We would like to acknowledge a brief history written by Charlie Mason and the format of this report was followed from the report on the Structure D excavation by Burke Willard and Sam Horstman. The statistics presented in this paper are the work of the artifact analysis group, Luke Doiron, Richard Isolde, and Neill Wente.

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In a final effort to understand the lifeways and industry of the Longdale Mining Complex, Washington and Lee's Anthropology 377 course went to Longdale once again to excavate two structures. The Longdale Mining Complex is located in Alleghany County within the George Washington and Jefferson National Forest. These two structures are located to the east of state route 850 and Simpson Creek, and to the west of Interstate 64 in Community 1, the largest community of the three at Longdale, consisting of 33 structures. They are situated on the first ridge above Simpson Creek. Both sites are about 600 feet to the south-southwest and north-northeast of Structure D, which was excavated in the spring of 1996.

The focus of our work was to excavate Structure F (see Appendix A), believed to have been a domestic structure. It was selected because of the suspected high economic status of its occupants during the active mining years in the region. Many of our observations within the first week of the term led us to this hypothesis. We noted the location to be of a higher elevation than the rest of the Longdale Mining Complex which suggests the occupants were looking over the community in both a literal and metaphorical sense. Also noted was the large size of the structure and the large amount of stone and brick scatter. We also studied what appeared to be a walkway made of bricks on the eastern side of the structure. The unique characteristics of
this structure left us in anticipation to excavate what we believed to be the home of upper level management at the mining complex.

Mining undoubtedly created, shaped, and dominated the lifeways of this region during the eighteenth and early nineteenth centuries. Three major furnaces, the Lucy Selina, Australia, and Longdales 1 and 2 were the lifeblood of the Longdale community. Undoubtedly, this atmosphere of industry shaped the lifeways of the populace that inhabited and worked in Longdale and the surrounding region.

The 47%-52% iron-rich Oriskany sandstone which constitutes Brushy Mountain drew the iron industry to this region of Alleghany County in 1827 when the Lucy Selina Furnace was built by John Jordan and John Irvine. The area was optimal because of the Oriskany, the abundance of hardwood forest for charcoal production, and the accessible waterways for transportation. In 1831 the Jordan and Irvine Company disbanded, but the furnace continued to operate under the direction of four other partners until 1852.

1854 witnessed the construction of the first hot-blast furnace in the area, the innovation of William Firmstone. The furnace, named Australia, was built by the B.J. Jordan Company. F.T. Glasgow managed the furnace during the first years of the Civil War, then Joseph Anderson of the large Richmond ironworks, Tredegar, purchased Australia to increase the iron supply for the Confederacy. The Australia furnace was shut down in 1865, an
economic tragedy for the people of the mining community.

William Firmstone, the hot-blast innovator, bought the Lucy Selina, a cold blast furnace, in 1870 and converted it into a hot-blast furnace. Charcoal burning ceased at the Lucy Selina with the introduction of coke for smelting. Firmstone's Lucy Selina also utilized its own railway system. Roads and railroads would be an integral part of the mining operations at Longdale and, therefore, they can help to answer a myriad of questions. The internal connection between structures and the community as a whole is an obvious one. They can clarify what areas were domestic or industrial, and how they related to one another. They can also establish Longdale's link to nearby communities, and perhaps the presence of commuters. They can give us all sorts of clues about old ways of life, a pattern of life that would not last forever. In 1911, the Longdale Company folded due to the rise of powerful and wealthy competition who had access to much richer midwestern ores and who possessed technologies that would render the labor intensive "southern style" of production obsolete.¹

The goals of our excavation were both concrete and intangible. Our concrete goal was to define the dimensions of the physical structure and to identify the hearth within it. The intangible goals were to identify the time of occupation and to assess the relative socio-economic status of the dwelling's

residents to other members of the Longdale Mining Complex. In order to do this we had to carefully establish areas to be excavated, and excavate them in a manner that would yield answers to our questions.

The first pits were shot in on the south and west sides of the structure. We chose this location because it was consistent with the pattern of excavation used in Structure D a year ago. These pits were numbered 1-19 and within them we hoped to get a clue about two possible doorway entrances to the structure. Of these units, we excavated pits 1, 3, 5, 7, 9, 11, 13, and 17 (map A). All of these units were on the exterior of the structure. These pits were somewhat disappointing when excavated because they were relatively shallow with some pits reaching sterile soil at a depth of 3 inches, and they yielded few artifacts.

The next sets of pits were shot in on the east side of the structure. We placed these pits in their locations because a brief visual survey of the area indicated the presence of a brick walkway or patio. The first group was shot from a datum point 13 degrees East of North, and numbered 20-28. The second group was shot in from datum point 15 degrees West of North, and were accordingly numbered 29-34. The students of the 337 course excavated pits 21, 23, 25, 27, 29, 31, and 33 (map A). These pits were not subject to the same erosion as the western and southern pits and they yielded many more artifacts as well as a fascinating feature.

Once these units were excavated we moved into the interior
of the structure. This transition to the interior 6' by 6' units would ordinarily be rather simple, but it was complicated by the presence of an incredible amount of boulder-sized foundation blocks. These first had to be moved by the students with help from the other excavators from Structure A. Once this was done, we laid in interior units by extending string from previously established points of exterior units. Once the last pit was shot in, we had a total of 22 interior units which we defined with the letters A-V, so as to distinguish them from the exterior units. 14 of these 22 pits were excavated. They were A, E, G, I, K, M, N, O, P, Q, R, S, T, and V (map A). These units contained various features and yielded structural dimensions that gave us many insights, and in the end, bolstered our hypothesis regarding the socio-economic status of the structure's inhabitants.

These pits, both exterior and interior, were excavated in the same manner. Soil was removed uniformly, layer by layer, with hand trowels. The exterior units had three layers of soil which we excavated. The first layer was a dark organic layer with a somewhat sandy consistency. This layer also included the surface and any leaves or debris covering the surface. The Munsell reading was 10 YR 3/2 for nearly all of these. The second layer was lighter in color and contained a higher percentage of clay. However, the layer two Munsell readings differed more so from each other in these units ranging from 10 YR 4/2 to 4/4. The third layer was a modeled clay layer that was
not exceptionally thick and was in some cases sterile. The usual
Munsell reading was 10 YR 5/4.

The soils on the interior pits were different. While the
layer 1 remained nearly the same as the exterior, the second
layer was a very thick layer of painted mortar, from the interior
walls, and sand. It continued down to a clay with some modeling
that was nearly always sterile, with four exceptions. All of
these will be discussed in further detail later in this report.

All of the soil from the excavation was placed in buckets
and the sifted in wooden sifters lined with one quarter inch
chicken wire. Any artifacts not found in the pit were located in
the stream following the sifting processes. The artifacts were
then placed in plastic sandwich bags and labeled as follows:
Longdale Mining Complex, Community 1, Structure F, Unit --, Layer
--, Date excavated, Initials of excavators. These same
statistics were also recorded on pieces of masking tape and
attached to the bags so that artifacts would not lose provenience
during the washing and cataloging process.

Structure F is a domestic structure and it is L-shaped. It
is oriented facing the southeast and it overlooks Simpson Creek.
There is evidence of an old road that has been partially eroded
which lay nearly parallel to the orientation of Structure F on
the edge of the steep ridgetop. Structure F is isolated from
every other structure by a distance of at least 600 feet. This
isolated structure has an interior area of nearly 900 square
feet. This renders it to be one of the largest domestic
structures within the Longdale community. The foundation of the structure consists of very rough limestone. Many of the large pieces of dislodged foundation had to be carried out by two people with still a great degree of difficulty. A sand based mortar was used to hold the foundation in place. The exterior walls of the structure were made of bricks. The walls were two bricks thick and were of a low quality, raising questions regarding their origin. The interior walls of the structure were the brick walls covered in mortar and painted white. There is no indication of wooden lathe walls or additional insulation.

The assemblage of artifacts, specifically the ceramics, allows us to assess the socio-economic status of the occupants. The amount of ceramic, medicine bottle, and mason jar fragments unearthed in the structure support our first hypothesis of the structure as a domestic one. The total number of bottle glass fragments was 551 while 187 ceramic sherds were located. This is approximately 40% of the 1856 artifacts found, certainly sufficient to qualify the structure as domestic. These artifacts also speak to affluence. Thirty percent of the ceramics identified were porcelain. Porcelain is the most expensive of all ceramic types. There was no undecorated earthenware or stoneware recovered from the site. There was also an abundance of decorated storage vessels. When compared to the percentage of porcelain found in other Longdale structures, it becomes

evident that these people were of financial means. In fact, it is the highest percentage of porcelain ever found at Longdale.

The assemblage of artifacts unearthed at Structure F indicates that there were all the activities associated with everyday life occurring inside the structure. It did not serve solely as a place to sleep. Meals were prepared there and leisure activities were also pursued. The interior units of the structure produced a high ratio of kitchen to personal artifacts. 

In pits R, I, K, N, and S (map A). The proximity of these pits to each other and to a feature located in pit S attests to the variety of activities going on. In layer 2 of this unit we identified what we believed to be the front of a stove (See also Appendix B-2, map A). It was made of iron and contained a hole in the center measuring 6 inches in diameter. Underneath this cover was a concentration of burned wood. This feature was abutted against the western wall of the structure.

The other artifacts located indicate the presence of children or of women who collected porcelain miniatures. At any rate, the existence of these artifacts in the structure indicates other activities. These items include porcelain dolls legs, marbles, ceramic tobacco pipes, and shotgun shell casings. Not only do these artifacts speak to the activities pursued in the structure, but they address just who the occupants were. The hypotheses that the structure was occupied by a family unit consisting of a male, a female, and children is partially supported by these findings. The marbles indicate children while
porcelain miniatures and dolls indicate either children or a woman's hobby. The assortment of adult sized porcelain buttons also supports the presence of a woman. A man's existence in this structure can be ascertained by the presence of the pipe and the shotgun shells. Together, these artifact allow us to conclude with a fair amount of certainty that men, women, and children occupied the structure.

The final objective of the excavation was to identify the date of occupation at the structure. Once again, the ceramic record is our most reliable resource. Nails would also assist in this process. Using Stanley South's Mean Ceramic Dating Formula, the artifact analysis group was able to calculate an overall ceramic mean date for the structure. This date was 1867.8. A mean nail chronology was also used to determine a date, however this method is not as reliable as the ceramic dating. 1859.4 was the date produced by this formula. This is consistent with the ceramic date and also serves to give us an idea of the overall period of occupation. This final range was between 1850 and 1910.

Features were located on both the exterior and interior of the structure. They gave us clues as to what was going on where, in and around the structure. The most noticeable feature was the brick pattern on the east side of the structure. There appears to be a walkway or patio that surrounds that side of the structure (map A). There has been conjecture that this brick pattern, laid on their sides, is only a wall collapse, but
further investigation yielded that the bricks were only one layer thick, certainly not sufficient for a wall. Right off of this walkway is a brick pedestal. It was located in pit 27 at a depth of 10 1/2 inches (Appendix B-1, map A). When we used a Brunton compass to measure the orientation of the pedestal, we found it to be nearly identical to that of the structure. This seems to support the only going theory on the pedestal as a support for a deck or porch. We had originally intended to shoot off of the other corner and look for another one of these, but time restraints rendered this impossible.

The excavation of interior pits P and R allowed us to confirm our suspicions of these areas as doorways since the beginning of our work. Pit R, located on the western side, yielded its doorway first (map A, Feature 6). There is a wooden step that goes across the opening with limestone lying underneath. The doorway in pit P (map A, Feature 7) had the wood plank at the bottom, but no stone underneath it. The relative depth of pit P's doorway to that of R indicated to us that pit P served as an entrance to the cellar while pit R would have entered into the main floor. The theory that there is no doorway in pit R is strongly challenged by the archaeological record. Post-occupational salvaging of materials is too convenient to explain the complexity of the doorway feature located.

The most unique feature on the interior of this structure is the entirely brick hearth mound (map A, Feature 8). This is the only one of its kind at the Longdale Mining Complex. The hearth
was uncovered in two different units which allowed us to discover its exact measurements. However, we never made it down to what we can be sure is the base of the hearth. At the closing depths of pit G, the hearth was 13 bricks deep.

On the western side of the hearth, there lies a brick collapse that is still partially intact (map A, Feature 5). It was first believed to be wall collapse, but further investigation led us to conclude that it is the collapse of the western side of the chimney. This became evident when we examined the angle at which it fell and looked at the cross section of the brick scatter that led up to it. The scatter looked like it used to fit together as a chimney. A metal bar (map A, Feature 9) would have most likely served as a chimney brace or support.

The final question regarding the structure was related to the size of the cellar. Excavation indicated that the cellar only existed in the area of the structure west of the hearth and that it slowly slopes upward as you move northward. These dimensions also support pit P being the ideal location for an entrance to the cellar.

Now that excavation has been completed and the artifacts have been analyzed, we want to know how accurate these findings are. The main event that would disturb our findings is the post-occupational activities that took place at Structure F. We did find a plastic comb fragment deep in layer 2 and also found a strange piece of metal tubing at the same depth in another pit. However, there were also area that contained valuable ceramic and
glass artifacts in undisturbed areas. One major soil anomaly occurred in the interior of the structure (map A, unit I). The north foundation wall in this pit was scattered and a thick layer of sterile clay was deposited on top of where the wall would have been. There is no sign of what could have moved this amount of soil or dislodged the foundation. There is a large tree located very close by, but there are no roots running through the disturbed area. Despite the amount of tampering that occurred at this structure, it was not sufficient to lead us to believe that our findings are not accurate.

We strongly believe that all of our findings throughout the excavation have overwhelmingly proven that structure F was occupied by a family of very high socio-economic status in relation to the entire community of the Longdale Mining Complex. It is also clear by examining the structure’s strong, well built stone walls, its large size, its beautifully preserved brick hearth, and its location in the community as a whole, that the construction was an expensive/labor intensive process. The ceramic assemblage comprised 10% of the total findings. Notably, 30% of these ceramics were porcelain, which was the most expensive ware of its day. The site also yielded more than 100 medicine bottle fragments, other bottle glass, and kitchen related artifacts. These ratios strengthen our final conclusion.

Fortunately, due to the amount of ceramic pieces assembled, we have been able to construct an occupation date range consisting of occupation between 1850 and 1910. Since 61% of our
artifacts were nails, the artifact analysis group was able to establish a date of 1857, supporting the occupation range date. Furthermore, 84.2% of the nails recovered were machine cut nails produced between the years of 1830 and 1880, and only 15.5% were wire nails, nails produced starting in the 1880's and continuing on to the present day. Overall, most of the artifacts tended to support this range of dates; however, it is clear that there was post-occupational tampering of the structure, testified by the discovery of roof-shingle pieces, and a piece of a plastic comb.

The 648 square feet of earth excavated was only made possible by a group of dedicated workers. The students were well behaved, responsible, enthusiastic, and concerned with the progress of the excavation. Under strong leadership, these young students made it possible for many inferences and hypotheses to be made and tested, finally providing us with a better understanding of the lifeways of the people of the Longdale Mining Complex.
Feature 2

Longdale Mining Complex Stratigraphic Level Forms

Community I Structure F Unit 27
Level 2 Excavators LD, RI Date 4.30.97

Depth:
NW: 10.25"
SW: 8.75"
SE: 9.5"
NE: 12.5"
C: 10"

SCALE: 1" : 1"

Soil Description 10 VR 4/3

Artifacts

Features and Associations Feature 2: Possible Porch Pedestal

Shading is Variable Mortar Cover

Additional Notes
Appendix B.2

LMC Unit 8
Community I Layer 2 CH, RS
Structure F 5.12.97

Feature 3 (Stove)
Depth - 21"