td>23</td>
<td>17</td>
<td>rectangular</td>
<td>236</td>
<td>N-S</td>
<td>180</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>148</td>
<td>24</td>
<td>2,142.20</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>27</td>
<td>rectangular</td>
<td>235</td>
<td>N-S</td>
<td>210</td>
<td>E-W</td>
<td>inslanted walls, convex base</td>
<td>140</td>
<td>281</td>
<td>5,745.50</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>28</td>
<td>rectangular</td>
<td>400</td>
<td>N-S</td>
<td>140</td>
<td>E-W</td>
<td>straight walls, mortar lined floor</td>
<td>66</td>
<td>4</td>
<td>22.90</td>
<td>nearly completely destroyed</td>
</tr>
<tr>
<td>7</td>
<td>34</td>
<td>rectangular</td>
<td>370</td>
<td>N-S</td>
<td>120</td>
<td>E-W</td>
<td>slightly inslanted walls, convex base</td>
<td>142</td>
<td>763</td>
<td>38,095.70</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>rectangular</td>
<td>200</td>
<td>E-W</td>
<td>120</td>
<td>N-S</td>
<td>inslanted walls, convex base</td>
<td>134</td>
<td>191</td>
<td>5,433.70</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>42</td>
<td>rectangular</td>
<td>164</td>
<td>E-W</td>
<td>111</td>
<td>N-S</td>
<td>inslanted walls, convex base</td>
<td>124</td>
<td>326</td>
<td>7,262.40</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>45</td>
<td>rectangular</td>
<td>260</td>
<td>E-W</td>
<td>40</td>
<td>N-S</td>
<td>N.A.</td>
<td>N.A.</td>
<td>0</td>
<td>0</td>
<td>destroyed, no artifacts</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>square</td>
<td>125</td>
<td>N-S</td>
<td>125</td>
<td>E-W</td>
<td>north wall inslanted, rest straight, convex base</td>
<td>126</td>
<td>116</td>
<td>736.60</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>54</td>
<td>rectangular</td>
<td>340</td>
<td>N-S</td>
<td>125</td>
<td>E-W</td>
<td>straight walls, slightly convex base</td>
<td>154</td>
<td>235</td>
<td>4,057.85</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>58</td>
<td>rectangular</td>
<td>192</td>
<td>N-S</td>
<td>140</td>
<td>E-W</td>
<td>straight walls inslanted floor south to north</td>
<td>150</td>
<td>17</td>
<td>472.90</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>60</td>
<td>oval</td>
<td>167</td>
<td>N-S</td>
<td>109</td>
<td>E-W</td>
<td>slightly inslanted wall, convex base</td>
<td>85</td>
<td>600</td>
<td>5,233.40</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>64</td>
<td>rectangular</td>
<td>300</td>
<td>N-S</td>
<td>126</td>
<td>E-W</td>
<td>straight walls, base inslants south to north</td>
<td>90</td>
<td>117</td>
<td>1,435.80</td>
<td></td>
</tr>
</tbody>
</table>
### Table 6: Summary of Water Closets, continued

<table>
<thead>
<tr>
<th>Block</th>
<th>Feature</th>
<th>Planview</th>
<th>Orientation</th>
<th>Planview</th>
<th>Orientation</th>
<th>Profile</th>
<th>Profile</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>73</td>
<td>oval</td>
<td>210</td>
<td>N-S</td>
<td>136</td>
<td>E-W</td>
<td>inslanted walls, convex base</td>
<td>192 204</td>
<td>2,594.80</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>75</td>
<td>rectangular</td>
<td>296</td>
<td>E-W</td>
<td>234</td>
<td>E-W</td>
<td>inslanted walls, convex base</td>
<td>130 138</td>
<td>4,118.00</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>77</td>
<td>rectangular</td>
<td>306</td>
<td>E-W</td>
<td>190</td>
<td>N-S</td>
<td>straight walls, convex base</td>
<td>168 17</td>
<td>890.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>half cut by demolition trench</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>78</td>
<td>rectangular</td>
<td>180</td>
<td>N-S</td>
<td>164</td>
<td>E-W</td>
<td>straight walls, straight base</td>
<td>194 124</td>
<td>11,428.70</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>84</td>
<td>rectangular</td>
<td>106</td>
<td>E-W</td>
<td>86</td>
<td>N-S</td>
<td>inslanted walls, convex base</td>
<td>144 39</td>
<td>205.00</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>91</td>
<td>rectangular</td>
<td>260</td>
<td>N-S</td>
<td>218</td>
<td>E-Ws</td>
<td>straight walls, inslanted base</td>
<td>154 0</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>93</td>
<td>oval</td>
<td>230</td>
<td>N-S</td>
<td>178</td>
<td>E-W</td>
<td>straight walls, inslanted base</td>
<td>186 45</td>
<td>1,590.20</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>102</td>
<td>rectangular</td>
<td>300</td>
<td>N-S</td>
<td>272</td>
<td>E-W</td>
<td>straight walls, slanted base</td>
<td>180 7</td>
<td>67.20</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>103</td>
<td>rectangular</td>
<td>204</td>
<td>N-S</td>
<td>103</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>66 182</td>
<td>5,325.00</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>115</td>
<td>oval</td>
<td>180</td>
<td>N-S</td>
<td>120</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>66 113</td>
<td>2,610.10</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>119</td>
<td>rectangular</td>
<td>150</td>
<td>N-S</td>
<td>80</td>
<td>E-W</td>
<td>straight base, slanted base</td>
<td>50 29</td>
<td>1,368.00</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>124</td>
<td>rectangular</td>
<td>155</td>
<td>N-S</td>
<td>125</td>
<td>E-W</td>
<td>straight walls, convex base</td>
<td>110 54</td>
<td>1,713.60</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>127</td>
<td>rectangular</td>
<td>224</td>
<td>E-W</td>
<td>158</td>
<td>N-S</td>
<td>straight walls, flat base</td>
<td>160 0</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>128</td>
<td>rectangular</td>
<td>206</td>
<td>E-W</td>
<td>160</td>
<td>N-S</td>
<td>straight walls, flat base</td>
<td>208 86</td>
<td>9,091.10</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>131</td>
<td>square</td>
<td>157</td>
<td>E-W</td>
<td>156</td>
<td>N-S</td>
<td>straight wall, no floor</td>
<td>290 34</td>
<td>3,714.40</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>artifacts limited to the lower 30 cm rest of feature filled with bricks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation Block</td>
<td>Feature</td>
<td>Planview</td>
<td>Planview Length (in cm)</td>
<td>Orientation</td>
<td>Planview Width (in cm)</td>
<td>Orientation</td>
<td>Profile</td>
<td>Depth (in cm)</td>
<td>Total Number of Artifacts</td>
<td>Weight (in gram)</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>----------</td>
<td>------------------------</td>
<td>------------</td>
<td>-----------------------</td>
<td>------------</td>
<td>---------</td>
<td>--------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>19</td>
<td>141</td>
<td>rectangular</td>
<td>372</td>
<td>N-S</td>
<td>88</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>60</td>
<td>6</td>
<td>17.30</td>
</tr>
<tr>
<td>19</td>
<td>145</td>
<td>rectangular</td>
<td>200</td>
<td>N-S</td>
<td>132</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>200</td>
<td>514</td>
<td>32,677.60</td>
</tr>
<tr>
<td>19</td>
<td>146</td>
<td>circular</td>
<td>196</td>
<td>N-S</td>
<td>194</td>
<td>E-W</td>
<td>straight &amp; slanted walls, slanted floor</td>
<td>216</td>
<td>653</td>
<td>29,466.75</td>
</tr>
<tr>
<td>19</td>
<td>148</td>
<td>rectangular</td>
<td>158</td>
<td>N-S</td>
<td>115</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>110</td>
<td>121</td>
<td>4,582.31</td>
</tr>
<tr>
<td>19</td>
<td>150</td>
<td>circular</td>
<td>220</td>
<td>N-S</td>
<td>210</td>
<td>E-W</td>
<td>straight &amp; slanted walls, slanted floor</td>
<td>188</td>
<td>828</td>
<td>17,109.80</td>
</tr>
<tr>
<td>9</td>
<td>153</td>
<td>rectangular</td>
<td>282</td>
<td>N-S</td>
<td>186</td>
<td>E-W</td>
<td>straight wall, sloped floor</td>
<td>77</td>
<td>14</td>
<td>202.50</td>
</tr>
<tr>
<td>9</td>
<td>154</td>
<td>rectangular</td>
<td>280</td>
<td>N-S</td>
<td>112</td>
<td>E-W</td>
<td>inslanted walls, flat base</td>
<td>220</td>
<td>86</td>
<td>2,692.90</td>
</tr>
<tr>
<td>9</td>
<td>156</td>
<td>square</td>
<td>130</td>
<td>N-S</td>
<td>130</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>112</td>
<td>64</td>
<td>640.90</td>
</tr>
<tr>
<td>10</td>
<td>165</td>
<td>circular</td>
<td>147</td>
<td>E-W</td>
<td>140</td>
<td>N-S</td>
<td>straight walls, flat base</td>
<td>215</td>
<td>330</td>
<td>4,088.70</td>
</tr>
<tr>
<td>10</td>
<td>166</td>
<td>rectangular</td>
<td>170</td>
<td>N-S</td>
<td>87</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>87</td>
<td>15</td>
<td>96.30</td>
</tr>
<tr>
<td>10</td>
<td>180</td>
<td>oblong</td>
<td>180</td>
<td>N-S</td>
<td>87</td>
<td>E-W</td>
<td>straight walls, slanted base</td>
<td>58</td>
<td>26</td>
<td>1,537.70</td>
</tr>
<tr>
<td>10</td>
<td>189</td>
<td>rectangular</td>
<td>200</td>
<td>N-S</td>
<td>112</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>92</td>
<td>436</td>
<td>30,348.80</td>
</tr>
<tr>
<td>10</td>
<td>194</td>
<td>rectangular</td>
<td>145</td>
<td>N-S</td>
<td>124</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>94</td>
<td>4</td>
<td>132.50</td>
</tr>
<tr>
<td>10</td>
<td>197</td>
<td>rectangular</td>
<td>188</td>
<td>N-S</td>
<td>124</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>166</td>
<td>250</td>
<td>3,093.30</td>
</tr>
<tr>
<td>10</td>
<td>201</td>
<td>corner</td>
<td>38</td>
<td>E-W</td>
<td>22</td>
<td>N-S</td>
<td>only northwest corner</td>
<td>87</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Table 6: Summary of Water Closets, continued

<table>
<thead>
<tr>
<th>Excavation Block</th>
<th>Feature</th>
<th>Planview</th>
<th>Planview Length (in cm)</th>
<th>Orientation</th>
<th>Planview Width (in cm)</th>
<th>Orientation</th>
<th>Profile</th>
<th>Depth (in cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight (in grams)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>203</td>
<td>square</td>
<td>240</td>
<td>N-S</td>
<td>238</td>
<td>E-W</td>
<td>inslanted wall, slanted floor</td>
<td>180</td>
<td>7</td>
<td>765.00</td>
<td>few artifacts but did not appear to be disturbed</td>
</tr>
<tr>
<td>25</td>
<td>209</td>
<td>rectangular</td>
<td>314</td>
<td>N-S</td>
<td>268</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>82</td>
<td>772</td>
<td>28,095.50</td>
<td>associated with store, Building 76 (Feature 202)</td>
</tr>
<tr>
<td>25</td>
<td>210</td>
<td>rectangular</td>
<td>200</td>
<td>E-W</td>
<td>102</td>
<td>N-S</td>
<td>inslanted walls, slanted floor</td>
<td>122</td>
<td>160</td>
<td>5,426.60</td>
<td>top cut by demolition trench</td>
</tr>
<tr>
<td>25</td>
<td>214</td>
<td>rectangular</td>
<td>232</td>
<td>N-S</td>
<td>150</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>135</td>
<td>6</td>
<td>694.30</td>
<td>contains sterile soil few artifacts</td>
</tr>
<tr>
<td>25</td>
<td>215</td>
<td>rectangular</td>
<td>268</td>
<td>N-S</td>
<td>220</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>138</td>
<td>15</td>
<td>190.35</td>
<td>partially destroyed by demolition trench</td>
</tr>
<tr>
<td>25</td>
<td>225</td>
<td>rectangular</td>
<td>136</td>
<td>N-S</td>
<td>2</td>
<td>E-W</td>
<td>straight walls, slanted floor</td>
<td>88</td>
<td>6</td>
<td>150.50</td>
<td>destroyed by demolition trench</td>
</tr>
<tr>
<td>1</td>
<td>231</td>
<td>oval</td>
<td>174</td>
<td>N-S</td>
<td>146</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>168</td>
<td>3</td>
<td>680.40</td>
<td>west half destroyed by Building 88, Feature 232, only 3 pieces of a large metal kettle recovered</td>
</tr>
<tr>
<td>21</td>
<td>263</td>
<td>square</td>
<td>135</td>
<td>E-W</td>
<td>128</td>
<td>N-S</td>
<td>straight walls, slanted floor</td>
<td>115</td>
<td>439</td>
<td>38,726.10</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>265</td>
<td>rectangular</td>
<td>218</td>
<td>N-S</td>
<td>164</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>160</td>
<td>276</td>
<td>12,412.70</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>276</td>
<td>oval</td>
<td>192</td>
<td>E-W</td>
<td>146</td>
<td>N-S</td>
<td>straight walls, convex base</td>
<td>205</td>
<td>280</td>
<td>5,676.60</td>
<td>upper 125 cm disturbed by demolition trench</td>
</tr>
<tr>
<td>21</td>
<td>280</td>
<td>rectangular</td>
<td>156</td>
<td>N-S</td>
<td>85</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>65</td>
<td>49</td>
<td>702.90</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>281</td>
<td>rectangular</td>
<td>230</td>
<td>N-S</td>
<td>130</td>
<td>E-W</td>
<td>straight walls, flat base</td>
<td>130</td>
<td>318</td>
<td>14,671.50</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>284</td>
<td>rectangular</td>
<td>280</td>
<td>N-S</td>
<td>120</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>97</td>
<td>373</td>
<td>6,183.80</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>287</td>
<td>rectangular</td>
<td>236</td>
<td>N-S</td>
<td>136</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>120</td>
<td>286</td>
<td>4,320.00</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>295</td>
<td>rectangular</td>
<td>240</td>
<td>N-S</td>
<td>130</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>104</td>
<td>75</td>
<td>5,581.30</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>296</td>
<td>rectangular</td>
<td>255</td>
<td>N-S</td>
<td>130</td>
<td>E-W</td>
<td>inslanted walls, slanted floor</td>
<td>328</td>
<td>252</td>
<td>4,283.60</td>
<td></td>
</tr>
</tbody>
</table>
### Table 7: Sizes of Various Types of Water Closets

<table>
<thead>
<tr>
<th>Water Closet Shapes</th>
<th>Number of Features</th>
<th>Length Range cm (feet)</th>
<th>Average Length cm (feet)</th>
<th>Width Range cm (feet)</th>
<th>Average Width cm (feet)</th>
<th>Depth Range cm (feet)</th>
<th>Average Depth cm (feet)</th>
<th>Photos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circular</td>
<td>3</td>
<td>147-220 (5-7 ¾)</td>
<td>187.7 (6)</td>
<td>109-178 (3 ½-6)</td>
<td>139.8 (4 ¼)</td>
<td>188-216 (6 1/4-7)</td>
<td>206.3 (7)</td>
<td>166-168</td>
</tr>
<tr>
<td>Oval</td>
<td>5</td>
<td>167-230 (5 ½-7 ½)</td>
<td>188.6 (6)</td>
<td>136 &amp; 87 (4 ½ &amp; 3)</td>
<td>192 &amp; 58 (6 ¼ &amp; 2)</td>
<td>66-186 (2-6)</td>
<td>142 (4 3/4)</td>
<td>169-171</td>
</tr>
<tr>
<td>Oblong</td>
<td>2</td>
<td>210 &amp; 180 (7 &amp; 6)</td>
<td>157.4 (5)</td>
<td>112-290 (3 ½-10)</td>
<td>164.6 (5 ½)</td>
<td>112-290 (3 ½-10)</td>
<td>164.6 (5 ½)</td>
<td>174-177</td>
</tr>
<tr>
<td>Square</td>
<td>5</td>
<td>125-240 (4-8)</td>
<td>157.4 (5)</td>
<td>60-328 (2-10 ¾)</td>
<td>130.2 (4 ¾)</td>
<td>112-290 (3 ½-10)</td>
<td>164.6 (5 ½)</td>
<td>174-177</td>
</tr>
<tr>
<td>Rectangular</td>
<td>44</td>
<td>106-400 (3 ½-13)</td>
<td>237.4 (7 ¾)</td>
<td>40-272 (1 1/3-9)</td>
<td>139.7 (4 ½)</td>
<td>112-290 (3 ½-10)</td>
<td>164.6 (5 ½)</td>
<td>174-177</td>
</tr>
</tbody>
</table>

**Figure 58: Percentages of Water Closet Shapes**
Photo 166: Top of Circular Water Closet, Feature 146 in Excavation Block 19, Facing East

Photo 167: Top of Circular Water Closet, Feature 150 in Excavation Block 19, Facing West
Photo 168: Top of Circular Water Closet, Feature 165 in Excavation Block 10, After Being Uncovered, Facing Northeast

Photo 169: Top of Oval Water Closet, Feature 60 in Excavation Block 2, Facing North
Photo 170: Top of Oval Water Closet, Feature 93 in Excavation Block 24, Facing East

Photo 171: Excavated Oval Water Closet, Feature 276 in Excavation Block 21, Facing North
Photo 172: Excavated Oblong Water Closet, Feature 73 in Excavation Block 8, Facing East

Photo 173: Excavated Oblong Water Closet, Feature 180 in Excavation Block 10, Facing East
Photo 174: Top of Square Water Closet, Feature 131 in Excavation Block 13, Facing East

Photo 175: Top of Square Water Closet, Feature 156 in Excavation Block 9, Facing East
Photo 176: Top of Square Water Closet, Feature 203 in Excavation Block 25, Facing South

Photo 177: Excavated Square Water Closet, Feature 263 in Excavation Block 21, Facing North
Photo 178: Excavated Rectangular Water Closet, Feature 17 in Excavation Block 23, Facing Southwest

Photo 179: Excavated Rectangular Water Closet, Feature 42 in Excavation Block 3, Facing Southwest
Photo 180: Excavated Rectangular Water Closet, Feature 280 in Excavation Block 21, Facing West

Photo 181: Excavated Rectangular Water Closet, Feature 194 in Excavation Block 10, Facing South
Photo 182: Excavated Long Rectangular Water Closet, Feature 34 in Excavation Block 7, Near Moving Picture Building, Facing North

Photo 183: Excavated Remaining Lower Portion of Long Rectangular Water Closet, Feature 141 in Excavation Block 19, Associated with German Zion Church, Facing South
Overall, the water closets varied in depth from 58 to 328 cm (2 to 10 ¾ feet), with an overall average depth of 137.2 cm (4 ½ feet). The majority of the trenches had depths between 101 to 150 cm (3 1/3 to 5 feet) (Figure 59). Most of those less than 100 cm (3 1/3 feet) deep had been cut by demolition trenches (Figure 59). A total of 15 water closets had been impacted by demolition trenches. For example, Feature 141, associated with the German Zion Church (Photo 183). Four features had been nearly completely destroyed. Feature 45, was found at the base of a demolition trench in Excavation Block 3 (Photo 184). All that remained of this feature was a dark rectangular stain about 2 cm (3/4 inch) deep, a few bricks and broken pieces of the drainage pipe (Photo 185). Only the base and the northeast corner of Feature 28, remained in Excavation Block 7 (Photo 186). The base of the feature indicated that this water closet was 400 cm (13 feet) long and 140 cm (4 ½ feet) wide suggesting that it was likely associated with the moving picture theater, hall, and saloon, located just to the north. Four artifacts were discovered in the scarce remains of the fill attached to the corner: a portion of an ironstone plate, a barrel mustard jar, and two cut nails, dating to the 1800s. Feature 201 in Excavation Block 10, likewise had been destroyed by a demolition trench, with only the lower portion of its northwest corner intact (Photo 187). No artifacts were found with this feature. The fourth water closet, Feature 225, was present in Excavation Block 25. Only the western side of the water closet remained (Photo 188). Six artifacts were discovered adjacent to the wall including a condiment bottle, a shot glass, and four animal bones. This water closet was placed adjacent the northeast corner of the cedar post house (Feature 224, Building 84) and a limestone wall had been constructed between the two features (Photo 189), probably to keep the water closet contents from seeping into the basement of this home.

Figure 59: Number of Water Closets at Various Depths

![Figure 59: Number of Water Closets at Various Depths](image-url)
Photo 184: Only Base of Water Closet, Feature 45 Remaining in Excavation Block 3, Facing North

Photo 185: Closeup of Remains of Water Closet, Feature 45, Facing North
Photo 186: Intact Corner of Water Closet, Feature 28, in Excavation Block 7, Facing Northeast

Photo 187: Only A Portion of the Northwest Corner of Water Closet, Feature 201 in Excavation Block 10, Still Present Near a Cistern, Feature 172, Facing Northwest
Photo 188: West Wall of Water Closet, Feature 225, Intact Within Block 25, Facing North

Photo 189: Intact Brick Wall of Water Closet, Feature 225, on Right, and Top of Limestone Slab Retaining Wall, on Left, Adjacent to Northeast Corner of Cedar Post House, Feature 224, Building 84, Facing North
In profile, the walls of 35 water closets were straight. Their floors either were flat (Photos 190-192) or convex (Photos 193-195), but both types slanted towards the outlet pipe. Another 19 water closets had inslanted walls and a convex floor (Photos 196-199).

The inlet and outlet pipes later were connected with a pipe, present in 23 (39%) of the water closets (Photos 200-203). This was done when nearby buildings were remodeled with an indoor bathroom, replacing the outside water closets. This appears to have been done primarily in the 1920s or 1930s, but Features 58 and 119, could have been earlier as they had artifacts dating to the 1910s and Feature 84 and 265 may have been later as they contained artifacts dating to the 1950s. Feature 165 in Excavation Block 10 differed in that the connection between the inlet and outlet pipe was made of bricks not a stoneware pipe (Photos 204-205).

Another six water closets (Features 27, 78, 124, 209, 210, and 215) were converted into outside toilets as suggested by an upward stack pipe, place for a toilet flange, and sometimes with water pipes (Photos 206-214). Water closets, Features 91 and 119, had been previously excavated, most probably by looters. Only modern debris was found in their fill. The rest of the water closets contained artifacts dating after 1880.

As the population grew and an awareness of germs spreading disease, not miasma (through smells), St. Louis passed ordinances in the 1880s governing privy vaults and requiring water closets. These ordinances mandated that vaults or privies “located on a line of any street or alley through which there is a public, private or district sewer” must be connected to that line. Any privy within the city limits not connected to the sewer would be considered a “nuisance” and the owner would be subject to a $20-$500 fine. It further required, that privy tubs and vessels be emptied daily, not every other day as defined in the previous codes (Sullivan 1881:482, 494).

In 1887, an even stricter ordinance was passed requiring the depth of vaults not to exceed 8 feet (2.4 meters) replacing at least 10 feet (3 meters) depth mandated by earlier ordinances. This was an attempt to keep the vaults above the water table. The water table and surrounding ground was further protected by requirement that:

All privy vaults which shall hereafter be connected with the sewer system of the city shall be so constructed that the bottom and sides will be impervious to water, and to this end shall be built of hard brick, with full joints, laid in hydraulic cement mortar, composed of two parts sand to one part cement...The walls shall not be less than nine inches in thickness. The bottom of the vault shall be so formed as to throw all matter cast into said vault to the sewer opening.

(Anonymous 1887a)

For this reason, all the water closets at the NGA tract had 2 courses of bricks on their walls and floors. They further were made with convex or slanted floors that allowed the liquids to flow out of these chambers. Connections to the sewer lines were to be 6 inches (15 cm) in diameter and made of iron or semi-vitrified clay pipes. The outlet pipe was to be protected by a grate or similar obstacle to prevent solid waste from clogging the pipes. It was mandated by the 1881 ordinance (Sullivan 1881:485) that nothing could be dumped into the water closet that could clog the system. However as observed at the NGA tract and at other sites in St. Louis, this did not prevent people from still using these vaults to discard trash. It was only after the 1930s,
with the widespread use of trucks, that regular trash collection became widely available. Regardless, by this time, most people had indoor bathrooms and no longer had a large pit to dispose of their trash.

*Photo 190: Water Closet with Straight Walls and Flat Slanted Floor, Feature 17 in Excavation Block 23, Facing West*

*Photo 191: Straight Wall and Flat Slanted Floor, Feature 131, Excavation Block 13, Facing East*
Photo 192: Straight Walls and Flat Slanted Floor, Feature 156 in Block 9, Facing East

Photo 193: Water Closet with Straight Walls and Convex Floor, Feature 93 in Excavation Block 24, Facing East
Photo 194: Straight Wall, Convex Floor, Feature 145, Excavation Block 19, Facing West

Photo 195: Straight Walls and Convex Floor, Feature 189 in Excavation Block 10, Facing North
Photo 196: Water Closet with Inslated Wall Convex Base, Feature 42 in Excavation Block 3, Facing West

Photo 197: Inslated Walls, Convex Floor, Feature 153 in Excavation Block 9, Facing North
Photo 198: Inslanted Walls and Convex Floor, Feature 296 in Excavation Block 18, Facing South

Photo 199: Inslanted Walls and Convex Floor, Showing Slant Towards Outlet Pipe, Feature 64 in Excavation Block 2, Facing West
Photo 200: Inlet and Outlet Pipe Connected in Water Closet, Feature 115, Excavation Block 12, Facing North

Photo 201: Inlet and Outlet Pipe Connected in Feature 146, Excavation Block 19, Facing West
Photo 202: Inlet and Outlet Pipe Connected in Feature 148, Excavation Block 19, Facing East

Photo 203: Inlet and Outlet Pipe Connected in Feature 150, Excavation Block 19, Facing East
Photo 204: Bricks Used to Connect Inlet and Outlet Pipe in Feature 165, Excavation Block 10, Facing North

Photo 205: Feature 165, Water Closet with a Brick Connection, Upper Portion of Bricks Partially Removed, Facing North
Photo 206: Feature 78 in Excavation Block 8, Water Closet Converted into Outdoor Toilet, with Toilet Flange on Stack Pipe, Facing East

Photo 207: Feature 78, Closeup of the Toilet Flange on Upper Portion of Stack Pipe, Facing East
Photo 208: Two Sewer Pipes Going Into Feature 78 Water Closet Later Converted to an Outside Toilet, Facing North

Photo 209: Fill Outside Water Closet/Outdoor Toilet Feature 78 Used to Fill in a Clay Pit and Trench for Second Sewer Pipe into Water Closet, Facing North
Photo 210: Sewer Pipe from Feature 78 with Manufacturer’s Name, Facing South

Closeup of Manufacturer’s Name
Photo 211: Feature 27, Water Closet Converted to Outside Toilet, Facing North

Photo 212: Feature 209 in Excavation Block 25, Store Water Closet Turned into Outside Toilet Facing South
Photo 213: Water and Sewer Pipes Associated with Toilet Placed Within Feature 215 in Excavation Block 25, Facing West

Photo 214: Water Closet, Feature 210 in Excavation Block 25, Converted into an Outside Toilet, Facing South
The St. Louis Health Commissioner could inspect water closets to be certain that they were properly constructed or connected to the sewer system. If it was found to be “in any other state or condition which is dangerous or detrimental to the public health”, then they may require reconstruction of the water closet (Sullivan 1881:494). The 1887 revisions also outlined the fines of $10-$200 for each day the problems remained (Anonymous 1887b).

While all home owners may not have complied with the 1881 sewer line connection mandate, other ordinances seem to be designed to “encourage” compliance. For example, one required the licensing of privy cleaners which included a fee of $100 and a bond of $1000 (Sullivan 1881:908). These fees would have caused the cost of privy cleaning to rise significantly and make the cost of hooking into the sewer line more attractive. Those licensed were required to perform the service “without creating a nuisance, and in as inodorous a manner and as free from foul odors and gasses as possible” (Sullivan 1881:909).

Most of the artifacts recovered from the water closets dated to the 1920s and 1930s (Figure 60). As indicated above, it was during this time that most families could afford to renovate their homes and add indoor toilets. As a result, water closets were abandoned and filled with debris dating to these time frames. Surprising, however, is the number of water closets that contained artifacts dating to the 1940s and 1950s, even as late as the early 1960s (Figure 60) suggesting that these pits were still open and likely being utilized. The City Plan Commission of 1947 did find that 1,434 homes in this part of the city had outside toilets and nearly 60-89% of the homes were considered substandard. It is possible, that in addition to the six outside toilets identified during these investigations, that water closets continued to be used after 1940.

Figure 60: Number of Water Closets with Artifacts from Different Times

![Number of Water Closets with Artifacts from Different Times](image)
Cisterns

A total of 43 cisterns was identified within the Excavation Blocks (Table 8), representing 28.1% of the yard features. Cisterns were used to collect rain to be used for various household chores, but occasionally served as drinking water. Water was transported to the cisterns by drainage pipes from building gutters. The cisterns were circular, but 10 were slightly oval shaped. They measured between 60 and 330 cm (2 and 11 feet) in diameter, with an average diameter of 218.7 cm (7 feet). Most of the cisterns measured between 201 and 300 cm (6 ½ and 10 feet) in diameter (Figure 61). The upper portion of at least 25 cisterns (58.1% of the cisterns) were made of brick in a beehive shape (Photo 215). These narrower tops did not take up valuable yard space, while the wider main body was underground. It is possible that other cisterns were made in this fashion, but the upper brick portion had been removed when buildings were razed after the 1970s and only their main bodies remained below ground. The brick tops were so strongly built that during excavations it was easier to pry them off than to try and cut them in half (Photo 216). Feature 61 in Block 2 (Photos 217-218) and Feature 100 in Block 24 (Photos 219-220) were thought to represent cisterns but turned out to be displaced tops that likely were moved when nearby buildings were razed. The displaced top of Feature 100 differed in that it was made of cobbles cemented together instead of bricks. Cisterns ranged in depth from 54 to 540 cm, with an average depth of 320.5 cm. Most cisterns were between 201 and 450 cm (Figure 62), but the cisterns did range widely in depth (Figure 62).

The main body and floor of 11 cisterns were made of bricks lined with mortar (Photo 221-222), but over twice as many (25 cisterns) had only mortar lined walls and floors (Photo 223-224). Two features in Excavation Block 2, Feature 57 (Photo 225, Figure 63) and Feature 59 (Photo 226, Figure 64), had a brick and mortar lining to a depth of 140 cm (4 ½ feet), with the rest of the feature lined with only mortar. Another cistern in Excavation Block 8, Feature 72, had walls made of limestone slabs that were lined with mortar to hold in water (Photo 227).

Block 10 had unusual cisterns, Features 172 (Photos 228-229) and 177 (Photos 230-231), which consisted of wooden barrels placed partially into the ground (Figure 65). Cisterns of this type were common during the 1700s in general but by the mid to late 1800s they were less common, especially in cities due to the need for larger cisterns that could store more water. However, barrel cisterns have been found at other locations in St. Louis dating to the 1800s (Michael Meinkoth 2016, personal communications). Feature 172 had a diameter of 140 cm (4 ½ feet) and was 54 cm (1 ¾ feet) deep. Feature 177 had a diameter of 110 cm (3 ½ feet) and a depth of 95 cm (3 feet). These had three metal barrel hoops, and although the wood had rotted; its impressions were left as a dark stain visible at the edges of the features (Photos 229 and 231). Another cistern, Feature 198, was identified in this block by metal hoops at the top and bottom (Photo 232-236), but no hoops in between these. But, this cistern was wider with a diameter of 170 cm (5 ½ feet) and was much deeper, 214 cm (7 feet) than would be practical for an actual barrel to be used for the cistern. Instead, this cistern was made in an analogous way, with long boards attached to the metal hoops. A bluish stain existed just outside this cistern, especially at its base, suggesting that water did seep out of this feature (Photo 236).
## Table 8: Summary of Cisterns

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>7</td>
<td>circular</td>
<td>270</td>
<td>N-S</td>
<td>270</td>
<td>E-W</td>
<td>brick</td>
<td>deep straight walls, flat base</td>
<td>430</td>
<td>3,621</td>
<td>245,350.35</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>11</td>
<td>circular</td>
<td>260</td>
<td>N-S</td>
<td>260</td>
<td>E-W</td>
<td>brick top 140 cm, rest mortar lined</td>
<td>beehive top, straight walls, flat floor</td>
<td>470</td>
<td>1,892</td>
<td>109,439.10</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>12</td>
<td>circular</td>
<td>240</td>
<td>N-S</td>
<td>240</td>
<td>E-W</td>
<td>brick top 140 cm, rest mortar lined</td>
<td>beehive top, straight walls, flat floor</td>
<td>470</td>
<td>1,092</td>
<td>101,463.90</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>circular</td>
<td>184</td>
<td>N-S</td>
<td>184</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>230</td>
<td>55</td>
<td>3,116.50</td>
<td>previously dug, only lower 40 cm intact, cut by later construction of F25 cistern</td>
</tr>
<tr>
<td>7</td>
<td>30</td>
<td>circular</td>
<td>270</td>
<td>N-S</td>
<td>270</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>straight walls, flat base</td>
<td>251</td>
<td>1,554</td>
<td>118,242.30</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>35</td>
<td>circular</td>
<td>300</td>
<td>N-S</td>
<td>300</td>
<td>E-W</td>
<td>mortar</td>
<td>straight wall, convex base</td>
<td>260</td>
<td>14</td>
<td>443.70</td>
<td>previously dug, only lower 84 cm intact</td>
</tr>
<tr>
<td>2</td>
<td>53</td>
<td>circular</td>
<td>310</td>
<td>N-S</td>
<td>310</td>
<td>E-W</td>
<td>mortar</td>
<td>straight wall, flat base</td>
<td>340</td>
<td>3</td>
<td>1,300.00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>55</td>
<td>circular</td>
<td>300</td>
<td>N-S</td>
<td>300</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>beehive top, straight walls, flat floor</td>
<td>385</td>
<td>475</td>
<td>62,761.00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>56</td>
<td>circular</td>
<td>270</td>
<td>N-S</td>
<td>270</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>beehive top, straight walls, flat base</td>
<td>445</td>
<td>2,594</td>
<td>123,466.80</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>circular</td>
<td>110</td>
<td>N-S</td>
<td>110</td>
<td>E-W</td>
<td>brick top 140 cm, rest mortar lined</td>
<td>straight walls, flat base</td>
<td>540</td>
<td>130</td>
<td>6,925.90</td>
<td></td>
</tr>
</tbody>
</table>
Table 8: Summary of Cisterns, continued

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>59</td>
<td>circular</td>
<td>268</td>
<td>N-S</td>
<td>E-W</td>
<td>brick top 140 cm, rest mortar lined</td>
<td>beehive top, straight walls, floor slants from west to east</td>
<td>410</td>
<td>1,834</td>
<td>111,254.70</td>
</tr>
<tr>
<td>2</td>
<td>62</td>
<td>oval</td>
<td>268</td>
<td>N-S</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>straight wall, flat base</td>
<td>450</td>
<td>1,832</td>
<td>121,113.50</td>
</tr>
<tr>
<td>2</td>
<td>65</td>
<td>circular</td>
<td>250</td>
<td>N-S</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>straight wall, flat base</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>69</td>
<td>circular</td>
<td>256</td>
<td>E-W</td>
<td>N-S</td>
<td>brick top, mortar walls &amp; base</td>
<td>top partially inslanted, straight walls &amp; base</td>
<td>310</td>
<td>611</td>
<td>56,309.50</td>
</tr>
<tr>
<td>8</td>
<td>72</td>
<td>circular</td>
<td>230</td>
<td>N-S</td>
<td>E-W</td>
<td>limestone &amp; mortar lined interior</td>
<td>straight walls, flat base</td>
<td>294</td>
<td>691</td>
<td>24,503.70</td>
</tr>
<tr>
<td>8</td>
<td>83</td>
<td>circular</td>
<td>240</td>
<td>E-W</td>
<td>N-S</td>
<td>brick &amp; mortar interior</td>
<td>straight walls, straight base</td>
<td>420</td>
<td>202</td>
<td>17,727.30</td>
</tr>
<tr>
<td>8</td>
<td>86</td>
<td>circular</td>
<td>202</td>
<td>N-S</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>225</td>
<td>1,100</td>
<td>63,675.40</td>
</tr>
<tr>
<td>24</td>
<td>90</td>
<td>circular</td>
<td>294</td>
<td>N-S</td>
<td>E-W</td>
<td>brick top, mortar sides</td>
<td>beehive top, straight walls, straight base</td>
<td>318</td>
<td>544</td>
<td>82,593.70</td>
</tr>
<tr>
<td>24</td>
<td>97</td>
<td>circular</td>
<td>222</td>
<td>N-S</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>216</td>
<td>467</td>
<td>89,132.50</td>
</tr>
<tr>
<td>24</td>
<td>98</td>
<td>circular</td>
<td>266</td>
<td>N-S</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>137</td>
<td>753</td>
<td>39,067.90</td>
</tr>
<tr>
<td>24</td>
<td>104</td>
<td>circular</td>
<td>184</td>
<td>N-S</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>305</td>
<td>213</td>
<td>14,588.77</td>
</tr>
</tbody>
</table>
### Table 8: Summary of Cisterns, continued

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>111</td>
<td>oval</td>
<td>232</td>
<td>E-W</td>
<td>224</td>
<td>N-S</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>240</td>
<td>5</td>
<td>1,099.30</td>
<td>mixed fill, few artifacts</td>
</tr>
<tr>
<td>12</td>
<td>114</td>
<td>oval</td>
<td>291</td>
<td>N-S</td>
<td>242</td>
<td>E-W</td>
<td>brick top, mortar sides, brick &amp; mortar base</td>
<td>beehive top, straight walls, flat base</td>
<td>354</td>
<td>333</td>
<td>27,102.90</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>118</td>
<td>circular</td>
<td>248</td>
<td>N-S</td>
<td>246</td>
<td>E-W</td>
<td>brick top, mortar sides, brick &amp; mortar base</td>
<td>beehive top, straight walls, flat base</td>
<td>450</td>
<td>816</td>
<td>56,086.50</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>122</td>
<td>circular</td>
<td>180</td>
<td>N-S</td>
<td>180</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>337</td>
<td>119</td>
<td>19,627.20</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>138</td>
<td>circular</td>
<td>175</td>
<td>N-S</td>
<td>175</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>210</td>
<td>179</td>
<td>25,381.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>169</td>
<td>oval</td>
<td>245</td>
<td>N-S</td>
<td>204</td>
<td>E-W</td>
<td>bricks with mortar lining interior</td>
<td>straight walls, flat base</td>
<td>420</td>
<td>1,016</td>
<td>115,790.50</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>172</td>
<td>circular</td>
<td>140</td>
<td>N-S</td>
<td>132</td>
<td>E-W</td>
<td>wood &amp; metal hoops</td>
<td>straight walls, flat base</td>
<td>54</td>
<td>64</td>
<td>1,232.90</td>
<td>barrel cistern</td>
</tr>
<tr>
<td>10</td>
<td>177</td>
<td>oval</td>
<td>110</td>
<td>N-S</td>
<td>80</td>
<td>E-W</td>
<td>wood &amp; metal hoops</td>
<td>straight walls, flat base</td>
<td>95</td>
<td>203</td>
<td>859.60</td>
<td>barrel cistern</td>
</tr>
<tr>
<td>10</td>
<td>178</td>
<td>oval</td>
<td>330</td>
<td>N-S</td>
<td>280</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>straight walls, flat base</td>
<td>210</td>
<td>693</td>
<td>71,547.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>190</td>
<td>oval</td>
<td>128</td>
<td>E-W</td>
<td>116</td>
<td>N-S</td>
<td>brick with mortar lined interior</td>
<td>straight walls, flat base</td>
<td>384</td>
<td>261</td>
<td>28,021.50</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>193</td>
<td>oval</td>
<td>60</td>
<td>N-S</td>
<td>50</td>
<td>E-W</td>
<td>brick with mortar lined interior</td>
<td>straight walls, flat base</td>
<td>172</td>
<td>1</td>
<td>300.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>195</td>
<td>circular</td>
<td>172</td>
<td>N-S</td>
<td>172</td>
<td>E-W</td>
<td>brick top, rest mortar lined</td>
<td>straight walls, flat base</td>
<td>410</td>
<td>215</td>
<td>19,341.60</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>198</td>
<td>circular</td>
<td>170</td>
<td>E-W</td>
<td>166</td>
<td>N-S</td>
<td>wood &amp; metal hoops</td>
<td>straight walls, flat base</td>
<td>214</td>
<td>269</td>
<td>22,773.60</td>
<td>barrel cistern</td>
</tr>
</tbody>
</table>
Table 8: Summary of Cisterns, continued

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>213</td>
<td>oval</td>
<td>213</td>
<td>N-S</td>
<td>196</td>
<td>E-W</td>
<td>brick top, mortar walls &amp; base</td>
<td>straight walls, flat base</td>
<td>405</td>
<td>523</td>
<td>48,339.00</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>216</td>
<td>circular</td>
<td>220</td>
<td>N-S</td>
<td>220</td>
<td>E-W</td>
<td>brick top, mortar walls &amp; base</td>
<td>straight walls, flat base</td>
<td>395</td>
<td>30</td>
<td>3,791.50</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>223</td>
<td>circular</td>
<td>240</td>
<td>N-S</td>
<td>238</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>300</td>
<td>176</td>
<td>21,113.60</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>227</td>
<td>oval</td>
<td>136</td>
<td>E-W</td>
<td>120</td>
<td>N-S</td>
<td>brick top, mortar walls &amp; base</td>
<td>straight walls, flat base</td>
<td>343</td>
<td>4</td>
<td>359.60</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>260</td>
<td>circular</td>
<td>94</td>
<td>N-S</td>
<td>90</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>131</td>
<td>14</td>
<td>1,360.40</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>261</td>
<td>circular</td>
<td>126</td>
<td>E-W</td>
<td>124</td>
<td>N-S</td>
<td>brick beehive top, mortar walls &amp; base</td>
<td>straight walls, flat base</td>
<td>393</td>
<td>221</td>
<td>17,531.90</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>279</td>
<td>circular</td>
<td>240</td>
<td>N-S</td>
<td>240</td>
<td>E-W</td>
<td>brick top, mortar walls &amp; base</td>
<td>straight walls, flat base</td>
<td>345</td>
<td>132</td>
<td>16,837.20</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>292</td>
<td>circular</td>
<td>240</td>
<td>N-S</td>
<td>240</td>
<td>E-W</td>
<td>mortar</td>
<td>straight wall, flat base</td>
<td>312</td>
<td>435</td>
<td>105,699.60</td>
<td>brick top collapsed</td>
</tr>
<tr>
<td>18</td>
<td>298</td>
<td>circular</td>
<td>220</td>
<td>N-S</td>
<td>220</td>
<td>E-W</td>
<td>mortar</td>
<td>straight walls, flat base</td>
<td>300</td>
<td>313</td>
<td>45,042.20</td>
<td></td>
</tr>
</tbody>
</table>
Figure 61: Number of Cisterns of Various Diameters

Figure 62: Number of Cisterns by Various Depths
Photo 215: Several Cisterns in Excavation Block 2 with Beehive Brick Tops, Facing East. Note Black Tarps are Covering Water Closets Placed Next to the Cisterns.

Photo 216: Mortar Lined Beehive Brick Top of Cistern Being Removed from Feature 59 in Excavation Block 2, Facing Northeast.
Photo 217: Feature 61, Cistern Top in Excavation Block 2, Facing North

Photo 218: No Evidence of Cistern Once Top of Feature 61 was Removed, Facing Northeast
Photo 219: Feature 100 in Excavation Block 24, Cistern Top Made of Cobbles Cemented Together, Facing North

Photo 220: No Evidence of Cistern Under Top of Feature 100, Facing North
Photo 221: Feature 30 in Excavation Block 7, Cistern Lined with Bricks and Mortar on Interior, Facing East

Photo 222: Feature 62 In Excavation Block 2, Cistern Lined with Brick and Mortar on the Interior, Facing Southeast
Photo 223: Cisterns Features 12 and 13 in Excavation Block 24, Lined with Mortar, Facing North

Photo 224: Feature 90, Mortar Lined Cistern, Facing East
Photo 225 Brick Top of Cistern, Feature 57 in Excavation Block 2, Facing Northeast

Figure 63: South Profile of Feature 57

KEY:
- Bricks
- Mortar
- 10YR3/2 Very Dark Grayish Brown Cinder and Silty Clay
Photo 226: Brick Top and Only Mortar Lined Lower Portion of Cistern, Feature 59 in Excavation Block 2, Facing West

Figure 64: West Profile of Feature 59
Photo 227: Excavated Limestone Slab with Mortar Lining
Interior of Cistern, Feature 72, Facing Northwest
Photo 228: Top of Barrel Cistern, Feature 172, Showing Metal Hoop, Facing East

Photo 229: Excavated Barrel Cistern, Feature 172, Showing Three Metal Hoops, Facing South
Photo 230: Top of Barrel Cistern, Feature 177 in Excavation Block 10, Facing North

Photo 231: Excavated Barrel Cistern, Feature 177, Facing East, Notice Metal Hoop at Base and Stains Left from Wooden Barrel Staves
Figure 65: Location of Barrel Cisterns Within Excavation Block 10 on the 1909 Sanborn Company Map
Photo 232: Upper Metal Hoop on Deep Cistern, Feature 198 in Excavation Block 10, Facing South

Photo 233: Metal Hoop Removed from Top of Feature 198, Facing Northwest
Photo 234: West Profile of Deep Barrel Cistern, Feature 198, Showing Metal Hoops at Top and on the Bottom, Facing West

Photo 235: Close-up of Lower Metal Hoop, Facing West
Originally, ARC attempted to excavate cisterns by first cutting them in half with a trackhoe to a depth of about 2 meters, and then hand excavating the remaining half, screening the removed fill (Photo 237). However, it immediately became apparent that many of the cisterns still held water. Some were nearly completely filled (Photo 238). The saturated fill made screening impossible because the mud covered artifacts could not be distinguished from cinders and other objects that were not to be collected. Further, water running out resulted in the fill being unstable so that it was not safe to excavate (Photos 239-240). The strategy was updated from hand excavations to completely removing the fill by trackhoe. The operator spread the fill out, which was examined for artifacts. If possible, the cistern was cut in half so that the profile could be photographed, and to determine if there was more than one zone, which needed to be collected separately. The trackhoe then removed the second half of the fill, attempting to leave as much of the cistern’s wall in place as practical. For the safety of the archaeological crew, the depth of the feature was determined by dropping a measuring tape from the top to the bottom of the feature (Photo 241).
Photo 237: Hand Excavating Second Half of Cistern, Feature 11 in Excavation Block 23, Facing North

Photo 238: Water Pouring Out Near the Top of Cistern, Feature 90 in Excavation Block 24, Facing Southeast
Photo 239: Feature 55 in Excavation Block 2, Cistern with Water Causing the Lower Portion of the Fill to Collapse and Rest of Fill Separating from the Wall About to Collapse, Facing Northeast

Photo 240: Feature 292 in Excavation Block 18, Cistern with the Fill in the Process of Collapsing, Facing North
Typically, other cisterns excavated in the past within Missouri cities contained mostly a clean fill, with few artifacts. These features were not used to discard trash when they were being used because they were needed to obtain clean water for household tasks. After they were no longer needed as the result of buildings being connected to piped water, these deep holes were viewed as a hazard to children and pets. They usually were quickly filled in with soils or coal cinders over a short time period. However, the majority of the cisterns at the NGA tract (88.4%) appear to have been gradually filled with trash. Only six cisterns (Features 53, 111, 193, 216, 227, and 260) were filled in with a clean fill (Photo 242). These contained an average of 9 artifacts per feature. Of these cisterns, the most artifacts (N=30) were found in Feature 216 in Excavation Block 25. This cistern was unusual as it was under the northeast corner of an addition to a flat, Building 81, Feature 218 (Photo 243). This may have made the cistern more accessible during inclement weather. When it was no longer needed, the pit appears to have been quickly filled with mostly cinder (Photo 244).

Feature 111 in Excavation Block 12 contained only 5 artifacts in addition to a bag of cement or mortar (Photo 245). Feature 193 in Excavation Block 10 had only one olive oil bottle (Photo 246) within its fill. It was situated near the southeast corner of the narrow stairway and root cellar (Feature 192) to Building 71 described above. Feature 53 in Excavation Block 2 contained no artifacts except for some bricks at its base. Unfortunately, no artifacts were found in this pit as this mortar lined cistern was located near cisterns Features 55 and 56, and may have been the oldest cistern in this area associated with a store at the corner of Howard and N. 23rd (Photos 247-248).

Feature 260 was located near the back stairway to a still standing flat (Photo 249). This cistern was unusual in that it still contained its top, providing some insights into what the other cisterns would have looked like on the surface. Although this feature had a concrete top dating to the 1900s, instead of completely brick, it still featured the access hole where a pump would have stood to access the water in the cistern (Photo 250). Once the opening had been removed, it revealed the beehive shape top identified on the other cisterns in the NGA tract (Photo 251). This cistern appears to have been filled with a relatively clean fill (Photo 252) as only 14 artifacts were recovered. These dated to the 1890s to 1910 suggesting that this cistern had been filled in early.
Photo 242: Feature 227 in Excavation Block 25, Cistern with Clean Fill, Facing East
Photo 243: Feature 216 in Excavation Block 25 Within an Addition to a Flat, Facing Northwest Notice Well, Feature 219, Dark Stain Just Outside Northwest Corner of Addition.

Photo 244: Cinder Dumped to Fill in Cistern, Feature 216, Facing North
Photo 245: Burlap Bag Filled with Cement or Mortar Found in Cistern, Feature 111 in Excavation Block 12, Facing East

Photo 246: Feature 193 in Excavation Block 10 Containing a Clean Fill Except for One Olive Oil Bottle, Facing West
Photo 247: Dark Fill Associated with Cistern Feature 53, Which is Between Cisterns Feature 55 to Left and Feature 56 to Right, Facing Southwest

Photo 248: Very Dark Grayish Brown (10YR3/2) Clay Associated with Feature 53, Facing East Notice Few Bricks at Base of Feature
Photo 249: Location of Cistern Top, Feature 260 in Excavation Block 21, Near Back Stairs of a Flat, Facing Northeast

Photo 250: Closeup of Top of Cistern, Feature 260, Facing North
Photo 251: Beehive Brick Tops Associated with Cisterns, Feature 260 (to Left) and Feature 261 (to Right), Facing Northwest

Photo 252: Fill Associated with Cistern, Feature 260, Facing Northwest
A similar small number of artifacts also was recovered from Feature 26 (N=55) and Feature 35 (N=14). However, these features appear to have been previously excavated, possibly by looters looking for objects to sell (Photo 253). Only the lower 40 cm of Feature 26 was intact and the lower 84 cm of Feature 35 (Photo 254-255). Feature 35 was constructed into the side of Feature 26, suggesting that it was older. The artifacts associated with this feature were among the oldest found in the NGA tract dating to the 1850s-1860s, which is probably what attracted the looters. Only a small number of artifacts were found in Feature 35 none of which could not provide an accurate date but seemed to date between 1850 and 1880. In addition to the looted features, artifacts from Feature 65 could not be cataloged because two bags were taken during the warehouse break in and two of its boxes mixed with other features.

Photo 253: Upper Portions of Features 26 (Top) and Feature 35 (Below) in Excavation Block 7, With Mixed Fill After They had been Exposed by Looters, Facing North

Photo 254: Lower Portions of Feature 26 (on Right) and Feature 35 (on Left) With Intact Remains, Facing East
The other cisterns across the NGA tract produced numerous objects, many of these whole pieces. A total of 25,573 artifacts were recovered from them, or an average of 752 per cistern. By comparison, privy vaults produced an average of 316 artifacts and water closets produced an average of 179. Overall, the artifacts collected from the cisterns dated between the 1850s and 1930s. Most of the cisterns, however, dated between 1900s and 1910s, with a slightly lesser amount dating to the 1920s and 1930s (Figure 66).

It was somewhat surprising how widely used cisterns were across the NGA tract since a water reservoir was constructed immediately east of the tract in 1855 (Primm 1981:159). Since the construction of this water reservoir was prior to the major construction of homes and businesses within the tract, it would seem these buildings would have been hooked up to this nearby water system. However, only five Excavation Blocks 1/14, 3, 9, and 19 had no cisterns. Blocks 1/14 and 19 were primarily associated with St. Leos Catholic Church and the German Zion (Lutheran) Church, and Excavation Block 9 was associated with the Howard School. It is possible that cisterns were not needed for these social institutions, but these buildings would have needed to be cleaned and priests’ garments cleaned as well. It is more likely that cisterns were not built near these buildings because it would ruin the appearance of these places to have a pump next to them or were considered a potential hazard. They likely used cisterns built nearby.

During the late 1800s, it would have been expensive for the city to afford the widespread installation of water pipes and most people could not afford to hook up to this system and install plumbing in their homes. Also at this time, while water pressure was maintained by having it flow from the highest points in the city, such as the nearby water reservoir, it was not passed through a filtration system. As a result,
Mark Twain once described St. Louis’ water as:

‘too thick to drink and too thin to plow.’ Except for the natives, who upon
finding mud in the bottom of a glass would ‘stir it up, and take the draught as
they would gruel’

(cited in Primm 1981:158)

In 1904, a filtration system was developed, and clean water produced in St. Louis, only weeks
before the start of the World’s Fair. As a result, piped water became more widely used after
1904. This is reflected as to when the cisterns were closed and filled with rubbish at the NGA tract, with most dating between 1910 and 1930s.
Wells

Only five wells were identified within the Excavation Blocks, with one discovered in Blocks 2 (Feature 63), 12 (Feature 125), and 24 (Feature 106), and two in Block 25 (Features 219 and 226) (Table 9). The wells were constructed of dry lain limestone slabs (Photos 256-266). They were circular to slightly oval shaped, measuring 140 to 162 cm (4 ½ to 5 1/3 feet) in diameter, with an average diameter of 152.4 cm (5 feet). A trackhoe was used to remove the fill of these deep features. The operator attempted to cut the wells in half, but they were too narrow and deep to leave the walls intact, so the entire well and limestone lining were removed. The fill was spread out over the backdirt pile so that the crew could inspect it and collect artifacts. Wells would quickly fill with water so it was not always clear if the base had been reached. The trackhoe excavated as deep as it could reach and was still uncovering artifacts. Most of the wells were excavated to a depth of 690 or 700 cm (22 ½ or 23 feet). The upper portion of Feature 106 in Block 24 had been previously cut by a demolition trench. This well continued down 320 cm (10 ½ feet) where bedrock was encountered (Photo 262). However, the well was originally dug at least 180 cm (6 feet) into the bedrock (Photos 263). Feature 125 was excavated to depth of only 530 cm (17 ¼ feet), but the trackhoe could not reach deeper due to the way it was oriented (Photos 264-266).

Fewer artifacts were found in the wells than other types of features excavated within the NGA tract. The wells produced between 45 to 329 artifacts, or an average of 121 pieces. Artifacts associated with Features 106, 125, and 219 ranged from 1890 to 1910, and those associated with Features 63 and 226 ranged from 1920s to 1930s. Similar to the cisterns, it appears that wells were no longer used between 1910 and 1930s due to nearby buildings being connected to the city water system.

Every household did not have a well, but one was placed so that it could be accessed by families within this neighborhood block as well as other nearby blocks. Since the entire NGA tract was not excavated, it is unclear as to how wells were distributed across this area. The original excavation of wells on this high portion of St. Louis City would not have been easy. It would have required a person to dig a hole about 4 to 5 feet wide, down 22 to 30 feet. Further, they had to excavate through bedrock in some places. Subsequently, the entire hole was lined with limestone slabs. Water would have been accessed from the well via a bucket or more often by a hand pump. One well in Excavation Block 25, Feature 226, differed from the others in that it was placed at the northwest corner of an addition to a flat (Figure 67, and see Photo 243) and not in the middle of a city block. This well may have been intended to be used by the occupants of that building and other nearby residents.

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>63</td>
<td>oval</td>
<td>140</td>
<td>N-S</td>
<td>123</td>
<td>E-W</td>
<td>700</td>
<td>78</td>
<td>11,859.40</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>106</td>
<td>oval</td>
<td>162</td>
<td>N-S</td>
<td>140</td>
<td>E-W</td>
<td>500</td>
<td>92</td>
<td>9,025.80</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>125</td>
<td>oval</td>
<td>150</td>
<td>N-S</td>
<td>127</td>
<td>E-W</td>
<td>530</td>
<td>329</td>
<td>34,492.00</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>219</td>
<td>circular</td>
<td>150</td>
<td>N-S</td>
<td>140</td>
<td>E-W</td>
<td>690</td>
<td>62</td>
<td>2,209.30</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>226</td>
<td>oval</td>
<td>160</td>
<td>E-W</td>
<td>146</td>
<td>N-S</td>
<td>690</td>
<td>45</td>
<td>12,986.20</td>
<td></td>
</tr>
</tbody>
</table>

Table 9: Summary of Wells
Photo 256: Top of Limestone Lined Well, Feature 63 in Excavation Block 2, Facing North

Photo 257: Excavated Well, Feature 63, with Water at the Base, Facing North
Photo 260: Limestone Well Top, Feature 226 in Excavation Block 25, Facing Southeast

Photo 261: Excavated Well, Feature 226, Facing South
Photo 262: Feature 106 in Excavation Block 24, Well Cut in Half to Top of Bedrock, Facing East

Photo 263: Feature 106, Well Excavated into Bedrock, Facing East
Photo 264: Limestone Slab Top of Well, Feature 125 in Excavation Block 12, Facing East

Photo 265: East Profile of Upper Portion of Feature 125, Facing East

Photo 266: Excavated Well, Feature 125, Facing East
Figure 67: Location of Wells, Features 219 and 226 in Excavation Block 25, on 1909 Sandborn Company Map
Pit Features

A total of 16 pit features were uncovered during the data recovery investigations (Table 10). Although some of these represent privy vaults, it is not clear as to how these pits were used. Just over half of these were found at the base of the clay mines, the only features associated with this activity. Pits varied in shape with 4 rectangular, 2 oblong, 8 oval, and 2 irregular (Photos 266-267). Rectangular pits ranged in size from 120 to 187 cm (4 to 6 feet) long, with an average length of 140.75 cm (4 ½ feet), and width of 84 to 182 cm (2 ¾ to 6 feet), or an average of 116.5 cm (3 ¾ feet) wide.

Feature 24, in Excavation Block 7, when it was first exposed appeared to have been a privy vault because of its rectangular shape and it appeared to be lined with wood on the sides (Photo 267). However, excavations revealed that it had an uneven floor that was not very deep, with a maximum depth of 21 cm (1/2 foot) (Photos 268-269). This pit was unlined and did not have wooden walls. Its fill consisted predominately of cinders and 46 artifacts were recovered that dated from 1862 to 1886. This pit is similar to privy vaults used in rural areas, where the outhouses were often moved and cleared out with shovels, leaving an uneven floor. It is not clear if this pit was used in that way or not.

Photo 267: Feature 24 in Excavation Block 7 Being Exposed (on Right), Facing South
Privy Vault, Feature 23, is to the Left
### Table 10: Summary of Pit Features

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>24</td>
<td>rectangular</td>
<td>187</td>
<td>N-S</td>
<td>182</td>
<td>E-W</td>
<td>straight walls, uneven floor</td>
<td>21</td>
<td>46</td>
<td>1,024.40</td>
<td>filled with broken bottles, mostly beer</td>
</tr>
<tr>
<td>7</td>
<td>31</td>
<td>oval</td>
<td>120</td>
<td>E-W</td>
<td>106</td>
<td>N-S</td>
<td>slightly inslanted walls, convex base</td>
<td>140</td>
<td>3,519</td>
<td>81,530.90</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>3</td>
<td>41</td>
<td>oblong</td>
<td>155</td>
<td>N-S</td>
<td>59</td>
<td>E-W</td>
<td>slightly inslanted walls, flat base</td>
<td>20</td>
<td>11</td>
<td>68.60</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>24</td>
<td>105</td>
<td>oval</td>
<td>113</td>
<td>N-S</td>
<td>110</td>
<td>E-W</td>
<td>straight walls, convex base</td>
<td>55</td>
<td>0</td>
<td></td>
<td>only modern fill</td>
</tr>
<tr>
<td>12</td>
<td>129</td>
<td>oval</td>
<td>85</td>
<td>N-S</td>
<td>68</td>
<td>E-W</td>
<td>basin</td>
<td>16</td>
<td>42</td>
<td>1,430.70</td>
<td>filled with bottle glass, some modern</td>
</tr>
<tr>
<td>13</td>
<td>136</td>
<td>oval</td>
<td>106</td>
<td>E-W, continues west</td>
<td>50</td>
<td>N-S, continues north</td>
<td>straight walls, flat base</td>
<td>30</td>
<td>56</td>
<td>2,084.10</td>
<td>adjacent foundation of livery/undertaker, Building 50, Feature 134</td>
</tr>
<tr>
<td>10</td>
<td>175</td>
<td>oval</td>
<td>99</td>
<td>E-W</td>
<td>62</td>
<td>N-S</td>
<td>inslanted walls, flat base</td>
<td>24</td>
<td>31</td>
<td>373.90</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>10</td>
<td>183</td>
<td>oval</td>
<td>204</td>
<td>N-S</td>
<td>125</td>
<td>E-W</td>
<td>inslanted walls, flat base</td>
<td>170</td>
<td>1,748</td>
<td>26,364.55</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>10</td>
<td>184</td>
<td>oval</td>
<td>225</td>
<td>N-S</td>
<td>144</td>
<td>E-W</td>
<td>inslanted walls, flat base</td>
<td>58</td>
<td>527</td>
<td>9,714.30</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>10</td>
<td>185</td>
<td>rectangular</td>
<td>120</td>
<td>N-S</td>
<td>100</td>
<td>E-W</td>
<td>straight walls, flat floor</td>
<td>14</td>
<td>77</td>
<td>4,519.60</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>10</td>
<td>186</td>
<td>rectangular</td>
<td>136</td>
<td>N-S</td>
<td>84</td>
<td>E-W</td>
<td>inslanted walls, flat base</td>
<td>30</td>
<td>153</td>
<td>2,129.50</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>10</td>
<td>187</td>
<td>rectangular</td>
<td>120</td>
<td>N-S</td>
<td>100</td>
<td>E-W</td>
<td>straight walls, flat floor</td>
<td>15</td>
<td>39</td>
<td>1,924.60</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>14</td>
<td>288</td>
<td>amorphous</td>
<td>190</td>
<td>E-W</td>
<td>120</td>
<td>N-S</td>
<td>amorphous</td>
<td>130</td>
<td>11</td>
<td>772.80</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>18</td>
<td>290</td>
<td>amorphous</td>
<td>210</td>
<td>N-S</td>
<td>90</td>
<td>E-W</td>
<td>slanted walls, convex base</td>
<td>75</td>
<td>21</td>
<td>163.80</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>18</td>
<td>291</td>
<td>oblong</td>
<td>189</td>
<td>N-S</td>
<td>51</td>
<td>E-W</td>
<td>slanted walls, flat base</td>
<td>23</td>
<td>0</td>
<td>0.00</td>
<td>pit base of clay mine</td>
</tr>
<tr>
<td>18</td>
<td>297</td>
<td>oval</td>
<td>76</td>
<td>E-W</td>
<td>56</td>
<td>N-S, continues south</td>
<td>inslanted walls, convex base</td>
<td>97</td>
<td>9</td>
<td>26.90</td>
<td>pit base of clay mine</td>
</tr>
</tbody>
</table>
Rectangular pits, Features 185, 186 and 187, were found at the base of the clay mine in Excavation Block 10 (Photos 270-271). Features 185 (Photos 272-273) and 187 (Photo 274-275), located near each other on the southern end of the Excavation Block were the same size and the nearly the same depths, 14 and 15 cm, (1/2 feet) respectively. Both features contained artifacts dating to the 1880s. Feature 186 contained a large quantity of lime mortar on its north side (Photos 276-277). This feature did have nearly twice as many artifacts as found in Features 185 or 186, but these also dated to the 1880s suggesting that the clay mine, on the eastern edge of Excavation Block 10, was closed at about that time and likely filled in for development. It is not clear if these pits represented privy vaults associated with a short term outhouse used by miners or if they had some other function.

Figure 68: Location of Pits, Features 175, 183, 184, 185, 186, 187, in Excavation Block 10 (Sanborn Company Map 1909)
Photo 270: Rectangular Pits, Features 185 (on Left) and 187 (on Right) Exposed on the Bottom Western Edge of a Clay Mine, Facing South

Photo 271: Rectangular Pit, Feature 186, Being Excavated at Base of Clay Mine, Cistern, Feature 189, Just Behind Excavators and Water Closet, Feature 192, Just to Right, Facing Northeast
Photo 272: Top of Pit, Feature 185 in Excavation Block 10, Facing West
Notice Wood Lining Edges of Feature

Photo 273: Excavated Pit Feature 185, Facing East
Photo 274: Top of Pit, Feature 187 in Excavation Block 10, Facing South

Photo 275: Excavated Pit Feature 187, Facing East
Photo 276: Top of Pit, Feature 186 in Excavation Block 10, Facing West
Notice Large Amount of Mortar on North Side of Feature

Photo 277: West Wall Profile of Pit Feature 186 with Mortar on North Side, Facing West
Two features were oblong, Features 41 and 291. Both of these pits were placed on the base of clay mines as there was no evidence of these pits in the overlying fill. Feature 41 measured 155 cm (5 feet) long and 59 cm (2 feet) wide (Photos 278-279). This pit had a depth of only 20 cm (1/2 feet) and produced only 11 artifacts. However, one of the ironstone sherds had a manufacturing that dated after 1914. There was no evidence of this pit at the same level as the nearby water closet (Feature 40), above the base of the mine. However, the water closet did contain similar artifacts dating to the 1910s-1920s. Later objects could have been moved into this pit by the sewer pipe from the water closet as this pipe was placed on the east side of that featured.

Feature 291 also was found at the base of a clay mine in Excavation Block 18. This feature measured 189 cm (6 ¼ feet) long and 51 cm (1 ½ feet) wide (Photo 2810). It had an irregular shaped base but had a maximum depth of only 23 cm deep (3/4 feet) (Photo 281). The objects found in this pit consisted of small fragments of bricks and limestone. It is unclear as to how this pit was used.

*Photo 278: Oblong Pit on Base of Clay Mine, Feature 41 in Excavation Block 3, Facing East*

*Photo 279: Excavated Pit, Feature 41, Facing East*
Photo 280: Top of Oblong Pit, Feature 291 in Excavation Block 18, Facing South

Photo 281: East Profile of Rectangular Pit, Feature 291, Facing East
Half of the pit features were oval shaped. These measured between 76 and 225 cm (2 ½ and 7 1/3 feet) long, with an average length of 128.5 (4 ¼ feet), and between 50 and 144 cm (1/2 and 4 ¾ feet) wide, with an average width of 90.1 cm (3 feet). They ranged widely in depth from only 16 cm (1/2 feet) for Feature 129 to 170 cm (5 ½ feet) for Feature 183.

The largest pit, Feature 183 in Excavation Block 10, produced a total of 1,748 artifacts. Most of these dated to the 1850s-1870s, but some artifacts in the upper level of the pit dated to the 1890s (Photos 282-284). This pit could be a privy vault that was unlined, but its exact function is unclear.

Feature 184, found just to the northwest of Feature 183 (see Figure 68) and contained artifacts dating between the 1850s and 1870s (Photos 285-287). Several large limestone slabs were found at the top of this feature. It is unclear if this served as a shallow privy vault or if it has some other use.

A pit, Feature 297 in Excavation Block 18, also produced artifacts dating to the 1850s to 1860s. Unlike Features 183 and 184, this pit was on the base of a clay mine. Its shape suggested that this pit once supported a large post (Photo 288), possibly associated lever system used to remove clay from this mine.

Feature 175 also was found at the base of a clay mine in Excavation Block 10 (Photo 289 and see Figure 68). This pit contained mostly coal clinker, as well as pieces of limestone and bricks (Photo 290). A total of 31 artifacts were found within this small pit. These pieces appear to date to the 1850s to 1860s as well.

*Photo 282: Top of Large Oval Pit, Feature 183 in Excavation Block 10, Facing West*
Photo 287: Excavated Pit, Feature 184, Facing West

Photo 288: Excavated Oval Pit at Base of Clay Mine, Feature 297 in Excavation Block 18, Facing South
Photo 289: South Profile of Pit, Feature 175 in Excavation Block 10, Facing South

Photo 290: Excavated Pit Feature 175, Facing West
Feature 136 was found adjacent to a concrete foundation that had been constructed later at Building 50 (Feature 134 in Excavation Block 13). This building was used as a livery stable and at one time for undertaking. The pit was partially under the foundation to the north and extended under the concrete sidewalk along Jefferson Avenue to the west (Photos 291-292). Only 56 artifacts were associated with this shallow pit dating to the 1880s and 1890s.

Photo 291: Top of Pit, Feature 136 in Excavation Block 13, with a Late 19th Century Soda Bottle, Facing North

Photo 292: North Profile of Pit, Feature 136, Under Building 50 Concrete Foundation, Facing North
The upper portions of Features 105 and 129 had been cut by demolition trenches. Feature 105, in Excavation Block 24, only contained some broken limestone pieces. No artifacts were found within the small portion of this pit that was left intact (Photos 293-294). Feature 129 contained artifacts dating to the 1950s (Photos 295-296). Among these was a large number of Heineken beer bottles. Heineken, made in the Netherlands, was first introduced into the American market after Prohibition ended in 1933. By the 1950s, it was widely popular (Heineken International 2010). This pit was likely dug out by looters, but it is unclear if this took place prior to the excavation of the demolition trench or when it was dug.

Photo 293: Top of Pit, Feature 105 in Excavation Block 24, Below Demolition Trench, Facing East

Photo 294: East Profile of Pit Feature 105, Facing East
Notice Large Pieces of Limestone in Fill
Photo 295: Top of Pit, Feature 129 in Excavation Block 12, Facing North

Photo 296: East Profile of Pit Feature 129, Facing East

Heineken Bottle
Feature 31 was identified behind the moving picture building, which also has a meeting hall and saloon in Excavation Block 7. This pit was filled with broken bottles (Photos 297-300). Many of these were beer bottles, representing a minimum of 3,070 bottles of various types of beer.

Photo 297: Top of Pit, Feature 31 in Excavation Block 78, Mostly Filled with Broken Beer Bottles, Facing South

Photo 298: South Profile of Pit Feature 31, Filled with Broken Beer Bottles, Facing South
Photo 299: Sample of Broken Beer Bottles Collected from Feature 31, Facing South

Photo 300: Excavated Pit Feature 31, Facing West
Two pits, Features 288 and 290, had an irregular shape. Feature 288 was discovered in Block 14, beneath the middens (Features 285 & 233H) dumped to fill the area north of St. Leo Catholic Church, and was placed at the base of the clay mine. The top of this pit had a maximum length of 190 cm and maximum width of 120 cm (Figure 69). Its base also was irregular shape and had a depth of 130 cm. This pit was filled with a very dark grayish brown (10YR3/2) clay (Photo 301). The clay did have good preservation and there was a piece of a board found on its west side. In a cluster at the base of the feature was a pile of coal clinker. A few artifacts (N=11) were discovered within this pit. These dated to the 1880s to 1900, suggesting that these had been dumped at this location when the church was being built. The purpose of the pit is unclear.

*Figure 69: Feature 288 in Excavation Block 14*
Feature 290, likewise, was found on the bottom of a clay mine in Excavation Block 18. The top of this feature appeared to be rectangular shape (Photo 302), but upon excavations it was found to be more irregularly shaped (Photo 303). This pit had a maximum length of 210 cm (7 feet) and a maximum width of 90 cm (3 feet). The irregular base had a maximum depth of 75 cm (2 ½ feet). Only 21 artifacts were cataloged, but two bags of artifacts were taken during the warehouse break in. The cataloged artifacts consisted of artifacts dating to the 1850s to 1870s. The function of this pit is unclear, but it may have been a hole where clay was being removed to be made into bricks.
Photo 302: 
Top of Pit Feature 290 
in Excavation Block 18, 
Facing North

Photo 303: Excavated Irregular Shape of Pit Feature 290, Facing South
**Ash Pits**

During the data recovery investigations six ash pits were identified (Table 11). Features 1 and 2 were defined as two separate features, but later inspection of the 1895 Whipple map showed that they were part of a single ash pit (Figure 70). They both were made two courses bricks thick, with Feature 1 (Photo 304) being 35 cm high and Feature 2 (Photo 305) 21 cm high, but their tops had been knocked off when these pits were no longer being utilized. The ash pit was at least 240 cm wide north-south and its floor was unlined (Photo 306). No fill remained in this feature; only a sterile soil that had been lain across this portion of the block when buildings were razed after 1970.

![Figure 70: Whipple 1895 Map Showing an Ash Pit at Features 1 and 2 in Excavation Block 23](image-url)
Table 11: Summary of Ash Pits

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Wall Construction</th>
<th>Profile Shape</th>
<th>Depth (cm)</th>
<th>Number of Artifacts</th>
<th>Weight (in grams)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>1</td>
<td>linear</td>
<td>89</td>
<td>E-W</td>
<td>21</td>
<td>N-S</td>
<td>brick wall</td>
<td>2 courses thick</td>
<td>35</td>
<td>0</td>
<td>227.70</td>
<td>south wall of ash pit</td>
</tr>
<tr>
<td>23</td>
<td>2</td>
<td>linear</td>
<td>N.A.</td>
<td>N.A.</td>
<td>39</td>
<td>N-S</td>
<td>brick wall</td>
<td>2 courses thick</td>
<td>21</td>
<td>0</td>
<td>21</td>
<td>north wall of ash pit</td>
</tr>
<tr>
<td>23</td>
<td>15</td>
<td>rectangular</td>
<td>200</td>
<td>N-S</td>
<td>190</td>
<td>E-W</td>
<td>mortar or soft cement</td>
<td>shallow straight walls, dirt flat floor</td>
<td>32</td>
<td>11</td>
<td>3,726.60</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>47</td>
<td>rectangular</td>
<td>320</td>
<td>N-S</td>
<td>220</td>
<td>E-W</td>
<td>brick walls, unlined base</td>
<td>straight wall, flat base</td>
<td>60</td>
<td>253</td>
<td>3,726.60</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>149</td>
<td>rectangular</td>
<td>250</td>
<td>N-S</td>
<td>150</td>
<td>E-W</td>
<td>brick walls, unlined base</td>
<td>straight walls, flat base</td>
<td>23</td>
<td>170</td>
<td>4,211.15</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>188</td>
<td>rectangular</td>
<td>235</td>
<td>E-W</td>
<td>180</td>
<td>N-S</td>
<td>concrete walls, unlined base</td>
<td>straight walls, flat base</td>
<td>56</td>
<td>218</td>
<td>2,275.60</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>191</td>
<td>rectangular</td>
<td>170</td>
<td>E-W</td>
<td>147</td>
<td>N-S</td>
<td>concrete walls, brick base</td>
<td>straight walls, flat base</td>
<td>27</td>
<td>40</td>
<td>391.70</td>
<td></td>
</tr>
</tbody>
</table>
Photo 304: Feature 1, Excavation Block 23, South Wall of Ash Pit

Photo 305: Feature 2, Excavation Block 23, North Wall of Ash Pit
Two other ash pits also were lined with brick with unlined floors. These include Feature 47, which measured 320 cm long (10 ½ feet) and 220 cm (4 ¼ feet) wide. This pit was deeper than the other ash pits measuring 60 cm (2 feet) deep (Photos 307-308). Its fill contained artifacts dating between 1878 and 1905. The pit was placed adjacent to the water closet, Feature 46, which contained artifacts that dated later to the 1920s-1930s. Despite the late date, when the water closet stopped being utilized, it is likely that both these features were constructed at the same time and the ash pit stopped being used earlier than the water closet.

The other brick lined ash pit, Feature 149, measured 250 cm by 150 cm (8 ¼ by 5 feet) (Photo 309). It only was 23 cm (3/4 feet) deep (Photo 310). This ash pit contained later artifacts dating to the 1930s and 1940s.

Ash pit, Feature 15, was lined with a mortar or a soft cement. It measured 200 meters (6 ½ feet) north-south by 190 cm (6 ¼ feet) east west (Photo 311). This pit was 32 cm (1 foot) deep (Photo 312). Artifacts within this fill were earlier, dating to the 1860s to 1880s.

Feature 188 had concrete lined walls and a dirt floor. This rectangular pit measured 215 cm (7 feet) long and 180 cm (6 feet) wide. It had a fill 56 cm (2 feet) deep, with artifacts dating to the 1940s. This ash pit was placed in the southwest corner over the remains of a domestic dwelling, Building 70 (Feature 174) which was torn down in the 1930s (Figure 71, Photos 313-314).

Ash pit, Feature 191, measured 170 cm (5 ½ feet) east-west by 147 cm (5 feet) north-south. Its fill was 27 cm (1 foot) deep and contained artifacts dating to the 1930s (Photos 315-316). The walls of this pit appeared to have been mostly concrete, but the north wall was made of brick. The northern portion of the pit also suggested that it had a brick floor that was at least 2 courses thick. It is possible that the brick was a base of a chimney. Ash pits often were used for bar-b-ques as well to burn rubbish.
Photo 307: East Profile of Ash Pit, Feature 47 in Excavation Block 3, on Left, and Water Closet, Feature 46, on Right, Facing East

Photo 308: Excavated Ash Pit, Feature 47, and Water Closet, Feature 46, Behind to Right, Facing Southeast
Photo 309: Top of Brick Lined Ash Pit, Feature 149 in Excavation Block 19, Facing Northwest

Photo 310: Excavated Ash Pit, Feature 149, Facing North
Photo 311: Top of Mortar or Concrete Lined Ash Pit, Feature 15 in Excavation Block 23, Facing West

Photo 312: West Profile of Ash Pit, Feature 15, With a Brown Fill and an Earthen Floor, Facing West
   Note Fill Below the Pit was Used to Fill in a Clay Mine.
Photo 313: Ash Pit, Feature 188, Over the Remains of Building 70, Feature 174, in Excavation Block 10, Facing South

Photo 314: South Profile of Concrete Lined Ash Pit, Feature 188, Facing South
Figure 71: Remains of Ash Pits, Features 188 and 191, in Excavation Block 10
(Sandborn Map Company 1909)
Photo 315: Concrete Walled Ash Pit, Feature 191 in Excavation Block 10, With Bricks Along North Wall, Facing North

Photo 316: Brick Base on North End of Concrete Walled Ash Pit, Feature 191, Facing North
Ash pits were used throughout St. Louis during the late 1800s in to the early 1900s as a place to discard coal clinker and wood ash from cooking stoves and fire places in homes (Figure 72). By 1940, with regular trash collection, and a movement toward electric and gas burning stoves, ash pits still remained popular as a place to burn tree branches, leaves, and other yard waste (Figure 73). Some of these also served as bar-b-que pits. Some ash pits continue to exist in the city as planters (Figure 74), but most ash pits, like those in the NGA tract, have been demolished.

Figure 72: Girl Standing Near Outhouse with an Ash Pit to Left (Housing and Sanitation Committee Civic League 1910)  
Figure 73: St. Louis Brick Ash Pit (Allen 2011)
Middens

Other than the middens (Features 233 A-H, 285, 301-305) and ceramic concentrations (237 & 286) associated with St. Leo Catholic Church, three other middens were identified within the Excavation Blocks (Table 12). A midden is not located within a pit feature but represents a layer of rubbish. One of these, Feature 81, was identified in Excavation Block 8, near the base of the clay pit and below a yellowish brown sterile silty clay used to fill in the rest of the clay mine (Photos 317, Figures 75 & 76). This midden was uncovered across an area of 680 cm (22 1/3 feet) east-west and extended 100 cm (3 ¼ feet) north of the limestone foundations of Feature 80 (Building 31) and Feature 82 (Building 32) (Figure 77). The midden had a maximum depth of 30-33 cm (1 foot). Materials were collected from this midden as it was removed. The artifacts consisted of habitational debris, including: whiteware and ironstone dinner settings, stoneware and redware food storage vessels, yellowware vessels, soda bottles, a medicine bottle, a shoe heel, a tobacco pipe stem, a redware flower pot, and animal bones. These artifacts dated between the 1850s and 1870s. It is possible that the abandoned clay pit was used for a short time to dump rubbish, before the pit was filled in for homes.
Table 12: Summary of Historic Middens and Ceramic Concentrations

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Planview Shape</th>
<th>Length (cm)</th>
<th>Orientation</th>
<th>Width (cm)</th>
<th>Orientation</th>
<th>Depth (cm)</th>
<th>Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>81</td>
<td>Roughly rectangular</td>
<td>680</td>
<td>E-W</td>
<td>100</td>
<td>N-S</td>
<td>26</td>
<td>142</td>
<td>2,499.90</td>
<td>Midden base of clay mine</td>
</tr>
<tr>
<td>9</td>
<td>155</td>
<td>Roughly rectangular</td>
<td>388</td>
<td>E-W</td>
<td>210</td>
<td>N-S</td>
<td>78</td>
<td>80</td>
<td>4,073.30</td>
<td>Howard School midden</td>
</tr>
<tr>
<td>1</td>
<td>233A-G</td>
<td>Unknown</td>
<td>5000</td>
<td>E-W</td>
<td>3500</td>
<td>N-S</td>
<td>200</td>
<td>4,161</td>
<td>314,626.70</td>
<td>St. Leo Church midden</td>
</tr>
<tr>
<td>14</td>
<td>233H</td>
<td>Unknown</td>
<td>2500</td>
<td>E-W</td>
<td>2000</td>
<td>N-S</td>
<td>264</td>
<td>361</td>
<td>41,594.70</td>
<td>St. Leo Church midden</td>
</tr>
<tr>
<td>21</td>
<td>262</td>
<td>Rectangular</td>
<td>2000</td>
<td>N-S</td>
<td>750</td>
<td>E-W</td>
<td>68</td>
<td>17</td>
<td>2,957.10</td>
<td>Brick midden, remains of F266, Building 91</td>
</tr>
<tr>
<td>21</td>
<td>264</td>
<td>Rectangular</td>
<td>700</td>
<td>N-S</td>
<td>500</td>
<td>E-W</td>
<td>96</td>
<td>162</td>
<td>19,259.30</td>
<td>Brick midden, remains of F266, Building 91</td>
</tr>
<tr>
<td>14</td>
<td>285</td>
<td>Unknown</td>
<td>2500</td>
<td>E-W</td>
<td>2000</td>
<td>N-S</td>
<td>264</td>
<td>186</td>
<td>21,342.10</td>
<td>St. Leo Church midden</td>
</tr>
<tr>
<td>1</td>
<td>301</td>
<td>Rectangular</td>
<td>400</td>
<td>E-W</td>
<td>140</td>
<td>N-S</td>
<td>N.A.</td>
<td>1</td>
<td>296.30</td>
<td>Midden between foundations, Features 236, 244, 245, &amp; 246, St. Leo Church (Building 90)</td>
</tr>
<tr>
<td>1</td>
<td>302</td>
<td>Rectangular</td>
<td>290</td>
<td>E-W</td>
<td>140</td>
<td>N-S</td>
<td>N.A.</td>
<td>0</td>
<td>0.00</td>
<td>Midden between foundations, Features 236, 244, 246, &amp; 247, St. Leo Church (Building 90)</td>
</tr>
<tr>
<td>1</td>
<td>303</td>
<td>Rectangular</td>
<td>290</td>
<td>E-W</td>
<td>140</td>
<td>N-S</td>
<td>N.A.</td>
<td>7</td>
<td>1,461.90</td>
<td>Midden between foundations, Features 236, 244, 247, &amp; 248, St. Leo Church (Building 90)</td>
</tr>
<tr>
<td>1</td>
<td>304</td>
<td>Rectangular</td>
<td>800</td>
<td>E-W</td>
<td>130</td>
<td>N-S</td>
<td>N.A.</td>
<td>26</td>
<td>2,815.30</td>
<td>Midden between foundations, Features 249, 250, 251, &amp; 257, St. Leo Church (Building 90)</td>
</tr>
<tr>
<td>1</td>
<td>305</td>
<td>Rectangular</td>
<td>1620</td>
<td>E-W</td>
<td>150</td>
<td>N-S</td>
<td>N.A.</td>
<td>0</td>
<td>0.00</td>
<td>Midden between foundations, Features 252 &amp; 253, St. Leo Church (Building 90)</td>
</tr>
<tr>
<td>1</td>
<td>237</td>
<td>Oval</td>
<td>433</td>
<td>N-E</td>
<td>285</td>
<td>E-W</td>
<td>10</td>
<td>551</td>
<td>11,464.50</td>
<td>Ceramic concentration</td>
</tr>
<tr>
<td>14</td>
<td>286</td>
<td>Amorphous</td>
<td>400</td>
<td>N-S</td>
<td>270</td>
<td>E-W</td>
<td>19</td>
<td>286</td>
<td>1,692.00</td>
<td>Ceramic concentration</td>
</tr>
</tbody>
</table>
Figure 75: South Profile of Midden Feature 81 and Overlying Fill in Excavation Block 10

[Diagram of stratigraphy with layers labeled: Clean Fill, Fea 82, Limestone Foundation, Fill, Clean Fill, Fea 81, Intermittent Stratum, Fea 81, Stratum 1, Fea 81, Stratum 2. Key to colors: Fill, 10YR 4/3 Silty Clay, Clean Fill, 10YR 4/6 Silty Clay, Clean Fill, 10YR 5/6 Silty Clay, Fea 81, Stratum 1, 10YR 3/2 Silty Loam, Fea 81, Intermittent Stratum, 10YR 4/3 Silty Loam, Fea 81, Stratum 2, 10YR 4/2 Silty Loam, Sewer Trench, 7.5YR 4/6 Silty Loam.]

293
Figure 76: West Profile of Midden Feature 81 and Overlying Fill

Key:
- Clean Fill, 10YR 4/6 Silty Clay
- Fea 81, Stratum 1, 10YR 3/2 Silty Loam
- Fea 81, Stratum 2, 10YR 4/2 Silty Loam
Figure 77: Location of Midden, Feature 81 within Excavation Block 8

Midden at Base of Clay Pit
Another midden, Feature 155 in Excavation Block 9, was exposed behind the remains of Howard School, near the alley. It was discovered approximately 100 cm (3 ¼ feet) below the modern grade but it was uncertain if the midden was associated with the school, a nearby pie company, or with flats. This midden measured 388 cm (12 ¾ feet) east-west and extended 210 cm (7 feet) from the alley to the south (Photo 318, Figure 78). Artifacts were collected off its surface and a 2 by 1 meter (6 ½ by 3 ¼ feet) test unit was excavated into the midden to obtain a better sample of artifacts (Photo 319). The data captured from this unit suggested the midden was 78 cm (2 ½ feet) thick, but it was thickest near the alley and thinned to the south (Photo 320). The remaining portion of the midden was removed with the trackhoe and the backdirt monitored for artifacts. A total of 80 artifacts were recovered, consisting mostly of domestic debris (e.g., dinner settings, condiment bottles, and animal bones) that could be associated with the school cafeteria or social events. A liquor flask and a tobacco pipe stem also were uncovered that could hint at some illicit activities conducted on the school property. The artifacts date to the 1880s or 1890s, and could represent artifacts associated with the workers associated with building the school or the early use of the school.

Photo 318: Top of Midden, Feature 155 in Excavation Block 9,
Dark Stain in Center of Picture Near Alley Behind Howard
School, Facing East
Figure 78: Location of Midden, Feature 155
Behind Howard Public School as Depicted on 1909 Sandborn
Photo 319: East Profile of Midden, Feature 155, (Black Lens) in Test Unit, Facing East

Photo 320: Feature 155, Midden Thinning Toward South Away from Alley, Facing West
In Excavation Block 21, two middens were identified: Feature 262, which was 68 cm (2 ¼ feet) deep, and Feature 264, which was 96 cm (3 feet) deep (Figure 79). Although these were originally identified as two separate locations, it later was apparent that they were part of the same midden composed predominately of bricks (Photos 321-322). Artifacts associated with the bricks dated between the 1910s and 1930s. A greater concentration of artifacts was found near an old tree located near the southeastern edge of Feature 264, next to the alley. This place contained 137 artifacts, with only 24 artifacts found across the rest of the midden associated with Feature 264 and 17 artifacts associated with Feature 262. The bricks likely were associated with a brick flat, just north of the middens, Building 91, Feature 266 (Figure 79), and the artifacts suggest that this building was razed in the 1930s. It should be noted that no remains associated with the wood frame domestic dwelling that once existed just southwest of the brick flat, Building 91 was found during the excavations (Photo 322-323).
Photo 321: Brick Midden, Feature 262 in Excavation Block 21, Facing West

Photo 322: Excavating Brick Midden, Feature 264, in Southeast Portion of Excavation Block 21, Facing Northeast

Note No Evidence of the Frame Domestic Dwelling in the Center of this Area and Bricks from Feature 262 Starting to be Exposed on Lower Left
Unknown Features

The purpose of two features could not be determined. Feature 19, in Excavation Block 23, appeared to have been rectangular shaped, but its western half had been removed possibly when buildings were razed in this area (Photo 324). The pit was 140 cm (4 ½ feet) long and its two corners were formed by limestone slabs. The walls between the corners were constructed of brick. Its remaining fill, which was 14 cm (1/2 feet) deep, was removed by hand, but it contained only debris from buildings razed in this area. This may have been part of an ash pit, but it was unclear.

Feature 67 in Block 8 was roughly square, measuring 136 by 102 cm (4 ½ by 3 1/3 feet), and having concrete walls. Excavations were attempted but modern debris including charcoal briquets were recovered inside this pit. Excavations were stopped at about 20 cm (1/2 feet) when modern syringe bags were uncovered (Photo 325-326). For the safety of the crew, the rest of the pit was cut by the trackhoe revealing that the pit was 114 cm (3 ¾ feet) deep and had a concrete floor. Only modern materials were found in this pit. It is unclear if this was an ash pit or had some other purpose.
Photo 324: Remaining Eastern Wall of Feature 19 in Excavation Block 23, Facing Northeast

Photo 325: Feature 67 in Excavation Block 18 After Hand Excavations were Halted, Facing South
Photo 326: Syringe Bag Found During Excavation of Feature 67, Facing North
ARTIFACT ANALYSIS

Analysis of the artifacts recovered during the data recovery investigations provided further insights into the various research questions.

Prehistoric Artifacts

A search for any evidence of prehistoric remains was conducted during the data recovery investigations. Besides the removal of soils to culturally sterile subsoils, at least one deep trench was excavated within all the Excavation Blocks to be certain that there were no buried remains. Also, all the soils used to fill in clay pits were removed to look for any prehistoric remains. No prehistoric features were uncovered in any of the Excavation Blocks.

Only one (3.3g) possible prehistoric artifact was found, a utilized flake (Photo 327). This flake came from Stratum 1 of Level 3, 40-60 cm (1 1/3 – 2 feet) deep, inside a water closet, Feature 54 in Excavation Block 2. It was made of Mounds Gravel (also known as Lafayette or Grover Gravel). This pebble to cobble size stone was deposited in the area along with coarse sand, silt, and clay likely during the late Tertiary System. The gravel often has a polished, rounded surface, with a pale brown to yellow color. The interior, composed of chert or quartzite, can vary in color from white to reddish brown. These stones were readily available in the local creek beds or on the steeper ridge slopes across the St. Louis area. Although Mounds Gravel can be knapped, it is more difficult to work than Burlington and other upper Mississippian cherts, and was mostly used as hammerstones in making stone tools or manos for grinding nuts or grains (Thompson 1995:140-141; Ray 2007:311-316). The flake’s edges have a series of flake scars of different shapes on both sides, suggesting that it was used as a cutting tool. The flake also was polished indicating that it was collected from a stream. This piece could have been inadvertently carried to this site along with construction materials (e.g., sand) or collected by a nearby resident as a curiosity before being deposited into the water closet.

Photo 327: Utilized Flake from Water Closet, Feature 54 in Excavation Block 2
Artifacts from Clay Mine Pits and Midden, 1850-1880

As the archival review suggested, this area had been extensively mined for clay and limestone from 1850 until about 1880. Originally, these materials were used to construct the water reservoir, just east of the NGA tract, that was completed in 1855. Later in time, the clays were used to make bricks and the limestone to construct foundations and buildings across St. Louis. The Excavation Blocks revealed that mining activities were even more extensive than suggested by the 1875 Compton and Dry map, with evidence of pits present in 11 of the 16 Excavation Blocks (see Table 1, page 47). Only Excavation Blocks 7, 12, 13, 24, and 25 displayed no evidence of clay mining.

Earliest features identified at the NGA tract included 7 pits at the base of clay mines (Features 175, 185, 186, and 187 in Excavation Block 10; Features 290, 291, and 297 in Excavation Block 18), and a thin midden (Feature 81) at the base of a clay pit in Excavation Block 8 (Appendix A). However, while Feature 185 does have artifacts similar to the other pits at the bottom of the clay mine, it also produced some artifacts dating between 1900 and 1930. The clay mine had clearly been filled in prior to this time. This could suggest that artifacts in one of its bags may have been mixed during the break in at the warehouse. Anomalies from this pit will be described but not included in the artifact count. A total of 393 (8,638.8g) artifacts were associated with the other pits and the midden.

Dining Artifacts

The most common artifacts found in these pits were associated with dining activities. A total of 314 (3,666.6g) objects were associated this activity; and as outlined in the Methodology section, these represented a minimum of 31 pieces. The earliest pieces were found in the midden (Feature 81) and one vessel from a pit, Feature 297. These consisted of fragments of whiteware dinner settings, representing a minimum of 8 vessels: 3 plates, 1 cup, and the rest unidentifiable. In the 1820s, British ceramic manufacturers were able to produce a whitish colored dinner setting by adding white cobalt to the paste and reducing the blue cobalt in the glaze (Lewis 1969). The whiter color closely resembled expensive porcelains and quickly replaced both creamwares and pearlwares by 1830. Whitewares continued to be popular until the 1850s in the U.S.

A plate rim sherd and an unknown vessel fragment from Feature 297 were undecorated (Photo 328:A). Three other pieces were painted, two sherds from at least one vessel had a molded shell edge design (Photo 328:B). Shell edge designs were first introduced on pearlwares by 1780 and were the most popular decoration during the first half of the 19th century. The molded shell edge design was usually painted blue or green until about 1830, when they only were painted blue. By the 1840s, the popularity of this design began to wane and manufacturers started cutting their costs in producing these pieces by not painting each individual molded edge, but painting a band of blue across the back portion of the mold or not painting these pieces at all. By 1860 the design was no longer being used but it was reintroduced after 1880 (Majewski 1987; Miller 1980, 1991; Hume 1969; Hughes 1961). The sherds recovered from the midden, Feature 81, only had a band painted along the top of the shell edge suggesting that they dated after 1840 (Photo 328:B).

305
The other two painted sherds included a cup with a black band painted near its edge on the interior and exterior surface (Photo 328:C). A body sherd from an indeterminate vessel had a painted sprig decoration. This was popular throughout the early to mid-1800s. Red, blue, green, or black twigs were used until the 1830s, but after that time only a black twig was produced, which was made thicker over time. This pattern was discontinued about 1860. It was reintroduced after 1880, although most pieces were produced as a transfer print or a decal and were no longer hand painted (Majewski 1987; Miller 1991). The piece recovered does appear to have a thin black twig (Photo 328:D).
Two other whiteware sherds were decorated with a transfer print. This process was first patented in 1751 (Williams-Wood 1981:53), but the early prints were placed over the glaze and tended to rub off over time. An underglaze print was developed around 1760 but it was not used on pearlwares produced in Staffordshire, England until after 1781. This decoration only became widely popular after the introduction of a stipple method of decorating transfer prints about 1807 (Miller 1991:9). This decoration consisted of inscribing a design on a copper plate and then pressing the plate, colored with a cobalt blue pigment, onto a piece of paper. The paper was then carefully transferred onto the ceramics; this highly skilled job was generally performed by women (Stelle 2001). The use of a transfer print greatly reduced the cost of decorating pieces as well as resulted in standard patterns, allowing homemakers to have matching dinner sets and to be able to replace broken pieces. It also allowed vessels to be completely decorated with intricate designs depicting flora, Chinois, landscape, romantic, classical, or other themes, which typically covered the entire surface of the vessel (Figure 80). Between 1820 and 1830, other colors started to be utilized besides the cobalt blue (light blue, green, red, purple, brown, and black), although it was only after 1860 that polychrome transfer prints could be applied (Lewis 1969). Highly ornate prints dropped in price during the 1840s-1850s in favor of plain white vessels (Miller 1980). However, by 1880, floral prints resurged in use, but the decorations did not cover as much of the vessel as earlier prints and the decorations were more stylized and typically of floral designs. Unfortunately, the whiteware sherds were too small to determine the type of print, but one had a cobalt blue color and the other was brown.

The base of another plate from the midden had a portion of a manufacturing mark with “T.J.&J.” This was likely associated with the Thomas, John, and Joseph Mayer who had pottery works in Longport and Burslem, Staffordshire, England. This company operated between 1842 and 1855 further suggesting the midden could date to the 1850s (Kowalsky and Kowalsky 1999:274). However, it should be cautioned that dinner settings could be used long after they were produced.

Figure 80: Typical Transfer Print Decorated Plate
More common was a semi-vitreous dinnerware made of ironstone. These represented a minimum of 18 vessels, consisting of 3 plates, 2 serving bowls, 1 soup bowl, 1 sugar bowl, 2 saucers, 8 cups, and 1 indeterminate vessel. Ironstones were first patented in 1800 by William Turner at his Lane End potteries in Longton, Staffordshire, England. These pieces were harder than the nonvitreous wares produced earlier, such as creamware, pearlware, and whiteware, and could be fired to higher temperatures making it similar to the expensive Chinese porcelains. These pieces were cheaper to manufacture and could be mass produced. Turner perfected this process by mixing a whitish colored clay with powdered slag. Others experimented with his formula and in 1813, Charles James Mason, received a patent for a new ironstone by adding feldspar (Hillier 1965:22; Miller 1991). In 1827, his patent ended and a number of other potters experimented with this ware, which was given many different names. Chief among these were:

<table>
<thead>
<tr>
<th>Name</th>
<th>Synonym</th>
</tr>
</thead>
<tbody>
<tr>
<td>china stone</td>
<td>ironstone china</td>
</tr>
<tr>
<td>semi-porcelain</td>
<td>stone china</td>
</tr>
<tr>
<td>demi-porcelain</td>
<td>porcelain de terre</td>
</tr>
<tr>
<td></td>
<td>opaque porcelain</td>
</tr>
<tr>
<td></td>
<td>opaque porcelain</td>
</tr>
</tbody>
</table>

It was most commonly known as ironstone (Majewski 1987:46).

Early ironstones tended to be thick and heavy. They were decorated in similar ways to the nonvitreous whitewares, popular at the time, with broad transfer prints and hand painted designs. Being semi-vitreous, ironstone vessels were more durable, but their thickness did not make them widely popular with consumers for table settings. During the 1850s, people’s taste in dinner settings changed due to the growing influence of Victorian society. In part due to these beliefs, it was thought that eating tainted foods could not only affect a person’s health and mental well-being, but ultimately their morality. As a result, undecorated or broadly molded ironstone vessels were popular, reflecting the purity of the foods served. Ornately decorated dinner settings, used during the first half of the 19th century, became less common because the decorations could hide tainted foods (Miller 1980, 1991; Praetzellis and Praetzellis 1992; Snyder 1995:11, 36; Wetherbee 1996:8-9).

The majority of the ironstone vessels were undecorated (Figure 81, Photo 329). A plate from a pit, Feature 290 in Excavation Block 18, had a molded shell edge, but it was left unpainted (Photo 330:A). As suggested above, unpainted shell edge was produced during the 1850s-1860s. Another two vessels had a molded panel shape (Photo 330:B-C). Prior to 1880, broad molded shapes were common on ironstone vessels (Wetherbee 1996). A sugar bowl from a pit, Feature 185 in Excavation Block 10, had the molded face of Queen Elizabeth I on it (Photo 330:D).
Figure 81: Percentage of Various Ironstone Decorations of Pit Features and Midden at Base of Clay Mine

- None: 11 (61%)
- Molded: 4 (22%)
- Painted: 2 (11%)
- Transfer Print: 1 (6%)
Photo 329: Plain Vessels from Features 185, 186, and 187
in Excavation Block 10

A. 186:01
Ironstone Plate

B. 185:02
Ironstone Saucer

C. 187:01
Ironstone Serving Bowl
Photo 330: Molded Ironstone Vessels from Features at Base of Clay Mine

A. 290:01
Ironstone Plate
Shell Edge

B. 81:11
Ironstone Cup
Molded

C. 81:08
Ironstone Soup Bowl
Molded

D. 185:01
Ironstone Sugar Bowl
Molded
Two ironstone vessels were painted. These included a cup from Feature 290 in Excavation Block 18 with a black band near the interior and exterior edge. Another cup fragment from a pit, Feature 285 in Excavation Block 10, had a painted red band on its interior and a sprig decoration with a black twig on its exterior surface (Photo 331). As indicated above these were popular on vessels from at least the 1830s to 1860.

*Photo 331: Cup with Painted Sprig Design from Feature 175 in Excavation Block 10*

A cup from Feature 185 in Excavation Block 10 had a blue floral transfer print. This piece was very small and the overall decoration could not be determined.

Three of the vessels had manufacturer’s marks. These include the ironstone sugar bowl with the molded face of Queen Elizabeth I. This piece was produced by Powell and Bishop at their Hanley potteries in Staffordshire, England (Photo 332:A). They were in operation between 1866 and 1878 (Kowalsky and Kowalsky 1999:310). A complete serving vessel (see Photo 329:C) found in a pit, Feature 187 in Excavation Block 10, had a manufacturer mark of the Meakin Brothers and Company from Cobridge, Staffordshire, England (Photo 332:C). This company was in existence between 1865 and 1882 (Kowalsky and Kowalsky 1999:275). A nearly complete saucer (see Photo 329:B), found in Feature 185, appears to be later than the artifacts found in other pit features at the base of the clay mine. It contained an Alfred Meakin mark (Photo 332:B). This company was in Tunstall, Staffordshire, England, between 1875-1913. However, the mark was used between 1891 until sometime after 1897. It also was marked “England”. In 1890, the McKinley Tariff Act was passed, which required the country of origin be marked on all foreign ceramics beginning in 1891. This could suggest that this clay mine was open as late as 1890s. There is a very deep hole depicted on the 1875 Compton and Dry map just east of this location and this portion of the pit could have been filled in later than others.
Two vessels were made of porcelain. These include a saucer from Feature 185 (Photo 333:A) and a cup (Photo 333:B) from another pit, Feature 186. Both were undecorated. Even though porcelain vessels would have been more expensive and a drain on a working class family’s limited expendable income, it was often viewed as being crucial to have a porcelain tea set to properly entertain guests. The undecorated porcelain vessels would have been less expensive than decorated pieces.
One glass bowl was found in Feature 186 of Excavation Block 10 (Photo 334). This piece had a molded geometric design. Although glass vessels with etched decorations have been around since at least Roman times, in the 1850s manufacturers developed a technique to press decorations onto glass making these pieces more affordable. During the late 1800s, glass serving vessels became more common on the dinner table (McKearin and McKearin 1948). Similar to pure white dinner settings, see-through glass vessels also reflected the wholesomeness of the foods.

In addition to the dinner settings, a total of 249 (1,514.3g) animal bones were recovered from the pits and the midden at the base of the clay mine. Also, one peach pit was discovered in the midden.
Kitchen Artifacts

A total of 22 (1,609.2g) artifacts were associated with kitchen activities. These represented a minimum of 15 vessels. Among these vessels were two small body sherds from redware storage jars (Photo 335:A). These were found in pit Feature 297 in Excavation Block 18 and the midden, Feature 81 in Excavation Block 8. In pit Feature 175 in Excavation Block 10, a rim sherd from a stoneware crockery vessel was uncovered (Photo 335:B).

Nonvitreous redwares were used for dinner settings and storage vessels by the earliest American settlers. However, with the influx of creamwares and then pearlwares into the American market during the late 1700s, redwares were relegated to the kitchen as storage and food preparation vessels. However, by the mid-1800s they were replaced by harder semi-vitreous stonewares. Stoneware were first produced in Germany during the Middle Ages and by the mid-1500s these vessels were exported throughout Europe and later to the U.S. Stonewares were viewed as a safe alternative to tin glazed dinnerwares, but stonewares tended to have a thick and heavy appearance that did not make them widely popular at the dinner table. The knowledge of their manufacture was brought to the U.S. by German immigrants who operated local potteries and produced vessels primarily for kitchen use, e.g., mixing bowls, storage crockery, and jugs. By the mid-1800s, stonewares replaced redwares, which were used primarily as flower pots after this time (Lewis 1969:51; Ketchum 1991).
At least three vessels from the midden, Feature 81 in Excavation Block 81, and a pit, Feature 175 in Excavation Block 10 appear to have served as mixing bowls. These were all made with a nonvitreous yellowware. Although the British controlled the ceramic market during the 19th century, yellowware vessels could be successfully sold by American companies. One of the vessels from the midden an annularware decoration with a blue dendritic pattern (Photo 336). Annularwares were made by having a band applied with a “slip quill that the decorator would blow through as the piece was turned on a wheel” (Leibowitz 1985:10). Since the bands were applied separately from the rest of the vessel, they tended to easily chip and were typically used on utilitarian vessels, such as mixing bowls and chamber pots. Annularwares were popular during the first half of the 19th century and continued to be made into the early 1900s, although after 1850, simple banded forms became more common. The dendritic, or sea weed, design was applied by mixing tobacco, turpentine, and urine. Once applied a chemical reaction took place causing the mixture to spread into spine like patterns (Leibowitz 1985:14).

Photo 336: Annularware Mixing Bowl with a Dendritic Decoration from Midden, Feature 81 in Excavation Block 8
Prior to the mid-1800s, families had to make their own condiments, but after that time commercially prepared condiments became available. A possible catsup bottle was found in Feature 186 of Excavation Block 10, but the piece was too small to positively identify. Four complete pickle bottles were found in Features 185 and 187 of Excavation Block 10 (Photo 337). Pickles were one of the earliest commercially produced condiments and remained widely popular into the present.

Photo 337: Pickle Bottles from Features 185 and 187 in Excavation Block 10
A baking soda bottle was found in pit Feature 185. Baking soda was perfected by the German educated, Harvard chemist, Eben Horsford. It allowed for the production of lighter bread, cakes, and biscuits. In 1854, he and his partner, George Wilson, had established the Rumford Chemical Works in what would become East Providence Rhode Island. They soon were selling baking powder on a commercial scale (American Chemical Society 2006).
**Beverage Artifacts**

Beverage artifacts are separated from dining artifacts in that drinks could be consumed without foods and away from the dinner table. A total of 152 (31,992.6g) artifacts are associated with beverages. These came from a minimum of 129 vessels. Slightly more of the bottles were associated with nonalcoholic drinks than alcoholic drinks (Figure 82).

*Figure 82: Percentage of Nonalcoholic and Alcoholic Beverages from Pits at Base of Coal Mines*
Nonalcoholic beverages consisted entirely of soda bottles (Photos 339). These were discovered in the midden, Feature 81, and pit Features 185, 186, and 187 in Block 10. Most of the bottles had a thicker glass than those produced today to handle the pressure of carbonation. They also had a blob finish. A variety of closures were developed to seal in the carbonation, but the two most popular were the Henry Putnam fastening of 1859 and Charles G. Hutchinson stopper of 1879 (Paul and Parmalee 1973) (Figure 83). At that time, soda was produced locally because the unopened bottles could not be stored for long periods. The soda bottles, in pits at the base of the clay mines, were produced by variety of soda manufactures (Table 13). Most of these were made between the 1860s and 1880s. However, one bottle found in Feature 185, the Tip Top Soda, was produced between 1902 and 1945. This particular soda was produced in St. Louis but was sold nationally. It also was made with a thinner glass and had a crown finish. These innovations were introduced at the start of the 20th century. As suggested by some of the dinner settings found in this feature, this pit at the base of the clay mine appears to have been filled after 1902.

Table 13: Dates of Soda Bottle Manufacturers found in the Midden and Pits at Base of Clay Mines

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Number of Bottles</th>
<th>Soda Bottler</th>
<th>Dates of Manufacture /Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>81</td>
<td>1</td>
<td>G. Sudhoff, St. Louis</td>
<td>1873-1929</td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>1</td>
<td>C Schliper &amp; Co., St. Louis</td>
<td>1858-1862, 1869-1878</td>
</tr>
<tr>
<td>10</td>
<td>185</td>
<td>1</td>
<td>Tip Top, St. Louis</td>
<td>1902-1945</td>
</tr>
<tr>
<td>10</td>
<td>186</td>
<td>1</td>
<td>Grone &amp; Whelan, St. Louis</td>
<td>1880-1912</td>
</tr>
<tr>
<td>10</td>
<td>187</td>
<td>1</td>
<td>C. Damhorst, St. Louis</td>
<td>1888-1933</td>
</tr>
</tbody>
</table>

Only four alcohol bottles were recovered from the pit features at the base of the clay mines, including two fragments from the body of an amber colored beer body fragment and one olive colored body fragment that could be from a European beer or a wine bottle. Feature 185 produced a liquor flask and a liquor bottle. The bottle contained an Owens Bottling Company mark that was produced between 1919 and 1929. The flask also appears to date to the 1900s (Photo 340). These may have been placed into one of the Feature 185 bags during the warehouse break in.
Photo 339: Soda Bottles from Midden and Pit Features at Base of Clay Mines
Figure 83: Most Popular Two Closures for Soda Bottles (Seattle History Company 2009)

Henry W. Putnam Stopper Fastener Patent March 15, 1859

Charles G. Hutchinson Bottle Stopper Patent April 8, 1879
Photo 340: Liquor Bottles Dating to the 1900s
Found in Pit Feature 185 at Base of Clay Mine
Health Care Artifacts

Only 10 (259.6g) fragments of medicine bottles were found in the midden, Feature 81, and pit Feature 186. These represented a minimum of 3 vessels. Unfortunately, they were unmarked so it is unclear as to what medicines were contained in these bottles, but the bottles did date prior to the 1880s, when semi-automatic bottles became common (Paul and Parmalee 1973) (Photo 341). Three bottles were found in Feature 185. These appear to date after 1880 because they were made on semi-automatic bottle making machines as opposed to being mold blown. In addition, one of these bottles had a manufacturer’s mark of the Illinois Glass Company in Alton, Illinois, which operated between 1880 and 1915. Another bottle had the mark of the William McCully & Company of Pittsburgh, Pennsylvania, which operated between the 1870s and 1896.

Photo 341: Mold Blown Medicine Bottle in Feature 186, in Excavation Block 10
Personal Care and Adornment Artifacts

Only one (161.6g) personal care object was recovered from pit Feature 186. This white glass bottle represented Hagan’s Magnolia Balm used to improve complexion by getting rid of pimples, blotches, and blemishes (Photo 342, Figure 84). Notice, however, this bottle is misspelled with “Hagen’s”. This product was originally developed by a druggist, William E. Hagan, in Troy, New York, and represented one of the first commercially produced cosmetics. The rights to this remedy passed through several hands but continued to be sold until 1922 (University of Rochester 2015).

Photo 342: Complexion Cream Bottle found in Pit at Base of Clay Mine, Feature 186 in Excavation Block 10

Figure 84: Advertisement for Hagan’s Magnolia Balm (Ebay 2018)
**Personal Artifacts**

Personal artifacts represented objects owned by an individual. A total of 20 (114.3 g) personal pieces were recovered representing at least 9 objects. Two bone buttons, with 4 sew thurs, were recovered from the pit Feature 186 in Excavation Block 10. Buttons from cattle bone were produced during the 18th and 19th century. They were used mostly on utilitarian clothing, such as undergarments (Luscomb 1967).

Also recovered were 2 porcelain buttons with 4 sew thurs discovered in pit Features 186 and 190. These buttons known as “Little Chinas” (Luscomb 1967:31) or “Pearl” buttons in the 1902 Sears Roebuck Catalogue (1986) were originally produced by hand, making them both expensive to manufacture and purchase. In 1840, Richard Prosser, in England, invented a process that compressed dry china clay powder into buttons. This process revolutionized the manufacturing of porcelain buttons and allowed for both inexpensive and durable buttons to be available to the public. The commercial production of buttons with standard sizes allowed for the replacement of missing buttons. A Frenchman, Felix Bapterosses, invented a similar manufacturing technique during this time, although it employed a wet rather than a dry process (Pool 1985:281). The Bapterosses button factory produced the majority of the porcelain buttons manufactured. Porcelain buttons were manufactured in the United States by the mid-1800s after Thomas Prosser, Richard Prosser’s brother, immigrated to the United States in 1841 (Luscomb 1967:31). After 1850, porcelain buttons were widely used on a variety of clothing, both formal and utilitarian.

Also recovered from the midden, Feature 81, and pit Feature 175 in Excavation Block 10 were 13 shoe fragments from at least 2 shoes.

Other objects included a tobacco pipe stem made from kaolin clay (Photo 343:A). It was discovered in the midden of Feature 81. A porcelain marble was found in pit Feature 186. The disturbed pit, Feature 185, did produce an unusual artifact, a Jumeau doll watch (Photo 343:B). This was an accessory sold with the high priced French Fashion dolls that first became popular in the 1850s. The most popular dolls produced during the 19th century were made of china and represented adult women. Their heads were depicted with dark eyes, rosy cheeks, and red lips (Figure 85). Their hairstyles either were flat on top with sausage curls around the head, or having a “Dolly Madison” hairstyle popularized by the wife of President James Madison (who served 1809-1817), with curls around the head and a molded ribbon. Although these dolls were first produced in the 1820s, they were most popular between the 1840s and 1880s (Van Patten 1999).

Beginning around 1850, French Fashion and Bébés were manufactured. These were introduced by Pierre Francoise Jumeau who started the Jumeau firm in the 1840s. They first produced papier mache dolls, but during the late 1850s introduced the “poupees” (fashion lady dolls). In the late 1870s, the firm made “bebe” dolls with a child’s head (Figure 86). These differed from earlier dolls in that these dolls had heads made of bisque (unglazed porcelain), with glass eyes and leather bodies. Both dolls were sold with exquisite dresses reflecting fashions of the time. Magazines were sold that instructed girls how to make dresses for their dolls teaching them sewing skills and fashion of the mid-late 1800s. Similar to American Dolls sold today, these dolls were sold with accessories, including watches, like the one found in Feature 185.
These dolls, however, were expensive and generally only could be afforded by girls from more affluent families. During the 1890s, German manufacturers started producing a cheaper bisque doll and Jumeau Company sold out to a German firm in 1899 (Van Patten 2017, 1999).

Photo 343: Select Personal Artifacts from the Midden and Pit Features on the Base of Clay Mines
Figure 85: Porcelain Doll First Produced in Early 1800s
(Van Patten 1999)

Figure 86: French BeBe Doll
(Van Patten 1999)
Household Artifacts

A total of 77 household artifacts (2,996.3g) were found in the midden and pit features at the base of the clay mines. These represented a minimum of 20 pieces, which include objects that are present within a household that can be used by any family member. Among these are at least 2 chamber pots. One found in pit Feature 175 is made from a nonvitreous yellowware and has a banded annularware decoration. Fragments of a second chamber pot and a portion of its lid were found in the disturbed pit Feature 185. It was made of a semivitreous ironstone without any decoration and likely dates to the late 1800s.

A complete bluing bottle was found in pit Feature 187 in Excavation Block 10. Bluing liquids were used to make white clothes whiter. Washing clothes required soaking and washing in soapy water in a large kettle over a stove or pouring heated water into a bath tub. Then the clothes were rinsed in water within another kettle. This process may have been conducted twice. White clothes were then dipped briefly in a kettle with bluing liquid and then hung up to dry (Mrs. Stewart’s Bluing 2015). Similar to the bottle recovered from Feature 187, these bottles often are stained blue from the liquid bluing agent that was once inside of them (Photo 344).

A tack was found in Pit Feature 175. The tack could have been used to hold upholstery onto a chair. A brass ring drawer pull was discovered from the disturbed Feature 185 (Photo 345).

Photo 345: Brass Ring Drawer Pull from Feature 175, Excavation Block 10

Photo 344: Bluing Bottle from Pit Feature 187 in Excavation Block 10
Feature 186 in Excavation Block 10 produced two fragments from a single white glass flower vase. The vase had a painted green floral decoration on it (Photo 346). In the midden at the base of a clay mine, Feature 81 in Excavation Block 8, a small fragment of a redware flower pot was recovered. As indicated above, nonvitreous redwares were almost exclusively used for making flower pots after the mid-1800s.

*Photo 346: Painted White Glass Floral Vase from Feature 186 in Excavation Block 10*
Excavation Block 10, pit Feature 175 contained brass hardware associated with a kerosene lamp and Feature 186 contained a glass globe also associated with a kerosene lamp (Photo 347:A). At least 4 kerosene lamp chimneys were recovered from Features 186 (Photo 347:E). Features 175, 185, 186, and 187 had 6 portions of lamp shades (Photo 347:B-C). Two of these in Feature 186 and 187 were made with an opaque white glass (Photo 347:D).

*Photo 347: Parts of Kerosene Lamps from Pit Features at Base of Clay Mines*
Artifacts Associated with Early Residential Use, 1850-1890

The first homes in the tract area dated after 1850. As suggested by early atlases and Compton and Dry maps, most of these homes were located on the northern portion of the NGA tract (see Harl 2016:73-108). Artifacts indicated that 13 yard features were filled in prior to 1890 across the NGA tract. Not surprising is that half of these consisted of privy vaults (Features 23 in Excavation Block 7, Feature 74 in Excavation Block 8, Feature 130 in Excavation Block 12, Features 220 and 221 in Excavation Block 25, and Feature 299 in Excavation Block 18). St. Louis City passed several ordinances during the 1880s prohibiting the use of privy vaults in favor of sealed water closets (Sagur 1876; Anonymous 1887a, b). This was due to a better understanding that illnesses were spread by germs and not by unpleasant smelling vapors as thought during most of the 1800s. Other features included two cisterns (Features 26 and 35 in Excavation Block 7), a barrel cistern (Features 177 in Excavation Block 10), three pits (Feature 24 in Excavation Block 7, and Features 183 and 184 in Excavation Block 10), and a mortar lined ash pit (Feature 15) found near the alley in Excavation Block 23. Unfortunately, many of these features had been disturbed. For example, the two cisterns in Excavation Block 7 had been previously excavated, likely by looters, with only the lower 40 cm (1 1/3 feet) remaining in Feature 26 and the lower 84 cm (2 ¾ feet) in Feature 35. Demolition trenches had cut the tops of privy vaults of Feature 130, leaving only the lower 43 cm (1 ¼ feet) and Feature 299, leaving only the lower 20 cm (1/2 foot). The upper portions of the privy vaults in Excavation Block 25 also had been cut, but these features were deeper and the lower 275 cm (9 feet) were still intact in Feature 220 and 125 cm (4 feet) in Feature 221. The artifacts from these features provided some insights into lives of these residents during the late 1800s. In addition to these features, the middens near St. Leo Catholic Church also contained a number of artifacts dating to the 1880s. Although some of the materials may have been associated with activities at St. Leo Catholic Church, most of the remains likely were removed from privies at unknown locations across the city and used to fill in this clay pit. Since it is not clear where these remains originated, they will not be discussed below.

A total of 6,477 (114,105.0g) artifacts were recovered from the features. They represented a minimum of 1,134 items.

Dining Artifacts

A total of 4,807 (43,814.35g) artifacts were associated with eating at the dinner table. These represented a minimum of 341 pieces, not including the faunal and floral food remains. Not surprising was that around 90% of these consisted of ironstone settings (Figure 86).
Ironstone Vessels

These represented a variety of dinner settings (Table 14). At least 73 of these consisted of plates. Of the plates large enough to determine their diameters, these varied between 16 and 24 cm (6 1/3 and 9 1/2 inches) (Figure 87, Photo 348).

Table 14: Number of Various Types of Ironstone Dinner Settings from 1850-1890 Features

<table>
<thead>
<tr>
<th>Vessel Types</th>
<th>Number of Vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plates</td>
<td>73</td>
</tr>
<tr>
<td>Dish</td>
<td>3</td>
</tr>
<tr>
<td>Soup Bowls</td>
<td>8</td>
</tr>
<tr>
<td>Bowls &amp; Serving Bowls</td>
<td>50</td>
</tr>
<tr>
<td>Platters</td>
<td>9</td>
</tr>
<tr>
<td>Tureen</td>
<td>3</td>
</tr>
<tr>
<td>Butter Dish</td>
<td>2</td>
</tr>
<tr>
<td>Sugar Bowls</td>
<td>2</td>
</tr>
<tr>
<td>Pitchers</td>
<td>5</td>
</tr>
<tr>
<td>Tea Pot</td>
<td>2</td>
</tr>
<tr>
<td>Creamer</td>
<td>1</td>
</tr>
<tr>
<td>Saucers</td>
<td>69</td>
</tr>
<tr>
<td>Cups</td>
<td>77</td>
</tr>
</tbody>
</table>

Figure 86: Percentages of Dinner Settings Material Types from 1850-1890 Features
Figure 87: Diameters of Various Ironstone Plates Associated with 1850-1890 Features
Photo 348: Plain Ironstone Plates of Various Sizes from 1850-1890 Features

74:41
Stratum 5
Ironstone Plate

74:43
Stratum 5
Ironstone Plate

184:01
Stratum 1
Ironstone Plate

220:64
West 1/2
Ironstone Plate
English style dining etiquette “in which food was placed on the table and guests helped themselves, within the rules of proper manners” was replaced around 1870 by “à la Russe” style of serving foods (Lucus 1994:82). In this style of service, tables were decorated with elaborate center pieces and foods were served in courses by servants. Smaller plates of various sizes and specialty dishes were used to serve the appropriate foods. Larger dinner plates of 25.5 (10 inches), once used to hold multiple foods, became less popular. This method freed the host to spend more time socializing (Lucus 1994:84). Since a large quantity of foods had to be transported from the kitchen and served, it required many servants. Most people could not afford servants, especially those within the NGA tract, so an adapted version of service known as “American” style was utilized. In this style, various courses were placed on the table one at a time, or placed on a nearby buffet or side table. The host would then divide the foods into portions and give them to guests who passed the dishes around the table. The host did not have as much time to socialize, but the pace of the meal was dictated by them (Lucus 1994:83). Different foods were served on different size plates with this style, which could explain the different size plates associated with these features.

Five soup bowls for serving soups and stews were recovered from the features. These varied in diameter from 22 (8 ½ inches) to 28 cm (11 inches). The bowls had broad borders preventing soup from spilling onto the table.

Food serving vessels included parts of platters, tureens, pitchers, butter dishes, and sugar bowls. More common were bowls and larger serving bowls (n=50). Of the circular bowls whose diameters could be estimated, as expected these ranged widely from 10 cm to 24 cm (4 to 9 ½ inches) due to the variety of foods being brought from the kitchen (Figure 88). Some of these vessels had an oblong shape.

Figure 88: Bowls and Serving Bowls Diameters from 1850-1890 Features
More common were cups and saucers (Table 14). The saucers ranged in size from 12 to 16 cm (4 ¾ to 6 inches) but the majority were 15 to 16 cm (6 inches) in diameter. Cups were typically 9 cm (3 ½ inches) in diameter. Most of these were thin and appear to have been used for tea services, but some may have been used to serve coffee as well. The upper portion of a tea pot and a small section of a creamer were recovered as well.

The majority of the ironstone vessels were undecorated (Figure 89). However, many of these represented only small portions of vessels and it is possible that other portions of these pieces were decorated. About 27% of the ironstone dinner settings were molded. Most of these consisted only of a panel or ribbed shape (Photo 349). At least 12 vessels had a molded floral pattern that became popular after 1870 (photo 350). Another 8 plates and 2 platters have a shell edge pattern along their edge. Of these, 7 pieces are painted blue and 3 are unpainted (Photo 351). These were most common during the 1850s and 1860s.

![Figure 89: Percentage of Various Ironstone Vessel Decorations from 1850-1890 Features](image-url)
Photo 349: Molded Panel Shapes on Ironstone Vessels from 1850-1890 Features

74:56
Ironstone Serving Vessel
Molded

74:44
Stratum 5
Ironstone Plates
Molded

74:91
Stratum 5
Ironstone Saucer
Molded

74:106
Stratum 5
Ironstone Cup
Molded

183:15
Stratum 1, West Half
Ironstone Butter Dish
Molded

111:104
Stratum 2, West Half
Ironstone Cup
Molded

220:05
Stratum 1 East 1/2
Ironstone serving bowl
paneled
Photo 350: Ironstone Vessels with Molded Floral Pattern from 1850-1890 Features
Photo 351: Ironstone Vessels With Shell Edge Borders from 1850-1890 Features

A. 74:52
Stratum 5
Ironstone Plate
Shell Edge

B. 130:02
Ironstone Platter
Plate

C. 220:02
Stratum 1 East 1/2
Ironstone plate
molded & painted
Blue shell edge
Other painted ironstone vessels included a saucer from Feature 74 in Excavation Block 8, which has a painted gold band near its edge (Photo 352:A). The upper portion of a tea pot was found in the same feature; it also has a painted gold band near its rim (Photo 352:B) and a green band painted around the interior. Two vessels, a bowl and a cup, have a banded annularware (Photo 352:C). Banded annularwares were most popular after 1850.

Another 11 vessels had a spongeware floral or geometrical decorations (Photo 353). This decoration was introduced about 1780 and consisted of a person using a fine brush and applying hundreds of touches with the paint on the vessel per square inch. This technique was known as spatterware. During the 1830s, a less laborious method was developed by dipping paint onto a sponge which had a cut pattern on it and applying this onto a vessel, replacing spatterware by the 1840s. Spongeware decorations similar to the ones found in these features were produced until around 1930 (McConnell 1990).
Photo 353: Ironstone Vessels with Spongeware Decorations from 1850-1890 Features

A. 74:67
Stratum 5
Ironstone Bowl
Painted

B. 74:109
Stratum 5
Ironstone Cup
Painted

C. 74:107
Stratum 5
Ironstone Cup
Painted

D. 74:99
Stratum 5
Ironstone Saucers
Painted

E. 74:112
Stratum 5
Ironstone Cups
Painted

F. 23:7
Ironstone Saucer
Painted

G. 74:100
Stratum 5
Ironstone Saucer
Painted
Seven other vessels had a painted floral decoration, (Photo 354). Most of these were the sprig and twig design. Although the twigs were painted black which was typical after 1830, these did have a thin twig which was more common prior to 1860.

*Photo 354: Ironstone Vessels with Painted Floral Designs from 1850-1890 Features*
Three other vessels had a molded shape with a painted floral decoration. A cup from Feature 74 had a painted green leaf and blue floral design (Photo 355:A). A serving vessel, likely a tureen handle, had a painted green leaf decoration (Photo 355:B). A pitcher from Feature 184 in Excavation Block 10 had a molded floral pattern with a stylized painted copper tea leaf design, known as lusterware (Photo 355:C). This style was introduced in the 1850s. The earliest vessels only had a copper colored band, but in 1854, Anthony Shaw of Tunstall, Staffordshire, England, introduced the tea leaf pattern. This style became widely popular and was copied by various other pottery manufacturers. Other motifs also were introduced, and lusterware continued to be produced until the start of the 20th century. This style was again made in the 1960s, but this resurgence did not last long (Wetherbee 1996:150-162).

*Photo 355: Molded and Painted Ironstone Vessels from 1850-1890 Features*
Only 8% of the ironstone vessels had a transfer print decoration (Photo 356). All of these prints were a single color (Table 15). Although polychrome prints were introduced by the 1860s, they did not become popular until after 1890. Two of the prints from the recovered vessels could be identified. One from Feature 74 was a cup with a Susa print (Photo 356:B). This print was registered by Charles Meigh and Son of Hanley, Staffordshire, England. They produced it between 1850 and 1861 (Photo 356:A). The other one was an Anaconda print produced by Edward Challinor of Tunstall, Staffordshire, England, between 1842 and 1872. Four children plates were recovered that had a transfer print that was partially painted. One plate depicts two girls sharing an umbrella in the rain (Photo 357:B). This style of print is often marked “Grandmamma Umbrella”. In the background is an elderly woman and three children emerging from a building apparently without an umbrella. However, school is often marked on the doorway suggesting that the woman is a teacher (Transferware Collector’s Club 2018). A portion of a second plate depicts a boy holding a rabbit (Photo 357:C). The third plate displays a mother looking at her daughter (Photo 357:A). Below the picture is printed “Mother and Daughter Dear to Each. With a Love Surpassing Speech.” Children’s plates often depicted children at play, scenes from nursery rhymes, expressed moral themes or loving relations such as the scenes depicted by the mother and child and the two girls protected from the rain by their grandmother’s umbrella. Letters of the alphabet are often molded around the edges so that children could begin learning them. The plate recovered from Featured 183 in Excavation Block 10 consisted only of a portion of the molded alphabet border (Photo 357:D), and two of the other plates also had the alphabet.

Table 15: Quantity of Ironstone Vessels with a Single Transfer Print Color from 1850-1890 Features

<table>
<thead>
<tr>
<th>Minimum Number of Vessels</th>
<th>Excavation Block</th>
<th>Feature</th>
<th>Vessel Type</th>
<th>Print Color</th>
<th>Decoration</th>
<th>Photo 356</th>
<th>Pattern Name (Dates Produced)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23</td>
<td>15</td>
<td>bowl</td>
<td>black</td>
<td>scenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>15</td>
<td>creamer</td>
<td>red</td>
<td>indeterminate</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>cup</td>
<td>blue</td>
<td>floral</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>74</td>
<td>saucer</td>
<td>black</td>
<td>scenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>cup</td>
<td>black</td>
<td>scenic</td>
<td>B</td>
<td>Susa (1850-1861)</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>bowl</td>
<td>red</td>
<td>scenic</td>
<td>A</td>
<td>Anaconda (1842-1872)</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>74</td>
<td>cups</td>
<td>blue</td>
<td>scenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>plate</td>
<td>blue</td>
<td>floral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>serving vessel</td>
<td>blue</td>
<td>indeterminate</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>tureen</td>
<td>blue</td>
<td>scenic</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>serving vessel</td>
<td>purple</td>
<td>scenic</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>serving vessel</td>
<td>blue</td>
<td>scenic</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>74</td>
<td>serving vessel</td>
<td>blue</td>
<td>Chinois</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>23</td>
<td>plate</td>
<td>flow blue</td>
<td>indeterminate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>26</td>
<td>bowl</td>
<td>blue</td>
<td>indeterminate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>35</td>
<td>indeterminate</td>
<td>blue</td>
<td>scenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>184</td>
<td>plate</td>
<td>brown</td>
<td>nature, Chinois?</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>19</td>
<td>184</td>
<td>dish</td>
<td>brown</td>
<td>scenic</td>
<td>J</td>
<td></td>
</tr>
</tbody>
</table>
Photo 356: Sample of Ironstone Vessels with Transfer Print Decorations from 1850-1890 Features
Photo 357: Children Plates from 1850-1890 Features

A. 74:53
Stratum 5
Ironstone Plate
ABC Child’s Plate
Molded and Transfer Print

B. 220:03
Stratum 1 East 1/2
Ironstone plate
molded, transfer print & painted

C. 220:66
West 1/2
Ironstone plate fragment
Alphabet, molded, & transfer print

D. 83:06
Stratum 1, West Half
Ironstone Child’s Plate
Molded
Ironstone vessels included 39 pieces that contained a manufacturer’s mark (Photo 358). The majority of these were produced by English companies (Figure 90, Table 16). Only three vessels were recovered that were produced by American companies, all of these in Trenton, New Jersey (Table 17). Since the late 1700s when the British manufacturers developed creamwares and then pearlwares as safer alternative to tin glazed wares, the English dominated the world dinnerware markets into the late 1800s. Although some American companies tried to compete, people viewed these wares as being inferior. As a result, most American companies used manufacturer’s marks similar to the British in attempt to fool American consumers (Photo 359). Many American companies were forced to produce cheaper nonvitreous wares of redware and yellowware utilitarian vessels (Leibowitz1985).

![Figure 90: Percentage of English and American Dinner Settings Manufacturers from 1850-1890 Features](chart.png)
<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>74</td>
<td>Edward Challinor (1842-1867)</td>
<td>Tunstall, Staffordshire, England</td>
<td>1842-1867</td>
<td>K&amp;K 1999:144</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>74</td>
<td>Joseph Heath (1845-1853)</td>
<td>Tunstall, Staffordshire, England</td>
<td>1845-1853</td>
<td>K&amp;K 1999:229</td>
<td>D</td>
</tr>
<tr>
<td>1</td>
<td>74</td>
<td>Mayer &amp; Elliot (1858-1860)</td>
<td>Longport, Staffordshire, England</td>
<td>1858-1860</td>
<td>K&amp;K 1999:271</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>184</td>
<td>Anthony Shaw (1851-1900)</td>
<td>Burslem, Staffordshire, England</td>
<td>1858-1900</td>
<td>K&amp;K 1999:332</td>
<td>K</td>
</tr>
</tbody>
</table>
Photo 358: English Manufacturer's Marks on Ironstone Vessels from 1850-1890 Features

A. 183:18
Stratum 1, West Half
Ironstone Tea Pot
Henry Alcock & Co.

B. 183:08
Stratum 1, West Half
Ironstone Platter
Hope & Carter
1862-1880

74:94
Stratum 5
Ironstone Saucer
James Edwards

D. 74:96
Stratum 5
Ironstone Saucer
Joseph Heath
1845-1853

E. Thomas Hughes
1855-1879
Registered April 17, 1855
Kowalsky and Kowalsky 1999:241

F. 183:01
Stratum 1, West Half
Ironstone Plate
Meakin Bros & Co.
1875-1882

G. 184:01
Stratum 1
Ironstone Plate
Charles Meakin Co.
1876-1882

H. 23:81
All Stratums
Ironstone Plate
J. & G. Meakin
1851-1890

I. 74:95
Stratum 5
Ironstone Saucer
J & G Meakin
1851-1890

Mark in
Kowalsky & Kowalsky
1999:276

J. 183:118
Stratum 2, West Half
Ironstone Plate
J. W. Pankhurst & Co.
1853-1882

K. 184:07
Stratum 1
Ironstone Pitcher
Anthony Shaw
1858-1900
Table 17: List of Ironstone Ceramic Manufacturer’s Marks from American Companies Found in 1850-1890 Features

<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>74</td>
<td>Coxon &amp; Co. (1863-1884)</td>
<td>Trenton, New Jersey</td>
<td>1863-1884</td>
<td>yes</td>
<td>374</td>
</tr>
<tr>
<td>1</td>
<td>221</td>
<td>Eagle Pottery Co. (1876-1889)</td>
<td>Trenton, New Jersey</td>
<td>1876-1880</td>
<td>K&amp;K 1999:32</td>
<td>no</td>
</tr>
<tr>
<td>1</td>
<td>184</td>
<td>Prospect Hill Pottery (1872-1959)</td>
<td>Trenton, New Jersey</td>
<td>1872-1879</td>
<td>K&amp;K 1999:57</td>
<td>no</td>
</tr>
</tbody>
</table>

Photo 359: American Manufacturer’s Marks on Ironstone Vessels from 1850-1890 Features
Nonvitreous Wares

Nonvitreous wares recovered included a small fragment from a redware cup discovered in Feature 35 of Excavation Block 7. The cup was painted a dark brown color (Photo 360:A). From the same block in Feature 23 was a rim from a serving bowl and in Feature 26 a portion of a pitcher, both made of yellowware. The serving bowl had a banded annularware design (Photo 360:B). The pitcher has a molded floral pattern and is covered with a Rockingham glaze. This streaky dark molasses brown to golden butterscotch colored glaze was first produced by the Swinton Pottery in Yorkshire, England, in 1785. The streaky colors made these pieces more popular in the kitchen. Due to its inexpensive costs, U.S. companies were able to compete against the English manufacturers and were producing Rockingham glazed vessels by the early 1800s. This style of glazing continued to be popular into the 20th century (Brewer 1996).

Photo 360: Redware Cup and Yellowware Bowl from 1850-1890 Features
At least six vessels were made of a nonvitreous whiteware. These came from various features, but three were recovered from Feature 26. A small piece discovered in Feature 299 of Excavation Block 25 was unidentifiable, but a plate in Feature 183 of Excavation Block 10, measuring 24 cm (9 ½ inches) in diameter, had a painted blue shell edge pattern (Photo 361:A). The individual molds were painted as was common prior to 1860. Another plate was discovered in Feature 26. It had a small portion of a painted floral design (Photo 361:B). The remaining three vessels were cups. One from Feature 26 had a brown slip, possibly of an annularware design (Photo 361:C). Another cup from the feature had a small portion of a blue scenic transfer print (Photo 361:D). The third cup from Feature 177 in Excavation Block 10 had two thin painted red lines with a blue spongeware pattern between the lines (Photo 361:E). Whitewares were no longer made after the 1860s.

*Photo 361: Whiteware Vessels from 1850-1890 Features*
Porcelain Vessels

A minimum of 11 porcelain vessels were recovered from these features, representing 3% of the table settings. Six of these vessels appear to be undecorated. These include a plate with a diameter of 26 cm (10 inches) (Photo 362:A), three serving bowls, a saucer (Photo 362:C), and a cup (Photo 362:B). A sugar bowl has an indeterminate painted image (Photo 363:D) and a molded cup handle is partially painted in gold (Photo 363:C). Two cups have a painted polychrome floral design, with “Forget Me Not” also painted on them (Photo 363:A-B).

Photo 362: Plain Porcelain Vessels from 1850-1890 Features
Photo 363: Painted Porcelain Cups and Sugar Bowl from 1850-1890 Features

A. 183:29
Stratum 1, West Half
Porcelain Cup
Painted

B. 183:30
Stratum 1, West Half
Porcelain Cup
Painted

C. 184:47
Stratum 2
Porcelain Cup
Molded and Painted

D. 183:32
Stratum 1, West Half
Porcelain Sugar Bowl
Painted

0 1 2 3 4 5 cm
0 1 2 inches
Glasswares

Glassware represented 3% of the pieces used at the dining table. These consisted of four water goblets (Photo 364:A), one molded diamond pattern serving bowl (Photo 364:B), one parfait glass (Photo 364:C), one cake stand fragment (Photo 364:D), and two glass pitcher handles (Photo 364:E-F). One of the handles had a molded leaf and dot design (Photo 364:F). Also recovered were a salt cellar (Photo 364:G) and a portion of a sugar bowl (Photo 364:H).
After 1850, pressed glass was produced that was less expensive and could be molded in a greater variety of shapes than cut glass used earlier. These were made mostly by American companies. This innovation along with changing dining habits to serving foods in courses on smaller dishes, resulted in pressed glassware becoming more common on the dining table, with whole sets of sold by the late 1800s (Figure 91).

**Figure 91: Glassware Sets Sold in 1897 Sears Roebuck Catalogue (Israel 1968:684)**
**Utensils**

Other dining artifacts include four utensils. These include a complete brass spoon from Feature 183 in Excavation Block 10 (Photo 365:A). Also, a bone covered handle from another utensil was uncovered in this feature. In the adjacent pit, Feature 185, a fragment from another spoon was recovered. Feature 74 in Excavation Block 8 produced a bone covered knife handle (Photo 365:B).

**Photo 365: Brass Spoon from Feature 183 of Excavation Block 10 Associated Dating 1850-1890**

---

**Faunal and Floral Remains**

A total of 3,979 (15,099.1g) fragments of animal bones were discovered in these features. There was not enough time before the report was due to send the bones off to a zooarchaeologist for analysis or floral remains to a paleoethnobotanist. But these materials will be curated for future researchers. Also recovered were 7 oyster shells. During the mid-1800s to early 1900s the consumption of oysters, or less expensive local mussels, was widely popular at dinner parties. Oyster bars existed or oysters were sold at local restaurants, hotels, and brothels. Local bars often served oysters or local mussels to encourage patrons to drink more. St. Louis, being a major river port, did receive oysters and other sea foods by boats coming up the Mississippi River from the Gulf (Hodes 2009:677).
Kitchen Artifacts

Kitchen artifacts consisted of 337 (18,763.1g) pieces, representing a minimum of 144 vessels. These items were associated with food preparation and storage.

Vessels Associated with Preparing Foods and Drinks

Among the food preparation items were 17 mixing bowls, with 11 bowls coming from Feature 74 in Excavation Block 8 alone. All but one of these were made of yellowware (Photo 366); one bowl, in Feature 183 of Excavation Block 10, was made of a redware.

Photo 366: Yellowware Mixing Bowls from 1850-1890 Features
Other various food preparation vessels also were recovered. These include two bean pots, one made of redware and another stoneware (Photo 367). As their names imply, these were used for cooking beans. A yellowware pan was recovered from Feature 74 in Block 8. It had an annularware banding (Photo 368). A portion of a tin tea pot was uncovered in Feature 74 (Photo 369:A). Feature 184 in Excavation Block 10 produced two spoon strainers with holes in them. These could have been used to infuse tea, but seem to be too large and may have been used to pick up foods out of boiling water (Photo 369:B)
Food Storage Vessels

Among these recovered vessels were six glass canning jars. The first successful canning jar for preserving foods was developed by John L. Mason who was awarded a patent on his jar on November 28, 1858 (SHA 2017). A few years later, Lewis R. Boyd improved on Mason’s canning jar by adding an opaque glass lid liner that separated the contents in the jar from the zinc lid which would have contaminated the food (Lief 1965:8). Over the years, various versions of this type of closure were developed (Figure 92). The use of a white glass lid liner continued until the invention of a vacuum seal cap using a rubber gasket, which was developed in 1929, rapidly becoming popular during the 1930s (Lief 1965:32). Four canning jars used the white glass lid liners (Photo 370:A).
Figure 92: Various Types of Mason Style Canning Jar Closures Using White Glass Canning Jar Liners (Society for Historical Archaeology 2013)
Photo 370: Canning Jars from 1850-1890 Features

A. 74:06
Stratum 1
Glass Canning Jar
Mason

B. 183:38
Stratum 1, West Half
Canning Jar
Wax Seal

C. Example of Lightening Fastener
(DSHA 2017)

D. Example of Thumbscrew Lid

E. Example of Crystal Canning Jar
Made by Hero Glass Works
(Lockhart et al. 2016:221)
Two jars found in Feature 183 of Excavation Block 10 had different closures. One of these had a grooved ring wax seal closure (Photo 370:B). It was held in place with a Lightening Fastener (Photo 370:C) or a Thumb Screw Lid (Photo 370:D). This type of canning jar was produced between 1858 and 1912 (SHA 2017). The base of another jar had two patent dates on the base. One marked November 26, 1867 was for the design of the jar and February 4, 1873 for the lid and threads. This patent was for a Crystal canning jar produced by the Hero Glass Works between 1873 and 1880, which had a screw type zinc lid (Photo 370:E).

Crockery vessels or storage jars were used to store bulk foods obtained from the market, grocery, or dry goods store. Some of the vessels were made of a nonvitreous wares such as redware consisting of a portion of a crock found in Feature 184 of Excavation Block 10 (Photo 371:A) and a storage jar lid in Feature 220 of Excavation Block 25 (Photo 371:B). Also recovered was a yellowware crock from Feature 184 and three yellowware jars in Feature 74 of Excavation Block 8 (Photo 371:C). Not surprising a greater number of crockery was made of semi-vitreous stonewares consisting of 25 crocks and storage jars (Photo 372). By the 1860s, stoneware had replaced most nonvitreous wares as the preferred food storage vessels within the NGA tract and across St. Louis as a whole.

Jugs consisted of four made of stoneware (Photo 373:B.-D) and one of yellowware (Photo 373:A). These may have been used for alcoholic beverages, such as cider, but may have been used for vinegar or other liquids used in the kitchen. Three of the jugs were small (Photo 373:B-C), further suggesting that they were not used for alcohol but use in the kitchen.

These features also had five small stoneware crocks (Photo 374). These could have been used to hold cheese or butter. It is unclear if these were purchased from groceries with cheese or butter inside of them. However, they are unmarked and most commercially produced cheeses were sold in marked stoneware jars as observed in the NGA features. It is possible that cheese or butter was purchased in bulk or made in the homes, and these smaller containers used to hold them so that they could be used in preparing meals.
Photo 371: Redware and Yellowware Crock and Storage Jars from 1850-1890 Features

A. 184:10
Stratum 1
Redware Crockery

B. 220:15A
Stratum 1 E 1/2
Redware
Storage Jar Lid

C. 74:126
Stratum 5
Yellowware Jar
Annularware
Photo 372: Stoneware Crocks and Storage Jars from 1850-1890 Features

23:48
Stratum 2
Stoneware Crockery

74:118
Stratum 5
Stoneware Crockery

183:137
Stratum 2, West Half
Stoneware Crockery

23:64
Stratum 3
Stoneware Crockery

184:15a
Stratum 1
Stoneware Jar

26:12
Stoneware Crockery

26:14
Stoneware Crockery
Photo 373: Jugs from 1850-1890 Features

A. 74:123
Stratum 5
Yellowware Jug

B.-C. 74:131
Stratum 5
Stoneware Jugs

D. 184:14
Stratum 1
Stoneware Jug
Photo 374: Cheese or Butter Crock from 1850-1890 Features

74:119
Stratum 5
Stoneware
Cheese or Butter Crock

183:136
Stratum 2, West Half
Stoneware
Cheese or Butter Crock

220:15
Stratum 1 E 1/2
Stoneware
Cheese or Butter Crock

220:53
Stratum 2 E 1/2
Stoneware
Cheese or Butter Crock

74:08
Stratum 1
Stoneware
Cheese or Butter Crock

368
By the mid-1800s, various condiments were being commercially produced for local, national, and even international distribution. Before this time, these had to be produced from vegetables and fruits obtained from local farms and placed in canning jars or stoneware crockery vessels. The percentage of the various condiments discovered are depicted in Figure 93. Surprisingly, these consisted predominately of mustard and pickle jars with only six bottles used for other types of condiments. This could suggest that other condiments were not widely used within this neighborhood before 1890.

Mustards were used as a way of spicing up bland foods and to cover over the off-flavoring of foods that were starting to go bad. By the mid-1800s mustards were sold in barrel-shaped jars, which continued to be used until the 1920s. These jars can vary in shape from 3 ounces to 1 quart, although most were 6-8 ounces (SHA 2017). All of the mustard jars recovered were barrel shaped and the common 6-8 ounces (Photo 375). They likely were produced by local St. Louis firms and sold at local groceries.

Another popular condiment was pickles. These could have been made by families and put up in canning jars or stoneware crocks. However, by the mid-1800s pickles were produced on a commercial scale and greatly increased in popularity. At least 6 pickle bottles were uncovered (Photo 376). These also may have been produced by local firms.

Figure 93: Percentage of Various Condiments from 1850-1890 Features
Photo 375: Barrel Mustard Jars from 1850-1890 Features

74:136
Stratum 5
Glass Mustard Jar

74:137
Stratum 5
Glass Mustard Jars

183:40
Stratum 1, West Half
Mustard Jar
Barrel

184:49
Stratum 2
Barrel Mustard Jar

0 1 2 3 4 5 cm
0 1 2 3 4 5 6 inches
Photo 376: Pickles Jars from 1850-1890 Features

183:45
Stratum 1, West Half
Green Glass Pickle Jar

184:16
Stratum 1
Pickle Jar
The remaining condiments were represented by only one or two bottles each. These include a small piece of a ketchup bottle found in Feature 74 of Excavation Block 8, a Lea and Perrin Worcestershire sauce bottle with its glass stopper also found in Feature 74 (Photo 377:A), and a club sauce bottle found in Feature 184 of Excavation Block 10 (Photo 377:B). These condiments were used to spice up sandwiches and foods. Lea & Perrins sauce represents one of the earliest of the nationally marketed condiments. John Wheeley Lea and William Henry Perrins began producing Lea & Perrins Worcestershire Sauce from their plant in Cheltenham, England in 1837. They encouraged sales by paying stewards of ocean liners to serve their sauce in their dining rooms. In 1839, a New York entrepreneur, John Duncan, ordered a small quantity, which quickly sold out. Demand became so high that Duncan opened a processing plant in the U.S., importing the ingredients from England and using the secret English formula, which continues to be sold today (Lea & Perrins 2018).

Other sauce containers included two pepper sauce bottles (Photo 377:C-D). Pepper sauces, originally produced in the south and southwest, were being sold nationally after the Civil War. One of the bottles was made in the “Gothic or Cathedral style (Photo 377:C), which became popular in architecture and other aspects of society during the mid-1800s with the rise of Victorian ideology (SHA 2017). This type of bottling was popular from the 1850s to 1880s.

A portion of a syrup jar was found in Feature 74 of Excavation Block 8 (Photo 377:E). Maple syrup was popular with Americans since their earliest arrival to the Americas and they learned how to produce it from the indigenous inhabitants. However, by the mid-1800s, it was being commercially produced and sold nationally in glass jars.

The types of condiments contained in another 14 bottles could not be identified (Photo 378). These may have been used for pickles, preserves, food packaging, or chow-chow, a form of pickle relish.

A portion of a bottle found in Feature 74 of Excavation Block 8 was marked with “Spice” (Photo 379). Unfortunately, the type of spice was not on the fragment recovered. Since it was marked, this likely was a commercially prepared spice that was obtained from a grocery.
Photo 377: Various Condiments from 1850-1890 Features

A. 74:138
Stratum 5
Glass Lea & Perrin Sauce Bottle

B. 184:18
Stratum 1
Club Sauce Bottle

C. 74:139
Stratum 5
Glass Pepper Sauce Molded

D. 183:41a
Stratum 1, West Half Pepper Sauce Bottle

E. 74:10
Stratum 1
Glass Syrup Jar Handle
Photo 378: Indeterminate Condiment Types of Jars from 18509-1890 Features
Another 7 bottles were associated with flavoring extracts (Photo 380). Extracts were used to improve the taste of foods or drinks. French chefs cut up vanilla beans and applied them as flavoring, creating better tasting, but more expensive dishes. In 1847, Joseph Burnett and Theodore Metcalf, after discovering people’s desire for a cheaper substitute, developed a vanilla extract and formed a company to sell their product. By 1857, a number of other flavoring extracts were being produced including Lemon, Almond, Rose, Nutmeg, Peach, Celery, Cinnamon, Cloves, Nectarine, Ginger and Orange (Southborough Historical Society 2007).

A bottle from Feature 183 of Excavation Block 10 consisted of “Dr. Price’s Flavoring Extract, Vanilla” (Photo 380:A). In 1874, V. Clarence Price and Charles R. Steele formed a partnership in Chicago, Illinois, and sold Dr. Price’s extracts. Steele left the company in 1883 to concentrate on selling real estate and Price formed the Price Flavoring Extract Company. Dr. Price is further known as the inventor of baking powder and as the grandfather of the actor, Vincent Price. Dr. Price sold the company in the 1890s but extracts under his name continued to be sold until 1922 (Griffin 2013A).

Two glass jars, also found in Feature 183, could have held commercially prepared foods (Photo 381). A food can lid was uncovered in Feature 23 of Excavation Block 23 (Photo 382). Also recovered were four food cans found in Features 47 and 55. Storing foods in a tin covered iron can was first developed by a Parisian, Nicholas Appert, as a better way to supply Napoleon’s troops with food. Between the 1840s and 1860s, a variety of machines were invented to mass produce cans for preserving foods without fear of contamination. During the second half of the 19th century, foods began to be commercially produced in growing numbers reducing the need for housewives to preserve their own foods. This industry developed partially due to the needs of soldiers during the Civil War and increased consumer appeal after that time, especially in areas like remote mining communities in the west. Gail Borden even developed ways of economically packaging bulky and perishable foods such as milk (Schlereth 1991:163).
Photo 381: Commercially Prepared Food Jars from Feature 183 in Excavation Block 10

183:140
Stratum 2, West Half
Food Jar

183:44
Stratum 1, West Half
Glass Food Jar

Photo 382: Food Can Lid from Feature 23 of Excavation Block 23

23:14
Stratum 1
Metal Food Can Lid
Beverages

A total of 228 (20,946.4g) artifacts were associated with beverages, representing a minimum of 103 vessels. Surprisingly, no beverage bottles were recovered from the privy, Feature 130, in Excavation Block 12; the two cisterns, Features 26 and 35, in Excavation Block 7, the barrel cistern, Feature 177, in Excavation Block 10; the two pits, Features 24 in Excavation Block 7 and Feature 184 in Excavation Block 10; and the ash pit, Feature 15, in Excavation Block 23. Only three more nonalcoholic bottles were recovered than alcoholic bottles (Figure 94).

Nonalcoholic beverages consisted entirely of carbonated sodas. From the mid-1800s, sodas were a popular recreational drink. All of the sodas used at this time were produced by various local St. Louis manufacturers (Table 18, Photo 383). There does appear to be a slight preference for the H. Grone soda, especially in Feature 74 but a variety were used even within this feature. Two of the Grone sodas and the John O’Brien soda (Photo 383:A) were made with rounded bottoms. This was so that the sodas would have to be stored upside down ensuring that the liquid would stay in contact with the cork. Otherwise, the cork could dry out and cause a loss of carbonation (Paul and Parmalee 1973). Soda producers soon learned to overcome this problem by developing a wide range of closures meant to prevent the loss of carbonation and still be easy to open (Figure 95).
Two of the soda bottles had crown cap closures (Photo 383:H-I). The crown cap was patented by William Painter of Baltimore, Maryland on February 2, 1892. This proved to be the most effective means of holding in carbonation. However, it was not as easy to open as the Putnam Lightening Fastener and other types of closers, so an advertising campaign was used to convince the public of how easy it was to open crown caps (Figure 96). It still took some time, however, before this innovation was widely accepted by manufacturers and the public. As late as 1905, only 25% of the bottlers were using crown caps and by 1920 it was almost exclusively used (Paul and Parmalee 1973).

The two bottles with crown caps appear to have been produced after 1890 by Henry Breimeyer (between 1892 and 1958) and Wolf Christen (between 1892 and 1905). These two bottles were found near the top of the privy vault, Feature 74 of Excavation Block 8, and it is possible that they were discarded at this location after the privy had been filled.

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Number of Bottles</th>
<th>Soda Bottler</th>
<th>City</th>
<th>Dates of Manufacture/Use*</th>
<th>Photo 383</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>183</td>
<td>1</td>
<td>S. Amsler</td>
<td>unknown</td>
<td>indeterminate</td>
<td>I</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>1</td>
<td>H. (Henry) C. Breimeyer</td>
<td>St. Louis</td>
<td>1890-1958</td>
<td>I</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>5</td>
<td>J. Cairns</td>
<td>St. Louis</td>
<td>1854-1860</td>
<td>E</td>
</tr>
<tr>
<td>10</td>
<td>183</td>
<td>1</td>
<td>Eclipse Carbonating Co.</td>
<td>St. Louis</td>
<td>1894-1909</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>8</td>
<td>H. Grone &amp; Co.</td>
<td>St. Louis</td>
<td>1863-1867</td>
<td>F-G</td>
</tr>
<tr>
<td>25</td>
<td>221</td>
<td>1</td>
<td>Louis Miller</td>
<td>St. Louis</td>
<td>indeterminate</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>183</td>
<td>1</td>
<td>John O’Brien</td>
<td>St. Louis</td>
<td>indeterminate</td>
<td>A</td>
</tr>
<tr>
<td>8, 25</td>
<td>74, 220</td>
<td>6</td>
<td>C. W. Schleiper &amp; Co.</td>
<td>St. Louis</td>
<td>1858-1862, 1869-1878</td>
<td>C</td>
</tr>
<tr>
<td>7</td>
<td>23</td>
<td>1</td>
<td>Schleiper &amp; Graf</td>
<td>St. Louis</td>
<td>1882-1905</td>
<td>B</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>1</td>
<td>Soda Water</td>
<td>St. Louis</td>
<td>indeterminate</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>183</td>
<td>2</td>
<td>G. Sudhoff &amp; Co.</td>
<td>St. Louis</td>
<td>1877-1893</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>1</td>
<td>Wolf Christen</td>
<td>St. Louis</td>
<td>1892-1905</td>
<td>H</td>
</tr>
</tbody>
</table>

*Dates obtained from City Directories
Photo 383: Example of Soda Bottles Recovered from 1850-1890 Features

A. 74:144
Stratum 1
Glass Soda Bottle
John O’Brien

B. 23:66
Stratum 3
Glass Soda Bottle
Schleiper & Grul, St. Louis

C. 74:146
Stratum 1
Glass Soda Bottles
C. W. Schleiper & Co.

D. 221:25
Stratum 2
Glass soda bottle
Louis Miller

E. 183:54
Stratum 1, West Half
Eclipse Soda Bottle

F-G. 74:145
Stratum 1
Glass Soda Bottles
H. Grone & Co.

H. 74:13
Stratum 1
Glass Soda Bottle
Wolf Christen

I. 74:14
Stratum 1
Glass Soda Bottle
H. C. Breimeyer
Figure 95: Various Bottle Closures Developed in 1885 Alone
(Paul and Parmalee 1973:11)
Figure 96: Advertisement Showing Consumers Various Ways to Open Crown Caps
(Paul and Parmalee 1973:19)
The percentages of the various alcoholic bottles are represented in Figure 97. Beer represented only 13% of these beverages. Embossed beer bottles were recovered from Feature 74. These include one bottle from the Natural Bridge White Beer Brewer (Photo 384:A). White (Weiss) beer had a long tradition in Germany. It was named for its pale appearance due to wheat being mixed with the barley malt. This technique of making beer was brought to St. Louis by German immigrants and white beer was most popular between 1860 and the 1880s (Herbst et al. 2015:232).

Figure 97: Percentage of Various Alcoholic Beverages from 1850-1890 Features

A small fragment from another beer bottle was marked “G. Deuber, St. Louis, Mo”. During the 1870s and 1880s, George Deuber was a partner with the widow, Lena Hannemann, whose husband, Carl, started brewing Weiss beer in 1857 and operated a tavern next to the brewery. Between 1894 and 1898, Deuber was a partner with Charles Lohmueller in operating the American Weiss Beer Brewery (Herbst et al 2015:232, 236). The bottle recovered from Feature 74 was likely from a Weiss beer as well.

A third beer bottle was from the “St. Louis Ale Brewery” (Photo 384:B). This brewery was created by Richard F. Cooper and William J. Conger in 1862. Cooper moved to St. Louis after his brewery in Alton was destroyed by fire caused by an exploding boiler. He had been standing near the boiler, but miraculously did not suffer any serious injuries. Cooper and Conger sold the business to Benard F. and John Young. Benard soon took over the brewery (Figure 98), which lasted for 20 years. In the 1870s he was producing between 800 and 1100 barrels of ale and porter per year. But the demand for his beer dropped in the 1880s and he went out of business in 1884 (Herbst et al. 2015:225). This bottle and another one found in the same feature (Photo 384:C) have a green color. Green colored beer bottles were commonly produced in England and Europe during this time. Although these bottles were likely produced by St. Louis breweries, they may have been made to appeal to immigrant families.

Figure 98: St. Louis Ale Brewery Ad from 1870s (Herbst et al. 2015:11)
Photo 384: Beer Bottles from Feature 74 of Excavation Block 8

A. 74:150
   Stratum 1
   Glass Beer Bottle
   Natural Bridge White Beer Brewery

B. 74:152
   Stratum 5
   Glass Beer Bottle
   St. Louis Ale Brewery

C. 74:151
   Stratum 1
   Glass Beer Bottle
One stoneware cider bottle was uncovered in Feature 183 of Excavation Block 10 (Photo 385). This bottle was marked with “J.A. Barret & Co.”, but no information could be found on this company.

Just under half (46%) of the alcoholic beverages consisted of liquor bottles. At least six bottles, from Feature 74 of Excavation Block 8, represented flasks. Five of these are scroll flasks used between the 1840s and 1870s (Photo 386:B-E; Figure 99). Another flask depicted a man walking with a knapsack on a stick over his shoulder. Above it is written “For Pike Peak” and under it “Old Rye” (Photo 386:A; Figure 100). Flasks of this type started being produced in 1859, when rumors of gold being found near Pike’s Peak in Colorado spread across the country. This resulted in a rush of people to that region. The flask continued to be produced after the gold rush until the 1870s. The 1866 and 1872 prices for these flasks, consist of (McKearin and McKearin 1948:497):

<table>
<thead>
<tr>
<th></th>
<th>1866</th>
<th>1872</th>
</tr>
</thead>
<tbody>
<tr>
<td>quarter pint</td>
<td>--</td>
<td>$10.00</td>
</tr>
<tr>
<td>half pint</td>
<td>$7.20</td>
<td>$12.00</td>
</tr>
<tr>
<td>pint</td>
<td>$9.60</td>
<td>$16.00</td>
</tr>
<tr>
<td>quart</td>
<td>$12.00</td>
<td>$24.00</td>
</tr>
</tbody>
</table>

Figure 99: Typical Scroll Flask (McKearin and McKearin 1948:577)

Figure 100: Typical Pike’s Peak Flask (McKearin and McKearin 1948:577)
Photo 386: Liquor Flasks and Bottles from 1850-1890 Features

A. 74:155
Stratum 5
Glass Liquor Bottles
Pike’s Peak Old Rye Eagle

B. 74:156
Stratum 5
Glass Liquor Flask
Scroll Flask

C.-E. 74:157
Stratum 5
Glass Liquor Bottles

E.-H. 74:154
Stratum 5
Glass Liquor Bottles

L.-J.183:63-64
Stratum 1, West Half
Liquor Bottles

K. 220:17
Stratum 1 E 1/2
Glass Liquor Starwood’s Bottle
The remaining 10 bottles consisted of liquor bottles. One of these (Photo 386:K) was marked Starworks of Cincinnati, Ohio. No information could be found on this company.

Wine bottles represented the next highest percentage of alcohol containers at 41% (see Figure 97). Wine drinking was not frowned upon by many in Victorian society. In fact, having the right type of wine served with various courses during a meal often was considered crucial (Wnuk 2000). Most of the wine bottles were Burgundy style with sloped shoulders (Photo 387:C-F). This style was first produced during the early 1800s and continue to be popular today (SHA 2018). Two wine bottles (Photo 387:A-B) found in Feature 220 of Excavation Block 25 were of the Rhine style used in Germany and eastern France from the 1830s to the present. In fact, one of the bottles (Photo 387:B) has a German manufacturing mark of “Kempfh, Neustadt, Gebr.”

A small portion of a wine decanter was found in Feature 183 of Excavation Block 10. In addition, at least four wine glasses were recovered from Features 74 of Excavation Block 8, 183 of Excavation Block 10, 220 of Excavation Block 25, and 299 of Excavation Block 18. The glasses from Features 74 and 220 are similar in that they were made with a red glass having an etched grape vine, leaves, and grapes decoration (Photo 388:A-B). Also from Feature 299 was a beer mug (Photo 388:E). A liquor shot glass was discovered in Feature 220 (Photo 388:D) and a small glass tumbler that may have also served as a shot glass was uncovered in Feature 23 (Photo 388:C).

Portions of 25 other, larger tumbler glasses were recovered (Photo 389). These, however, could have been used to consume any drink. In the mid-1600s, the term tumbler was used to refer to drinking vessel that had a rounded bottom so that they would tumble over if they were set down. This forced the drinker to finish the glass, usually containing alcohol, before setting it down, increasing consumption. Tumblers made by the late 1700s had a thick glass bottom so that they were less likely to tumble over. Prior to the mid-1800s, they were blown and could have fine cut or etched moldings or decorations. By the 1850s, pressed glass tumblers, similar to the ones recovered from these features, were being produced making them more affordable (Holloway 2018; M McKearin and McKearin 1948).
Photo 387: Wine Bottles from 1850-1890 Features

A. 220:81
West 1/2
Glass wine bottle fragment
Rhine bottle

B. 220:82
West 1/2
Glass wine bottle fragment
Rhine bottle

C.-D. 74:153
Stratum 5
Glass Wine Bottles

E.-F. 23:67
Stratum 3
Glass Wine Bottles
Photo 388: Wine Glasses, Shot Glasses, and Beer aMug from 1850-1890 Features

A. 74:159
Stratum 5
Red Glass Wine Glass
Etched

B. 220:19
Stratum 1 E 1/2
Wine Glass Fragment
Etched

C. 23:18
Stratum 1
Glass Tumbler

D. 220:84
West 1/2
Shot glass fragment

E. 299:03
Beer Stein

0 1 2 3 4 5 cm
0 1 2 3 4 5 inches
Photo 389: Glass Tumblers from 1850-1890 Features
Health Care Products

A total of 262 (11,991.3g) artifacts were associated with health care. These represented a minimum of 154 vessels. Only five prescription bottles were recovered from these features (Figure 101). The pharmacy label could only be read on three of these bottles, all of them from the J.W. Tomfohrde Pharmacy (Photo 390:A-B). It was located at the northeast corner of Benton and W. 18th Street. It is possible that this drug store was just outside of the project area, as 18th street was renamed 22nd Street in the 1880s. Tomfohrde ran a pharmacy at this location from at least 1876 to 1893. The bottles were found in Feature 183 in Excavation Block 10 and in Feature 221 in Excavation Block 25. These were located only a couple of blocks from the pharmacy (if it was at the later location of 22nd and Benton).

Figure 101: Percentage of Health Care Products from 1850-1890 Features
By the late 1800s, commercially prepared and sold patent medicines were becoming more popular than medicines procured from a pharmacy. A greater number of patent medicine bottles (N=27) were recovered from the features (Figure 101). These medicines were used to cure a wide range of diseases, but nearly half of them were used for digestion troubles (Figure 102). Most of these products contained quantities of alcohol or now illicit drugs (Table 19). For example, Perry Davis Vegetable Pain Killer, found in Feature 74 of Excavation Block 8, claimed to be a “Purely Vegetable Medicine” (Figure 103) even though its main ingredients were opiates and ethyl alcohol. Udolpho Wolfe’s Aromatic Schnapps, consisting of five bottles found in Features 74 and 184 (Photo 391:A), claim to be a diuretic that could cure dropsy, gout, and various digestive disorders. It was gin flavored with and an aromatic Italian berry that was first produced in Schiedam, Holland. By 1848, Udolpho Wolfe imported this gin into New York and advertised its curative values (Meyer 2013).
Figure 102: Percentage of Various Patent Medicines Cures from 1850-1890 Features

- Blood Strengthener: 4 (21%)
- Coughs & Colds: 3 (16%)
- Chills & Fever: 2 (11%)
- Pain Killer: 1 (5%)
- Laxative & Stomach Ailments: 9 (47%)

Figure 103: Trading Card for Perry Davis Vegetable Pain Killer
(East Carolina University 2018)
<table>
<thead>
<tr>
<th>Number of Bottles</th>
<th>Patent Medicine (Dates Produced)</th>
<th>City, State</th>
<th>Cures</th>
<th>Principal Ingredients</th>
<th>Dates of Bottle Manufacture</th>
<th>Photo</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Udolpho Wolfe’s Aromatic Schnaps</td>
<td>New York, NY (Schiedam, Holland)</td>
<td>digestive disorders</td>
<td>gin</td>
<td>1848-1895</td>
<td>391:A</td>
<td>Meyer V 2013</td>
</tr>
<tr>
<td>1</td>
<td>Dr. J. Hastetter’s Stomach Bitters</td>
<td>San Francisco, CA</td>
<td>digestive disorders</td>
<td>47% alcohol, aromatic oils (anise, coriander, etc.) and vegetable bitters (cinchona, gentian, etc.)</td>
<td>1853-1954</td>
<td></td>
<td>National Park Service 2018</td>
</tr>
<tr>
<td>1</td>
<td>Dr. Hoofland’s German Bitters</td>
<td>Philadelphia, PA</td>
<td>digestive disorders</td>
<td>29% alcohol</td>
<td>1850-1870</td>
<td>391:B</td>
<td>Meyer V 2012</td>
</tr>
<tr>
<td>1</td>
<td>Citrate of Magnesia</td>
<td>unknown</td>
<td>laxative &amp; digestive disorders</td>
<td></td>
<td></td>
<td>391:C</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Bromo Seltzer</td>
<td>Baltimore, MD</td>
<td>digestive disorders &amp; headaches</td>
<td></td>
<td>1889-1971</td>
<td>391:D</td>
<td>Connie 2014</td>
</tr>
<tr>
<td>3</td>
<td>McClean’s Cordial &amp; Blood Purifier</td>
<td>St. Louis, MO</td>
<td>blood enricher &amp; cleanser</td>
<td>80-100% alcohol</td>
<td>1849-1886</td>
<td>391:E</td>
<td>Nickell 2013</td>
</tr>
<tr>
<td>1</td>
<td>Dr. Wynkoop’s Katharismic Honduras Sarsparilla</td>
<td>Albany, NY</td>
<td>purified blood &amp; removes taint</td>
<td></td>
<td>1847-1896</td>
<td>391:F</td>
<td>Meyer V 2013</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Jayne’s Expectorant</td>
<td>Salem NJ &amp; Philadelphia, PA</td>
<td>Cough</td>
<td>ipecac, opium, digitalis</td>
<td>1822-1976</td>
<td>391:G</td>
<td>Fincham 2018</td>
</tr>
<tr>
<td>2</td>
<td>J &amp; C McQuire Chemist &amp; Druggist</td>
<td>St. Louis, MO</td>
<td>chills &amp; fever</td>
<td>40% alcohol</td>
<td>1859-1921</td>
<td>392:A-B</td>
<td>Meyer V 2015</td>
</tr>
<tr>
<td>1</td>
<td>Smith’s Tonic Syrup</td>
<td>Louisville, KY</td>
<td>chills &amp; fever</td>
<td></td>
<td>1838-1892</td>
<td>392:C</td>
<td>Leavenworth Arena 1838 Toppan et al. 1899</td>
</tr>
<tr>
<td>2</td>
<td>Ayers Sarsparilla Extract</td>
<td>Lowell,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>New England Historical Society 2018</td>
</tr>
<tr>
<td>1</td>
<td>Perry Davis Vegetable Pain Killer</td>
<td>Providence, RI</td>
<td>pain killer</td>
<td>opiates, ethyl alcohol, vegetable extract, camphor</td>
<td>1843-1940</td>
<td>392:E</td>
<td>Sharrah and Bause 2017</td>
</tr>
<tr>
<td>1</td>
<td>Wakefield’s Blackberry Balsam</td>
<td>Bloomington, IL</td>
<td>cholera, morbus, diarrhea, dysentery, cholera infantum, all forms of summer complaints, &amp; teething children</td>
<td></td>
<td>1850-1980s</td>
<td>392:F</td>
<td>Griffin 2015</td>
</tr>
<tr>
<td>1</td>
<td>C.G.Clark Co.</td>
<td>New Haven, CT</td>
<td>cough balm, dyspepsia cure, camphor ice</td>
<td></td>
<td></td>
<td>392:G</td>
<td>Houlihan 2008</td>
</tr>
</tbody>
</table>
Photo 391: Patent Medicines from 1850-1890 Features

A. 184:20
Stratum 1
Patent Medicine Bottle
Udolphi Wolfe's Aromatic Schnapps

B. 74:162
Stratum 5
Glass Patent Medicine Bottle
Dr. Hoofland's German Bitters

C. 220:21
Stratum 1 East 1/2
Glass patented medicine bottle
Citrate of Magnesia

D. 74:20
Stratum 1
Glass Patent Medicine Bottle
Bromo-Seltzer

E. 220:20
Stratum 1 East 1/2
Glass patented medicine bottle
McLean's Cordial & Blood Purifier

F. 74:165
Stratum 5
Glass Patent Medicine Bottle
Dr. Wynkoop's Katharismic Honduras Sarsaparilla

G. 183:66
Stratum 1, West Half
Patent Medicine Bottle
Dr. Jayne's Expectorant
Photo 392: Additional Patent Medicines from 1850-1890 Features

A. 220:23
Stratum 1 East 1/2
Glass patented medicine bottle
J & C McQuire
Chemist and Druggist

B. 220:88
West 1/2
Glass patented medicine bottle
J & C McQuire
Chemist and Druggist

C. 183:67
Stratum 1, West Half
Patent Medicine Bottle
Smith’s Tonic Syrup

D. 220:87
West 1/2
Glass patented medicine bottle
Ayer’s Sarsaparilla
Compound Ext

E. 74:161
Stratum 5
Glass Patent Medicine Bottle
Perry Davis Vegetable Pain Killer

F. 220:89
West 1/2
Glass patented medicine bottle
Wakefield's Blackberry Balsam

G. 220:90
West 1/2
Glass patented medicine bottle
C.G. Clark medicine
James Ayers manufactured a wide range of drugs in addition to his Sarsaparilla Extract recovered from Feature 74. He amassed a fortune around $20 million. His “state-of-the-art factory” in Lowell Massachusetts, “employed 150 people. In one year alone, the factory processed 325,000 pounds of drugs, 220,000 gallons of spirits, and 400,000 pounds of sugar.” What made Ayers so successful was his business sense and advertising, spending $140,000 for advertisements in one year alone (Figure 104). The Sarsaparilla Extract advertisement claimed:

purifies the blood, stimulates the vital functions, restores and preserves health, and infuses new life and vigor throughout the whole system. Sarsaparilla was recommended for jaundice, dyspepsia, pimples, boils, ringworm, female weaknesses and ‘lassitude and debility peculiar to the Spring.’

(New England Historical Society 2018)

However, Sarsaparilla Extract contained mostly alcohol and did not actually cure any disease (New England Historical Society 2018).

Dr. David Jayne’s was one of the longest and most successful patent medicine manufacturers. He started producing medicines in 1831 and manufactured Expectorant, similar to the bottle found in Feature 74, in 1858. Jayne’s also used colorful graphics and almanacs to promote his products (Figure 105). Expectorant was advertised as being able to cure colds, asthma, consumption, and any other lung or throat diseases. It contained 15% alcohol, opium, ipecac which could cause irregular heartbeat, and digitalis, which increases the heart rate. Dr. Jayne’s company continued to produce drugs until 1930 (Yates 2005, Meyer 2013B).

Patent manufacturers flourished during the late 1800s as there was a general distrust of doctors and hospitals at that time. People preferred home remedies to cure themselves. If these did not work, then there was a multitude of patent medicines that promised to cure any ills.

Similar to Ayer’s Sarsaparilla Extract, Wakefield’s Blackberry Balsam, found in Feature 220 of Excavation Block 25, was meant to cure digestive disorders. However, it was advertised as curing various summer complaints and could be used on teething children (Figure 106). It even claimed that it could be used to loosen the bowels of newborn livestock.

Another bottle found in this feature was made by the C.G. Clark Co. in New Haven Connecticut. This company produced several medicines (Figure 107) including cough balm, dyspepsia cure, and camphor ice, but the bottle was similar to those used for the cough balm.

The remaining 118 bottles were used for medicines because of their shapes but it could not be determined if these were from prescription or patent medicines (Photos 393-394). Only one of these bottles, found in Feature 24, had a manufacturer’s mark of Cunningham & Company in Pittsburgh, Pennsylvania. This glass bottle manufacturer was in business between 1861 and 1886.
Figure 104: Advertisements for Ayer's Sarsaparilla (Hoyt 2015)
Figure 105: Advertisement for Dr. Jayne’s Expectorant (Ebay 2018)

Dr. Jayne’s Expectorant Trade Card

Rebekah at Well, Dr. Jaynes Expectorant Trade Card

My Mama, Jaynes Expectorant
Figure 106: Advertisement for Wakefield’s Blackberry Balsam (Steinbacher 2008)

Figure 107: Advertisement for the C.G. Clark Co. (Connecticut History Illustrated 2018)
Photo 393: Unmarked Medicine Bottles from 1850-1890 Features

74:167
Stratum 5
Glass Medicine Bottles

74:168
Stratum 5
Glass Medicine Bottles

74:169
Stratum 5
Glass Medicine Bottle

74:170
Stratum 5
Glass Medicine Bottles

220:26
Stratum 1 East 1/2
Glass medicine bottle

220:28
Stratum 1 East 1/2
Glass medicine bottle fragment
Photo 394: Additional Unmarked Medicine Bottles from 1850-1890 Features

130:12
Glass Medicine Bottle

183:71
Stratum 1, West Half
Medicine Bottles

183:75
Stratum 1, West Half
Medicine Bottle

183:153
Stratum 2, West Half
Medicine Bottle

183:155
Stratum 2, West Half
Medicine Bottle

183:158
Stratum 2, West Half
Medicine Bottle
Three vials were discovered in Feature 183 of Excavation Block 10 (Photo 395) and Feature 220 of Excavation Block 25 (Photo 395). These could have contained samples dispensed by a doctor or a pharmacy, but they are more commonly associated with homeopathic medicines. Homeopathy was developed by the German physician, Samuel Hahnemann, at the end of the 18th century, and later refined by the American physician James Tyler Kent. It is based on the theory that diseases could be controlled by administering drugs in small doses that produces the same symptoms as certain diseases in healthy people. In this way, the patient’s natural immune system was believed to be stimulated to fight off diseases (Ullman 1991). The 1897 Sears catalog sold homeopathic kits that could ward off a diversity of diseases, however, some of the medicines used (e.g. arsenic, belladonna, mercury, galena, and opium) could be more harmful than the diseases they were meant to fight (Figure 108).
Homeopathic Cases.

We make Special Medicine Cases in order to contain 12, 24, 36 or 48 remedies. We will fill these cases with any assortment of remedies you wish and in any size bottles. With each case we send a Homeopathic Manual, giving full directions how to use the remedies, also a General Description of Diseases, and how to treat sick people to get them well again. Our prices are very low for these cases and the cases are worth from four to five times the amount we ask for them. Send us a description of the remedies wanted and we will send you the cost. There ought to be one in every household, especially where there are children.

**Our 85c Homeopathic Cases.**

D 679 Contains 12, 1 dr. remedies with directions. ................................................................. $0.85

**Our $1.50 Homeopathic Cases.**

D 680 Contains 24, 2 dr. remedies with directions. ................................................................. $1.50

D 681 This is a durable polished hard wood case containing 24, 2 dr. and 4, 1 oz. bottles, fitted with lock and key, complete with Dock's Stepping Stone. $5.00

D 682 Similar to above containing 36, 3 dr. and 4, 1 oz. bottles, complete with book. ................. $6.75

We are prepared to furnish anything in the line of Homeopathic supplies, and guarantee them to be full strength and fresh condition. We mention a few of the more prominent. A more complete list will be found in our special Drug Catalogue. We will be pleased to furnish information on Homeopathic medicines if you are in doubt as to what to order. We will also send a copy of Halsey's Manual (182 pages), a complete homeopathic treatise, free on request. When ordering the following remedies please specify what form you wish them in; pills, powder, pack or liquid.

<table>
<thead>
<tr>
<th>Name</th>
<th>Strength</th>
<th>Name</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconite</td>
<td>3x</td>
<td>Hydrastis</td>
<td>1x</td>
</tr>
<tr>
<td>Antimon crud.</td>
<td>3x</td>
<td>Hyoscyamus</td>
<td>3x</td>
</tr>
<tr>
<td>Arsenic</td>
<td>3x</td>
<td>Ignatia</td>
<td>3x</td>
</tr>
<tr>
<td>Arnica</td>
<td>3x</td>
<td>Iodium</td>
<td>3x</td>
</tr>
<tr>
<td>Arsenic alb.</td>
<td>3x</td>
<td>Ipecac</td>
<td>3x</td>
</tr>
<tr>
<td>Baptisia</td>
<td>3x</td>
<td>Rhei bich.</td>
<td>3x</td>
</tr>
<tr>
<td>Belladonna</td>
<td>3x</td>
<td>Lachesis</td>
<td>6x</td>
</tr>
<tr>
<td>Bryonia alba.</td>
<td>3x</td>
<td>Lycopodium</td>
<td>3x</td>
</tr>
<tr>
<td>Calcarea car.</td>
<td>3x</td>
<td>Merc. bino.</td>
<td>3x</td>
</tr>
<tr>
<td>Cantharis</td>
<td>3x</td>
<td>Merc. coros.</td>
<td>3x</td>
</tr>
<tr>
<td>Carby veg.</td>
<td>3x</td>
<td>Merc. sol.</td>
<td>3x</td>
</tr>
<tr>
<td>Cauophyllum</td>
<td>3x</td>
<td>Merc. viv.</td>
<td>3x</td>
</tr>
<tr>
<td>Causticum</td>
<td>3x</td>
<td>Natrum mur.</td>
<td>6x</td>
</tr>
<tr>
<td>Chamomilla</td>
<td>3x</td>
<td>Nitric Acid.</td>
<td>3x</td>
</tr>
<tr>
<td>China</td>
<td>2x</td>
<td>Nux vomica.</td>
<td>3x</td>
</tr>
<tr>
<td>Chinin, arsen.</td>
<td>2x</td>
<td>Opium</td>
<td>3x</td>
</tr>
<tr>
<td>Chimonifaga.</td>
<td>1x</td>
<td>Phosphor.</td>
<td>3x</td>
</tr>
<tr>
<td>Colchicum</td>
<td>3x</td>
<td>Phosphoric ac.</td>
<td>3x</td>
</tr>
<tr>
<td>Concretas</td>
<td>3x</td>
<td>Phys. ac.</td>
<td>3x</td>
</tr>
<tr>
<td>Coffea crud.</td>
<td>3x</td>
<td>Podophyllin.</td>
<td>3x</td>
</tr>
<tr>
<td>Colocynth.</td>
<td>3x</td>
<td>Pulsatilla</td>
<td>3x</td>
</tr>
<tr>
<td>Colocynth.</td>
<td>3x</td>
<td>Rhus tox.</td>
<td>3x</td>
</tr>
<tr>
<td>Capsicum</td>
<td>2x</td>
<td>Sanguinaria</td>
<td>3x</td>
</tr>
<tr>
<td>Digitalis</td>
<td>2x</td>
<td>Scale cor.</td>
<td>1x</td>
</tr>
<tr>
<td>Drosera</td>
<td>3x</td>
<td>Sepia</td>
<td>3x</td>
</tr>
<tr>
<td>Dulcamara</td>
<td>3x</td>
<td>Silica</td>
<td>3x</td>
</tr>
<tr>
<td>Datura</td>
<td>1x</td>
<td>Staphy.</td>
<td>8x</td>
</tr>
<tr>
<td>Ferrum phos.</td>
<td>3x</td>
<td>Sulphur</td>
<td>3x</td>
</tr>
<tr>
<td>Ferrum phos.</td>
<td>3x</td>
<td>Tartar emetic</td>
<td>5x</td>
</tr>
<tr>
<td>Gelsemium</td>
<td>1x</td>
<td>Veratum alba.</td>
<td>1x</td>
</tr>
<tr>
<td>Glonid.</td>
<td>3x</td>
<td>Veratum rub.</td>
<td>3x</td>
</tr>
<tr>
<td>Graphites</td>
<td>5x</td>
<td>Hepar sulph.</td>
<td>3x</td>
</tr>
</tbody>
</table>

D 683 ¼ oz. phials each 10 cents. By mail 15 cents. 
D 684 ¼ oz. phials each 15 cents. By mail 20 cents. 
D 685 1 oz. phials each 20 cents. By mail 25 cents. 
D 686 2 oz. phials each 40 cents. By mail 45 cents. 

**Figure 108: Homeopathic Cases in 1897 Sears Roebuck Catalogue (Israel 1968:30)**
One syringe was found in Feature 221 of Excavation Block 25 (Photo 396). Syringes were used for personal cleaning, to prevent or treat venereal disease, and applied as a douche in an attempt to prevent pregnancies (Laskowski 2011; Society for Historical Archaeology 2005).

*Photo 396: Syringe from Feature 221 in Excavation Block 25*

---

**Personal Care and Adornment**

Only 24 (578.7.0g) artifacts were associated with personal care or personal adornment. These consisted of a minimum of 19 items (Figure 109). By the late 1800s, due to the influence of Victorian ideology, it was believed that a person’s appearance reflected their behavior. Criminals and people of poor reputations could be spotted by their appearance alone. While those who worked hard, exercised, stayed away from smoky bars, and lived a clean life would be more physically attractive (Wells 1868). By the end of the century, commercially prepared cosmetics became more common as women and men tried to improve on their appearance where diet and exercise could not (Wnuk 2000).

*Figure 109: Percentage of Personal Care and Adornment Items from 1850-1890 Features*
Most of the personal care items consisted of perfume bottles (Figure 109, Photo 398) which were recovered from:

<table>
<thead>
<tr>
<th>Block</th>
<th>Feature</th>
<th># of Bottles</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>183</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>130</td>
<td>1</td>
</tr>
</tbody>
</table>

Although perfumes have been used since ancient times, during the 1870s French manufacturers started to mass produce perfumes and sell them internationally. Shortly afterwards American manufacturers were producing perfumes as well. This also developed because of Victorian ideology, in which outdoor sights, smells, and sounds were thought to promote good health. To mask common body smells, deodorants were produced and widely marketed. Colognes and perfumes were used to further mask odors, but even more importantly, provided a person with a unique and pleasant smell. These often reflected the cleansing smells of nature with floral scents being the most popular (Schlereth 1991:284). However, they were still fairly expensive, most made in France, until the start of the 20th century.

Only one bottle, in Feature 74, was marked; it was made by “Lubin Parfumeur” of Paris, France (Photo 398:A). Pierre Francois Lubin was a merchant who became a perfumer in 1792. He was so successful that he supplied perfumes for most of the royal courts in Europe. In 1830, he started importing his perfume to the U.S. predominately to the southern plantation owners. Felix Andre Prot took over control of the perfumery in 1844 as Lubin had no heirs. Prot’s heirs continued to make Lubin perfumes today (Parfums Lubin 2018).

In addition, two white glass cosmetic jars were recovered from Features 74 and 183 (Photo 397). Unfortunately, these were not marked.

*Photo 397: Cosmetic Jars from 1850-1890 Features*
Photo 398: Perfume Bottles from 1850-1890 Features

A. 74:181
Stratum 5
Glass Perfume Bottle
Lubin Parfumeur à Paris

B. 74:182
Stratum 5
Glass Perfume Bottle

C. 74:25
Stratum 1
Brass Decorative Perfume Piece

D. 183:83
Stratum 1, West Half
Perfume Bottle
Molded

E. 183:84
Stratum 1, West Half
Perfume Bottle
Molded

F. 183:85
Stratum 1, West Half
Perfume Bottle
Molded

G. 130:14
Glass Perfume Bottle
Hair care products represented 31% of the personal care and adornment items. These included two hair combs used by women to hold and decorate their hair (Photo 399:A-B). One was made of rubber and the other of plastic.

In 1844, Charles Goodyear discovered that when rubber was mixed with sulfur, it “vulcanized” and turned harder. Nelson Goodyear, Charles’ son, improved on his father’s original patent getting a second patent in 1851. Shortly afterwards, rubber was being used for buttons and various novelty items such as women’s hair combs (Hughes and Lester 1981:48).

The earliest plastic, celluloid (also called Ivoroid), was created in 1869 by John Wesley Hyatt to imitate ivory for billiard balls. It was soon being used to produce a wide variety of novelty items such as gaming pieces, figurines, buttons, color studs and hair combs (Luscomb 1967:36; Friedel 1987).

Back and side combs (Figure 110) were used to fix the hair in the à la Madonna style, with it pulled back and braided on each side of the head, or in chignon braided and coiled into a large roll at the back of the head. These hairstyles were meant to balance the backward thrust of the full skirt’s bustle and call attention to the face (Figure 111) (Schlereth 1991). Although hair pins were used to keep the hair in place, side and back combs were used, similar to the two recovered from Feature 74 of Excavation Block 8. Brown plastic combs, similar to the one recovered from Feature 74 (Photo 399:B), became popular because they resembled more expensive tortoise shell combs. However, rubber combs were more often used such as the one recovered from Feature 74 (Photo 399:A). A rubber dressing comb was found in Feature 220 of Excavation Block 25. These were used to comb out the hair (Figure 112).

*Figure 110: Women’s Side and Back Combs Sold in the 1898 Sears Roebuck Catalogue (Israel 1968:326)*
Figure 111: Women’s Hair Styles Late 1800s (Israel 1968:270-271)

Figure 112: Women’s Dressing Combs Sold in the 1898 Sears Roebuck Catalogue (Israel 1968:326)
Photo 399: Hair Care Products from 1850-1890 Features

A. 74:183
Stratum 5
Rubber Woman’s Hair Comb

B. 74:26
Stratum 1
Plastic Woman’s Hair Comb

C. 220:98
West 1/2
Rubber comb

D. 74:184
Stratum 5
Glass Hair Tonic Bottle
Lyon’s Hair Tonic
A bottle of “Lyon’s Kathairon Hair Tonic” was discovered in Feature 74 (Photo 399:D). This was a product of Emanuel Thomas Lyon who was born in Germany in 1815. He immigrated to the U.S. in the 1840s and worked as a chemist in New York City, starting his own drug manufacturing company by the late 1840s. Around 1850, he developed Kathairon which was Greek meaning to cleanse, rejuvenate, and restore. This hair tonic was promoted to prevent hair from falling out, stop graying, and prevent dandruff as well as promote luxuriant growth. It also claimed the tonic could cure “nervous headaches, scald head, erysipelas diseases of the skin, etc.” (Figure 113). It contained 76.25% alcohol, which caused a tingling feeling of the scalp making the user believe the tonic was working. After Lyon died in 1858, Demas Barnes made Kathairon between 1860 and 1871. The Lyon Manufacturing Company was then formed and continued to produce this product until around 1906 (Fadely 2018B).

Figure 113: Advertisements for Lyon Kathairon Hair Tonic (Fadely 2018B)
Figure 113: Advertisements for Lyon Kathairon Hair Tonic (Fadely 2018B), Continued

LYON’S KATHAIRON

Increases the growth and Beauty of the hair, and is a most delightful dressing.

What a Figure! Ha! Ha! Ha! This is the

greeting oft-from their those becom-
turely grey avoid any pleasant you

USE Lyons KATHAIRON FOR THE HAIR.

LYON’S KATHAIRON, the most excellent and popular preparation for the Hair ever made. Sold everywhere.

DIRECTIONS FOR USE.

To Preserve and Beautify the Hair.—Apply Lyon’s Kathairon with the palm of the hand to the roots of the Hair and rub thoroughly. Then brush the hair vigorously. Morning is the best time.

For Dandruff, Scurf, Itching, Etc., the same general instructions apply. Rub and brush the head with vigor.

Baldness.—Wet the scalp thoroughly with Lyon’s Kathairon and rub with your hand till nearly dry. Repeat morning and evening. The growth may be slow. If the roots of the hair are not entirely dead you may hope for the best result.

As a Dressing, and to Keep the Hair in Place.—Use Lyon’s Kathairon freely as often as the hair gets dry.
No jewelry was recovered from these features, but a vanity box was found in Feature 184 of Excavation Block 10 (Photo 400). This would have been used to hold jewelry and other small precious objects.

*Photo 400: Vanity Box from Feature 184 of Excavation Block 10*

**Personal Items**

Personal items consisted of 286 (2,350.55g) artifacts, representing a minimum of 201 pieces. Of these, 57% consisted of clothing items (Figure 114). Not surprising buttons represented 77% of the clothing related artifacts (Figure 115). Most of these (75%) were made of porcelain (Figure 116, Photo 401). Nearly all of these consisted of 4 sew thrus, but one button in Feature 220 of Excavation Block 25 had 2 sew thrus (Photo 401:Q) and one button in Feature 23 of Excavation Block 7 had a dome shape with a shank attachment (Photo 401:W). Although most of these buttons were left plain white, two buttons had a painted blue or black border (Photo 401:X-Y). Another button from Feature 183 of Excavation Block 10 had series of small circles of a red transfer print (Photo 401:Z). A button from Feature 23 in Excavation Block 7 had a blue calico transfer print (Photo 401:AA).
Figure 114: Percentage of Personal Items from 1850-1890 Features

- Clothing: 114 (57%)
- Tobacco Pipe: 26 (13%)
- Buttons: 88 (77%)
- Buttons: 2 (2%)
- Children Toys: 54 (27%)
- Antler Knife Handle: 1 (1%)
- Shaving Brush Handle: 1 (1%)
- Bone Grammet: 1 (1%)
- Belt Buckle: 2 (2%)

Figure 115: Percentage of Various Clothing Items from 1850-1890 Features

- Shoes: 21 (18%)
- Tobacco Pipe: 26 (13%)
- Buttons: 88 (77%)
- Buttons: 2 (2%)
- Children Toys: 54 (27%)
- Antler Knife Handle: 1 (1%)
- Shaving Brush Handle: 1 (1%)
- Bone Grammet: 1 (1%)
Porcelain 67 75%
Bone 3 3%
Mussel 3 3%
Rubber 1 1%
White Glass 6 7%
Brass 10 11%

Figure 116: Percentage of Various Button Materials from 1850-1890 Features
Photo 401: Porcelain Buttons from 1850-1890 Features

A.-H. 23:24
Stratum 1
Porcelain Buttons
4 Hole

I.-M. 221:10
Stratum 1
Porcelain Buttons

N.-Q. 220:42
Stratum 1 East 1/2
Porcelain buttons

R.-S. 130:15
Porcelain Buttons
4 Hole

T. 15:6
Porcelain Button
4 Hole

U.-V. 74:185
Stratum 5
Porcelain Buttons
4 Hole

W. 23:27
Stratum 1
Porcelain Button
Dome Shape

X. 130:16
Porcelain Button
4 Hole
Painted

Y. 23:26
Stratum 1
Porcelain Button
Painted
4 Hole

Z. 183:101
Stratum 1, West Half
Porcelain Button
Red Transfer Print

A.A. 23:25
Stratum 1
Porcelain Button
Calico Transfer Print
4 Hole
Approximately 8% of the buttons were made of brass. Brass buttons were common during the 18th and the first half of the 19th century until the development of porcelain buttons (Luscomb 1967:26). Although they do not completely drop out of the market, after 1850, brass buttons are less common. During their height, brass buttons were sometimes covered with fabric, and from 1800 to 1850, gilded brass buttons were popular, especially on men’s vest coats. No trace of a gilt was found on these buttons, but the gilt could have worn off. Five buttons with 4 sew thurs were uncovered in Feature 184 of Excavation Block 10 (Photo 402:A-B). These could have come from the same article of clothing. The remaining five had a domed shape with a loop shank attachment (Photo 402:C-D). A button found in Feature 221 of Excavation Block 25 had an iron center with brass plating on the outside (Photo 402:D). Another button from Feature 183 in Excavation Block 10 was marked with “ACC” in large letters (Photo 402:E, Figure 117). This button was from a uniform from the University of Alabama Cadet Corp. The University of Alabama was established by 1831 in Tuscaloosa, Alabama. By the fall of 1860, the university adopted a system of military discipline and the student body was named the Corps of Cadets and wore uniforms similar to ones used at West Point (Figure 118). During the Civil War, the cadets were trained as officers and were used to train troops in the Confederate Army. They were directly called into several battles during the Civil War including one to protect their town and university, which was burned by Federal troops about a week before the end of the war. Military discipline became less popular by the end of the 19th century and the military system and the cadet corps abolished in 1903 (Center 2017; Causey 2018). The button could have been from a cadet who went to this school during the mid-late 1800s.

Figure 117: Example of Alabama Cadet Corps Button (Ridgeway 2018)

Figure 118: Example of Alabama Cadet Corps Uniforms
Worn by Cadet and Officer (Causey 2018)
Only three bone buttons were recovered. One from Feature 21 in Excavation Block 7 had 4 sew thrus with a central hole (Photo 403:A). The central hole was made by the machine that was used to cut buttons from animal bone. This machine was used until about 1860, suggesting that this was an older button. Bone buttons of this type were typically used on undergarments and other utilitarian clothing. These were gradually replaced by porcelain buttons after 1850. Another two buttons were large, measuring 3.25 cm (1 ¼ inches) (Photo 403:B). These pieces did not have sew thrus or other evidence of attachments, and may have served as button backings. Their size could suggest that these were used on coats.
Two other buttons, from Feature 220 in Excavation Block 25, were partially made of mussel shell and animal bone. These had 2 and 4 sew thrs (Photo 404:A-B). Another button from Feature 23 in Excavation Block 7 was entirely made of mussel shell (Photo 404:C). It had 2 sew thrs. During most of the 19th century, mussel shell buttons were produced by small factories located in towns along the rivers. These were used on inexpensive clothing. However, by the late 1800s, cheap shell buttons were being replaced by even cheaper and more durable porcelain buttons. Shell buttons acquired after this time tended to be more expensive, decorative sea shell buttons. The buttons recovered, however, were of the cheaper type gathered from nearby waterways.

More common were glass buttons which were produced after 1840 (Luscomb 1967:80). At least 9 of these were uncovered. Most of these (N=7) were white glass buttons with a dome shape and loop shank attachment (Photo 405:A-C). One white glass button from Feature 183 in Excavation Block 10, had a painted copper color border (Photo 405:D). This type of decoration was produced after 1850 (Luscomb 1967:127) and was attached with two sew thrs. One button, found in Feature 184, was made from a blue glass, with four sew thrs (Photo 405:E).
One rubber button was found in Feature 184. It had two sew thrus (Photo 406). Rubber buttons were produced after Nelson Goodyear’s patent of 1851 improving upon his father’s vulcanization process for making rubber. Rubber buttons were produced throughout the late 1800s (Luscomb 1967:170-171).

Brass hardware associated with suspenders were uncovered in Feature 23 of Excavation Block 7 and Feature 221 in Excavation Block 25 (Photo 407:A-B). During the 1700s, strips of ribbons attached to button holes were occasionally used to hold up men’s pants. The first true suspenders (or braces in England) were developed during the 1820s by Albert Thurston. Pants worn high on the waist became fashionable at that time. These were more effectively held up using suspenders than a belt. In 1894, a metal clasp was invented allowing suspenders to be clipped to pants instead of buttoned. Before 1940, suspenders were considered an undergarment and were hidden from view when in public. As late as 1938, Long Island, New York, passed an ordinance against men from showing their suspenders, calling it “sartorial indecency” (Suddath 2010). In addition to the suspender hardware two brass belt buckles were uncovered in Feature 183 and 184 of Excavation Block 10 (Photo 407:C-D).

A portion of a bone grommet was discovered in Feature 74 of Excavation Block 8 (Photo 408). It could have been used on women’s corset laces.

Photo 408: Bone Grommet Possibly from a Corset Lace in Feature 74 of Excavation Block 8
Shoes made up 18% of the clothing items (see Figure 115). However, these represented only fragments of shoes (Photo 409:A-B), with 15 representing only the heels. One of these, recovered from Feature 177 in Excavation Block 10, was a heel plate made of lead that was nailed onto the bottom of a leather heel so the shoe could last longer (Photo 409:C).

Other personal objects recovered included 26 tobacco pipes fragments. Tobacco was one of the first trade products sent back to Europe from the Americas. Initially, tobacco was smoked in pipes made of kaolin clay from the 16th until the mid-19th century. Similar to the ceramic market, England manufactured most of the kaolin pipes used in the Americas (Dallal 2004; Hume 1969:296). During the late 19th century, despite Victorian concerns with having a clean/wholesome environment, smoking continued to be popular, with sales nearly tripling to a half billion in 1880 (Schlereth 1991:46-47). By the 1860s, short stemmed pipes were used made of brier, meerschaum, redware, stoneware, or porcelain. Kaolin pipes were hot to the touch and supposedly stopped being used about this time. In particular, brier and meerschaum pipes did not conduct heat like the kaolin pipes and could be easily worked into a variety of decorative styles (Tender Box International 2010). The 1895 Montgomery Ward catalog lists only brier pipes with a small number made of apple wood and one made from corn cobs (Figure 119).
Figure 119: Clay Pipes Sold in 1895 Montgomery Ward Catalog (Emmit 1969:504-505)
While three pipes had short stems and were made of redware (Photo 410:A-B) or stoneware (Photo 410:C), the remaining 23 tobacco pipes were made of Kaolin clay, with moderately long stems (Photo 411). The bowls on two of these had a molded dot pattern (Photo 411:A & H) and one had a ribbed bowl (Photo 411:F). One pipe had a molded checkered pattern on the stem and it was marked “Peter” (Photo 411:E). This was the manufacturing mark of Peter Dormi of the Prince Pipe Making Company in Gouda, Netherlands, which was in operation between 1835 and 1898. However, similar pipes were produced by Peter Dormi of Grenzhausen, Westerwald, during the 18th century and by the start of the 19th century it was taken over by Peter Dornier in France. The Prince Pipe Making Company had bought the name from the French manufacturer in 1835 (Roland 2011). Data from archaeological investigations at other sites within the City of St. Louis have found that kaolin pipes were in use until the beginning of the 20th century. These appear to have been popular among the working classes, and they appear to have continued being produced in Europe and Ireland throughout the late 1800s (Harl 2006:397).

Photo 410: Redware and Stoneware Short Stemmed Tobacco Pipes from 1850-1890 Features
Photo 411: Kaolin Tobacco Pipes from 1850-1890 Features

A. 23:69
Stratum 3
Kaolin Tobacco Pipe
Molded

B-D. 23:29
Stratum 1
Kaolin Tobacco Pipes

E-F. 74:197-198
Stratum 5
Kaolin Tobacco Pipes

G. 220:45
Stratum 1 East 1/2
Kaolin pipe fragment

II. 183:97
Stratum 1, West Hall
Kaolin Pipe
Molded
Also recovered were two coins. One from Feature 23 in Excavation Block 7 was unidentifiable (Photo 412:A) and the other from Feature 183 of Excavation Block 10 was a 5 cent piece (Photo 412:B-C). It was used between 1866 and 1883.

*Photo 412: Coins from 1850-1890 Features*

In Feature 74 of Excavation Block 8 a hunting knife handle was recovered. It was curved and made of antler (Photo 413:A). Another object made of white animal bone was a shaving lather brush (Photo 413:B-C). From Feature 221 of Excavation Block 25 were 17 pieces from at least one harmonica (Photo 413:D). The harmonica was developed in 1821 by 16 year old Christian Friedrich Buschmann. In 1826, his instrument was improved upon by a Bohemian instrument maker, Richter, consisting of ten holes and twenty reeds, with separate blow and draw reed plates mounted on either side of a cedar comb. Known as a “Mundharmonika, or mouth organ”, this became the standard configuration in Europe. In 1857, German clock maker, Matthias Hohner, began to manufacture harmonicas. Hohner introduced harmonicas to America in 1862. By 1887, Hohner was producing more than one million harmonicas annually and made 90 different models (Euxton n.d.). The 1902 Sears Roebuck Catalogue suggested that harmonicas could be purchased as cheaply as 7 cents, but more expensive harmonicas could be acquired, which ranged in price from 65 cents to $1.30 (Figure 120).
Photo 413: Miscellaneous Personal Items from 1850-1890 Features

A. 74:198a
Stratum 5
Antler Knife Handle

B. 74:198b
Stratum 5
Bone Shaving Brush

C. Example of a White Bone
   Shaving Lather Brush
   (Israel 1968:111)

D. 221: 27
   Stratum 2
   Brass & wood
   Harmonica

No. 12094. White bone handle Lather Brush, all white
stock, medium size, well made, will give the best serv-
ices. Each, 20c.
Figure 120: Harmonicas Sold in 1902 Sears Roebuck Catalogue (1986:207)
Children toys represented 27% of the personal artifacts recovered (see Figure 114). Typical of most urban historic sites, marbles consisted of the majority of the children items at 39% (Figure 121). Various types of marbles were recovered including one made of clay found in Feature 184 of Excavation Block 10. This unglazed brown marble is only 1 cm (1/3 inch) in diameter (Photo 414:A). Although clay marbles are often thought to be the oldest marbles, they were produced in mass by the mid-1800s in both Germany and the U.S. and continued to be manufactured until the 1930s (Gartley and Carskadden 1998:49). The marble collected from Feature 184 was likely produced from left over clay by brick manufacturers for their own children. Bricks were manufactured on this site between the 1850 and 1880 and the clay marble could have been manufactured on site.

One marble, in Feature 23 of Excavation Block 7, was made of stoneware. This marble was covered by a salt glaze (Photo 414:B). Although Gartley and Carskadden (1998:39, 44) date this type of marble between 1600 and 1800, being replaced by Benningtons, which have a brown or blue spattered glaze popular from the 1870s to 1910s (Gartley and Carskadden 1998:135). The salt glazed marbles, however, continued to be made in small numbers throughout the 1800s. This is especially true of marbles produced with left over clay by stoneware manufacturers. The stoneware marble recovered was large, measuring 3 cm (1 inch) in diameter and was likely used as a shooter.

Of the recovered material, porcelain marbles were more common, with eight from these features. Although this type of marble was made in Germany around 1800, they appear only within the American market by the 1850s. These continued to be produced until around 1910. Unglazed marbles typically dated prior to 1880, with five of the porcelain marbles found being unglazed (Photo 414:C-D). One marble was glazed (Photo 414:E), while three others were glazed and painted. Two of these had blue lines around their circumference (Photo 414:F-G) and one had red and green intersection lines (Photo 414:H). Both types of decorations were common between 1850 and 1910 (Carskadden and Gartley 1990).
Figure 121: Percentage of Various Children Items from 1850-1890 Features

Marbles 22 39%

Toy Tea Set 13 23%

Doll 16 29%

Frozen Charollete 3 5%

Toy Bird Head 1 2%

Coin Bank 1 2%

Marbles 22 39%

429
Photo 414: Clay, Stoneware, and Porcelain Marbles from 1850-1890 Features

A. 184:53
Stratum 2
Clay Marble

B. 23:71
Stratum 3
Stoneware Marble
Large Shooter

C.-D. 183:167
Stratum 2, West Half
Porcelain Marbles

E. 183:168
Stratum 2, West Half
Porcelain Marble
Glazed

F.-G. 184:29
Stratum 1
Porcelain Marbles

H. 74:190
Stratum 5
Porcelain Marble
A slightly greater number of glass marbles (N-12) were collected from the features dating prior to 1890. In 1846, a glass manufacturer in Lausche, Germany, developed the “marbleschere” or marble scissors used to cut individual marbles from a rod of glass. These were then rounded and polished, but a pontil scar is often still visible. These handmade glass marbles continued to be made until the beginning of World War I. A glass marble making machine was developed in 1901 in the U.S. (Randall and Webb 1988:21, Randall 1971). However, the glass marbles uncovered were of the handmade versions (Photo 415).

*Photo 415: Glass Marbles from 1850-1890 Features*
Parts of three Frozen Charlottes were recovered from Feature 23 (Photo 416). These were based on a Victorian morality tale of how a young girl refused to obey her parents concerning putting on her coat before going outside, resulting in her freezing to death. These small figures were hidden within birthday cakes and puddings for young children and were played with by both girls and boys (Fraser 1963).

Photo 416: Frozen Charlottes from Feature 23 of Excavation Block 7

![Photo 416: Frozen Charlottes from Feature 23 of Excavation Block 7](image)

Parts from a minimum of 16 dolls were uncovered, representing the next highest percentage of children artifacts at 29%. These were all typical of porcelain dolls produced prior to 1890. They are depicted as young women, with dark eyes, rosy cheeks, red lips, and their hair having sausage curls around the head or a “Dolly Madison” hairstyle, (Photo 417:A-F, see Figure 85, page 257). The heads, arms and legs (Photo 417:G-L) were sewn to the body, which consisted of a cloth filled bag. Although boys sometimes had dolls, especially when they were young, these were more commonly used by girls.

Another item recovered typically used by girls are porcelain toy tea sets. Items recovered include: 3 plates, 3 bowls, 1 pitcher, 4 saucers, and 1 tureen lid. Most of these pieces were plain and two had a simple molded panel shape (Photo 418:A-I). The tureen lid, from Feature 183 in Excavation Block 10, was painted over the glaze with thin red and thicker pink lines, with a floral and scroll design between the lines. The floral design was partially painted gold (Photo 418:J). According to the 1895 Montgomery Ward Catalog, the decorated toy tea sets were more expensive than the plain sets (Figure 122). Most of the tea sets were of the inexpensive type, however, the tureen lid painted partially gold, would have been from a more expensive set.

In Feature 220 of Excavation Block 25 a glass bowl was discovered with the alphabet molded on its border (Photo 418:K). However, this bowl was only about 7 cm (2 ¾ inches) in diameter suggesting that it was a toy bowl and not child’s bowl used at the dinner table.
Photo 417: Doll Parts from 1850-1890 Features

A. 74:192
Stratum 5
Porcelain Doll Head

B. 183:88
Stratum 1, West Half
Porcelain Doll

C. 183:89
Stratum 1, West Half
Porcelain Doll

D. 23:85
All Strata
Porcelain Doll Head

E. 220:47
Stratum 1 East 1/2
Porcelain Doll fragment

F. 183:173
Stratum 2, West Half
Porcelain Doll
Back of Head

G. 183:174
Stratum 2, West Half
Porcelain Doll

H. 220:44
Stratum 1 East 1/2
Porcelain doll arm

I.–J. 74:24
Stratum 1
Porcelain Doll Parts

K.–L. 74:193
Stratum 5
Porcelain Doll Parts
Photo 418 Toy Tea Sets and Glass Toy Bowl from 1850-1890 Features

A. 183:95
Stratum 1, West Half
Porcelain Toy Plate

B. 183:92
Stratum 1, West Half
Porcelain Toy Plate

C.-D. 74:194-195
Stratum 5
Porcelain Toy Plate and Bowl
Molded

E. 183:172
Stratum 2, West Half
Porcelain Toy Pitcher
Molded

F. 183:171
Stratum 2, West Half
Porcelain Toy Tea Cup
Molded

G. 183:91
Stratum 1, West Half
Porcelain Toy Saucers

H.-J. 183:170
Stratum 2, West Half
Porcelain Toy Saucers

J. 183:93
Stratum 1, West Half
Porcelain Toy Tureen Lid
Painted

K. 220:50
Stratum 1 East 1/2
Glass Alphabet Toy Bowl

0 1 2 3 4 5 cm
0 1 2
2 inches

434
Figure 122: Toy Tea Sets in 1895 Montgomery Ward Catalogue
(Emmet 1969:231)

China Toy Tea Sets.

25155 Set consists of cups, saucers, tea pot, sugar bowl and cream; small size; packed in paper box. Price...$0.10
25156 Same description as above but larger. Price $0.25
25157 Set consists of decorated plates, cups, saucers, tea pot, creamer, sugar bowl; good sized dishes.
Price..........................$0.50
25158 Same description, but larger. Price..... .75
25159 Same, but larger size and assortment.
Price.......................... 1.00
25163 White Stone China Tea Set of 24 pieces, as follows: 6 plates, 6 cups, 6 saucers, 1 sugar bowl and cover, 1 tea pot and cover, 1 creamer, 1 slop bowl. This set is large enough for a miss from 8 to 14 years of age. (Not safe to send by mail.) Weighs 8½ lbs. Per set..................$1.25
The pieces in this set are larger than usually sold in toy sets; the cups stand 2 inches high, and the plates measure 4½ inches across.

25164—
Fancy Decorated Tea Set, same size and assortment as above; elegant patterns. Packed in wooden box, weight 8½ lbs. Price.$1.75
The lower portion of a redware coin bank was from Feature 74 of Excavation Block 8 (Photo 419). The bank was oval shaped and did not depict an animal like most coin banks (e.g., piggy banks). The upper portion of the redware bank was discovered in Feature 68, a house cellar located west of Feature 74 (Figure 123).

Photo 419: Lower Portion of a Redware Coin Bank from Feature 74 of Excavation Block 8
Fire Arms

Only two (5.6g) objects from Feature 74 were associated with fire arms. These include the spent shell casings of a 44 caliber and a 46 caliber bullet. No manufacturers mark was present on the bottom of these shells. Cartridge shells began being produced during the Civil War and became popular after this time.
Household Objects

Household objects consisted of 524 (14,607.1g) pieces. These came from a minimum of 163 household objects. At least 13 portions of chamber pots were recovered. Of these seven were made from a nonvitreous yellowware. All of these had a banded annularware decoration, with five vessels also having a dendritic decoration between the bands (Photo 421). Dendritic designs were most popular prior to 1860. These varied in size with four measuring 16-18 cm (6-7 inches) in diameter, possibly representing children chamber pots and the rest measuring 22-24 cm (8 ½-9 ½ inches).

Photo 421: Yellowware Chamber Pots from 1850-1890 Features
The remaining six chamber pots were made of ironstone. These were all undecorated (Photo 422). All of these were the larger chamber pots at 21-22 cm (8 ½ inches) in diameter.

*Photo 422: Ironstone Chamber Pots from 1850-1890 Features*
From Feature 220 in Excavation Block 25 was a small portion of a yellowware rim from a spittoon. It had a Rockingham glaze that would serve to hide its use. Also in this feature was a small portion of a rim from a wash basin. It was undecorated. An ironstone soap dish was recovered in Feature 74 of Excavation Block 8. It had a molded shape of a bird on its sides, possibly a peacock (Photo 423).

*Photo 423: Soap Dish from Feature 74 of Excavation Block 8*

Household cleaning items discovered included five bluing bottles from Feature 183 in Excavation Block 10 and seven bluing bottles in Feature 220 of Excavation Block 25 (Photo 424). These contained a bluing solution for keeping clothing white.

*Photo 424: Bluing Bottles from 1850-1890 Features*
Writing implements recovered from the features consisted of one ink bottle base found in Feature 183 of Excavation Block 10. Unfortunately, this did not have the name of the company that manufactured the ink. Two pieces of a slate tablet were uncovered in Feature 74 of Excavation Block 8 (Photo 425:A). It was likely used by a child for school work (Figure 124). No words, letters, or numbers could be identified on this portion of the tablet. In addition, 12 pieces of graphite styluses were uncovered used to write on slate tablets and on other surfaces (Photo 425:B-F). These had been used since Roman times for writing and continued to be used until the start of the 20th century.

Figure 124: Slate Writing Tablet With Graphite Pencil and Advertisement for the Dixon Slate Company (Ebay 2003)
Photo 425: Graphite Slate Tablet and Styluses from 1850-1890 Features

A. 74:213
Stratum 5
Graphite Tablet
Lined

B. 15:7
Graphite Stylus

C. 74:28
Stratum 1
Graphite Stylus

D. 74:212
Stratum 5
Graphite Stylus

E.-F. 221: 16
Stratum 1
Graphite Stylus
Various types of items placed around the household were recovered. These include a glass candy dish lid within Feature 74 of Excavation Block 8 (Photo 426:A). Also recovered was a portion of a white glass candy dish that resembled a nest (Photo 426:B). This was part of a hen and nest candy dish (Photo 426:C), which you lift the hen to retrieve the candy inside the nest. Porcelain covered dishes representing animals were first made in China, but in the 1700s and early 1800s ceramic hen and nest dishes were being manufactured in England for trade into America. These pieces were very expensive and could only be afforded by the more wealthy families. With the development of pressed glass by 1860, American companies were producing cheaper versions of hen and nest covered dishes that could be made in a variety of shapes and colors. Some of these served as candy or nut dishes, while smaller versions were made as trinket or vanity boxes. These continued to be produced into at least the 1980s (Smith 2004).

Photo 426: Candy Dishes from 1850-1890 Features
Brass parts associated with a music box were uncovered in Feature 184 of Excavation Block 10 (Photo 427). Various types of music boxes were available during the late 1800s and were a common fixture in many homes. The 1895 Montgomery Ward catalog indicated that prices for music boxes varied from as little as $0.45 for a small 2 1/4 inch box with 18 notes to as much as $35.00 for a large 21 by 14 by 8 1/2 inch box with 58 notes (Figure 125). Considering that most people earned only about a $5-8 a week, the later box would have been an extravagant expense (Schlereth 1991:78; Sutherland 2000).
Fragments of six porcelain figurines were discovered from Features 74, 220, and 283. These include two bird effigies (Photo 428:A-B) and the lower portion of a women’s dress (Photo 428:C). One of the birds contained traces of paint indicating that it was originally painted. This figurine may have depicted a parakeet by the shape of its feathers and large (but broken) peak (Photo 428:B). What the other figurines depicted are unclear but a human face was on the side of one of the fragments (Photo 428:E).

Photo 428: Portions of Porcelain Figurines from 1850-1890 Features
One object, from Feature 220 of Excavation Block 25, appears to be a porcelain egg (Photo 429). This was not associated with the hen on a nest covered dish, but likely served as a darning egg used for sewing up holes in socks.

Work related objects were uncovered, including iron bands used to hold wooden buckets together (Photo 430:A). These bands were in Features 26 of Excavation Block 7 and Feature 221 of Excavation Block 25. The buckets were likely used for household chores or other work related activities. In Feature 220, also within Excavation Block 25, was a portion of a paint brush. It was made of horse hair (Photo 430:B). Feature 74 of Excavation Block 25 contained a whetstone. It was long at 25 cm (10 inches) but narrow at 3 cm (1 inch). The whetstone was used to sharpen tools.
Another 8 artifacts were associated with furniture. In Feature 74 of Excavation Block 8 a piece of an iron grate was recovered (Photo 431:A). This was likely associated with a stove (Figures 126-127), a heater stove (Figures 128-129), or a fire place. In Feature 221 of Excavation Block 25 a decorative iron piece that may have come from a stove or some other type of furniture was recovered (Photo 431:B). Also within this feature were five mirror fragments. Parts from two castors were within Feature 183 and Feature 220. These were made of iron with porcelain wheels (Photo 431:C). Drawer pulls also were recovered from these features, including one made of wood (Photo 432:A), one of brass (Photo 432:B), and one of porcelain (Photo 432:C). A brass identification plate possibly associated with a desk was uncovered in Feature 177 of Excavation Block 10 (Photo 432:D).

Photo 431: Furniture Hardware from 1850-1890 Features
Figure 126: Examples of Stoves in 1897 Sears Roebuck Catalogue (Israel 1968:119 &123) 
Notice Grates on Side of Ovens

NEW SUNSHINE RANGE.
For hard or soft coal or wood.

The New Sunshine is built in a construction, containing every useful invention known to stoves at present prices. The shape, size, draft, and texture, and material are such as will keep the fire at the right temperature, and prevent the escape of smoke and gas. The fire is of the best kind, and the grate is of the best quality. The whole range is made of the best material, and is so constructed as to last for many years. The price is very reasonable, and the range is so made that it can be moved about easily. The whole range is very convenient, and the grate is so designed that it can be easily removed. The price is very reasonable, and the range is so made that it can be moved about easily. The whole range is very convenient, and the grate is so designed that it can be easily removed.
**SOUTHERN SUNSHINE COOK.**

For wood, with Reservoir.

No. 12583. The Southern Sunshine with murrocco enamel, every improvement that experience and ingenuity can suggest. In style and selling points it surpasses the best competitors. Though low in price it is a strong and durable stover. Length of fire box given below is the size when stove is ordered to be used for wood.

<table>
<thead>
<tr>
<th>Size</th>
<th>Covers</th>
<th>Price</th>
<th>Shipping</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
<td>15.00</td>
<td>10.00</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>12.00</td>
<td>8.00</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>9.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

**CLAD SUNSHINE RANGE.**

For hard or soft coal, with Reservoir.

No. 13596. Though low in price, quality has not been sacrificed to price in the construction of this range. It has all the latest improvements—valveless oven, gold and black, double grate, patent coal stager, quick draft damper, etc. We are pledged to think that nothing so good and serviceable has ever before been offered for the money required to buy this range. This range has six holes.

<table>
<thead>
<tr>
<th>Size</th>
<th>Covers</th>
<th>Price</th>
<th>Shipping</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
<td>15.00</td>
<td>10.00</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>12.00</td>
<td>8.00</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>9.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

**TRUE SUNSHINE RANGE.**

No. 13632. Hard or soft coal. The True Sunshine is the best type of this class of range that has ever been offered for sale. The range is better constructed. The range is more attractive in appearance than any of its competitors. Has five holes; double grate.

<table>
<thead>
<tr>
<th>Size</th>
<th>Covers</th>
<th>Price</th>
<th>Shipping</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
<td>15.00</td>
<td>10.00</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>12.00</td>
<td>8.00</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>9.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

**PRICE ARE FOR STOVE WITHOUT FURNITURE OR PIPE.**

33.50 for set of No. 8 Stove Furniture, to fit any of our stoves or ranges.

33.75 for set of No. 9 Stove Furniture, to fit any of our stoves or ranges.

*Figure 127: Additional Examples of Stoves in 1897 Sears Roebuck Catalogue (Israel 1968:122)*
Figure 128: Examples of Heating Stoves in 1897 Sears Roebuck Catalogue (Israel 1968:125)

Notice Grates on Front of Heating Ovens
Figure 129: Additional Examples of Stoves in 1897 Sears Roebuck Catalogue (Israel 1968:126)

**THE OAKLING SUNSHINE.**

For hard or soft coal.

<table>
<thead>
<tr>
<th>No. 1209.</th>
<th>Weight</th>
<th>Height</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>94 lbs</td>
<td>83 in.</td>
<td>$6.00</td>
</tr>
<tr>
<td>12</td>
<td>134 lbs</td>
<td>91 in.</td>
<td>$6.50</td>
</tr>
<tr>
<td>14</td>
<td>183 lbs</td>
<td>107 in.</td>
<td>$9.00</td>
</tr>
</tbody>
</table>

**CEM SUNSHINE.**

For hard or soft coal.

<table>
<thead>
<tr>
<th>No. 1208.</th>
<th>Weight</th>
<th>Height</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>94 lbs</td>
<td>83 in.</td>
<td>$6.00</td>
</tr>
<tr>
<td>12</td>
<td>134 lbs</td>
<td>91 in.</td>
<td>$6.50</td>
</tr>
<tr>
<td>14</td>
<td>183 lbs</td>
<td>107 in.</td>
<td>$9.00</td>
</tr>
</tbody>
</table>

**OAKDALE SUNSHINE.**

For hard or soft coal or wood.

<table>
<thead>
<tr>
<th>No. 1209.</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>94 lbs</td>
<td>$6.00</td>
</tr>
<tr>
<td>12</td>
<td>134 lbs</td>
<td>$6.50</td>
</tr>
<tr>
<td>14</td>
<td>183 lbs</td>
<td>$9.00</td>
</tr>
</tbody>
</table>

**LIVE OAK SUNSHINE.**

Will burn anything ever used for fuel.

The Live Oak Sunshine is a GREAT HEATER, suitable for stores, school houses, hotels, or any place where a powerful heat is required; mounted on a beautiful sheet steel; constructed of nearly six feet in height; made with a smoke and ash pan, and painted with a durable finish. Diameter of body, 22 inches; height of top weight, 125 pounds.

<table>
<thead>
<tr>
<th>No. 1207.</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>94 lbs</td>
<td>$20.00</td>
</tr>
<tr>
<td>12</td>
<td>134 lbs</td>
<td>$25.00</td>
</tr>
<tr>
<td>14</td>
<td>183 lbs</td>
<td>$30.00</td>
</tr>
</tbody>
</table>

**ROYAL SUNSHINE.**

Reversible Flue.

No. 1206. A new reversible firebox arrangement, with a heavily cast iron box, iron-reversible flue on the outside, that gives a much larger fire space to a given size of stove and the cast iron column that forms the flue. We respectfully ask an impartial examination and test of this stove, as we believe it will meet the requirements of our patrons, in comfort, ease of fuel, and such.

<table>
<thead>
<tr>
<th>No. 1206.</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>94 lbs</td>
<td>$30.00</td>
</tr>
<tr>
<td>12</td>
<td>134 lbs</td>
<td>$35.00</td>
</tr>
<tr>
<td>14</td>
<td>183 lbs</td>
<td>$40.00</td>
</tr>
</tbody>
</table>
Photo 432: Drawer Pulls and Desk Identification Plate from 1850-1890 Features

A. 23:52
   Stratum 2
   Wood Handle

B. 74:209
   Stratum 5
   Brass Drawer Pull

C. 23:37
   Stratum 1
   Porcelain Drawer Pull

D. 177:04
   Stratum 1
   Brass Identification Plate
A minimum of 20 vessels recovered were used for holding flowers. The majority of these were redware flower pots (Figure 130, Photo 433:A-B). As suggested above, redwares stopped being used for food storage vessels and were used almost exclusively for flower pots after 1860.

A small fragment of a stoneware jardinière was discovered in Feature 74 of Excavation Block 8 (Photo 433:C). Jardinière was adopted from the French word for a female gardener. The term jardinière began being used between 1835 and 1845, for large flower containers that typically are made of semi-vitreous ironstones or stonewares, and were elaborately decorated. The term jardinière technically should only be used for containers with a central drainage hole that is used outside and the term cache pot for indoor containers without a central hole. However, the term jardinière has been applied to both types of vessels (Crown and Colony 2016). These pieces were used to hold cut flowers as well as indoor plants, some large, such as ferns and palms. Aspidistra was a popular plant because it could withstand coal and oil smoke and could withstand the shade of heavily draped rooms (Chatelaine’s 2018). Jardinières were more expensive than plain redware flower pots (Figure 131).
Photo 433: Redware Flower Pots and Jardinieres in 1850-1890 Features

A. 24:7
Redware Flower Pot

B. 23:53
Stratum 2
Redware Flower Pot

C. 74:30
Stratum 1
Stoneware Jardiniere
Molded and Painted
Vases used to hold cut flowers represented 22% of the flower containers that were uncovered. These included a glass vase (Photo 434:B) from Feature 74 of Excavation Block 8, a cobalt blue glass vase (Photo 434:A) in the same feature, and two small fragments of porcelain vases (Photo 434:C) from Feature 26 of Excavation Block 7 and Feature 184 of Excavation Block 10.

Flowers were considered an integral part of a Victorian household during the mid to late 1800s. Flowers, with their colors and pleasant smells, were thought to disperse vapors that were considered the source of diseases. For this reason, hospitals and sanatoriums, as well as homes, were often surrounded by gardens. The types of flowers and their arrangement had meaning, reflecting family tastes and their values. The floral containers also were used to accent the flowers and also reflect the families’ aesthetic values.

A minimum of 12 recovered items were related to construction debris. Although nails, bricks, window glass, and other construction debris was typically not collected, some construction objects were saved. Among these selected were four door knobs. The door knobs in Feature 74 in Excavation Block 8 and Feature 183 of Excavation Block 10 were made of porcelain and had a plain white color. Door knobs in Feature 74 and Feature 23 of Excavation Block 7 were Bennington knobs (Photo 435:A-B). These door knobs are made with a dark brown and lighter brown clay that has a swirled or speckled appearance. They were patented by Christopher Fenton of Bennington, Vermont, in 1849 and were intended to compliment wooden doors (Kimberley 2011).
Photo 435: Construction Materials Associated with Households in 1850-1890 Features
Other construction related household objects include a door or shutter stop recovered from Feature 74 (Photo 435:C) and two coat or hat hangers from Feature 74 (Photo 435:D). Feature 23 of Excavation Block 7 produced portions of two bells (Photo 435:E) and a fragment of a graphite rod battery from Feature 74 that could have been associated with doorbell systems. Feature 184 of Excavation Block 10 produced a brass house key.

A brick was also discovered in Feature 74. Normally, it would not have been collected, but this brick had a portion of page from an English school book attached to the mortar (Photo 435:G).

Other household item recovered from the features were objects used for lighting the interior of the home at night. These included a brass candle stick holder from Feature 74 and a porcelain candle holder from Feature 23 (Photo 436). Although these objects may have been used to light the interior of the home, they may have also been used decorate a dining table with candle light.

*Photo 436: Candle Holders from 1850-1890 Features*
More common than candles for illuminating homes were kerosene lamps. Most of these consisted of glass lamp chimneys, N=47 (Photo 437:A-F). One of these glass lamp chimneys was marked “Dithridge & Co., Pitts., Pat., Oct 1861, Aug. 1870” (Photo 437:E). Edward Dithridge was born in England in 1804, but his family moved to the U.S. in 1812. In 1861, he worked in various glass producing companies, before leasing the Curling, Robertson & Co. glass works, which dissolved in 1860. In 1861, Dithridge patented several new varieties of lamp chimneys, including the one recovered from Feature 183, and his company went on to produce a wide variety of glass chimneys and lamp shades. They remained in Pittsburgh until after the death of Edward in 1887. His son Edward Jr. owned a glass company in Martins Ferry, Ohio, and moved Dithridge & Company to New Brighton, northeast of Pittsburgh. The company was acquired by the Pittsburgh Lamp, Brass & Glass Company in 1903 (The Lamp Works 2011).

Also recovered from the features were five glass lamp shades. These shades were frosted with a floral design (Photo 437:G) or had a molded panel (Photo 437:H), geometric, or floral design. Fragments of a peg wall lamp was recovered from Feature 184 in Excavation Block 10. It featured a frosted geometric design (Photo 437:I). These lamps were used on the wall and with ceiling chandelier lamps (Figure 132). In Feature 23 was 35 glass tube dangles from a lamp or possibly a chandelier (Photo 438). In addition, four lamp shades were made of white glass to help diffuse the light from the burner (Photo 439). One of these lamp shade from Feature 74 had a painted floral design on it (Photo 439:C). Lamps made of white or frosted glass, often painted with a floral theme were popular by the end of the 19th century (Figure 133).

Six lamp hardware fragments were found (Photo 440:A) in Features 184 of Excavation Block 10 and Feature 220 of Excavation Block 25 that came from a minimum of two lamps. Other recovered artifacts consisted of attachments, such as a lead loop attachment with a floral decoration from Feature 220 (Photo 440:B), a brass chain from Feature 23 of Excavation Block 7 (Photo 440:C), and an iron lamp holder from Feature 184 (Photo 440:E). A small portion of brass tubing was found in Feature 74 of Excavation Block 8 (Photo 440:D). It could have been associated with a gas lamp.
Photo 437: Glass Lamp Chimneys and Shades from 1850-1890 Features

A-B. 74:216
Stratum 5
Glass Lamp Chimney

C. 130:18
Glass Hurricane Lamp

D. 35:5
Glass Lamp Chimney

E. 183:112
Stratum 1, West Half
Lamp Chimney
Dethridge & Co.

F. 220:97
West 1/2
Glass Lamp Chimney

G. 24:8
Glass Lamp Shade
Frosted

H. 74:220
Stratum 5
Glass Lamp Shade

I. 184:39
Stratum 1
Peg Wall Lamp
Frosted
Photo 438: Chandelier Glass Tube Dangles from Feature 23 of Excavation Block 7

23:43
Stratum 1
Glass Lamp Shade Tube Dangles

23:54
Stratum 2
Glass Lamp Shade Tube Dangles

23:75
Stratum 3
Glass Lamp Shade Tube Dangles
Photo 439: White Glass Lamp Shades from 1850-1890 Features

A. 23:42
Stratum 1
White Glass Lamp Shade

B. 74:32
Stratum 1
White Glass Lamp Part

C. 74:33
Stratum 1
White Glass Lamp Shade
Painted
Figure 133: Examples of Lamps Sold in the 1897 Sears Roebuck Catalogue (Israel 1968:687)
A sheet of mica was recovered from Feature 220 of Excavation Block 25 (Photo 441). It could have been associated with electricity since mica is used with electrical appliances as it will pass electricity without being affected by the heat generated (Schaller 1916). It is unclear if this piece of mica was associated with electric lighting, which was developed by 1880, but only started to be widely used after 1910, or if it was associated with another appliance.
Transportation Items

A total of 7 (1,047.9g) artifacts were associated with transportation. These artifacts represented a minimum of 7 items. These include two brass rivets recovered from Feature 23 of Excavation Block 7 (Photo 442). These likely came from a harness or a saddle (Figure 134).

Photo 442: Brass Rivets Associated with Tack or Saddle from Feature 23 of Excavation Block 7

Figure 134: Examples of Rivets Used in Saddles in 1895 Montgomery Ward Catalogue (Emmit 1969:329-331)
Other transportation related objects recovered include a portion of a horse shoe found in Feature 183 of Excavation Block 10 (Photo 443:A). In nearby Feature 184 was a brass spur (Photo 443:B) and the handle of a riding crop made of wood and covered by brass with molded swirled lines (Photo 443:C). These lines probably allowed the riding crop to be griped more firmly. The spur was similar to “military style” spurs sold in the 1895 Montgomery Ward Catalogue (Figure 135, similar spurs in red box). These spurs were sold at about the average price for spurs at that time. Feature 221 contained an iron ring (Photo 443:D) and may have been a harness ring or associated with a wagon. Also, in Feature 221, a brass plate marked with “61” (Photo 443:E) was recovered. This may have been a registration plate displayed on a teamster wagon.

In 1900, Frank Fox owned the residence that the privy, Feature 221, was located behind. Fox did work as a teamster. He lived at this location, 2215 Montgomery Avenue, with his two sisters, Mary and Sarah, and brother, Thomas, who worked as a cashier for the railroad (U.S. Census 1900). They were born in Missouri to Irish immigrants. Unfortunately, the earlier census does not show the addresses that appeared on the 1895 fire insurance map, but in 1880, a residence along Montgomery was owned by Patrick Fox and his wife Catharine (U.S. Census 1880). Also living with them was their oldest son, Francis, and two brothers, James and Thomas, and three sisters, Kate, Margaret, and Sarah. None of the ages match, but all the children had been born in St. Louis and their parents were Irish immigrants. It is possible that the earlier census taker just got the ages wrong and this is the same family who owned the property in 1900. Both Francis (Frank) and his father worked as draymen so the registration tag may have been associated with one of their wagons. James worked as a cotton preparer in 1880. Thomas was too young to work.

Feature 184 was located behind a residence at 2340 Montgomery. In 1880, it was occupied by Dennis and Bridget Stranton, also from Ireland. They lived with their three sons James, John, and Patrick, who were born in St. Louis. Dennis also worked as a teamster, so the spur and crop could have been associated with this activity.
Photo 443: Transportation Related Artifacts from 1850-1890 Features

A. 183:179
Stratum 2, West Half
Iron Horse Shoe

B. 184:44
Stratum 1
Brass Spar

C. 184:43
Stratum 1
Brass and Wood Riding Crop Handle

D. 221:18
Stratum 1
Iron wagon hardware

E. 221:17
Stratum 1
Brass number plate "61"
Artifacts Associated with the Height of Residential Use, 1890-1920

The census and fire insurance maps suggested the NGA tract had the largest number of people living within it between 1890 and 1920 (Harl 2016). The clay mines and quarry pits had been filled in, and homes and businesses were placed along the roadways and behind these buildings in the alleys. Artifacts recovered from the yard features and some of the building remains indicated that 57 of these features were last used during this time.

Even though the city had passed ordinances and encouraged residents to stop using privy vaults and start using sealed water closets in the 1880s, excavations indicate that 9 privy vaults were still being used after 1890. Five of these (Features 133, 167, 168, 200, and 282) were used during the 1890s. The other four privy vaults (Features 4, 135, 176, and 289) were used until sometime prior to 1910. Only two of these privy vaults were intact (Feature 4 and 168), with the rest being either partially destroyed by the later construction of buildings or water closets (Features 200, 282, and 289) or had been previously excavated by looters (Features 133, 135, and 176). Feature 176 had been completely destroyed by looting activity, with only one barrel mustard jar remaining within the feature. One privy vault (Feature 167) had its upper portion destroyed by a demolition trench.

Water closets were composed of 10 features (28, 58, 60, 77, 78, 91, 153, 154, 214, and 231). Unfortunately, four of these (Feature 28, 91, 214, and 231) had been completely destroyed by past looting activity and Feature 77 was cut in half by a demolition trench. Other features dating to this time included 21 cisterns (see Table 20), a deep barrel cistern (Feature 198), and three wells (Features 196, 125, and 219). A shallow pit (Feature 136) was uncovered under the later addition of a concrete foundation to the livery stable in Excavation Block 13. In Excavation Block 2, an ash pit (Feature 47) was discovered behind the drug store that had artifacts dating prior to 1905. This pit was likely constructed and used at the same time as the adjacent water closet (Feature 46) but the water closet was last used in the 1930s. A midden (Feature 155) was discovered near the alley behind Howard Public School that contained artifacts dating to 1896. The remaining 11 features were associated with buildings. Most of these contained only a small number of artifacts, between 1 and 34 (see Table 20), that were discovered during trackhoe excavations, but two cellars (Feature 21 of Building 7, and Feature 68 of Building 26) were completely excavated because they appeared to have been razed between 1906 and 1910.
### Table 20: List of Features Last Used Between 1890 and 1920

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Feature Type</th>
<th>Comments</th>
<th>Nearest Building(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>4</td>
<td>85</td>
<td>1,767.55</td>
<td>privy vault</td>
<td></td>
<td>Kuhlmeys Drug Store &amp; 3 flats-3 story</td>
</tr>
<tr>
<td>23</td>
<td>12</td>
<td>1,092</td>
<td>101,463.90</td>
<td>cistern</td>
<td></td>
<td>2 flats-2 story</td>
</tr>
<tr>
<td>23</td>
<td>21</td>
<td>558</td>
<td>30,430.50</td>
<td>Building 7 floor</td>
<td></td>
<td>1 domestic next to alley</td>
</tr>
<tr>
<td>7</td>
<td>28</td>
<td>4</td>
<td>22.90</td>
<td>water closet</td>
<td>nearly completely destroyed</td>
<td>saloon &amp; next to alley</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>1</td>
<td>55.00</td>
<td>Building 13, cellar</td>
<td></td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>1</td>
<td>414.60</td>
<td>Building 14-19, cellars</td>
<td></td>
<td>6 flats-2 story</td>
</tr>
<tr>
<td>3</td>
<td>47</td>
<td>253</td>
<td>3,726.60</td>
<td>ash pit</td>
<td></td>
<td>drug store</td>
</tr>
<tr>
<td>2</td>
<td>55</td>
<td>475</td>
<td>62,761.00</td>
<td>cistern</td>
<td></td>
<td>Bakery, 2 flats-2 &amp; 3 story</td>
</tr>
<tr>
<td>2</td>
<td>56</td>
<td>2,594</td>
<td>123,466.80</td>
<td>cistern</td>
<td>upper fill 1930s</td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>2</td>
<td>58</td>
<td>17</td>
<td>472.90</td>
<td>water closet</td>
<td></td>
<td>1 flat-3 story alley</td>
</tr>
<tr>
<td>2</td>
<td>59</td>
<td>1,834</td>
<td>111,254.70</td>
<td>cistern</td>
<td></td>
<td>2 flats-3 story</td>
</tr>
<tr>
<td>2</td>
<td>60</td>
<td>600</td>
<td>5,233.40</td>
<td>water closet</td>
<td></td>
<td>1 flat-3 story</td>
</tr>
<tr>
<td>2</td>
<td>62</td>
<td>1,832</td>
<td>121,113.50</td>
<td>cistern</td>
<td></td>
<td>2 flats-2 story</td>
</tr>
<tr>
<td>8</td>
<td>68</td>
<td>1,336</td>
<td>66,117.50</td>
<td>Building 26 cellar with early artifacts</td>
<td></td>
<td>1 domestic next to alley</td>
</tr>
<tr>
<td>8</td>
<td>72</td>
<td>691</td>
<td>24,503.70</td>
<td>cistern</td>
<td>half cut by demolition trench</td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>8</td>
<td>77</td>
<td>17</td>
<td>890.50</td>
<td>water closet</td>
<td></td>
<td>2 flats-2 story</td>
</tr>
<tr>
<td>8</td>
<td>78</td>
<td>124</td>
<td>11,428.70</td>
<td>water closet &amp; outside toilet</td>
<td></td>
<td>2 flat-2 story</td>
</tr>
<tr>
<td>8</td>
<td>83</td>
<td>202</td>
<td>17,727.30</td>
<td>cistern</td>
<td></td>
<td>3 flat-2 story</td>
</tr>
<tr>
<td>8</td>
<td>86</td>
<td>1,100</td>
<td>63,675.40</td>
<td>cistern</td>
<td></td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>24</td>
<td>89</td>
<td>34</td>
<td>521.10</td>
<td>upper stairs to cellar for F88, Building 35</td>
<td></td>
<td>Charles Welz Shoe Store</td>
</tr>
<tr>
<td>24</td>
<td>90</td>
<td>544</td>
<td>82,593.70</td>
<td>cistern</td>
<td></td>
<td>Charles Welz Shoe Store, Dieckmann Grocery</td>
</tr>
<tr>
<td>24</td>
<td>91</td>
<td>0</td>
<td>0.00</td>
<td>water closet</td>
<td>dug by past looters</td>
<td>Charles Welz Shoe Store, Dieckmann Grocery, &amp; 2 flats-2 story</td>
</tr>
<tr>
<td>Block #</td>
<td>Feature #</td>
<td>Total Number of Artifacts</td>
<td>Weight in Grams</td>
<td>Feature Type</td>
<td>Comments</td>
<td>Nearest Building(s)</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>---------------------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>----------</td>
<td>----------------------</td>
</tr>
<tr>
<td>24</td>
<td>97</td>
<td>467</td>
<td>89,132.50</td>
<td>cistern</td>
<td></td>
<td>2 flats-2 story</td>
</tr>
<tr>
<td>24</td>
<td>98</td>
<td>753</td>
<td>39,067.90</td>
<td>cistern</td>
<td>upper portion of cistern destroyed by demolition trench</td>
<td>1 flat-3 story</td>
</tr>
<tr>
<td>24</td>
<td>106</td>
<td>92</td>
<td>9,025.80</td>
<td>well</td>
<td>contains artifacts that mends with pieces in Feature 118</td>
<td>1 flat-3 story</td>
</tr>
<tr>
<td>12</td>
<td>114</td>
<td>333</td>
<td>27,102.90</td>
<td>cistern</td>
<td></td>
<td>2 domestics</td>
</tr>
<tr>
<td>12</td>
<td>118</td>
<td>816</td>
<td>56,086.50</td>
<td>cistern</td>
<td></td>
<td>1 domestic next to alley</td>
</tr>
<tr>
<td>12</td>
<td>123</td>
<td>2</td>
<td>492.90</td>
<td>cellar, Building 47</td>
<td>older artifacts with modern debris on top of cellar</td>
<td>1 domestic next to alley</td>
</tr>
<tr>
<td>12</td>
<td>125</td>
<td>329</td>
<td>34,492.00</td>
<td>well</td>
<td></td>
<td>2 domestics</td>
</tr>
<tr>
<td>13</td>
<td>132</td>
<td>19</td>
<td>2,611.30</td>
<td>limestone foundation, Building 49</td>
<td></td>
<td>outbuilding</td>
</tr>
<tr>
<td>13</td>
<td>133</td>
<td>16</td>
<td>773.10</td>
<td>privy vault</td>
<td>previously dug by looters few artifacts left in disturbed fill</td>
<td>1 domestic</td>
</tr>
<tr>
<td>13</td>
<td>135</td>
<td>24</td>
<td>632.00</td>
<td>privy vault</td>
<td>previously dug by looters only lower 18 cm intact</td>
<td>Livery and Undertaker, &amp; 1 domestic</td>
</tr>
<tr>
<td>13</td>
<td>136</td>
<td>56</td>
<td>2,084.10</td>
<td>pit</td>
<td>partially under concrete foundation, Feature 134, Building 50 (stable &amp; undertaker building)</td>
<td>Livery and Undertaker</td>
</tr>
<tr>
<td>13</td>
<td>137</td>
<td>13</td>
<td>4,215.90</td>
<td>limestone foundation, Building 51</td>
<td>only partially exposed</td>
<td>2 domestics</td>
</tr>
<tr>
<td>9</td>
<td>151</td>
<td>15</td>
<td>59.67</td>
<td>Howard School foundation</td>
<td>artifacts mixed with building rubble when was razed in 1960s</td>
<td>Howard School</td>
</tr>
<tr>
<td>9</td>
<td>153</td>
<td>14</td>
<td>202.50</td>
<td>water closet</td>
<td>artifacts only from Strat 2, Strat 1 mixed with other features when warehouse was looted</td>
<td>Howard School</td>
</tr>
<tr>
<td>9</td>
<td>154</td>
<td>86</td>
<td>2,692.90</td>
<td>water closet</td>
<td>after warehouse looting Strat 3 bags missing and Strat 4 bags mixed with Fea. 62</td>
<td>Howard School</td>
</tr>
<tr>
<td>9</td>
<td>155</td>
<td>80</td>
<td>4,073.30</td>
<td>midden</td>
<td></td>
<td>Howard School</td>
</tr>
</tbody>
</table>
Table 20: List of Features Last Used Between 1890 and 1920, Continued

<table>
<thead>
<tr>
<th>Block #</th>
<th>Feature #</th>
<th>Total Number of Artifacts</th>
<th>Weight in Grams</th>
<th>Feature Type</th>
<th>Comments</th>
<th>Nearest Building(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>167</td>
<td>194</td>
<td>1,503.90</td>
<td>privy vault</td>
<td>upper half of privy destroyed by demolition trench</td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>10</td>
<td>168</td>
<td>420</td>
<td>19,686.40</td>
<td>privy vault</td>
<td>few artifacts near top date to 1930s</td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>10</td>
<td>169</td>
<td>1,016</td>
<td>115,790.50</td>
<td>cistern</td>
<td>likely looted, only one barrel mustard jar recovered</td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>10</td>
<td>176</td>
<td>1</td>
<td>169.20</td>
<td>privy vault</td>
<td></td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>10</td>
<td>178</td>
<td>693</td>
<td>71,547.00</td>
<td>cistern</td>
<td></td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>10</td>
<td>190</td>
<td>261</td>
<td>28,021.50</td>
<td>cistern</td>
<td>dinner settings dated between 1850s and 1890s</td>
<td>1 flat-2 story &amp; 1 domestic</td>
</tr>
<tr>
<td>10</td>
<td>195</td>
<td>215</td>
<td>19,341.60</td>
<td>cistern</td>
<td></td>
<td>1 flat-3 story</td>
</tr>
<tr>
<td>10</td>
<td>198</td>
<td>269</td>
<td>22,773.60</td>
<td>barrel cistern, deep</td>
<td>top destroyed during construction of Building 75</td>
<td>1 domestic-2 story</td>
</tr>
<tr>
<td>10</td>
<td>200</td>
<td>39</td>
<td>2,893.50</td>
<td>privy vault</td>
<td></td>
<td>1 flat-3 story (under domestic)</td>
</tr>
<tr>
<td>25</td>
<td>214</td>
<td>6</td>
<td>694.30</td>
<td>water closet</td>
<td>contains sterile soil few artifacts</td>
<td>1 domestic-2 story</td>
</tr>
<tr>
<td>25</td>
<td>219</td>
<td>62</td>
<td>2,209.30</td>
<td>well</td>
<td></td>
<td>1 flat-2 story</td>
</tr>
<tr>
<td>25</td>
<td>223</td>
<td>176</td>
<td>21,113.60</td>
<td>cistern</td>
<td></td>
<td>1 flat-2 story, near alley</td>
</tr>
<tr>
<td>1</td>
<td>230</td>
<td>2</td>
<td>146.40</td>
<td>St. Leo Church outbuilding (Building 87)</td>
<td>St. Leo Church outbuilding</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>231</td>
<td>3</td>
<td>680.40</td>
<td>water closet</td>
<td>only 3 pieces of a large metal kettle recovered</td>
<td>St. Leo Church</td>
</tr>
<tr>
<td>21</td>
<td>260</td>
<td>14</td>
<td>1,360.40</td>
<td>cistern</td>
<td></td>
<td>1 flat-3 story, 1 domestic next to alley</td>
</tr>
<tr>
<td>21</td>
<td>279</td>
<td>132</td>
<td>16,837.20</td>
<td>cistern</td>
<td>mostly destroyed by construction of water closet, Feature 281</td>
<td>1 flat-3 story, 1 domestic next to alley</td>
</tr>
<tr>
<td>21</td>
<td>282</td>
<td>32</td>
<td>274.60</td>
<td>privy vault</td>
<td>west end of feature cut by water closet, Fea 296 Missing 2 bags and 2 boxes &amp; 1 mixed after warehouse looting</td>
<td>2 flats-2 story</td>
</tr>
<tr>
<td>18</td>
<td>289</td>
<td>189</td>
<td>11,311.40</td>
<td>privy vault</td>
<td>upper portion of eastern side cut by demolition trench Missing 1 bag &amp; 3 boxes after warehouse looting</td>
<td>John Deeds Saloon 1895-1900, John Jansen Grocery 1930</td>
</tr>
<tr>
<td>18</td>
<td>298</td>
<td>313</td>
<td>45,042.20</td>
<td>cistern</td>
<td></td>
<td>2 flats-3 story</td>
</tr>
</tbody>
</table>
In all, a total of 20,489 (1,439,879.0g) artifacts came from these features. The represent at least 9,281 objects.

**Dining Artifacts**

Recovered dining items consist of 9,314 (291,920.52g) pieces, from a minimum of 2,210 vessels. By far, the largest percentage of the serving vessels were ironstone (Figure 136).

**Ironstone Vessels**

A variety of ironstone vessels were from these features. These are summarized in Table 21. The majority of the objects consisted of cups and saucers (Photos 449 and 450). Some of these were likely associated with tea sets. Portions of at least 14 tea pots were uncovered in the features (Photo 452). Other cups and saucers were likely associated with the consumption of coffee. Around 300 pieces were used for serving foods on the dinner table (446-448) or with serving liquids from a pitcher (Photo 451). In addition, portions of 10 sugar bowls were found (Photo 453:A-B). In Feature 144 of Excavation Block 8, a salt cellar (Photo 453:C) was discovered and in Feature 114, of Excavation Block 12, a butter insert (Photo 453:D). In addition, 81 bowls (Photo 446), 47 soup bowls (Photo 445), and 24 small dishes were recovered. Plates ranged widely in size from 10 to 29 cm (4 to 11½ inches) (Figure 137, Photo 444). The majority of these were between 20 and 24 cm (8 and 9½ inches). The varied plate sizes was typical of dinners consisting of various courses, with different plates required for each course, in the “American” style used at the start of the 20th century.

*Figure 136: Percentages of Dinner Settings Material Types from 1890-1920 Features*
Table 21: Number of Various Types of Ironstone Dinner Settings from 1890-1920 Features

<table>
<thead>
<tr>
<th>Vessel Types</th>
<th>Number of Vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plates</td>
<td>283</td>
</tr>
<tr>
<td>Dish</td>
<td>24</td>
</tr>
<tr>
<td>Soup Bowls</td>
<td>47</td>
</tr>
<tr>
<td>Bowls</td>
<td>81</td>
</tr>
<tr>
<td>Platters</td>
<td>37</td>
</tr>
<tr>
<td>Serving Vessels</td>
<td>190</td>
</tr>
<tr>
<td>Tureen</td>
<td>23</td>
</tr>
<tr>
<td>Sugar Bowls</td>
<td>10</td>
</tr>
<tr>
<td>Salt Well</td>
<td>1</td>
</tr>
<tr>
<td>Butter Dish</td>
<td>1</td>
</tr>
<tr>
<td>Relish Dish</td>
<td>5</td>
</tr>
<tr>
<td>Pitchers</td>
<td>33</td>
</tr>
<tr>
<td>Cream Pitcher</td>
<td>11</td>
</tr>
<tr>
<td>Tea Pot</td>
<td>14</td>
</tr>
<tr>
<td>Saucers</td>
<td>373</td>
</tr>
<tr>
<td>Cups</td>
<td>452</td>
</tr>
</tbody>
</table>

Figure 137: Various Plate Diameters from 1890-1920 Features
Photo 444: Undecorated Plates from 1890-1920 Features

60:1
Ironstone Plate

59:92
Stratum 1, West Half
Ironstone Plates

68:01
Ironstone Plate

190:17
Ironstone Plate

21:2
Ironstone Plate

169:02
Ironstone Plate

68:03
Ironstone Plate

169:01
Ironstone Plate

298:03
Ironstone Plate

169:03
Ironstone Plate

169:06
Ironstone Plate
Photo 445: Undecorated Soup Bowls from 1890-1920 Features

68:15
Ironstone Soup Bowl

223: 06
Ironstone soup bowl

169:26
Ironstone Soup Bowl

169:27
Ironstone Soup Bowl
Photo 446: Undecorated Bowls and Serving Bowls from 1890-1920 Features

59:261
Stratum 2, West Half
Ironstone Bowl

62:283
Stratum 3, South Half
Ironstone Bowl

195:16
Stratum 1
Ironstone Bowl

55:9o
Ironstone Serving Bowl

298:13
Ironstone Serving Bowl

198:31 and 198:65
Ironstone Serving Bowl

78:22
Ironstone Serving Bowl

168:14
Stratum 2
Ironstone Serving Bowl
Photo 447: Undecorated Oblong Serving Bowls from 1890-1920 Features

90:19
Ironstone Serving Bowl

21:11
Ironstone Serving Bowl

190:02
Ironstone Serving Bowl

178:18
Ironstone Serving Bowl
Photo 448: Undecorated Platters from 1890-1920 Features

118:24
Ironstone Platter

47.9
Ironstone Platter

62:328
Stratum 3, South Half
Ironstone Serving Platter

178:15
Ironstone Platter

298:11
Ironstone Platter
Photo 449: Undecorated Saucers from 1890-1920 Features

21:27
Ironstone Saucers

83:13
Ironstone Saucer

55:9w
Ironstone Saucer

86:16
Ironstone Saucer

90:22
Ironstone Saucer

62:17
All Strataums, North Half
Ironstone Saucer

117:06
Ironstone Saucer

169:51
Ironstone Saucer

169:53
Ironstone Saucer

118:31
Ironstone Saucers
Photo 450: Undecorated Cups from 1890-1920 Features
Photo 451: Undecorated Pitchers from 1890-1920 Features

59:270
Stratum 2, West Half
Ironstone Pitcher

62:341
Stratum 3, South Half
Ironstone Cream Pitcher

178:24
Ironstone Pitcher

198:07
Ironstone Pitcher
Photo 452: Undecorated Tea Pots from 1890-1920 Features

21:21
Ironstone Tea Pot

178:23
Ironstone Tea Pot

47:14
Ironstone Tea Pot

77:64
Ironstone Tea Pot

0 1 2 3 4 5 cm

0 1 2 2 inches
Photo 453: Undecorated Sugar Bowls, Salt Well, and Butter Insert from 1890-1920 Features

A. 56:33
Ironstone Sugar Bowl

B. 47:13
Ironstone Sugar Bowl

C. 68:36
Ironstone Salt Well

D. 114:15
Ironstone Butter Insert
Around 38% of the ironstone dinner settings had plain white undecorated surfaces, which was lower than for the 1850-1890 features which represented 50% of the ironstone vessels (Figure 138). However, since many of these were only fragments it is possible that other portions of the vessel, not recovered, were decorated. Molded pieces represented a smaller percentage (16%) in the 1890-1920 features. Although some severing bowls (Photo 454) and a pitcher (Photo 459:B) had broad molded shapes (Photo 454), the majority of the molded ironstone vessels exhibited smaller fine designs (Photos 453-461). Wetherbee (1996) indicates that broad molded shapes were popular from the 1850s to 1880s, with finely molded shaped ones popular after 1880, which was similar to most of the molded pieces found in the 1890-1920 features.

**Figure 138: Percentage of Various Ironstone Vessel Decorations from 1890-1920 Features**

- **Plain**: 635 (38%)
- **Molded**: 266 (16%)
- **Painted**: 55 (3%)
- **Transfer Print**: 252 (15%)
- **Transfer Print & Painted**: 25 (1%)
- **Gilded & Other**: 418 (25%)
- **Lustreware**: 26 (2%)
Photo 454: Broad Molded Shapes on Ironstone Serving Vessels from 1890-1920 Features

Ironstone Serving Bowl
Molded
(Note to Different Scale)

Ironstone Serving Bowl
Molded

Ironstone Serving Bowl
Molded

Ironstone Serving Bowl
Molded

Ironstone Serving Bowl
Molded

Ironstone Serving Bowl
Molded

Ironstone Serving Bowl
Molded
Photo 455: Fine Molded Patterns on Dinner Plates from 1890-1890 Features

12:2
Ironstone Plate
Molded

55:51
Ironstone Plate
Molded

55:9c
Ironstone Plate
Molded

56:4
Ironstone Plates
Molded
Photo 456: Additional Fine Molded Patterns on Dinner Plates from 1890-1920 Features
Photo 457: Fine Molded Patterns on Serving Vessels from 1890-1920 Features

12:7
Ironstone Bowl
Molded

59:268
Stratum 2, West Half
Ironstone Serving Bowl
Molded

46:01
Ironstone Serving Bowl
Molded

178:19
Ironstone Serving Bowl
Molded

98:16
Ironstone Serving Bowl
Molded
Photo 458: Fine Molded Patterns on Relish Dish, Tureen, and Sugar Bowl or Tea Pot Lid from 1890-1920 Features

A. 59:122
Stratum 1, West Half
Ironstone Relish Tray
Molded

B. 78:08
Ironstone Tureen
Molded

C. 219:04
Ironstone Tureen
Molded

D. 98:36a
Ironstone Tureen Finial
Molded - Pumpkin

E. 260:04
Ironstone Tureen Lid
Molded

F. 98:24
Ironstone Sugar Bowl
or Tea Pot Lid
Molded
Photo 459: Fine and Broad Molded Designs on Ironstone Pitchers from 1890-1920 Features

A. 62:23
All Stratums, North Half
Ironstone Cream/Milk Pitcher Molded

B. 168:21
Stratum 2
Ironstone Pitcher Broad Molded

C. 298:17
Ironstone Pitchers Molded

D. 90:20
Ironstone Pitcher Handle Molded
Photo 460: Fine Molded Patterns on Ironstone Cups from 1890-1920 Features

86:26
Ironstone Cups
Molded

59:116
Stratum 1, West Half
Ironstone Cup
Molded

298:25
Ironstone Cup
Molded
Photo 461: Fine Molded Patterns on Ironstone Saucers from 1890-1920 Features

62:301
Stratum 3, South Half
Ironstone Saucer
Molded

86:20
Ironstone Saucer
Molded

195:14
Stratum 1
Ironstone Saucer
Molded

62:301
Stratum 3, South Half
Ironstone Saucers
Molded

62:300
Stratum 3, South Half
Ironstone Saucers
Molded
A few of the vessels had identifiable designs. These include a nearly complete sugar bowl from Feature 125 in Excavation Block 12. It features a Ceres design (Photo 462), with a grain pattern, produced by the Elsmore & Forster Company in Tunstall, Staffordshire, England. This decoration was registered with the British patent office three times on November 2, 1859—one for tea, one for dinner, and one for toilet sets. This pattern was so popular that it quickly became copied with minor variations by other potters. Elsmore and Forster continued to produce the Ceres design until their company closed in 1871 (Weatherbee 1996:92-93). This suggests that the sugar bowl was used for some time before it was finally discarded into the well, Feature 125.

In Feature 78 of Excavation Block 8, a saucer was found with a Berlin Swirl design (Photo 463). This molded pattern was first patented by the Mayer Brothers in 1845 and their successors Mayer and Elliott in 1856. It was patented a third time by Liddle, Elliott and Son of Longport, Staffordshire, England in 1864. The saucer featured the latter company’s manufacturing mark. The company only lasted from 1860 to 1870, suggesting this saucer also had been used for some time before being discarded into the water closet, Feature 78 (Wetherbee 1996:45, Kowalsky and Kowalsky 1999:256).
Additional ironstone vessels displayed molded shapes that were marked on them, but they were made in America and not patented. These include a plate from Feature 169 of Excavation Block 10 that was marked with a Juananta design (Photo 464). The plate had a manufacturing mark from the East Palestine Pottery Company, which operated in East Palestine, Ohio, between 1884 and 1909 (Kovel and Kovel 1986:72H). This pattern was produced some time during this period. A saucer from Feature 12 of Excavation Block 23 was marked with a Radisson design (Photo 465). The saucer also had a manufacturer mark of W. S. George Company of Kittanning, Pennsylvania between 1880 and 1959 (Kovel and Kovel 1986:224). The Radisson pattern was produced between 1912 and the 1940s (J.D. 2005). Another saucer in Feature 118 of Excavation Block 12 was marked with a Florence design (Photo 466). This was made by the Standard Pottery Company of East Liverpool, Ohio, which operated between 1886 and 1927, although the mark on this vessel was used between 1910 and 1927 (Kovel and Kovel 1986:211L).
Photo 464: Ironstone Plate with Juananta Design from Feature 169 of Excavation Block 10

169:07
Ironstone Plate
Molded Juananta Shape
Photo 465: Ironstone Saucer with Radisson Design from Feature 12 of Excavation Block 23
Ironstone vessels with a painted decoration represented only 3% of the pieces associated with the features dating between 1890 and 1920 (Figure 138). Two small portions of a plate, from Feature 298 of Excavation Block 24, had a molded shell edge in which the individual molds painted blue. This was typically done before 1860 and the plate may have been an heirloom before it finally broke and was discarded into this cistern. Another small fragment from a cup had a painted blue banded annularware (Photo 467). This type of decoration was typically placed on cheaper yellowwares, but was sometimes placed on ironstones, especially cups, mugs, and chamber pots.

Five ironstone fragments featured a spongeware decoration (Photo 468). A saucer, from Feature 90 of Excavation Block 8, had the same pattern of spongeware used on a plate found in Feature 154 of Excavation Block 9, which was located one city block to the north.
Photo 468: Spongeware Vessels from Feature 55 in Excavation Block 2 and Feature 90 in Excavation Block 24

A. 55:9g
Ironstone Plate
Painted

B. 190:39
Ironstone Saucer
Painted

C. 90:04
Ironstone Plate
Molded and Painted

D. 90:34
Ironstone Saucer
Painted

E. 154:1
Ironstone Plate
Painted
A few vessels (N=7) had painted bands near their edges (Photo 469). However, all of these rim sherds were small in size and may have had decorations on other portions of these vessels.

*Photo 469: Painted Bands on Ironstone Vessels from 1890-1920 Features*

The majority of the painted ironstone vessels featured floral decorations (Photos 470). The floral designs depicted a more stylized pattern than they had been prior to 1860. Two plates (Photo 471), one from Feature 83 of Excavation Block 8 and one from Feature 168 in Excavation Block 10 (about 2 city blocks to the north), had a similar floral decoration and came from a similar, if not the same set. A more ornate pitcher with a floral design was found in Feature 98 of Excavation Block 24 (Photo 472:A). A cream pitcher from Feature 195 of Excavation Block 10 was unusual in that it was painted and molded in the shape of a corn cob (Photo 472:C). Another pitcher from Feature 21 of Excavation Block 23 had a barrel shape (Photo 472:D). The bottom part of a plate from Feature 90 of Excavation Block 24, featured three winged cherubs playing near a pond (Photo 472:B). This may have been from a child’s plate.
Photo 470: Ironstone Vessels with Painted Floral Designs from 1890-1920 Features

62:112
Stratum 2, South Half
Ironstone Saucer
Painted

59:266
Stratum 2, West Half
Ironstone Serving Bowl
Painted

77:03
Ironstone Cup
Painted

62:313
Stratum 3, South Half
Ironstone Saucer
Painted

62:319
Stratum 3, South Half
Ironstone Cup
Painted

59:443
Stratums 2 and 3, West Half
Ironstone Bowl
Painted

90:41
Ironstone Cup
Transfer Print

90:33
Ironstone Saucer
Painted

195:02
Stratum 1
Ironstone Plate
Molded and Painted
Photo 471: Two Ironstone Plates with a Similar Painted Floral Decoration from Feature 83 of Excavation Block 8 and Feature 168 of Excavation Block 10
Photo 472: Ornately Decorated Vessels from 1890-1920 Features

A. 98:140
Ironstone Pitcher
Molded and Painted

B. 90:10
Ironstone Plate
Painted

C. 195:12
Stratum I
Ironstone Cream Pitcher
Molded and Painted

D. 21:43
Ironstone Creamer
Molded and Painted
Ironstone vessels had 15% with transfer print decorations, with another 2% having a transfer print that also was partially painted (Figure 138). Most of the ironstone vessels have a transfer print with a single color (N=162, 59.3%). There does seem to be a slight preference for brown transfer prints over blues, with green, black, gray, purple, and red also present in smaller percentages (Figure 139). Another 14% of the transfer printed ironstones had a flow blue print. All of the flow blue vessels and the majority of the vessels with a single transfer prints (N=128, 79.0%) had floral decorations (Photos 473-478). These decorations covered a large portion of the border and often the entire vessel. Floral decorations were popular again after the 1880s in the U.S. Initially, these covered only a small portion of the border, but after 1905 more elaborate vessels were decorated across most of the border and often within the well became popular. Three bowls from Feature 97 of Excavation Block 24 were from the same set (Photo 473:B-D). They had a manufacturing mark indicating they were produced by Franz Anton Mehlem who produced ceramics in Bonn, Germany. Another piece found in Feature 90 within the same Excavation Block had a similar pattern and also was made by Mehlem (Photo 473:A).

Some of these patterns had been recorded with the British patent office. A tureen lid, a sugar bowl lid, and two cups from Feature 12 of Excavation Block 23 displayed a floral Dane design (Photo 479:A-C). No information could be found on this pattern, but the tureen lid did have a manufacturer’s mark of F. Winkle and Company. This company existed between 1890 and 1925 at Stoke on Trent, Staffordshire, England.

A plate from Feature 169 of Excavation Block 10 featured a Lyons pattern (Photo 479:D). This pattern was first registered by the William Alsager Adderley (and Company) of Longton, Staffordshire, England. This company was in existence between 1876 and 1905, but as to when the pattern was patented is not known (Transferware Collectors Club 2018). The plate had a manufacturer mark by the Ford China Company of Ford City, Pennsylvania, which operated between 1898 and 1904 (Kowalsky and Kowalsky 1999:36). The original Lyons pattern was imitated by this company.

Figure 139: Percentage of Single Transfer Print Colors on Ironstone Vessels from 1890-1920 Features
Photo 473: Dark Blue Floral Transfer Prints Found on Ironstone Vessels within 1890-1920 Features
Photo 474: Light Blue Floral Transfer Prints on Ironstone Vessels within 1890-1920 Features

114:01
Ironstone Plate
Transfer Print

62:277
Stratum 3, South Half
Ironstone Plate
Transfer Print

68:19
Ironstone Soup Bowl
Transfer Print

62:304
Stratum 3, South Half
Ironstone Saucer
Transfer Print

59:556
Ironstone Serving Bowl Lid
Molded and Transfer Print

62:305
Stratum 3, South Half
Ironstone Saucers
Molded and Transfer Print

62:338
Stratum 3, South Half
Ironstone Serving Vessel
Molded and Transfer Print

62:306
Stratum 3, South Half
Ironstone Saucer
Transfer Print

Exterior
Interior
Photo 475: Brown Floral Transfer Prints on Ironstone Vessels within 1890-1920 Features
Photo 476: Brown Floral Transfer Prints on Ironstone Saucers and Cups within 1890-1920 Features

169:83
Ironstone Cup
Molded and Transfer Print

190:11
Ironstone Cup
Transfer Print

56:51
Ironstone Saucers
Molded and Transfer Print

B. 90:41
Ironstone Cup
Transfer Print

90:45
Ironstone Cup
Transfer Print
Photo 477: Black and Red Floral Transfer Prints on Ironstone Vessels within 1890-1920 Features

A. 68:43
Ironstone Platter
Transfer Print

B. 68:13
Ironstone Plate
Transfer Print

C. 68:66
Ironstone Saucer
Transfer Print

D. 90:44
Ironstone Cup
Molded and
Black Floral Transfer Print

E. 155:12
Ironstone Saucer
Transfer Print

F. 298:19
Ironstone Cream Pitcher
Molded and Transfer Print

G. 68:48
Ironstone Pitcher
Transfer Print

H. 178:33
Ironstone Saucer
Transfer Print
Photo 478: Flow Blue Floral Transfer Prints on Ironstone Vessels Within 1890-1920 Features

169:78
Ironstone Saucers
Molded and Transfer Print

169:90
Ironstone Cups
Molded and Transfer Print

62:6
All Strata, North Half
Ironstone Serving Bowl
Flow Blue

Exterior
Interior

59:439
Strata 2 and 3, West Half
Ironstone Bowl
Transfer Print

Exterior

72:08
Ironstone Serving Bowl
Transfer Print - Flow Blue
Photo 479: Identifiable Patterns on Brown Transfer Prints from 1890-1920 Features

A. 12:18
Ironstone Cups
Dane Transfer Print

B. 12:12
Ironstone Sugar Bowl Lid
Dane Transfer Print

C. 12:11
Ironstone Tureen Lid
Dane Transfer Print

D. 169:12
Ironstone Plate
Lyon Molded and Transfer Print
A total of 28 vessels (17.3%) with a single color transfer print feature a scenic design. One of these vessels had a garden scene with flowers and butterflies (Photo 480:A). Another seven vessels had unidentifiable scenes with people (Photo 480:B-C). Others (4 vessels) had unidentifiable Chinois scenes (Photo 480:D-G). These Chinois decorations depict Chinese scenery, but instead of being produced in China they were manufactured in England or the U.S. This was an attempt to fool consumers or their guests into thinking these pieces were more expensive Chinese porcelains (Williams 1999).

Some vessels did have identifiable scenic patterns. Two cups and a saucer from Feature 21 of Excavation Block 23 and Feature 168 of Excavation Block 10 had a Willowware pattern (Photo 481). This very popular pattern reflected a Chinese tale that was fabricated by British pottery manufacturers. Thomas Turner was the first to produce elements of the Willowware design in 1780, but it was Spode, between 1790 and 1810, who created the classic Willowware design that was widely popular, and continues to be copied and reproduced today (Figure 140). There are several versions of the story, however, the pattern basically depicts various scenes of a Mandarin’s daughter, Koong-shee, who falls in love with his secretary, Chang. The Mandarin did not approve of the love affair and banishes Chang and imprisons Koong-shee in a pavilion surrounded by a zig-zag fence. He promises her to another man so she will forget her love. Chang breaks into the pavilion taking Koong-shee. They are depicted crossing a bridge across a river with Koong-shee carrying a distaff symbolizing her virginity, Chang has jewelry, and they are pursued by the Mandarin who carries a whip. They escape living in a small pavilion where Koong-shee’s maid and the Mandarin’s gardener lived. They hated the Mandarin and allowed the lovers to live with them. However, the Mandarin discovered their location. The lovers fled once more, sailing down the Yang-Tze River and purchased an island, with the jewelry, where they lived. Chang became a widely known gardener and the Mandarin discovered where the lovers were living. He sent soldiers to the island who killed Chang and Koong-shee set their pavilion on fire killing herself. The Gods took pity on them and transformed them into love birds, which are depicted flying together above the willow tree where they first expressed their love (Bockol 1995:25-32). The cup recovered depicts the lovers being pursued across the bridge followed by the Mandarin, and them flying together above the willow tree.

Figure 140: Typical Willowware Pattern (Bockol 1995:1)
Photo 480: Unidentifiable Scenic Transfer Prints from 1890-1920 Features

A. 98:06
Ironstone Plate
Molded and Transfer Print

B. 62:541
Ironstone Serving Bowl
Transfer Print

C. 62:543
Ironstone Saucer
Transfer Print

D.-E. 195:08
Stratum 1
Ironstone Dishes
Transfer Print

F. 21:20
Ironstone Pitcher
Brown Oriental Transfer Print

G. 168:01, Stratum 1
168:20, Stratum 2
Ironstone Cup
Transfer Print
Photo 481: Fragments of Ironstone Willowwares from 1890-1920 Features

21:39
Ironstone Saucer
Blue Willowware Transfer Print

Exterior

21:42
Ironstone Cup
Blue Willowware Transfer Print

0 1 2 3 4 5 cm
0 1 2 inches
Five vessels from Feature 168 of Excavation Block 10 were marked with a Coburg pattern. A pattern named for the City of Coburg, Ontario, Canada, was produced by Edward Challinor and Company of Land Delph, Fenton, England, between 1853 and 1862, George Wooliscroft, Tunstall, Staffordshire, England between 1851 and 1864, and Podmore, Walker and Company, Tunstall, Staffordshire, England, 1834 and 1859 (Transferware Collectors Club 2018; Kowalsky and Kowalsky 1999:143). However, none of these patterns are similar to the one found in Feature 168. This pattern did have the manufacture mark of Stonier, Hollinshead & Oliver of Hanley, Staffordshire, England, who operated between 1882 and 1891, suggesting the pattern was reintroduced at that time.

*Photo 482: Coburg on Ironstone Vessels from 1890-1920 Features*
Another five vessels in Feature 59 of Excavation Block 2 featured a gray transfer print with a floral, trumpet, and vase depicted of the Aquilla pattern (Photo 483). These pieces had a manufacturing mark by the Porcelain Royale Pitcairns Limited of Tunstall, Staffordshire, England, which operated between 1895 and 1901 (Kowalsky and Kowalsky 1999:305).

*Photo 483: Aquilla Pattern on Ironstone Vessels within Feature 59 of Excavation Block 2*
As depicted in Figure 138, at least 25 vessels (2%) had a transfer print that was painted over, giving these pieces a polychrome appearance. Most of these were floral prints whose leaves and flowers had been painted (Photo 484-485), but three pieces had scenic prints. A dish from Feature 169 of Excavation Block 10 had a blue bird (Photo 486:A) and two saucers from this same feature had a Holland scene of a windmill (Photo 486:B-C). In Feature 198 of Excavation Block 10 was a child’s alphabet plate. Unfortunately, only two small sections of this plate were recovered. This print was only partially painted and appeared to depict an older woman standing at a doorway with a child (Photo 486:D). In Feature 289 of Excavation Block 18 were two more small sections of a child’s plate that depicted a garden scene with a bird. The paint was only dappled over the transfer print (Photo 486:E).
Photo 484: Ironstone Plates with Floral Painted Transfer Prints from 1890-1920 Features
Photo 485: Ironstone Vessels with Floral Painted Transfer Prints from 1890-1920 Features

59:489
Stratums 1-3, East Half
Ironstone Creamer
Painted and Transfer Print

68:42
Ironstone Serving Bowl
Molded, Painted, and Transfer Print

125:32
Ironstone Cup
Painted and Transfer Print

98:13 & 15
Ironstone Bowl
Molded, Painted, and Transfer Print

169:09
Ironstone Plate
Painted and Transfer Print

178:26a
Ironstone Serving Vessel
Molded, Painted, and Transfer Print

56:31
Ironstone Tureen
Transfer Print
Photo 486: Ironstone Vessels with Scenic Painted Transfer Prints from 1890-1920 Features

A. 169:60
Ironstone Saucer
Painted and Transfer Print

B.-C. 169:80
Ironstone Sauces
Painted and Transfer Print

D. 198:10
Ironstone Child’s Alphabet Plate
Molded, Painted, and Transfer Print

E. 289:43
Stratum 3
Ironstone Child’s Alphabet Plate
Molded and Painted
Also recovered were vessels with polychrome transfer prints. This decorative style was used on a minimum of 95 vessels, representing 37.7% of the transfer printed wares. This technique was developed in the 1860s to produce more than one color transfer print at the same time, but it was not widely popular until after the 1880s. All of these vessels featured a floral decoration (Photo 487-489).

Photo 487: Ironstone Plates and Bowls with Floral Polychrome Transfer Prints from 1890-1920 Features
Photo 488: Ironstone Serving Bowls and Tureen with Floral Polychrome Transfer Prints from 1890-1920 Features

97:11
Ironstone Serving Bowl
Molded and Transfer Print

55:9n
Ironstone Bowl
Transfer Print

68:39
Ironstone Serving Bowl
Painted and Transfer Print

59:104
Stratum 1, West Half
Ironstone Bowl
Molded and Transfer Print

169:42
Ironstone Serving Bowl
Molded and Transfer Print

56:31
Ironstone Tureen
Transfer Print
Photo 489: Ironstone Saucer and Cups with Floral Polychrome Transfer Prints from 1890-1920 Features

90:29
Ironstone Saucer
Transfer Print

169:85
Ironstone Cup
Molded and Transfer Print

55:4
Ironstone Cup
Transfer Print

55:9bb
Ironstone Cups
Transfer Print
Approximately 2% (N=26) of the vessels had a painted copper colored decoration known as lustreware. This style was introduced in the 1850s and continued to be popular until the start of the 20th century. All of the recovered vessels featuring lustreware had the popular tea leaf decoration (Photos 490-491).

Photo 490: Tea Leaf Lustreware Decoration on Ironstone Plates from 1890-1920 Features
Photo 491: Lustreware on Ironstone Saucers and Cups from 1890-1920 Features

21:36
Ironstone Saucer
Copper Lustre

56:52
Ironstone Saucers
Copper Lustreware

56:68
Ironstone Cups
Copper Lustreware

219:07
Ironstone cup
Copper Luster Band
Molded & luster
A gilded decoration was more common on the decorated ironstone vessels, present on 24% of the vessels (Figure 138, page 250). During the 1700s and 1800s, gold paint was placed on dinner settings, but these pieces were expensive to purchase. By the 1890s, a process for cheaply applying gold to dinner settings was developed and these pieces became widely popular, even among working class families (Hughes 1961).

Gilded vessels included 41 pieces that had a gilded band placed around their edges (Photo 492). Recovered saucers also often featured a gilded band around the edges of the well (Photo 493). A gilded band was present on 15 vessels that had a molded decoration (Photo 494) and 11 vessels had a painted decoration (Photo 495). The painted vessels included a serving bowl from Feature 90 of Excavation Block 24 with a spongeware floral decoration (Photo 495:A), and a bowl that had a painted blue band (Photo 495:B) and a cream pitcher with a painted purple band, in addition to the gilded bands. A cup from Feature 190 of Excavation Block 10 depicted a statue of a victorious knight on top of a pavilion (Photo 496). The rest of the painted vessels featured floral decorations with a gilded band at the edge (Photo 495:C-D). A greater number (N=168) of the ironstone vessels with a band at their edge also had a transfer print decoration. Unlike ungilded transfer prints, a greater percentage of these vessels (70.8%, N=120) had multicolored floral prints (Photo 497-499). The remaining 48 pieces had a brown (5 vessels, Photo 500:A), green (5 vessels, Photo 500:C-E), purple (1 vessel, Photo 500:B) or black (1 vessel) transfer prints. Another 24 brown (Photos 501-503), 8 green (Photo 504:A-E), 3 purple (Photos 504:F-G), and 1 gray (Photo 504:H) prints were partially painted as well.

The remaining ironstone vessels (N=102) had gilded decorations. These included 42 vessels with gilded highlights on a green transfer print floral design (Photo 505-506). Seven of these vessels from Feature 86 of Excavation Block 8 had a similar pattern and likely came from the same set (Photos 505:A & D; 506:A, B, & G). Some of the pieces had a manufacturing mark by the T. & R. Boote & Son of Burslem, Staffordshire, England (Kowalsky and Kowalsky 1999:115-116). This mark was used between 1872-1876, suggesting that these vessel were kept for some time before being discarded into the cistern attached to the flats at 2319 N. Market Street. In Feature 118 of Excavation Block 12, 22 recovered fragments were marked with the Greenville pattern. These include pieces associated with dinner settings (Photo 507) and tea settings (Photo 508). Although no information could be found on this pattern, there was a manufacturing mark by the Alfred Meakin Ltd., which was used between 1897 and 1930 (Kowalsky and Kowalsky 1999:276-277). The number of pieces recovered could suggest that a family living within the domestic dwelling at 2551 Maiden Lane discarded this dinner setting into the cistern when they purchased a newer set sometime before 1920.

The remaining ironstone vessels decorated with transfer prints and various types of gilded decorations (N=60) included some with only wavy lines used to decorate serving vessel lids or a cream pitcher (Photo 509). Other vessels have a stylized floral gilded heart decoration on their border (Photo 510). Some vessels had a floral decoration (Photo 511), or there was a stylized floral edge (Photo 512) or floral vine or ribbon pattern along the border (Photo 513). Two vessels a plate from Feature 83 of Excavation Block 8 and a bowl from Feature 98 of Excavation Block 24 had a gilded spongeware decoration near their edges (Photo 514). A cup from Feature 56 of Excavation Block 2 had gilded spongeware near its edge and its handle was painted gold (Photo 515:A). A bowl from Feature 62 also in Excavation Block 2 had a black Chinois transfer print that was partially painted gold (Photo 515:B).
Photo 492: Ironstone Vessels with Gilded Band Near Edges from 1890-1920 Features

86:03
Ironstone Plate
Painted

68:14
Ironstone Plate
Painted

68:244
Unit
Ironstone Plate
Painted

279:12
Ironstone Dish
Gilded

12:9
Ironstone Serving Bowl
Gilded

56:29
Ironstone Relish Tray
Gilded
Photo 493: Ironstone Cups and Saucers with Gilded Bands from 1890-1920 Features

12:20
Ironstone Saucer
Painted

125:15
Ironstone Bowl
Gilded

195:20
Stratum 1
Ironstone Cup
Gilded

12:22
Ironstone Saucers
Painted

12:15
Ironstone Cup
Gilded
Photo 494: Ironstone Vessels with a Gilded Band and Molded Decoration from 1890-1920 Features

114:17
Ironstone Creamer
Molded and Painted

125:23
Ironstone Soup Bowl
Gilded and Molded

72:05
Ironstone Plate
Molded and Painted
Photo 495: Ironstone Vessels with a Gilded Band and a Painted Decoration from 1890-1920 Features

A. 90:13
Ironstone Serving Bowl
Painted

B. 59:3
Top Fill
Ironstone Bowl
Painted

C. 97:155
Ironstone Pitcher
Painted

D. 118:33
Ironstone Saucer
Molded and Painted
Photo 496: Ironstone Cup with a Gilded Band and a Painted Statue from Feature 190 of Excavation Block 10
Photo 497: Ironstone Vessels with a Gilded Band and a Multicolor Floral Transfer Print from 1890-1920 Features

86:08
Ironstone Plate
Painted and Transfer Print

56:26
Ironstone Serving Bowl
Gilded and Transfer Print

62:110
Stratum 2, South Half
Ironstone Serving Vessel
Gilded, Molded, and Transfer Print

114:14
Ironstone Bowl
Molded, Painted, and Transfer Print

59:482
Stratums 1-3, East Half
Ironstone Serving Bowl
Gilded and Transfer Print

59:441
Stratums 2 and 3, West Half
Ironstone Serving Bowl
Gilded and Transfer Print

55:9k
Ironstone Bowl
Painted and Transfer Print

55:9l
Ironstone Bowl
Painted and Transfer Print

125:12
Ironstone Bowl
Gilded, Molded, and Transfer Print

55:9p
Ironstone Bowl
Painted and Transfer Print
Photo 498: Ironstone Platters with Gilded Band and Multicolor Floral Transfer Prints from 1890-1920 Features

55:9q
Ironstone Platter
Painted and Transfer Print

55:9r
Ironstone Platter
Painted and Transfer Print

55:9u
Ironstone Platter
Painted and Transfer Print

125:24
Ironstone Platter
Gilded, Molded, and Transfer Print
Photo 499: Ironstone Cups and Saucers with Gilded Band and Multicolor Floral Transfer Prints from 1890-1920 Features
Photo 500: Ironstone Vessels with a Gilded Band and a Single Color Transfer Print from 1890-1920 Features

A. 90:43
Ironstone Cup
Painted and Transfer Print

B. 78:15
Ironstone Cup
Painted and Transfer Print

C. 62:124
Stratum 2, South Half
Ironstone Saucer
Molded, Painted, and Transfer Print

D. 62:278
Stratum 3, South Half
Ironstone Plate
Painted and Transfer Print

E. 62:303
Stratum 3, South Half
Ironstone Saucers
Molded, Painted, and Transfer Print
Photo 501: Ironstone Plates and Serving Vessels with a Gilded Band and a Painted Brown Transfer Prints from 1890-1920 Features
Photo 502: Ironstone Saucer with a Gilded Band and a Painted Brown Transfer Prints from 1890-1920 Features
Photo 503: Ironstone Cups with a Gilded Band and a Painted Brown Transfer Prints from 1890-1920 Features
Photo 504: Ironstone Vessels with a Gilded Band and Painted Single Color Transfer Prints from 1890-1920 Features

A. 86:08
Ironstone Plate
Gilded, Painted, and Green Transfer Print

B. 86:22
Ironstone Saucer
Gilded, Painted, and Green Transfer Print

C. 56:67
Ironstone Cup
Molded, Painted, and Green Transfer Print

D-E. 178:50
Ironstone Cups
Molded, Painted, and Green Transfer Print

F. 98:30
Ironstone Saucer
Painted and Purple Transfer Print

G. 56:66
Ironstone Cup
Molded, Painted, and Purple Transfer Print

H. 97:29
Ironstone Cup
Molded, Painted, and Gray Transfer Print

537
Photo 505: Ironstone Vessels with Gilded Highlights on Green Transfer Prints from 1890-1920 Features

A. 86:07
Ironstone Plate
Painted and Transfer Print

B. 118:28
Ironstone Tureen
Molded, Painted, and Transfer Print

C. 118:30
Ironstone Serving Vessel Lid
Molded and Transfer Print

D. 86:11
Ironstone Bowl
Painted and Transfer Print
Photo 506: Ironstone Cups and Saucers with Gilded Highlights on Green Transfer Prints from 1890-1920 Features

A-B. 86:18
Ironstone Saucer
Painted and Transfer Print

C. 125:27
Ironstone Saucer
Gilded and Transfer Print

D. 195:87
Stratum 2
Ironstone Cup
Gilded and Transfer Print

E. 195:19
Stratum 1
Ironstone Cup
Gilded and Transfer Print

F-G. 86:27
Ironstone Cups
Molded, Painted, and Transfer Print

H. 59:117
Stratum 1, West Half
Ironstone Cup
Painted and Transfer Print
Photo 507: Ironstone Dinner Settings with Gilded Highlights on a Green Greenville Pattern Transfer Print from 1890-1920 Features

118:12
Ironstone Plate
Molded, Painted, and Transfer Print

118:13
Ironstone Bowl
Molded, Painted, and Transfer Print

118:20
Ironstone Relish Dish
Molded, Painted, and Transfer Print

118:26a
Ironstone Serving (Condiment) Dishes
Molded, Painted, and Transfer Print
Photo 508: Tea Setting with Gilded Highlights on a Green Greenville Pattern Transfer Print from 1890-1920 Features

118:29
Ironstone Tea Pot
Molded, Painted, and Transfer Print

118:34
Ironstone Saucers
Molded, Painted, and Transfer Print

118:38
Ironstone Cups
Molded, Painted, and Transfer Print
Photo 509: Ironstone Vessels with Gilded Wavy Lines and Multicolored Floral Transfer Prints from 1890-1920 Features

114:11
Ironstone Serving Vessel Lid
Molded, Gilded, and Transfer Print

178:26
Ironstone Serving Vessel Lid
Gilded, Molded, and Transfer Print

56:36
Ironstone Creamer
Molded, Painted, and Transfer Print
Photo 510: Ironstone Vessels with a Gilded Stylized Floral Heart Shape, and a Painted Single or Multicolor Transfer Prints from 1890-1920 Features
Photo 511: Ironstone Vessels with a Gilded Floral Decoration from 1890-1920 Features
Photo 512: Ironstone Vessels with a Gilded Stylized Floral Border Design from 1890-1920 Features
Photo 513: Ironstone Vessels with a Gilded Floral Vine or Rope Design from 1890-1920 Features

59:255
Stratum 2, West Half
Ironstone Plates
Molded and Painted

59:113
Stratum 1, West Half
Ironstone Cup
Painted and Transfer Print

59:262-263
Stratum 2, West Half
Ironstone Bowls
Painted and Molded

59:480
Stratum 1-3, East Half
Ironstone Bowls
Gilded, Molded, and Transfer Print
Photo 514: Ironstone Vessels with a Gilded Painted Spongeware Edge from 1890-1920 Features
Photo 515: Ironstone Vessels with a Painted Gild Decoration from 1890-1920 Features

A. 56:81
Ironstone Cup
Gilded, Molded, Painted, and Transfer Print
Exterior

B. 62:294
Stratum 3, South Half
Ironstone Serving Bowl
Painted and Transfer Print
A minimum of 459 ironstone vessels had a manufacturers mark. Of these, 193 (42%) pieces were produced by 38 different English companies (Figure 141, Table 16, Photos 517-518). By far, the most popular company was Alfred Meakin, which was present on 67 vessels, representing 35% of the English manufacturers, and recovered from the most features (19). Many of the manufactures marks indicated that the ironstone vessels were produced between 1890 and 1920, but 13 pieces were made between 1857 and 1887. The earliest of these was a Wedgewood and Company serving bowl found in Feature 190 of Excavation Block 10. It was produced between 1848 and 1857. A tureen from Feature 68 of Excavation Block 8 was produced by John Wedgewood & Sons and had a royal registry mark of January 3, 1859. However, this vessel could have been produced after that date. Although the ceramics made during the 1880s may still have been used by these families into the 1890s, the 8 pieces produced prior to that time likely represented family heirlooms that eventually broke.

Four vessels were marked by English manufactures for import to New York City. A single plate from Feature 4 of Excavation Block 23 and another one from Feature 68 of Excavation Block 8, and a tureen from Feature 21 of Excavation Block 23 had a mark of Burgess and Goddard (Photo 516). Although Henry Burgess did manufacture ceramics and this company was established in New York City to import his wares, Burgess and Goddard also imported ceramics from a number of other English companies between the 1840s and 1890s, (Kowalsky and Kowalsky 1999:133). A saucer from Feature 62 of Excavation Block 2 was marked with another New York importer, Rowland and Marsellus Company. Between 1893 and 1910, they imported ceramics produced by Sampson Hancock and Sons. After that time, they imported wares made by various English manufacturers until 1933 (Kowalsky and Kowalsky 1999:329).

*Figure 141: Percentage of Country of Origins on Ironstone Vessels from 1890-1920 Features*
<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
</table>

*K&K is Kowalsky and Kowalsky*
<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>289</td>
<td>Anthony Shaw (1858-1900)</td>
<td>Burslem, Staffordshire, England</td>
<td>1858-1900</td>
<td>K&amp;K 1999:332</td>
<td>518:H</td>
</tr>
</tbody>
</table>
Table 16, Continued

<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
</table>

Photo 516: Burgess & Goddard Importers Mark on Ironstone Vessels from 1890-1920 Features
Photo 518: Additional British Manufacturers Marks on Ironstone Vessels from 1890-1920 Features

A. 90:02
Ironstone Plate
Alfred Meakin
1891-1897+

B. 125:27
Ironstone Saucer
Alfred Meakin
1897-1930

C. 90:24
Ironstone Saucer
J & G Meakin
1890+

D. 298:05
Ironstone Plate
J & G. Meakin
1890+

E. 117:01
Ironstone Plate
J & G Meakin
1890+

F. 198:03
Ironstone Soup Bowl
Powell & Bishop
1866-1878

G. 21:3
Ironstone Plate
Pratt & Simpson
1878-1883

H. 289:41
Ironstone Saucer
Anthony Shaw
1856-1898

I. 168:11
Ironstone Plate
Stonier, Hollinshead, & Oliver
1882-1891

J. 118:28
Ironstone Tureen
Upper Hanley Pottery Co.
1895-1900

K. 62:15
All Strataums, North Half
Ironstone Saucer
Upper Hanley Pottery Co.
1895-1900

L. 62:304
Stratum 3, South Half
Ironstone Saucer
J.H. Weatherby & Sons
1893-1925

M. 168:14
Stratum 2
Ironstone Serving Bowl
Wedgeswood & Co
1860-1890

N. 168:13
Stratum 2
Ironstone Serving Bowl
Arthur J. Wilkinson
1885-1895

O. 7:099
Stratum 2
Ironstone Plate
Arthur J. Wilkinson
ca. 1896

P. 47:11
Ironstone Serving Bowl
Wilkinson & Hulme
1881-1885

Q. 56:51
Ironstone Saucer
F. Winkle & Co.
1890-1925

R. 62:290
Stratum 3, South Half
Ironstone Serving Bowl
F. Winkle & Co.
1890-1925

S. 178:22
Ironstone Serving Dish
F. Winkle & Co.
1890-1925

T. 62:12
All Strataums, North Half
Ironstone Saucer
Wood & Son
1865-1907
Another 21 vessels featured manufacturer marks by companies in foreign countries other than England, including France, Germany, and Holland (Table 17). These vessels represented 5% of the marked ironstone vessels (Figure 141), with slightly more from Germany (N=9) but 7 of the vessels were from Holland and 4 from France. However, a saucer from Feature 62 of Excavation Block 2, made by Utzschneider, was produced in Larraine (Germany). Originally part of France, this region was annexed by Germany in 1871. The company did move into France, but continued to maintain a factory in the Larraine area. The two companies were reunited after World War I when Larraine was transferred back to France. Another saucer, also from Feature 62, was made in Scotland. Although part of the British Isle, this company was outside of England’s main pottery district. Other than 4 bowls from Feature 97 of Excavation Block 24, made by the German company of Franz Anton Mehlem, the majority of the foreign ceramics represented only one or two fragments, respectively. This could indicate that these were more expensive and used occasionally.

Table 17: Foreign Country Manufacturers Marks Other than England on Ironstone Vessels from 1890-1920 Features

<table>
<thead>
<tr>
<th>Number of Vessels</th>
<th>Features</th>
<th>Manufacturer (Dates of Operation)</th>
<th>Location</th>
<th>Mark Date</th>
<th>Reference</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>59, 62, 86</td>
<td>Keller &amp; Guerin Co. (1788-present)</td>
<td>Luneville, France</td>
<td>1892-1922</td>
<td>InfoFaience 2018 K&amp;K* 1999:637</td>
<td>519:A</td>
</tr>
<tr>
<td>1</td>
<td>62</td>
<td>Utzschneider/Sarreguemines (1790-1982)</td>
<td>Lorraine, France (Germany)</td>
<td>1790-1942</td>
<td>K&amp;K 1999:639-640</td>
<td>519:B</td>
</tr>
<tr>
<td>1</td>
<td>195</td>
<td>Mehlem, Inh, F. Guilleaume (1875-1930)</td>
<td>Katzenberg, Germany</td>
<td>1885-1920</td>
<td>PPM 2018</td>
<td>519:E</td>
</tr>
</tbody>
</table>

*K&K is Kowalsky and Kowalsky*
Photo 519: Manufacturer’s Marks from Foreign Countries other than England on Ironstone Vessels from 1890-1920 Features

A. 86:10
Ironstone Bowl
Keller & Guermin
France
1892-1922

B. 62:206
Stratum 3, South Half
Ironstone Saucer
U&C Sarreguemines
France (Germany)
1750-1942

C. 62:8
All Strata, North Half
Ironstone Serving Bowl
Franz Anton Mehlem
Germany
1888-1920

D. 97:09
Ironstone Plate
Franz Anton Mehlem
Germany
1885-1920

E. 95:03
Stratum 1
Ironstone Plate
Mehlem, Inh
Germany
1885-1920

F. 169:57
Ironstone Saucer
Stingut-Fabrik und Kunststofferei
F.A. Mehlem
Germany
1885-1920

G. 62:105
Stratum 2, South Half
Ironstone Plate
Petrus Regout & Co.
Holland
1890-1893

H. 169:78
Ironstone Saucer
Societe Ceramique
Holland
1891
The greatest percentage (53%) of marked ironstone vessels were from American companies (see Figure 141). The local residents, however, did not appear to favor one American firm over another. The marked vessels represented 53 different companies (Table 19). The greatest number of vessels (23) were associated with the East Palestine Pottery Company, but this only represented 9.4% of the American marked vessels, present in 9 features. Another six American companies were represented by between 11 and 15 vessels (Table 18). Pottery associated with the Standard Pottery Company, included 6 bowls and 3 saucers from the same set that had been tossed out into a cistern, Feature 118 within Excavation Block 12. The majority of the American firms produced less than 4 vessels per feature, suggesting that these pieces were discarded as they broke and not a set replaced by a newer one.

**Table 18: List of Second to Seventh Highest Number of Vessels Associated with American Pottery Firms**

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of Vessels</th>
<th>Number of Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>American China Co.</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Crown Pottery Co.</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Knowles, Taylor, &amp; Knowles</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Severs China Co.</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Standard Pottery Co.</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>C.C. Thompson Pottery Co.</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

During the late 18th and most of the 19th centuries, British manufactures dominated the ceramic manufacturing market. American firms could not compete with the English and were typically reduced to producing redware and yellowware utilitarian vessels during this time (Hughes 1961). Most consumers preferred English tablewares. Even as late as 1897, the Sears catalog was selling mostly English dinner settings (Figure 142-143) with a warning of “genuine English semi-porcelain ware, not first or second grade American, but the genuine English” (Israel 1968:678). As a result, many American firms copied English manufacturer marks to fool consumers into thinking they were purchasing English ceramics. For example, at the end of the 19th century several American companies were still using the British royal arms (Photos 519-523). The Sevres company used the Fleur-de-lis to fool consumers into thinking they were acquiring more expensive French porcelains. Some companies went so far as to use “China” in the name of the company, even though they were producing semi-vitreous ironstones. However, by the start of the 20th century, American manufacturers gradually took over the ceramic market by introducing new shapes and decorations, as well as developing techniques to mass produce ceramics. One of the outcomes of the Spanish-American War was a growing sense of American pride in global affairs and a movement to purchase American products. Also, in 1891 McKinley Tariff Act in 1891 was passed, which imposed a tariff on imported goods and required foreign manufacturers to provide proof of their country of origin. This Act was especially popular with American workers. By the 1902 edition of the Sears Roebuck catalog (1986), American wares were advertised in bold letters and represented a larger portion of the sets being sold (Figures 144-145). American pieces ranged in price from $4.98 to $8.58 for a 100 piece set, while similar British sets sold from $6.89 to $11.75 for 100 pieces (Figures 146-147). By this time, American companies used marks with American symbols such as flags, the U.S. shield, and eagles (Photos 519-523). The American China Company did not hide the fact that they were a U.S. firm in the name of the company. Homer Laughlin became so bold as even using a mark displaying an American eagle defeating the British lion (Photo 522:D).