

TOWER HILL NO. 2 MINE
Approx. .47 mi. SW of the Intersection of
Stone Church Road and T-561
Tower Hill No. 2 Vicinity
Fayette County
Pennsylvania

HAER No. PA-424

HAER
PA
26-TOH1.V
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

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Location: Approximately 0.47 miles southwest of the intersection of Stone Church Road and T-561, Tower Hill No. 2 vicinity, Fayette County, Pennsylvania

USGS Quad: Carmichaels, PA, 1:24,000
UTM Coordinates: 17.594040.4424160

Builder: Tower Hill-Connellsville Coke Company
Uniontown, Pennsylvania

Date(s) of Construction: 1907; ca. 1912

Present Owner: Carbon Fuel Resources, Inc.
Pittsburgh, Pennsylvania

Present Use: Vacant

Significance: The Tower Hill No. 2 Mine is significant for the technical information that can be learned from the site as a whole and for the engineering significance of the beehive and rectangular coke ovens that survive largely intact on the site. Tower Hill No. 2 operated between 1907 and the mid-1940s, the period of the Lower Connellsville Coking Region's initial rise in prosperity, as well as its decline. The site grew and changed to accommodate technological innovations as well as economic realities during this turbulent period. Examination of this relatively intact mine operation coupled with historical research can advance our understanding of early twentieth-century mine operations in the bituminous region of Pennsylvania.

Project Information: Tower Hill No. 2 was surveyed and subsequently determined eligible for listing in the National Register of Historic Places in 1990. The mine, including extractive and coking facilities, is currently slated for reclamation by the Bureau of Abandoned Mines due to its deteriorated condition. To mitigate the adverse effect of the reclamation on Tower Hill No. 2, the State Historic Preservation Office stipulated HAER documentation of the mine site. This report was undertaken to fulfill this stipulation.

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INTRODUCTION

The Tower Hill No. 2 mine is situated adjacent to the south side of its associated company town (also called Tower Hill No. 2) in Luzerne Township, Fayette County, Pennsylvania. Tower Hill No. 2 was a bituminous mine that contained both extractive and processing facilities in addition to the company town. Tower Hill No. 2 was constructed in 1907 by the Tower Hill-Connellsville Coke Company of Uniontown, Pennsylvania, and coal was first extracted in September of the same year. Beehive and rectangular ovens were utilized on the site for cooking the coal to produce coke. By 1913, the Tower Hill-Connellsville Coke Company was the third largest coal producer in the 16th Bituminous District, producing 621,278 tons (563613.46 tonnes). With short periods of closure, Tower Hill No. 2 survived stiff competition, receivership, volatility in the market, technological changes, strikes, and the Great Depression only to close in the 1940s after being mined out. The development and history of Tower Hill No. 2 is similar to many other bituminous mine operations during this unstable period.

The majority of mine resources at Tower Hill No. 2 are situated adjacent to either side of an access road leading generally southwest from the company town. The coke ovens stand in two long rows west of the mine building cluster. The parallel rows are oriented east-west. Tower Hill No. 2 Mine is eligible for listing in the National Register of Historic Places for the technical information that can be learned from the site as a whole and for the engineering significance of the coke ovens that survive relatively intact. Like most other coal extraction and coking operations dating to the early twentieth-century boom in the bituminous region of Pennsylvania, the site is vacant and deteriorating. Many of the mine buildings and structures survive, although in varying states of deterioration. Examination of the relationship between the buildings, landscape features and structures can advance our understanding of bituminous mine operations in the Lower Connellsville Coking District of Pennsylvania. Tower Hill No. 2 is typical of contemporary mine and coking plants in many ways, but it also contains atypical features, such as its coke oven arrangement.

The Tower Hill No. 2 site contains one of the largest surviving concentrations of coke ovens in southwestern Pennsylvania. Intact examples of both beehive and rectangular ovens are present. The ovens at Tower Hill No. 2 reveal the design and construction of coking ovens from the early twentieth century. Evolutions in coking technology occurred rapidly in the early twentieth century, and this site demonstrates the first two phases of this technological revolution. Adding to their importance is their overall state of preservation in comparison to other coke ovens in southwestern Pennsylvania. These ovens are representative of coke ovens in the region in form, but their arrangement is atypical. The ovens at Tower Hill No. 2 are arranged in two long, parallel rows rather than in short blocks as was the common practice.

PHYSICAL DESCRIPTION OF TOWER HILL NO. 2 MINE AND COKING OPERATION

The Tower Hill No. 2 mine and coke plant is situated adjacent to the south side of the company town of Tower Hill No. 2 in Luzerne Township, Fayette County, Pennsylvania. Tower Hill No. 2 was a bituminous mine that opened in 1907 and contained both extractive and processing facilities. The vacant site includes a number mine buildings, structures and landscape features situated on tax parcel number 19-27-0037. The property is currently owned by Carbon Fuel Resources, Inc. of Pittsburgh, Pennsylvania.

The majority of mine resources are situated adjacent to either side of an access road leading generally southwest from the company town. The condition of the buildings and structures vary from foundation ruins to nearly intact building shells. When the mine closed, almost all metal was salvaged and sold as scrap. All machines and engines were removed, but their footings and fitting survive. Although the windows and doors are missing from most buildings and the roofs are collapsing, the form, fenestration, and function of the buildings are still easily discernible.

The first building encountered when proceeding down the hill from the town is set back from the northwest side of the access road approximately 65 feet (19.8 meters) at a bend in the road. The building functioned as a water filtration plant. Its rectangular plan, masonry walls are banked into a hill. The plant stands one story with its basement exposed on the south and east sides. The basement story is poured concrete, and the upper story is brick laid in five-course common bond. The water filtration plant is approximately 32 x 34 feet (9.8 x 10.4 meters) in plan and stands 18 feet (5.5 meters) tall. The ridge of the missing gable roof ran generally north-south. Some window and door openings are discernible. The east and south walls of the lower story both contain one door opening. The upper story lacks fenestration except along the south wall, which is arranged in a window-window-window-door-window-window pattern from the west. The windows and doors are missing, but the openings retain simple concrete sills and lintels. Four parallel concrete walls extend north from the north wall of the building. The approximately 1 foot x 42 foot (0.3 x 12.8 meter) walls stand approximately 7 feet (2.1 meters) tall. The proximity of the walls to the building suggest that they were part of the water filtering process, but their exact relationship is unknown. This filtered water served the town as well as the mine (Dominick DeRose, Pers. com. January, 1997).

Proceeding down the access road, the second building encountered is the lamp house, which is situated south of the water filtration plant and adjacent to the access road (Dominick DeRose, Pers. com. January, 1997). A lamp house is where the lamps that miners attached to their hats so that they could see in the depths of the mine were stored. These lamps were dropped off at the end of a shift to be refueled and picked up again at the beginning of the next

shift. The lamp house also contained a locker room for the miners. They would exchange their street clothes for their work clothes in this building. Most likely, the clothes were stored in pails that were hoisted to the ceiling by ropes and pulleys, as was common practice in the bituminous region of Pennsylvania. The brick lamp house is rectangular in plan. The walls are laid in five-course common bond and rest on a stone foundation. The building is approximately 39.5 x 97 feet (12.0 x 29.6 meters). Although it is only one story, it is quite tall at 28 feet (8.5 meters). Stairs lead up a small hill from the access road to a central door on the east side of the building. The roof is missing, but extant metal trusses indicate that the roof was gabled and oriented north-south. The building is eight-bays wide by three-bays deep. The window and door openings are crowned with concrete lintels, and the sills are brick. Large door openings are situated on the south and west sides of the building and possibly the north (deterioration and overgrown foliage made examination of this facade difficult). Standard door openings are situated opposite each other on the east and west sides. The remaining bays contain tall windows. No evidence of the window frame configuration survives. Each bay is framed by simple brick pilasters with brick corbeling above and below. The gables are also framed with brick corbeling. This decoration is typical of industrial buildings dating to the early twentieth century. While the corbeling is decorative, the pilasters may serve a specific function. Metal posts that would strengthen the buildings may be enclosed within these wider sections of brick.

A smaller brick building known as the stair house is situated approximately 30 feet (9.1 meters) west of the lamp house. The gable roof of the stair house runs parallel to that of the lamp house. Metal roof trusses are visible, but the roofing is missing. This building is rectangular in plan, stands one story and is constructed of five-course common bond brick. Brick pilasters and corbeling also adorn this building. The building is two-bays wide by one-bay deep, measuring approximately 12 feet x 24 feet (3.7 meters x 7.3 meters). It stands 16 feet (4.9 meters) tall. The only opening in this building is one large door located in the southern gable. The opening has a concrete lintel. This building sheltered stairs that lead down to the mine.

A fan house is situated adjacent to the west side of the access road and stands approximately 50 feet (15.2 meters) southwest of the lamp house. The fan house has an irregular plan and stands one story. It has a concrete foundation and brick walls laid in five-course common bond. Terra cotta bricks covered with concrete line the interior walls in some places. The building is approximately 40 x 88 feet (12.2 x 26.8 meters), and it is 15 feet (4.6 meters) tall. The roof appears to have been a simple concrete slab. The building is largely collapsed, making it difficult to determine the fenestration pattern. While it may have had several doors, the walls do not appear to have been pierced with many windows. The eastern section of the building contains a room that is dominated by a large, irregularly shaped, concrete machine footing with metal anchor pins. Two large fans, which circulated air into the mine, were lo-

cated in the western half of the building. Two exterior walls and two parallel interior walls comprise the fan housing. The walls stand 7 feet (2.1 meters) apart. A circular pocket framed in header bricks that is centered in the northern exterior wall served as the footing for a metal driveshaft that turned the fans. The two interior walls are just over 1 foot (0.3 meters) thick, and both contain large circular openings measuring approximately 14 feet (4.3 meters) in diameter. Presumably, the fans turned inside these openings. The air shaft to the mine was located adjacent to the northwest side of this building.

Two irregularly shaped, short concrete walls are situated southwest of the fan house. These are the remnants of an office building that burned since the mine closed. A long concrete draught system, or heating duct, is located between the office ruin and the access road. This structure varies between 4 and 5 feet (1.2 and 1.5 meters) wide. It stands approximately 5 feet (1.5 meters) tall and 84 feet (25.6 meters) long. The system is enclosed on all four sides and has a hollow interior. It was devised to drive surplus heat from the ovens to the boilers.

A concrete drainage gutter is situated adjacent to the northwest side of the draught system. The gutter is between 3 and 4 feet (0.9 and 1.2 meters) wide and is approximately 28 feet (8.5 meters) long. A concrete footing is situated southwest of the office walls, culvert and gutter. It stands 3 feet (0.9 meters) tall and measures approximately 6 x 18.5 feet (1.8 meters x 5.6 meters). Its function is not apparent.

A large, three-course common bond brick building is situated on the northwest side of the access road, southwest of the concrete footing. The building, along with another long frame building that once stood to the rear (northwest), served as a stable. The two buildings were connected by concrete watering troughs that survive extant. This building has suffered fire damage, and the roof and north walls are largely collapsed. The fire consumed the frame stable. The extant stable building had a front gable roof (oriented southeast-northwest) which was supported by metal roof trusses. A wooden cornice lines the roof. Pictures from the early 1990s indicate that three wooden, gabled ventilators were perched on the roof, but no evidence of the ventilators survives. The one-story building stands approximately 20 feet (6.1 meters) tall. Its plan is approximately 39 x 100 feet (11.9 x 30.5 meters). Two large door openings are set off center along both gable walls. Evidence of metal tracks that once held sliding doors remains along both walls. A single window opening, with an extant wood surround, is centered in the east gable. This opening once held a double-hung sash window. The side walls of the building are pierced by a row of window openings situated just below the roof. These openings once contained six-pane windows.

The resources situated on the southeast side of the access road are most easily approached at ground level from the southern end of the access road due to a steep slope between the resources and the road. A concrete ramp supported by a concrete wall is the first structure en-

countered when proceeding northeast from the access road. The ramp is oriented north-south with the concrete support situated at the north end. The ramp is approximately 1 foot (0.3 meters) thick, and it measures 12 x 35 feet (3.7 x 10.7 meters). This resource is a later addition to the mine and served as a truck ramp.

The remains of the tipple are situated approximately 100 feet (30.5 meters) northeast of the ramp. A tipple is a tall metal framed structure that lowered and lifted coal or men in cars between the surface and the mine depths. The tipple footing is 12 x 20 feet (3.7 x 6.1 meters). Three parallel concrete walls are situated adjacent to the south side of the footing. The walls are approximately 2 feet (0.6 meters) wide, 25 feet (7.6 meters) long, and 3 feet (0.9 meters) tall.

A large building that contained the generator is located approximately 85 feet (25.9 meters) northeast of the tipple ruin. The generator building is rectangular in plan, stands one story, and its gable roof is oriented northeast-southwest. The building measures approximately 37.5 x 51 feet (11.4 x 15.5 meters), and it stands 30 feet (9.1 meters) tall. This building is similar in form and style to the lamp house and the stair house. It is two-bays wide and four-bays deep, and similar brick pilasters and corbeling adorn the walls. The walls are brick laid in five-course common bond and rest on a fieldstone foundation with a concrete cap. The roof is constructed of metal trusses and sheathed with composition shingles. Two metal ventilators are situated along the ridge of the roof. The windows and large door openings have concrete lintels and sills. The building is equipped with electrical conduits and sockets. The interior of the building is dominated by a large concrete machine footing near the southwest wall and a shaft enclosed in a brick room in the east corner. An arched door is centered along the northwest wall flanked by another smaller arched opening set off-center.

A stone pad indicates the location of the boiler building. The boiler building also contained the shower room (Dominick DeRose, Pers. com. January, 1997). The pad is situated adjacent to the southeast wall of the generator building. A thorough examination is difficult because the pad is cracked and overgrown with vines.

A concrete retaining wall stands at the base of the hill to the northeast of the generator and boiler buildings. The wall stands between 4.5 and 6.5 feet (1.4 and 2.0 meters) tall and is approximately 332 feet (101.2 meters) long.

A second access road runs from the first access road generally east-west. It lies to the south of this cluster of buildings and structures. The ruin of another building stands south of this access road and east of the boiler building. A deteriorated concrete pad indicates the location of a multi-use building which contained the blacksmith shop, carpenters shop, and electrical shop (Dominick DeRose, Pers. com. January, 1997).

Two types of coke ovens are present on the property. The coke ovens are arranged in two roughly parallel banks and are located in what is now a meadow situated to the southeast of the main cluster of mine buildings and structures. A continuous row of approximately 144 beehive ovens comprise the northeastern bank and a row of approximately 250 rectangular ovens arranged in three blocks of 50 and one block of 100 comprise the southwestern bank.

The earliest beehive ovens at the site were installed in 1907. While the specifications for beehive oven construction were never standardized, all ovens conformed to the same general pattern and were built of heat-resistant masonry. The beehive ovens at Tower Hill No. 2 are constructed of irregularly coursed ashlar, fieldstone, and firebrick. The interiors of beehive ovens are generally 8 feet (2.4 meters) tall and roughly 12 feet (3.7 meters) in diameter. Beehive ovens have a large side door and a round opening at their crown called a "trunnel head," which acted as both a loading port for the raw coal and a chimney while the oven was in operation. On top of the row of ovens ran a train of "lorries;" steel cars that moved on rails and had a dumping mechanism to charge the oven below by depositing an 8 ton (7.25 tonnes) load of coal through the trunnel head. The side door was closed with bricks sealed with mud, leaving just a small opening at the top for ventilation. The remaining heat from the previous charge would ignite the new load of coal. After the coal was ignited, it was cooked in the ovens for forty-eight to seventy-two hours, depending on the size of the charge (Bresentsky 1994:15). After the cooking was completed, a sprinkler hose was inserted through the side door to cool the coke so it could be handled (DiCiccio 1993:28-29). The bricks were then pulled from the lower door manually, and the coke was loaded onto wheelbarrows, or later, onto an electric trolley called a "Covington Device" that ran on a set of tracks laid parallel to the front of the ovens (DiCiccio 1993:143). The coke was loaded onto trains for shipment to steel mills.

Rectangular ovens were first constructed at the mine ca. 1912. These ovens were also constructed of firebrick and irregularly coursed ashlar and fieldstone. Like the beehive ovens, the rectangular ovens were loaded through trunnel heads by lorries that ran on a track on top of the ovens. Unlike the beehive ovens, the rectangular ovens had two doors, one at either end of the oven. The opposing openings facilitated evacuation of the coke. A pushing device, which ran on a track on the southwest side of the ovens, would push the coke out through the opposite opening and into a waiting rail car. This mechanization cut hours out of the coking process. All metal from the coke ovens—including tracks, doors, and hinges—was removed and sold as scrap when the mine closed. What survives today are the masonry shells of the ovens, the majority in sound condition.

The physical layout of Tower Hill No. 2 differed somewhat from the typical mining/coking operation built in the early twentieth century. Most commonly, coke operators built their ovens in several short parallel blocks of less than 100 ovens. The arrangement allowed

workers to recharge the ovens in less time using less power (Enman 1962:213). Tower Hill No. 2 features a single row of 144 beehive ovens and a parallel row of 250 rectangular ovens arranged in blocks. Ovens constructed in long rows would have been easier to expand over time as the operation grew by simply adding ovens to the end of the row and extending the track for the lorries and covington device. Another difference in this mine is the placement of the mine shaft. Operators tended to locate the mine shaft at the center of the oven configuration to facilitate movement of the coal from the mine to the ovens. At Tower Hill No. 2, the shaft is situated 400 feet (121.9 meters) to the northwest of the western flank of the beehive ovens. This may have been a function of the landscape. The ovens are located in a large, open, fairly flat meadow that easily accommodated the linear arrangement of the ovens.

HISTORICAL BACKGROUND

The Tower Hill No. 2 mine was a component of an extraordinary period in American history: the economic boom and subsequent bust, of the Connellsville bituminous coal region. While anthracite coal from northeastern Pennsylvania had been mined commercially since the 1840s, various advances in technology and infrastructure in the mid-nineteenth century soon made the bituminous coal of southwestern Pennsylvania an even more desirable commodity. The Bessemer converter, simultaneously developed by Charles Henry Bessemer and William Kelly, made the production of steel in large quantities possible (DiCiccio 1993:119). Coke (a refined type of coal made by cooking raw coal in ovens) made from bituminous coal was the fuel of choice for the Bessemer/Kelly process, and such coal was found in abundance in rural Fayette County. Connellsville district coal was well suited for conversion to coke, being clean, soft, nearly free of slate and sulfur, and uniform in quality and thickness. It could be coked straight from the mine with no intermediate preparation necessary. The expansion of railroad and riverboat capacity made it possible to transport the rich coke mined and refined in Fayette County to Pittsburgh (DiCiccio 1993:123; Frank LaCava, Pers. com. 1995), which rapidly became the steel production capitol of the United States.

The Tower Hill No. 2 mine and coke manufactory began operations in 1907 in the Lower Connellsville Coking District, also called the Klondike because its 1899 opening coincided with the Alaska gold rush (DiCiccio 1993:E142; *Uniontown Daily News Standard* January 31, 1907:1). The Klondike region was the last area to be mined in the Connellsville Coking District. The increased demand for coke, an abundant coal supply, and the region's proximity to numerous steel companies enabled the Connellsville District to grow to encompass 147 square miles (380.73 square kilometers), reaching from Latrobe southwest through Westmoreland and Fayette Counties almost to the West Virginia line. The coal seam averages 3.5 miles (5.63 kilometers) in width. By 1880, the region produced 72.16 percent of the nation's coke (H.C. Frick Coke Company 1893:n.p.). Seventy-five percent of local wage earners were involved in the industry (DiCiccio 1993:E74).

Initially, most companies producing coke in the Connellsville district were small, local family-owned operations. H.C. Frick changed that after he bought out many of his struggling competitors during the Panic of 1873. Aligning with steel magnate Andrew Carnegie, Frick tried to establish domination over the booming coke industry (DiCiccio 1993:E79). Frick's activity drew the attention of other industrial capitalists and soon the industry was controlled by companies headquartered in New York, Philadelphia, Baltimore and Pittsburgh (DiCiccio 1993:E167-68). The founder of the Tower Hill plant, Josiah VanKirk (J.V.) Thompson, recognized that corporate involvement would inevitably bring rapid development and escalating land values, and he capitalized on this trend.

J.V. Thompson was president of the First National Bank of Uniontown, Pennsylvania, but his true avocation was real estate investment (*Connellsville Weekly Courier* May 18, 1914:10). Thompson engineered the rise of the Klondike coke district at a time when experts thought its coal to be vastly inferior to that available in the Upper Connellsville Field. Thompson's strategy was to purchase land parcels from local farmers, consolidate them into marketable blocks, and then sell the blocks to coal developers (Sheppard 1947:66). Thompson systematically selected terrain that would realize the highest returns on his investments. He purchased along river beds and rail lines, enabling him to control the lands beyond because developers would have to cross his property to access transportation to market. Local entrepreneurs, large and small, routinely entrusted their savings to him to invest in such speculative ventures. In addition to making himself and many of his investors millionaires, he transformed the First National Bank into the nucleus of the Klondike economy. By the time corporate investors realized the value of Klondike coal, Thompson had acquired most of the land in the region (Sisterson 1950:34). Parcels on which Thompson acquired options at \$25 per acre, he later resold for as high as \$2,500 per acre. Coal barons such as Frick and W.J. Rainey, whose holdings were in the Upper Field, which was rapidly being depleted, were forced to pay Thompson's high price in order to expand their holdings and maintain their standing in the industry (*Uniontown Daily News Standard* Sept. 30, 1907:1). By 1907, J.V. Thompson had become Fayette County's largest individual taxpayer.

Early in the twentieth century, J.V. Thompson decided to diversify his investments into the actual production of coke (Sisterson 1950:38). Thompson formed the Thompson-Connellsville Coke Company in 1906 to manufacture coke at the Thompson No. 1 and No. 2 plants. The opening of the two Thompson extraction and coking operations propelled J.V. Thompson to the position of second largest independent operator in the region, behind W.J. Rainey (*Uniontown Daily News Standard* Oct. 21, 1909:1; *Connellsville Weekly Courier* May 18, 1914:10). He also developed the nearby Isabella-Connellsville Coke Company, and held executive positions with Rich Hill Coke Company, Harrison-Dodridge Coal and Coke, Greene County Coal Company, Liberty Coal Company and Wetzel Coal and Coke in addition to presiding over the Morgantown and Wheeling Railroad (*Western Pennsylvanians* 1923:515).

Tower Hill No. 2 was constructed the following year, in 1907, by the Tower Hill-Connellsville Coke Company of Uniontown, Pennsylvania. J.V. Thompson sold 2,000 acres (809.37 hectares) to the company for \$3,400,000, for both the Tower Hill No. 1 and 2 plants. The Tower Hill-Connellsville Coke Company was well capitalized at its inception, with \$2,590,000 in bonds, \$1,500,000 in preferred stock and \$4,000,000 in common stock, with Thompson holding a controlling interest in the company. Tower Hill No. 2 was planned to be an ultra-modern plant under the direction of Secretary and General Manager L.W. Fogg. Fogg was considered an expert in coke plant development, and was also affiliated with Republic Iron and Steel. Originally, 1,000 coke ovens were planned for the two Tower Hill works, but only 714 of the Tower Hill ovens came to fruition, with 394 of those are located at the No. 2 works.

The coal at Tower Hill No. 2 was so soft that it could be extracted from the earth without blasting, saving much in production costs. Workers first struck coal in September of 1907 at a depth of 310 feet (94.48 meters). H.F. Stark is attributed with sinking the mine shaft and the original coke ovens were built by Rimonti Gilardi of Connellsville. Only thirty of the ovens had been constructed at No. 2 by November, 1907. Gilardi also designed and installed a duct, or draught, system to drive surplus heat from the ovens to the boilers, devising an economical way to heat water (*Uniontown Daily News Standard* Sept. 25, 1907:1; *Uniontown Daily News Standard* Nov. 14, 1907:1).

From the outset, the Tower Hill-Connellsville Coke Company planned to use the new, technologically-advanced rectangular coke ovens at both their No. 1 and 2 plants. W.J. Rainey first experimented with rectangular, or push, ovens at Mt. Braddock in 1905-06 (*Connellsville Weekly Courier* May 18, 1914:11). Rectangular ovens are similar in function to beehive ovens except they are mechanically emptied, rather than hand drawn (Heald 1990:18). Rectangular ovens cost more to install, but they were more economical to operate, saving money in the long run. Workers could draw the coke from a rectangular oven in two minutes, as opposed to 2-3 hours for hand-drawing a beehive oven (*Connellsville Weekly Courier* May 18, 1914:24). Also, the rectangular ovens had a larger load capacity. The rectangular ovens built at J.V. Thompson's Tower Hill and Thompson mines were the first ovens in the Klondike constructed for machine drawing. The technology became standard after H.C. Frick adopted it the following year. Eventually, 2,666 of the 28,000 ovens built in the Klondike were machine drawn rectangular design (DiCiccio 1993:E141).

By 1913, the Tower Hill-Connellsville Coke Company had become the third largest coal producer in the 16th Bituminous District, producing 621,278 tons (563613.46 tonnes). Top producer H.C. Frick mined 1,168,951 tons (1060453.60 tonnes). However, when all of Thompson's operations in the district are combined, the Tower Hill-Connellsville Plants, the Thompson-Connellsville plants, and the Isabella-Connellsville plant totals surpassed the Frick

Company with an output of 1,442,460 tons (1308576.60 tonnes) (Pennsylvania Department of Mines 1914:631).

By 1914, J.V. Thompson had assumed the presidency of the Tower Hill-Connellsville Coke Company. He was by far the largest owner of coking coal lands in the world and had successfully extended his control to the burgeoning coal lands in Greene and Washington Counties. Thompson's position enabled him to dictate who the players in the coke market would be, threatening the dominance of H.C. Frick.

The inspection reports for Tower Hill No. 1 and No. 2 reveal numerous improvements to the premises during the first ten years. These improvements included: new overcasts and stoppings; larger capacity sprinklers and pumps for the ovens; larger circulation fans in the fan houses; additional coke ovens; and compressed air, and later, electric narrow gauge railroads for hauling coal.

Coke markets were particularly volatile just before World War I due to controversy over conflicting regulations and the government's inability to curb over-development in the industry. This volatility resulted in underemployment and low coke prices. Investors and creditors became more cautious during this period, a time when Thompson needed capital because he had over-extended his land investments (Sisterson 1950:46). Thompson was forced to accept interest rates as high as thirty percent on his borrowed money. His institution, the First National Bank of Uniontown, similarly could not borrow money to meet its debt obligation to Andrew Mellon's Union Trust Bank (Sheppard 1947:78, 79.) At the same time, many small depositors, who were nervous about their investments, initiated a run on the First National Bank. Federal regulators closed the bank on January 18, 1915, sending all of J.V. Thompson's assets, including the Tower Hill-Connellsville Coke Company, into receivership. Although Thompson's assets, valued at \$70,000,000, greatly exceeded his liabilities, J.V. Thompson was forced into bankruptcy because he was not able to convert his vast real estate holdings into cash (*Coal Age* June 19, 1919:1141). Frick and other coal barons waited for Thompson's lands to be marketed at sacrifice prices before purchasing them. This ended Thompson's dominance over the coking industry (*Coal Age* January 30, 1915:229).

Tower Hill No. 2 continued to operate with a surprising degree of regularity during the four-year receivership of J.V. Thompson's assets. Coke production was low, 35,999 tons (32657.72 tonnes) in 1915, but jumped to nearly six times that amount the following year (DiCiccio 1993:E124). Because of war-related manufacturing, 1916 marked the peak of U.S. coke production. By 1917, the President had to establish a price ceiling of six dollars/ton due to the high demand for coke (Luty 1918:115, 116). Tower Hill No. 2 continued to prosper and coked 234,632 tons (212856.74 tonnes) of coal the following year.

The Piedmont Coal Company bought out many of J.V. Thompson's holdings in 1919 for the sum of \$5,500,000. Included in the deal were 9,000 shares of preferred stock and 4,000 shares of common stock in the Tower Hill-Connellsville Coal Company (Piedmont Coal Company 1919:2). One year later, Piedmont transferred all of Thompson's former assets in Fayette, Beaver and Allegheny Counties to the Gallatin Land Company, probably a subsidiary company (Sisterson 1950:74). Piedmont hired J.V. Thompson as a salesman for a time after his bankruptcy.

Stock in the Tower Hill-Connellsville Coke Company rapidly changed hands after the 1919 buyout, fueling suspicions among Thompson loyalists that a steel-backed conspiracy was in progress. Tower Hill No. 1 was sold to the Eastern Coke Company. The Hillman Coal and Coke Company acquired controlling interest of Tower Hill No. 2 in 1920. Formerly called the United Coal Corporation, Hillman was affiliated with industrialist J.R. Nutt of Cleveland. The purchase of Tower Hill No. 2 brought Hillman's ownership up to 23 mines with a 6,000,000 ton (5443104 tonne) capacity (*Coal Age* June 3, 1920:1181). Hillman also bought the Thompson-Connellsville Coke Company and the Isabella-Connellsville Coke Company (*Coal Age* July 29, 1920:269). Although the plants had not had the benefit of capital investment since before 1915, they remained among the largest and most modern operations in the Klondike. Hillman upgraded Tower Hill No. 2 with electrical power during 1920-21 (*Coal Age* Sept. 23, 1920:665; *Coal Age* Feb. 19, 1920:372).

The conclusion of World War I brought about radical changes in the coal and coke industry that affected operators and workers alike. Competition brought about the trend of mines becoming captive (allied with) to steel companies, as Hillman did with Pittsburgh Steel. The conclusion of the war also brought about changes in demand and supply. To curb post-war overproduction, in December, 1919 the Fuel Administration ordered coke producers to curtail their production to 50 percent of the previous month. The order rendered many workers idle (*Coal Age* Dec. 25, 1919:952). In 1922, workers in the Klondike went on strike after a market collapse caused wages to plummet (DiCiccio 1993:E278). Some violence associated with the strike did occur at Tower Hill No. 1 in April, 1922, but the No. 2 plant's role in the strike is not known. Many Fayette County mines shut down entirely in the early 1920s. Although Tower Hill No. 2's production fell by half in the years before the strike, it managed to maintain a moderate level of output, probably due to its captive status (*Coal Age* May 6, 1920:968; *Coal Age* January 22, 1920:208).

Adding to the upheaval caused by various strikes were technological changes which would redefine the coke production process. The major advance was the invention of the by-product, or retort oven, which captured the chemicals and gases which were released from coal as it burned into coke. World War I had brought forth marketable uses and high demand for these gases and chemicals. With materials such as oven gas, ammonia, light oils and coal

tars accounting for as much sales value as the coke they came from, beehive ovens became intolerably wasteful in the post-war economy. The new ovens also yielded 6-8 percent more coke per ton of coal. For a number of reasons these by-product ovens were not constructed at the site, one being that they were very expensive to build, costing \$12,000-\$18,000 compared with \$700-\$800 for the beehive (DiCiccio 1993:E130-31). With the Connellsville Coke District nearly mined out, steel companies decided to install the new ovens at their steel plants and ship raw coal in from the various mines. Thus, the beehives rapidly fell into disuse during the 1920s. Also detracting from the Connellsville district's competitiveness was that the by-product ovens did not require as pure a coal as existed in the District to make high quality coke. They could use coal from any convenient and economical source, giving upstart Southern Appalachian operators a toehold in the market (DiCiccio 1993:E138-39).

A strike in 1922 pitted the union mines against the non-union and non-mechanized mines (particularly prevalent in the South and West) which were driving down prices for everyone. No longer able to turn a profit under their wage agreements, many union mines began to close down. Tower Hill No. 2, being still non-union and captive, enjoyed increased production until 1927. Eventually, a miner's strike during 1927-28 shut down production in all mines. Tower Hill No. 2's output in 1928 was nearly one-quarter that of the previous years. The bituminous coal and coke industry entered a virtual state of collapse during the Great Depression. The year 1932 marks the nadir of the crisis. Together, Tower Hill No. 1 and 2 produced only 258 tons (234.05 tonnes) in that year (DiCiccio 1993:E286, 305, 306, 312).

Tower Hill's beehive ovens appear to have been abandoned around 1927, and the rectangular ovens were used exclusively afterwards. During periods of high demand, such as World War II, beehive ovens were often pressed back into service. This does not appear to have been the case at Tower Hill No. 2. However, during strikes or times of economic distress, homeless families and single men, made homes out of the old beehive shells. The practice was surprisingly common throughout the Connellsville District during the Great Depression, which hit Fayette County particularly hard. During the depression, men who had families to support received preference in hiring. However, almost everyone in the patch had to go on relief in the early 1930s. In the late 1930s, rail sidings accessing the beehive ovens were removed and bricks from some of the oven facades were removed to build retaining walls in the company town (Dominick DeRose, Pers. com. fall, 1997).

With new despairs engendered by the Depression, United Mine Workers President John L. Lewis began a recruitment drive to unionize the Connellsville District and the captive mines after the passage of the National Industrial Relations Act under Franklin Roosevelt's New Deal program. Miners at captive mines desired affiliation with the UMWA, and called a wildcat strike in Fayette, Westmoreland and Greene Counties when the operators refused to recognize the union. Close to 30,000 workers walked out during this drive (DiCiccio

1993:E319, 331). Although Tower Hill did not operate at all from 1933-35, its workers appeared to have unionized during this time. In November of 1933, all the coke fields (except Frick's) succeeded in unionizing. Each year after that, Tower Hill No. 2 workers held a parade on Mitchell Day to celebrate unionization (Hannah and Georgia Pringle, Pers. com., fall 1997).

World War II brought about a need to drastically increase production of iron and steel for war materials, leaving coke producers scrambling to meet the sudden demand (Scott et al. 1943:2). Production figures for the Tower Hill No. 2 group (which by then included Tower Hill No. 1 and Thompson No. 1) increased as much as 750 percent in the war years over the level when the conglomerate reopened in 1936 after the Depression. Another national miner's strike occurred in 1942-43. It was not severely felt at Tower Hill, possibly because the local union leaders were called up for the draft. After the war ended, the mine closed since its coal supply was depleted. The ovens, however, continued to operate for a time to coke coal trucked in from other Hillman mines, before they closed in the mid-1940s. Today, coal is still mined in the Connellsville district, but on a much reduced scale. The industry is highly mechanized and only employs a small number of people in southwestern Pennsylvania.

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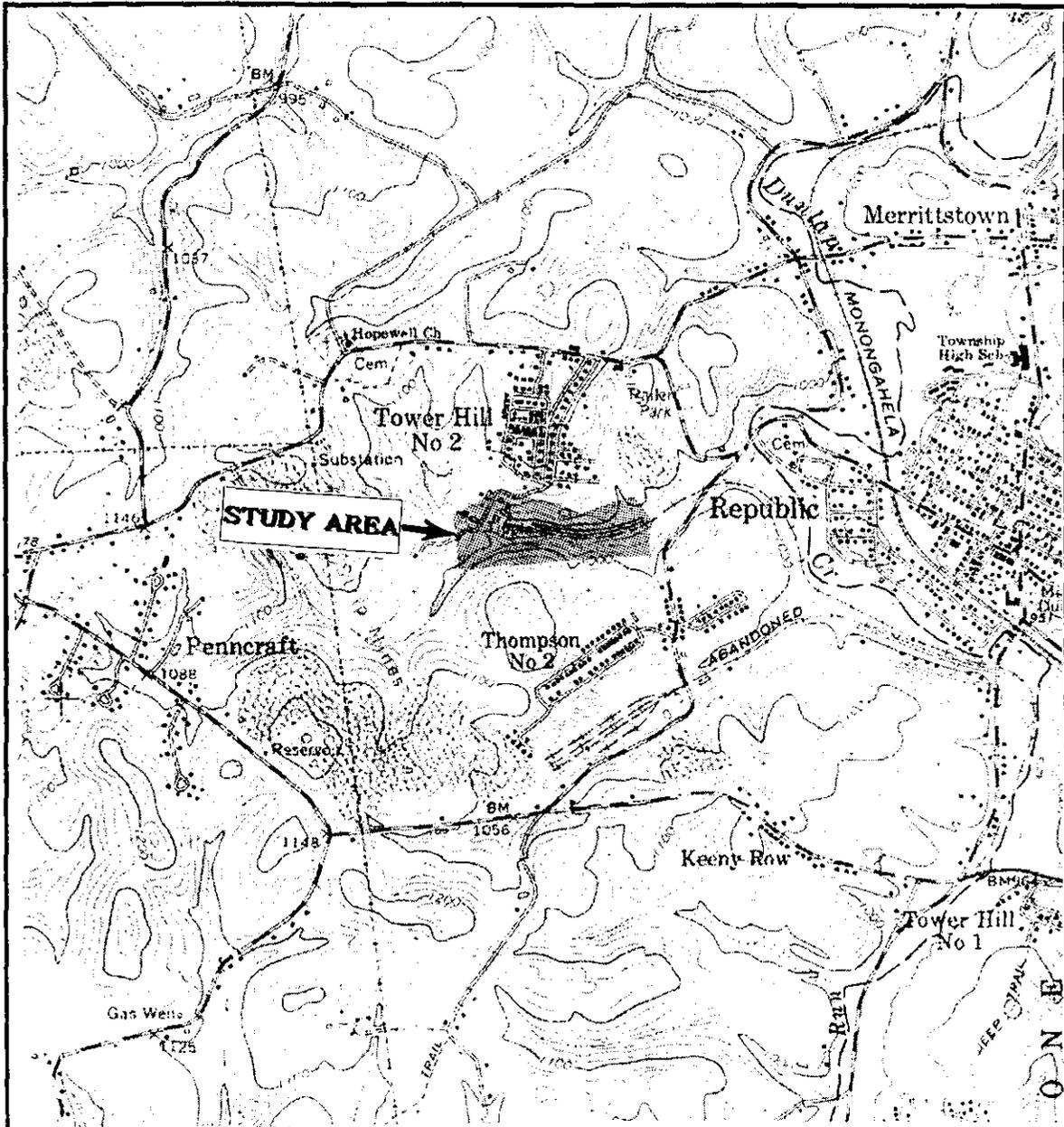
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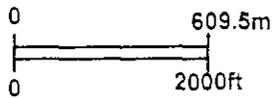
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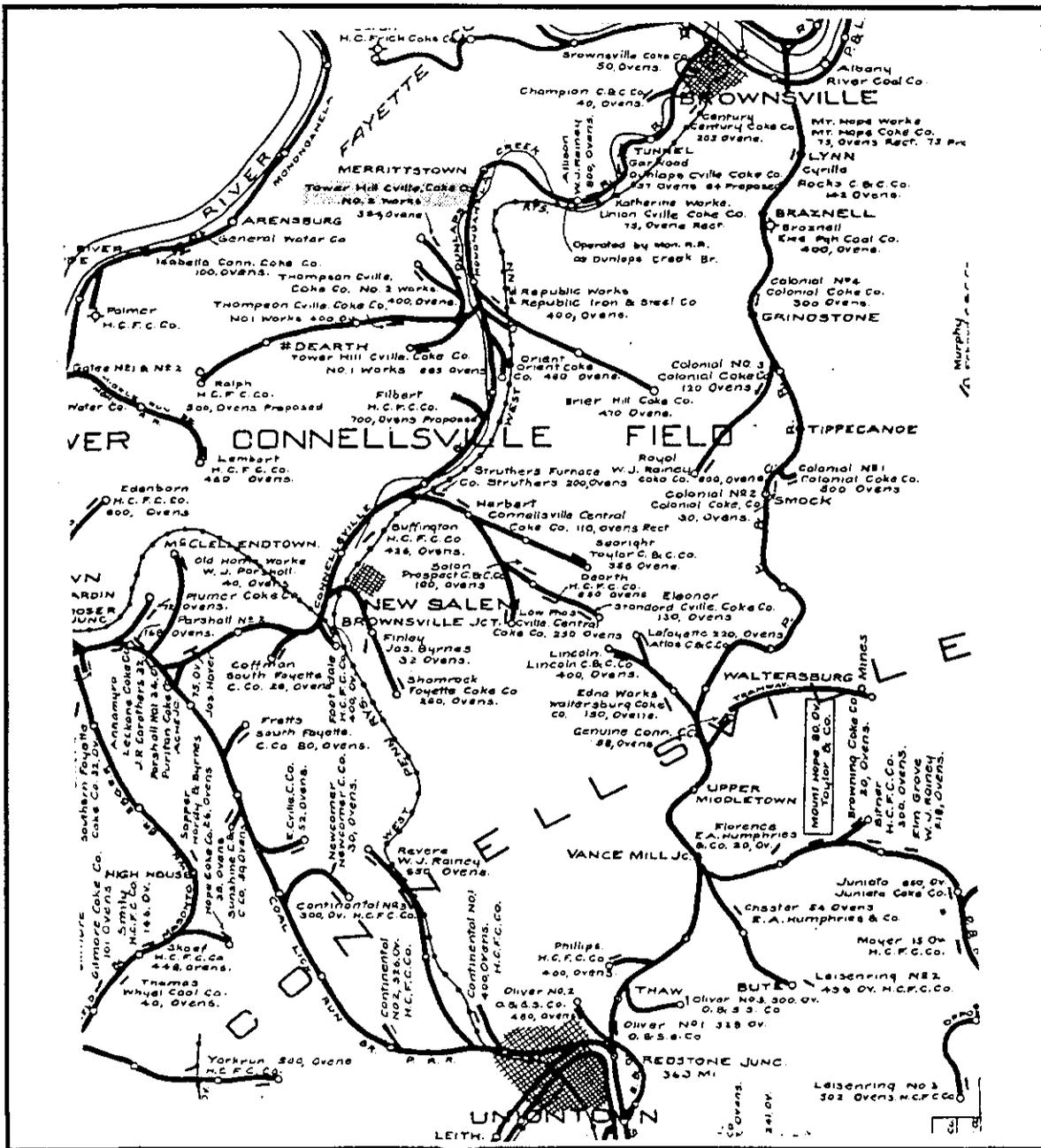
PROJECT LOCATION MAP

SOURCE

U.S.G.S., 1979
CARMICHAELS, PA.



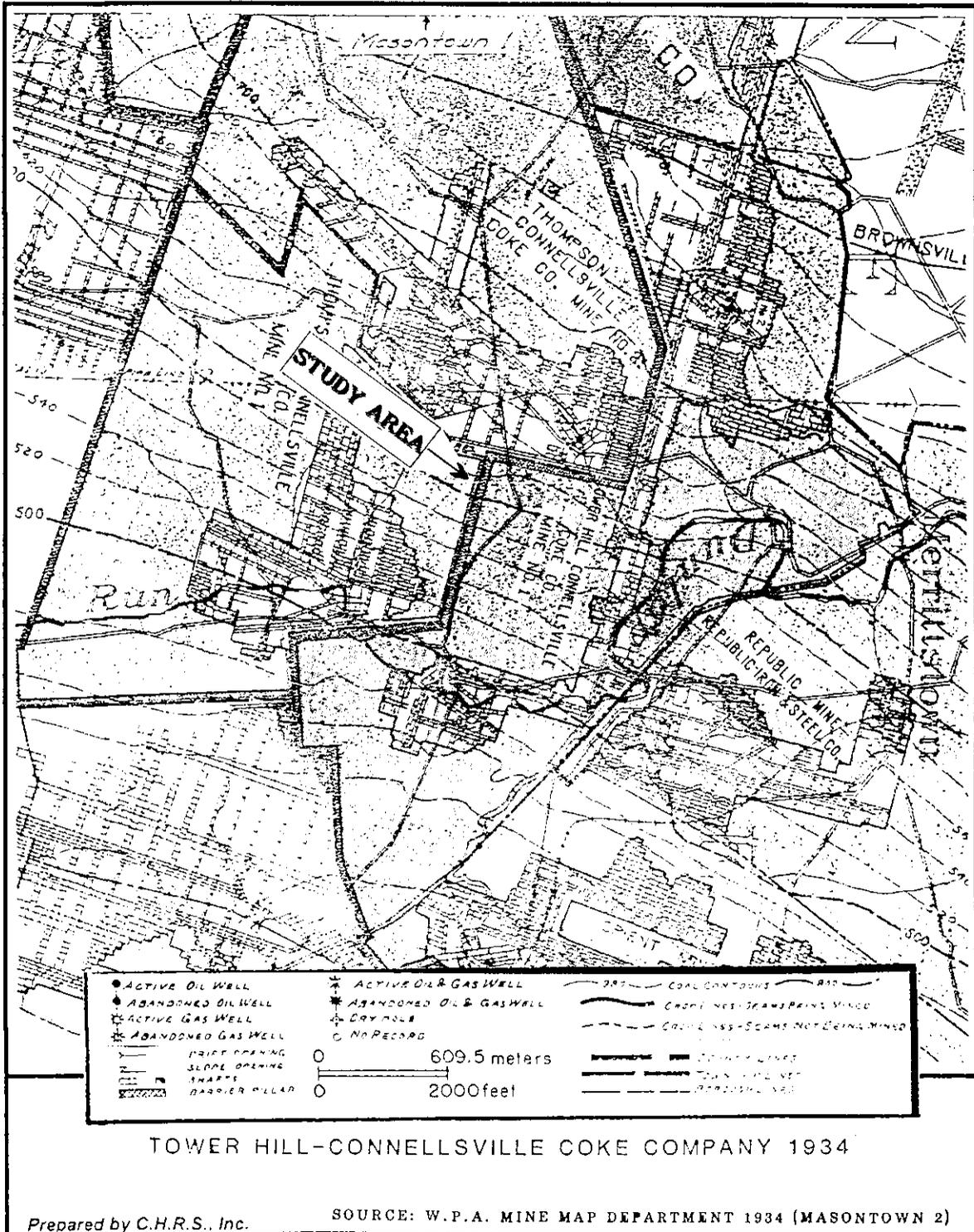
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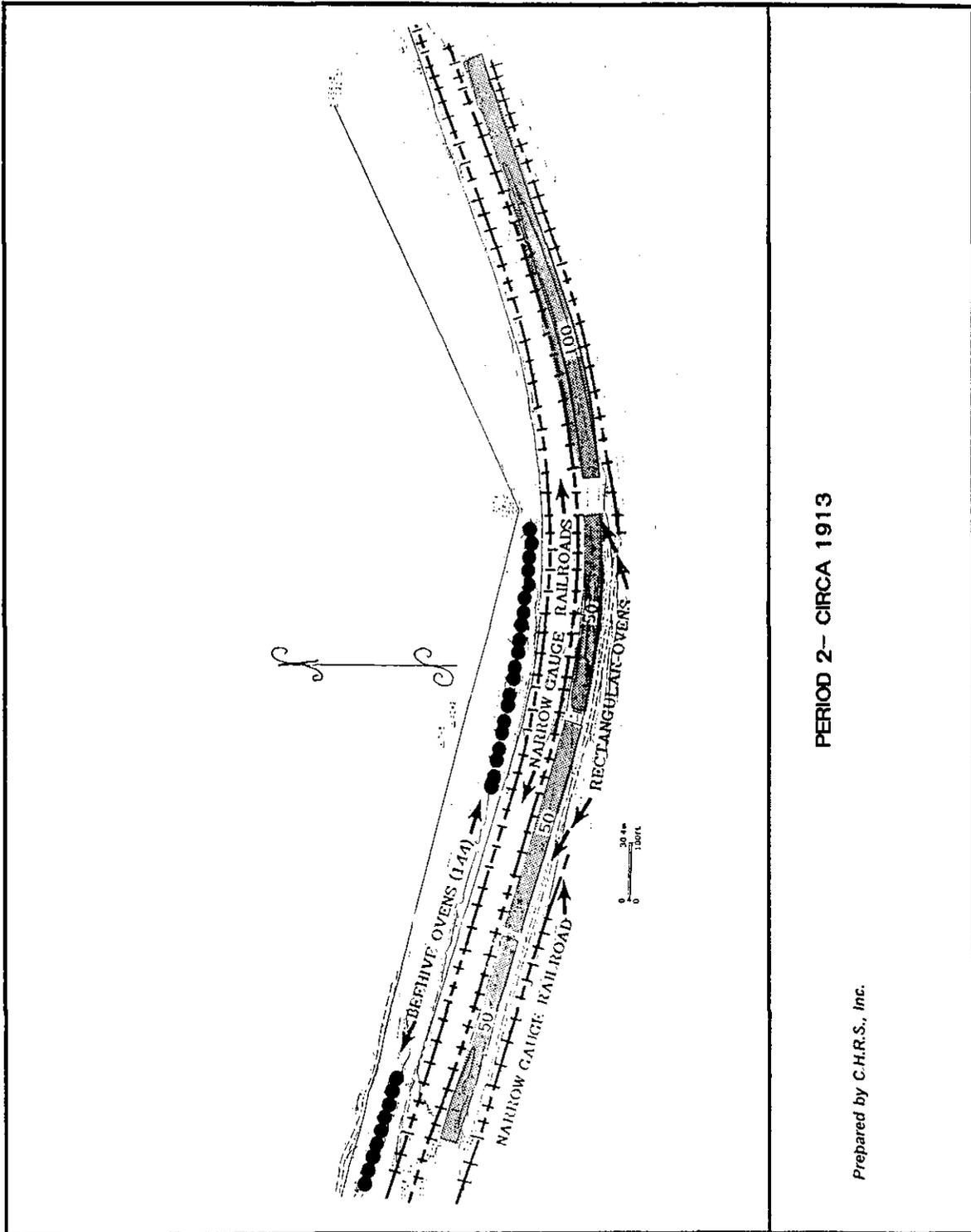


MAP OF CONNELLSVILLE RAILROADS 1910

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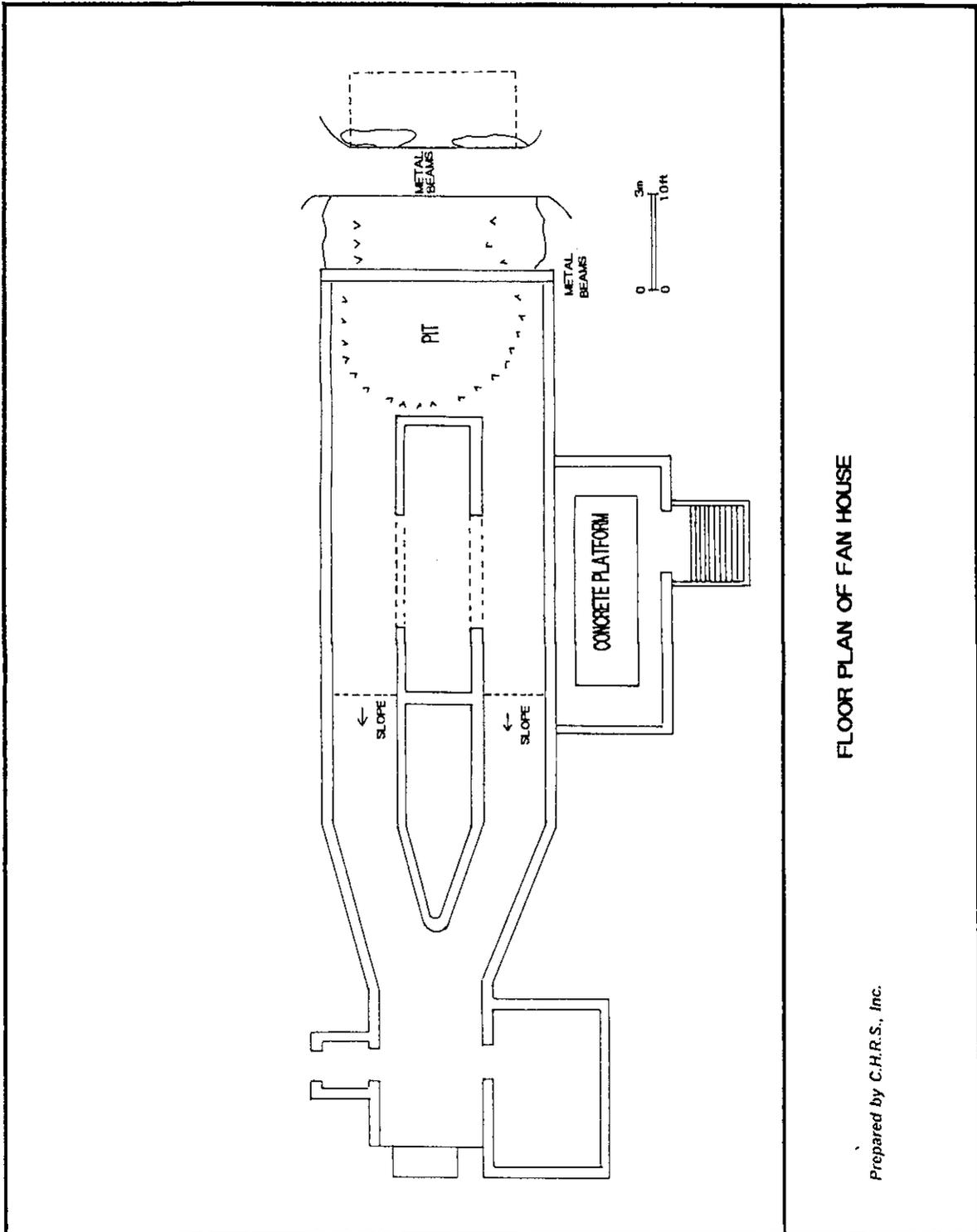
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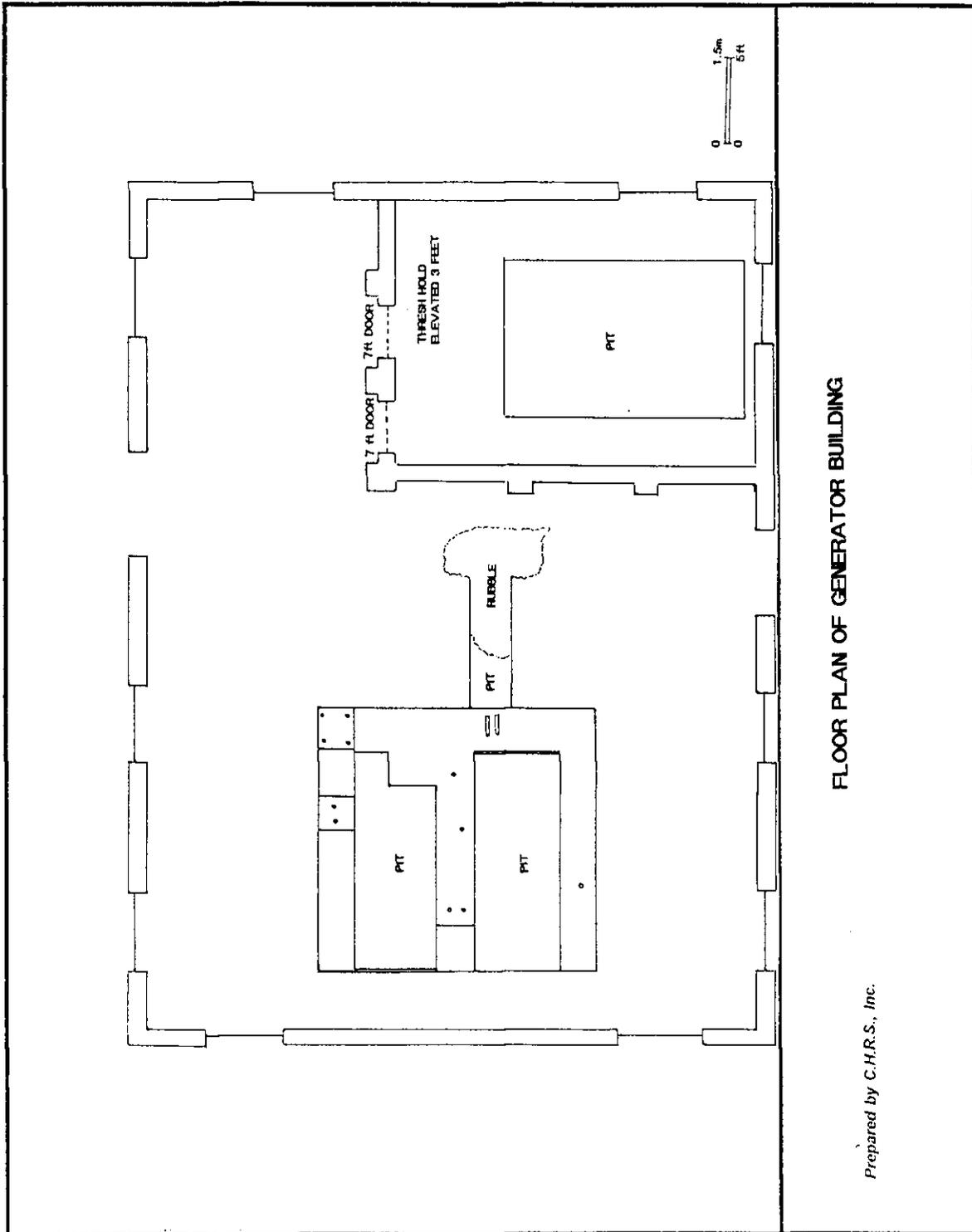
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FLOOR PLAN OF FAN HOUSE

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FLOOR PLAN OF GENERATOR BUILDING

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