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Geismar 2005

Construction of Coenties Slip

Report on the Log Water Main Discovery and Monitoring

(October 22-26, 2004)



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Prepared for New York City Parks and Recreation
Through Trocom Construction Corporation, Inc.
Prepared by Joan H. Geismar, Ph.D. LLC
March 2005

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INTRODUCTION/THE LOG PIPES

In October 2004, while installing an electric service pit during construction of Coenties Slip, a park located between Pearl and Water Streets in Lower Manhattan (Figures 1 and 2), construction workers uncovered a segment of a log water main. Earlier, a documentary assessment¹ coordinated by New York City Parks and Recreation (Parks) in conjunction with construction of a new Office-Trading Facility at 55 Water Street had determined that the park site, part of a former East River slip, was filled before the Revolutionary War. Before this, its northern end may have been where a fortification in the form of a redoubt was located.² Once filled, part of it became a public market and then all of it became a public thoroughfare. Based on its development history, the study identified the park site as potentially archaeologically sensitive. But it was riverbed deposits, wharves, landfill constructions, 17th-century fortifications, an 18th-century market, and 19th-century transportation facilities (e.g., Black 1973; Hyde 1912; Figures 3 and 4), not log pipes, that were identified as possible archaeological resources.³

Under subcontract to Trocom Construction Corporation, Inc., Parks' contractors for the construction of Coenties Slip, the project archaeologist, Joan H. Geismar, Ph.D., made a site visit on October 22, 2004, to identify the pipe segment. The log, encountered between 9 and 10 feet north of the park's southern limit, had been removed to expedite installation of the electric service pit. It was therefore no longer *in situ* at the time of the visit but was lying on the ground beyond the impact area.

The log pipe, which proved to be the female end of a water main segment, still retained the metal ring, albeit heavily corroded, that once stabilized its joint when it was one of many sections of what comprised an early-19th century water main (Figure 5). The park's construction protocol was for an archaeologist to be in attendance only when excavations reached depths of 4 feet or more, that is, the depth at which a landfill structure might be an issue. However, no archaeologist was on site when the excavation inadvertently extended below 4 feet and encountered the log pipe. During the site visit, after the bored-out log was identified, Douglas Greeley, Deputy Commissioner of the Bureau of Water and Sewer Operations of the Department of Environmental Protection (DEP), was notified and agreed to have the pipe fragment picked up by DEP personnel and transported, as it turned out, temporarily to an agency facility.

Subsequent hand and backhoe excavation during the October 22 visit revealed that additional log pipe remained *in situ* east of the electric service pit, and that its depth was about 4.8 feet below the curb east of the pit, but less than 4 feet below site grade. Moreover, it exposed an intact joint of two additional log segments, a unique remnant of what may be considered New York City's earliest infrastructure. The partially exposed pipe and joint were photographed (Figures 6 to 8) and it was expected they would be reburied and remain where they were found since it was feared that removal might damage the somewhat fragile looking pipe. However, on October 26, it was learned that the pipes had been removed, apparently without causing any noticeable damage (Figure 9).

¹ Historical Perspectives 2001

² Historical Perspectives 2001:10

³ Historical Perspectives 2001:19; see this report for details of the site's development history and identified archaeological potential

MONITORING EXCAVATIONS FOR A SCULPTURE BASE

Also on October 26, at Parks' request, excavation of a shallow pit at the site of a planned steel and glass art sculpture was monitored to ensure that its installation would not impact any additional archaeological features or resources. The pit, approximately 10 by 11 feet and 2 feet deep (about 4.5 feet below the south curb, or approximately at the same depth as the water pipes), was located north of the log water main. Excavation revealed fill material that included ash and fragments of oyster shell and brick. It also exposed utilities that indicated this part of the park site had been disturbed in the past. Among the exposed utilities were two ducts, one identified as an Empire City Subway duct, located in the southern half of the pit, the other a shallow electrical duct in its southwest corner (Figure 10). Excavation did not encounter any archaeological features or resources. Figure 11 offers a location plan for the monitored excavation in the vicinity of the sculpture base and for the log pipes. A composite photo taken on February 24, 2005, shows the park construction virtually complete with the exception of its final major detail, the steel and glass art sculpture (Figure 12).

HISTORIC CONTEXT FOR THE COENTIES SLIP LOG PIPES

Removal of the water main fragment and two intact log water main segments prompted research at the JP Morgan Chase Archives to determine when they might have been installed. The JP Morgan Chase Archives houses records from New York City's earliest water company founded in 1799. The history of this company, actually a means to an end—in this case, a banking charter—is an interesting one, summarized as follows:⁴

The Manhattan Company was a private water works incorporated in 1799 under a charter that included banking and other privileges.⁵ Aaron Burr was a major organizer. The water company and the Manhattan Bank, forerunner of the Chase Manhattan Bank, now the JP Morgan Chase Bank, were established in the same year. The methods and policies of the Manhattan company, which included water from wells adjacent to the recognizably polluted Collect Pond,⁶ support the assertion that it "provided only enough water service to maintain the franchise, for its founders had used the charter primarily as an entry into the banking business."⁷ Company offices were established at what is now 40 Wall Street, later also the location of the Manhattan Bank building.⁸

Whatever the ulterior motive for its inception, and for better or worse, the Manhattan Company became the main supplier of water to New York City's residents in the early years of the 19th century. It also supplied water free to fight the fires that made a comprehensive water supply system a necessity in the growing city. A journal at the JP Morgan Chase Archives indicates that the company water was available to residences and businesses at Coenties Slip during the first

⁴ This summary is adapted from a 1A archaeological assessment of the New York Stock Exchange (NYSE) Securities Project study (Geismar 2003:33,48).

⁵ Stokes V 1926:1364-1365

⁶ By 1802, filling began to eliminate the pond polluted by the noxious industries that had developed around it; by 1812, the filling process was virtually complete (Geismar 1993:8-9).

⁷ Duffy 1968:201

⁸ Stokes V 1926:1369; see Stokes V 1926: 1364-1369 for details of the water company's beginnings and Duffy 1968: 202-211 and Koeppel 2000:70-138 for syntheses of its goals and operation

decade of the 19th century since by 1808, at least one building had cancelled, or “stopped,” the service (Journal 1820; Figure 13). Charges for the water were initially based on the number of fireplaces in a building, and commercial establishments paid more than private residences. According to the journal, ten of the twenty-five buildings documented at Coenties Slip housed grocers and one a stove dealer (Journal 1820). Manhattan Company records and a series of questions and answers issued in 1823⁹ suggest that cheating the company was often the goal of householders and businesses alike: the former shared water among neighbors and the latter used free water as a come-on to attract business.

For almost three decades, water was distributed in mains created from hollowed-out pine logs. Fire fighting entailed exposing the main, tapping into it with a “cock,” and plugging the hole when finished. While records do not indicate the depth of the mains, their fire-fighting function has always suggested they were relatively shallow to allow tapping on demand (this is in contrast to an old but undated newspaper account that reports the discovery of a section of wooden main between Front and Water Streets at a depth of 10 feet¹⁰). In 1955, a log section, now in the possession of the JP Morgan Chase Archives, was recovered at the intersection of New Street and Exchange Place, and other random but fragmentary discoveries have been made over the years.¹¹ By 1827, the wooden mains were being replaced with cast-iron pipes and street hydrants were either planned or installed throughout the city.¹² Despite repeated efforts to relinquish their water supply operation to the city, and despite the recognized inferiority of the water it offered, the Manhattan Company persisted until the introduction of Croton water in 1842.

The intact water main segments removed from Coenties Slip are an exceptional example of the hollowed-out log pipes initially used by the Manhattan Company to distribute water to lower Manhattan. The fact that they were unscathed by subsequent introduction of the city’s infrastructure and the elevated train line that once crossed the site is almost miraculous. Moreover, the depth of the logs, at about 4 feet below the current surface, but undoubtedly as much as 3 feet shallower under original street elevations, is one of the few examples of the actual depth of these mains. The joint between the two logs, documented in field photos (see Figures 7 and 8), constitutes a unique find.

PIPE PRESERVATION AND CONSERVATION

Quick action on the part of several agencies, among them Parks, DEP, and the New York City Landmarks Preservation Commission, resulted in the removal on October 27 of the two whole log mains and the smaller segment from the DEP facility to a conservation lab in New Jersey (Cultural Preservation & Restoration) where they were immediately stabilized pending a cohesive plan for their preservation. Field measurements had indicated that each intact pipe was about 13.5 feet long, 1 foot in diameter and with bore holes about 8 inches in diameter at the untapered end of the logs; the pipe segment first seen on October 22 was just about 10 feet long. These measurements were later refined in preparation for conservation when they were found to be 13.5 feet, 13 feet, and 9 feet 10 inches long with diameters ranging from 8 to 10 inches at the two tapered ends and 13, 11.5, and 9 inches at the open ends. Bore holes ranged from 5 inches at

⁹ Lozier 1823

¹⁰ Anon. N.D.

¹¹ Elliot 2003:personal communication; Greeley 2003:personal communication

¹² e.g., Goodrich 1828

the tapered (male) end to 9 inches at the unaltered (female) end in the two intact segments. All were identified as yellow pine.¹³ After exploring the alternatives, it was decided that the most practical method of preservation for the pipes was the introduction of polyethylene glycol (PEG) followed by freeze drying. Initially, the log mains were submerged in fresh water to clean and prepare them for conservation, a program that will take at least ten months to complete.

THE FUTURE OF THE PIPES

Once conserved, it would have been ideal to display the wooden pipes in the park where they were found, but conservation requirements have proved this impractical. Currently, a committee has been formed to locate a suitable repository for this unique resource once conservation is complete. As of this writing, the conservation effort will be funded by the New York City Water Board and managed by DEP. All those involved recognize the uniqueness of this find and every effort is being made to preserve it and make it accessible to all New Yorkers.

¹³ McGowan 2005:personal communication

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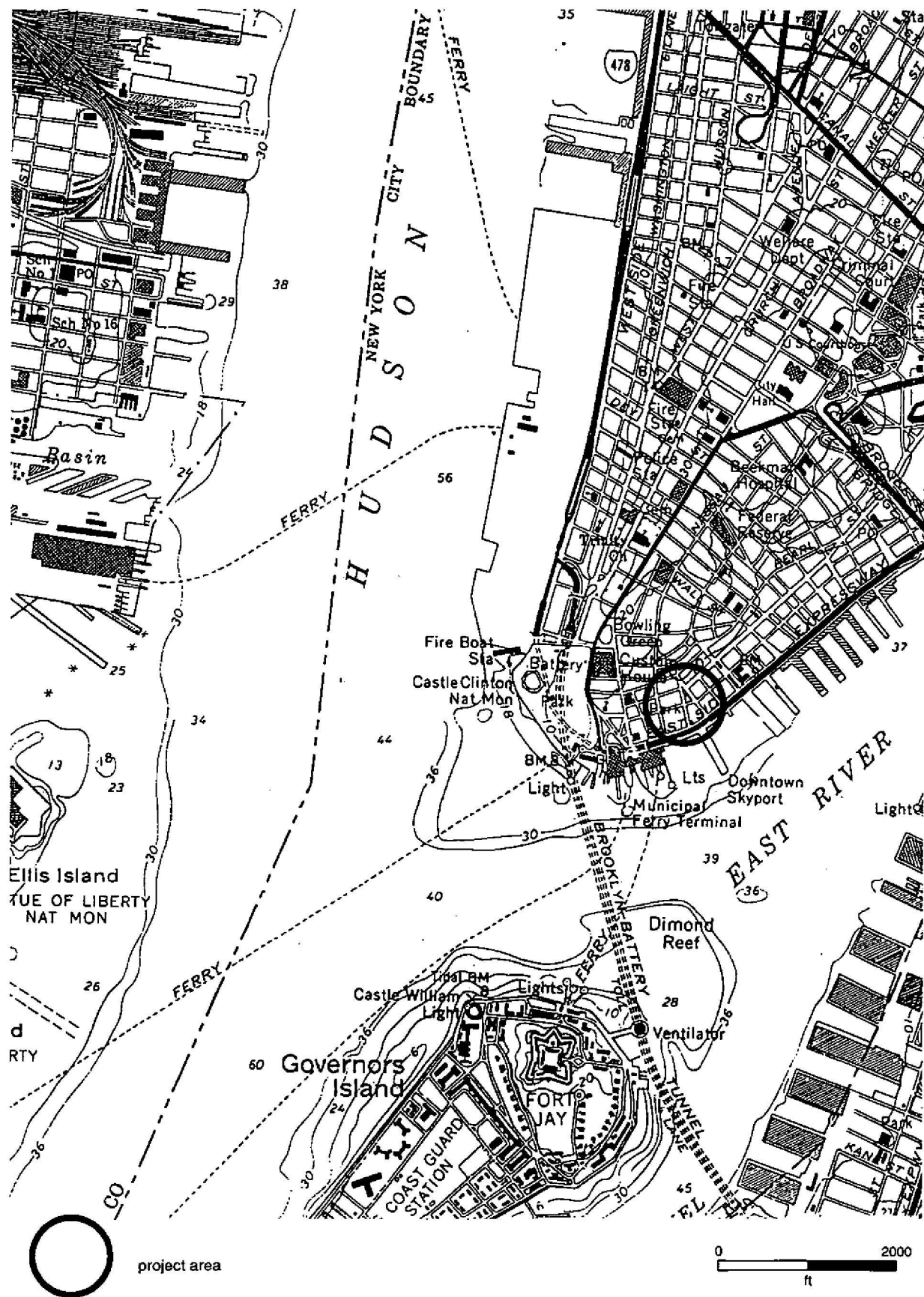
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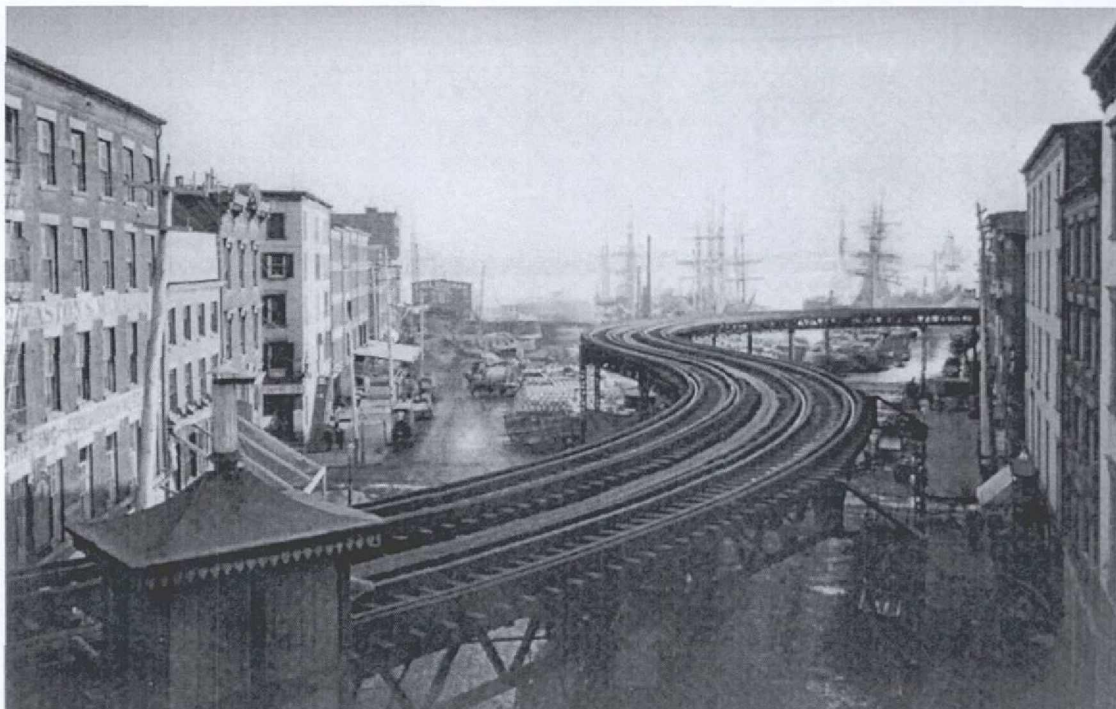
USGS, Jersey City Quadrangle, 1967, Photorevised 1981. United States Geological Survey, Reston, VA.

FIGURES

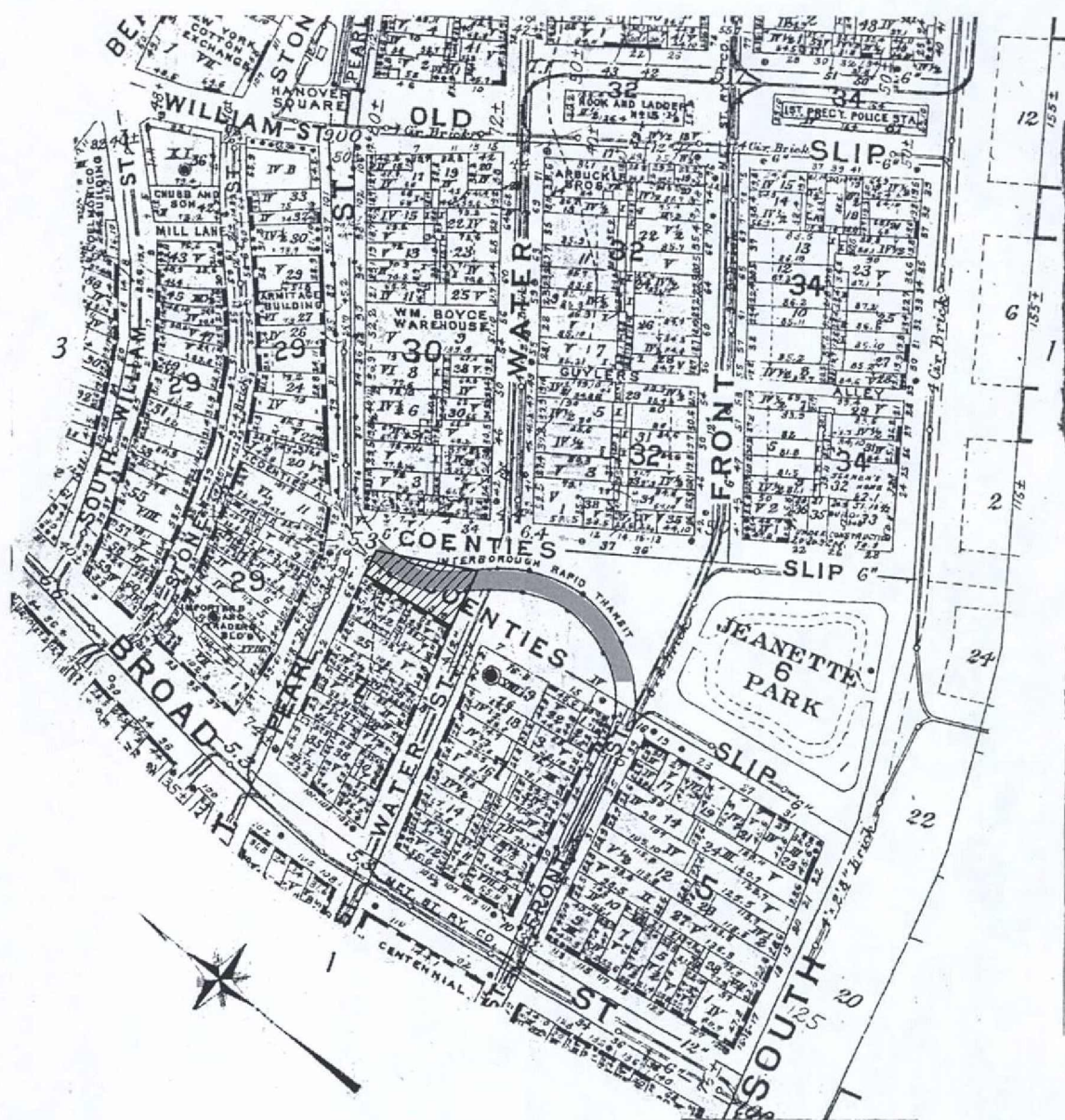
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13. Manhattan Company Journal page, 1820, photo







3 Coenties Slip looking east from Pearl Street in 1879, shortly after the elevated IRT was constructed. The park site is on the right side of the "S" curve of the "El." (Black 1973)

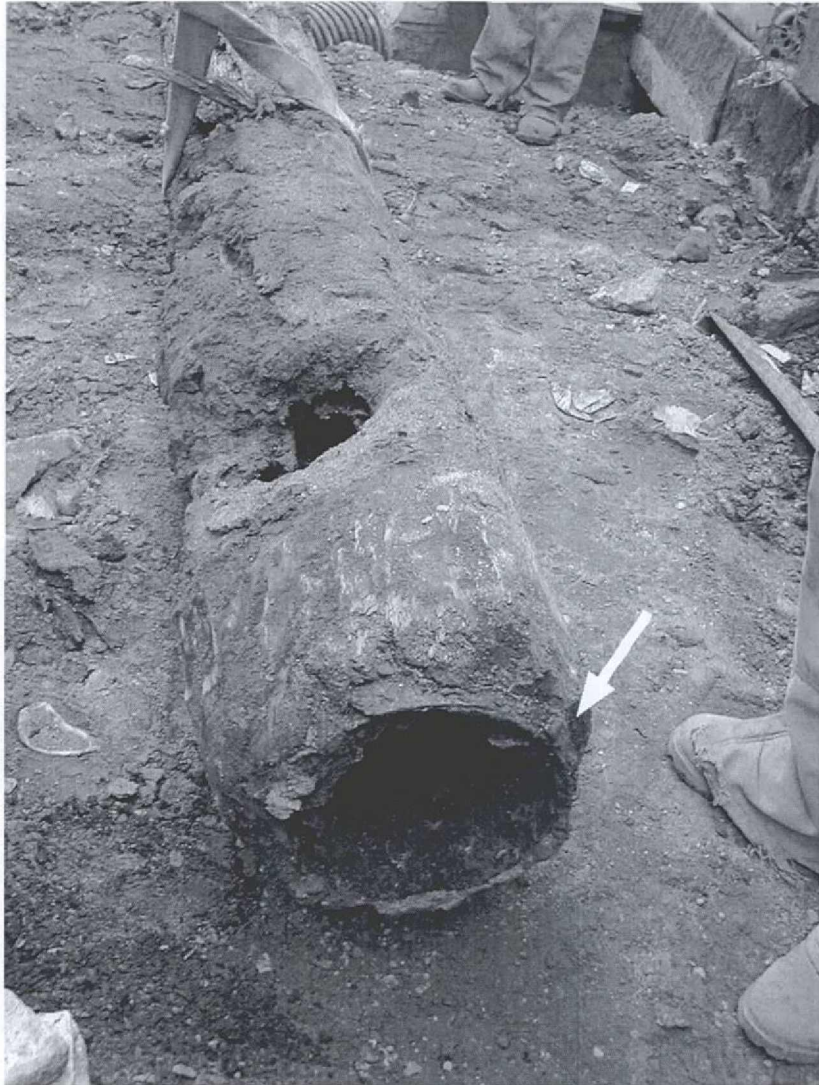


Coenties Slip (park)

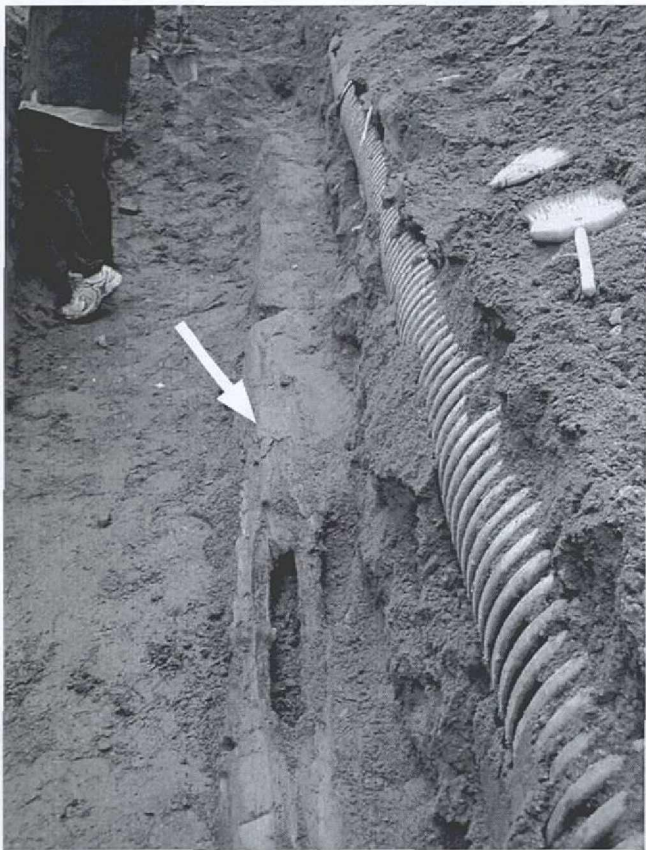


"El" train (IRT)





5 Large fragment of log water main after removal. The remnants of a corroded metal band (arrow) that stabilized its joint is still evident. (Geismar 10/22/04)



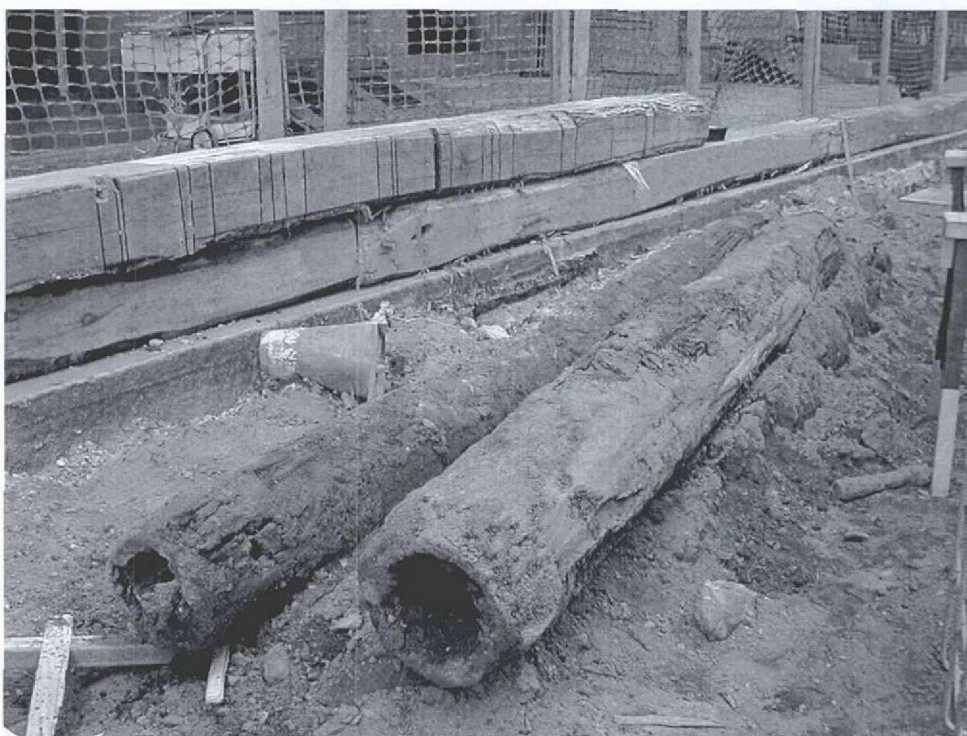
6 Log water main (arrow) partially exposed at the Coenties Slip construction site. A newly installed utility pipe is to the right. View is looking east. (Geismar 10/22/04)



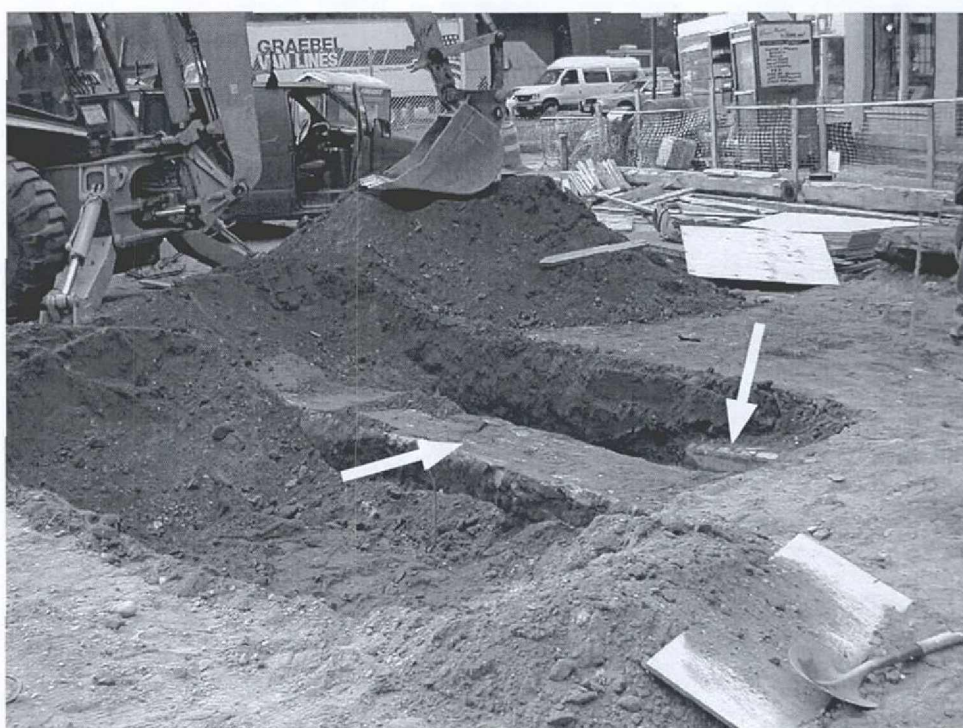
7 Intact joint (arrow) of partially exposed log water main *in situ*. Each segment is more than 13 feet long. (Geismar 10/22/04)



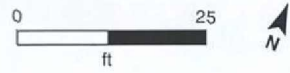
8 Detail of the exposed log water main joint, with the male (left) and female (right) components *in situ* and intact. (Geismar 10/22/04)



9 Two log water main components after being removed from the ground. Only the female ends are shown. (Geismar 10/26/04)



10 A shallow pit excavated where a statue base was to be installed revealed a subway duct (left arrow) and an electric line (right arrow), but no archaeological resources. (Geismar 10/26/04)





12 Composite view of Coenties Slip showing park near completion in February 2005. View is from a 5th floor window on the north side of the slip. The three figures on the right side of the photo are crossing the electric service box where the first log pipe was first discovered. (Geismar 2/24/05)

Coenties		Slip.			
S. M. Mead	2	5			
	4	7			
	5	6			
Oliver Cook	6	6			
N. J. Arnold	7	6	grocers		
G. Storm	9	4	grocers		
	11	4			
S. Sedding & Co.	12	4	grocers	dean & van made	
R. L. Reed	13	4	grocers		
	14	6			
Storm Barley & Co.	15	4	grocers		
Brunkhoff & Betts	16	4	grocers	Almond	
	20				
	21	4			
	22				
Washington Kellogg	23	4	grocer		
Wardell & Van Buren	24	4	grocer	allowance	
Beaton & Smith	25		grocers		
	26				
Frederick & Stokes	27		grocers		
	28				
S. M. Kenrick	29		grocer		

13 Manhattan Company Journal page (1820) with water customers at Coenties Slip listed. A notation indicating water was stopped at 27 Coenties Slip in 1808 (arrow) indicates that piped-in water was available at least by that year. (Journal 1820)