



Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Marathon Battery Co. Site Profile

Site Description:

Former battery manufacturing facility

Site Size: 350 acres

Primary Contaminants:

Heavy metals and trichloroethylene

Potential Range of Health Effects:

Kidney disorders, central nervous and immune system deficiencies, and lung cancer

Nearby Population Affected:

400 people within one mile

Ecological Concerns:

Hudson River, surrounding marshes, wetlands, and wildlife

Year Listed on NPL: 1983

EPA Region: 2

State: New York

Congressional District: 21

Success in Brief

Diverse Conditions Require Tailored Cleanup in New York

The Marathon Battery Company site encompasses wetlands, archaeologically and historically sensitive land, a manufacturing and warehousing facility, and contaminated residential areas. Because of the site's diversity, the U.S. Environmental Protection Agency (EPA) designed specific treatment remedies to address the effects of extensive heavy metal contamination. Using Superfund authority, EPA and private party cleanup efforts included:

- Draining, dredging, and treating contaminated sediments and replanting acres of coves and marshes along the Hudson River;
- Excavating and treating contaminated soil surrounding the battery plant and an underground vault;
- Decontaminating and recycling books stored at the plant;
- Excavating and landscaping residential yards near the site.

In reaching final remedy decisions, EPA asked for help from scientists, citizens, and environmental groups at frequent public meetings. The Agency settled with former property owners and plant operators to conduct the cleanup, estimated at \$91 million. The parties also agreed to reimburse EPA \$13.5 million for past cleanup and future oversight costs.

Photo: Eric Lind, courtesy of Constitution Marsh Sanctuary, National Audubon Society



"Beaver's little brother," the muskrat, is a fur-bearing, aquatic mammal whose population has plummeted to 15% of normal because of cadmium contamination in marsh cattails, a primary food source.

The Site Today

After a hard winter, the former battery plant is coming down and the site will soon be an empty lot, available for commercial applications. Area ground water will need treatment prior to use for years to come. Wetlands replanting efforts should be completed by 1995; natural recovery systems for the marsh, including wildlife and endangered species, can best be accomplished in solitude.

A Site Snapshot



The Marathon Battery Company site encompasses 350 acres of land bordering the Hudson River in lower New York State. The site includes the battery manufacturing plant, a residential neighborhood, the Hudson River in the vicinity of Cold Spring Pier, and a series of backwater river areas known as East and West Foundry Cove and Constitution Marsh.

High levels of heavy metals, including cadmium, nickel, and cobalt, were found at the plant and in river sediments and marsh soil. Relatively high levels of cadmium concentrations

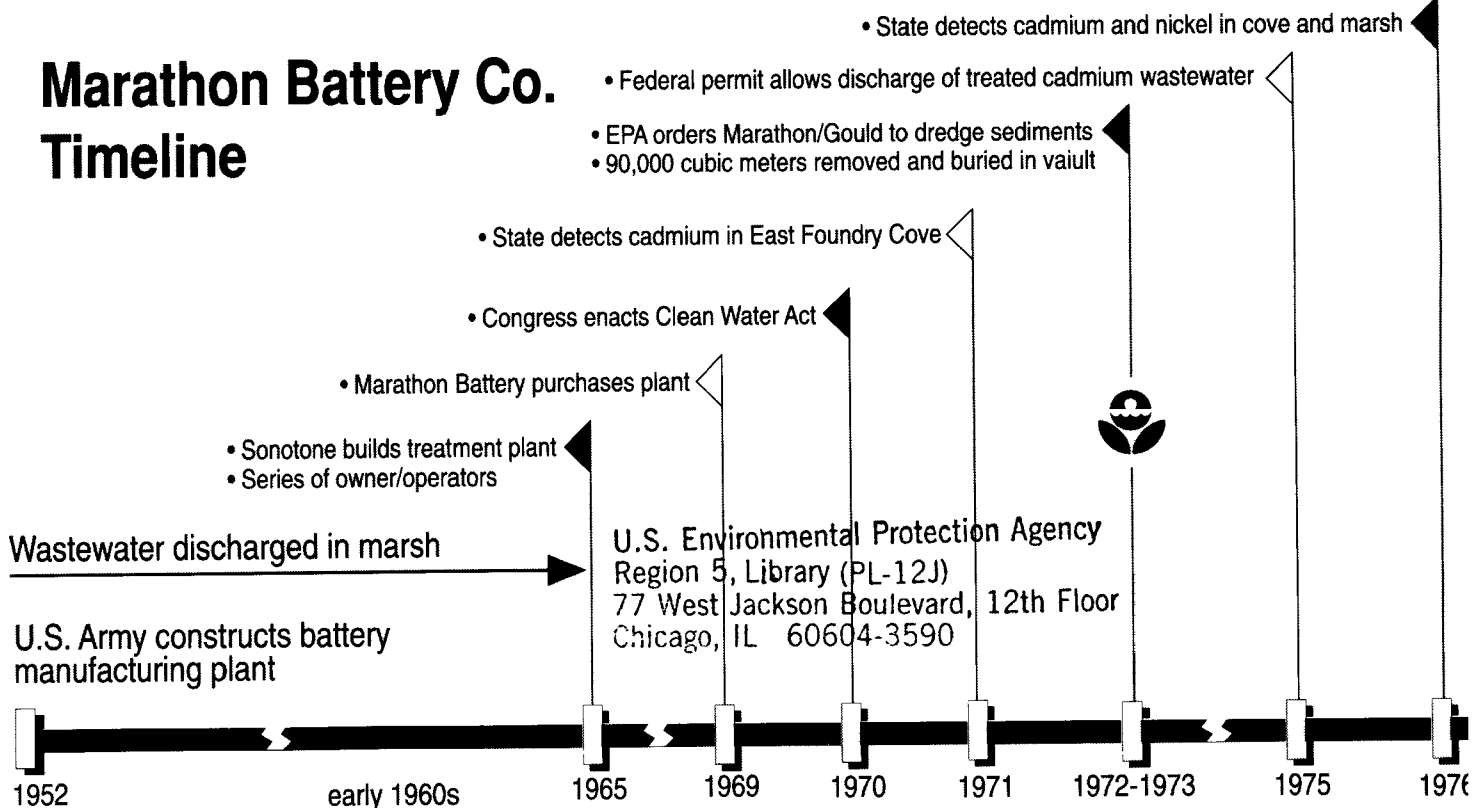
were detected in nearby residential yards of Cold Spring. Area ground water contained elevated levels of trichloroethylene (TCE).

Tidal action slowly flushed cadmium deposits from the wetlands of Foundry Cove into the Hudson River. Accumulated concentrations of cadmium in the soil and sediments threatened the marsh, indigenous wildlife, and numerous plant species. Heavy metals do not biodegrade and

therefore are highly persistent in the environment, disturbing soil microbial activity and affecting plant and animal metabolism. The short-nosed sturgeon, an endangered species of fish, migrates up and down the Hudson and feeds on insect larvae in the contaminated soil sediments. Limited consumption of another species, the blue claw crab, is recommended.

Approximately 400 people live within one mile of the site. Potential health effects from heavy metal contamination include kidney damage, cardiovascular and immune system deficiencies, central nervous system disorders, and lung cancer.

Marathon Battery Co. Timeline



Wetlands Endure 27 Years of Pollution

The site's history began in 1952 when the U.S. Army constructed a plant for battery manufacturing outside the town of Cold Spring. A series of owners made batteries at the plant for commercial or military use; Marathon Battery owned and operated the plant from 1969 until 1979. Other owners included Sonotone Corporation, Clevite Corporation, and Gould, Inc.

Prior to 1965, the facility discharged untreated wastewater into the Hudson River through the municipal sewer system. During periods of overload or system shutdown, wastewater was discharged directly into East Foundry Cove Marsh (see map).

In 1965, the State Department of Health concluded that the new

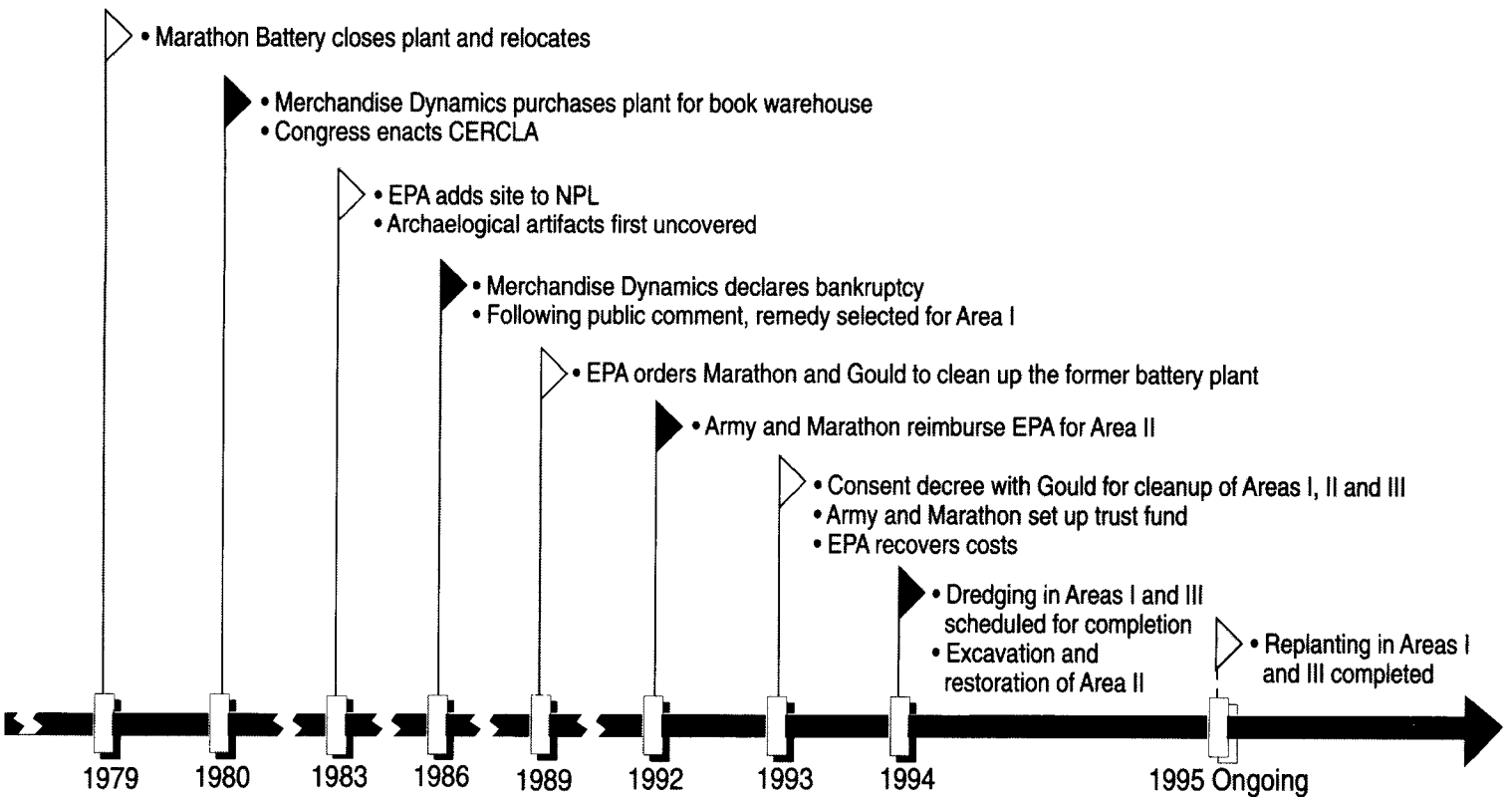
Cold Spring municipal sewage treatment system under design would not be able to handle the plant's industrial wastewater. The plant was required to develop a new system for treatment. Plant operators began to discharge treated wastewater directly into East Foundry Cove. But the treatment process developed for the plant did not work consistently and contaminated wastewater frequently entered the Cove.

In 1971, state officials detected high cadmium levels in East Foundry Cove in violation of the Clean Water Act of 1970. To comply with an EPA order, Marathon Battery Company and Gould Inc. dredged a portion of the cove in 1972 and 1973,

removed 90,000 cubic meters of contaminated sediments, and buried the residue in a clay-lined, underground vault on the property.

East Foundry Cove sustained years of cadmium discharge

In 1975, Marathon Battery obtained a federal permit to discharge treated wastewater containing low levels of cadmium. Despite the earlier dredging, sampling in 1976 revealed continued high cadmium and nickel concentrations in the marsh. In 1979, the company closed the plant and moved from Cold Spring to Texas. Merchan



dise Dynamics, Inc. purchased the property in 1980 for use as a book storage facility. Later that year, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act to address cleanup of the nation's hazardous waste sites.

Investigations at the battery plant began in 1983 when the New York State Department of Environmental Conservation (NYSDEC) sampled the marsh and analyzed various cleanup alternatives. Because of the severity and extent of contamination, EPA added the site to the National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites requiring long-term cleanup under the Superfund program.

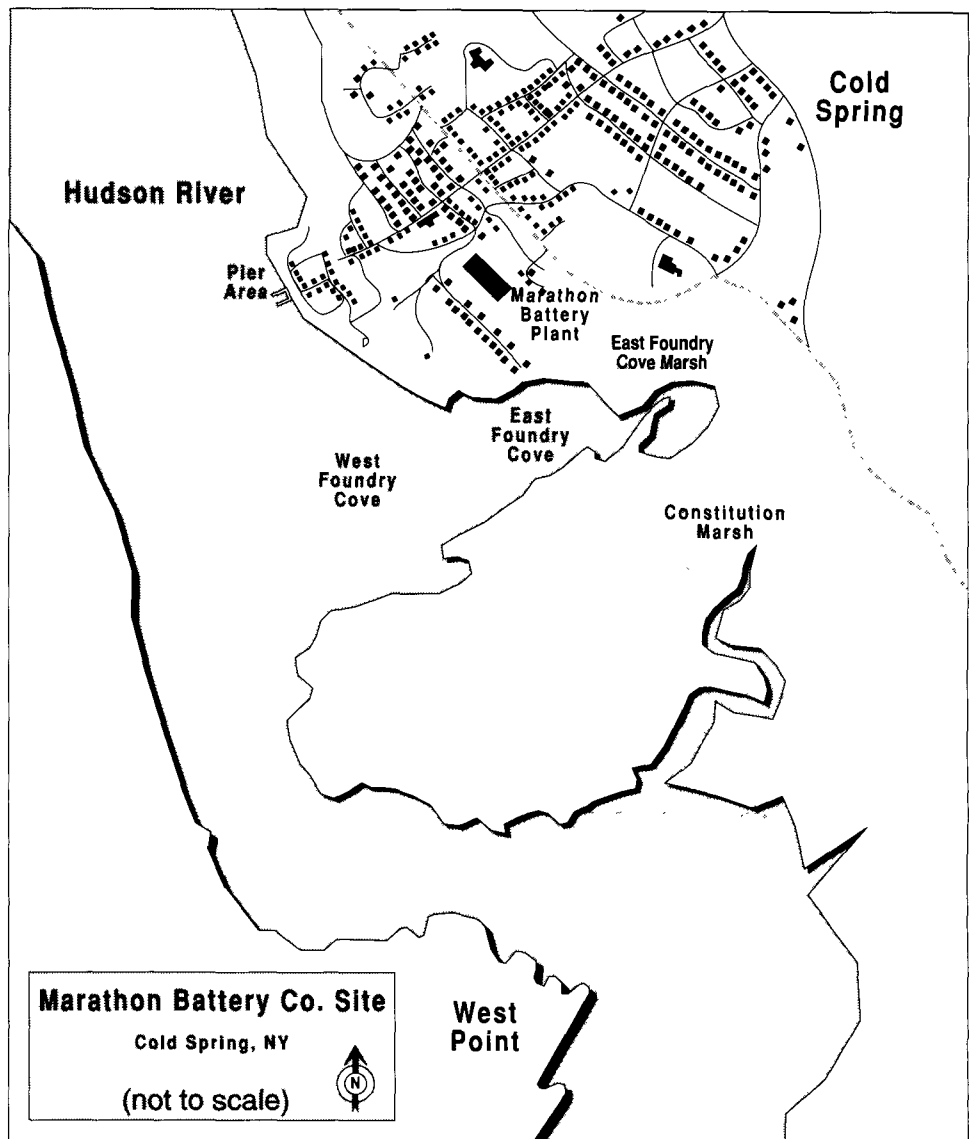
Business activities ceased at the site in 1986 when Merchandise Dynamics declared bankruptcy; the warehoused books were contaminated with cadmium dust by this time.

EPA Tailors Cleanup to Maximize Effectiveness

EPA assumed responsibility for the site in 1986, dividing the cleanup into three geographical areas. Before activities began, EPA opened an Information Repository so that interested members of the public would be kept apprised of site progress.

Area I: Sensitive Wetlands

Following a period of public comment, EPA selected a remedy



<u>Area</u>	<u>Description</u>
I	East Foundry Cove Marsh and Constitution Marsh
II	Former battery plant, surrounding property, nearby residential yards
III	East Foundry Cove, West Foundry Cove, and Cold Spring pier area

to excavate contaminated sediments from East Foundry Cove Marsh. Following treatment and off-site disposal of sediments, the marsh would be restored with clean soil and replanted. Reme-

dial operations would require building a dike around the marsh and constructing a short rail spur to haul away treated soil, avoiding disruption of Cold Spring's historic downtown district. Work

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27 Years of Pollution

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to excavate and replant the marsh and dredge the cove is ongoing under a Consent Decree signed in 1993 (see below).

Because of limited contamination and the possibility that human intervention could cause more environmental harm than good, Constitution Marsh will not be remediated.

Area II: The Battery Plant and Residential Areas

The cleanup approach selected for Area II included the 11-acre plant grounds, the interior of the facility including the books, the underground vault, and nearby residential yards. In 1989, EPA issued a Unilateral Administrative Order to Marathon and Gould to participate in the facility cleanup valued at approximately \$2.3 million.

In late 1991, the companies completed a pilot study on ways to decontaminate books in the warehouse. Cleanup of the plant's interior was completed in late 1992 and the books recycled. During the winter of 1993, part of the roof

collapsed on the facility, and the responsible parties agreed to demolish the structure altogether.

The plant ground remediation, including excavation of the vault, was begun in mid-1993 concurrently with Areas I and III and should be completed by late 1994. Ground water contamination will be monitored for 30 years.

Nearby Residents Get New Landscaping

Over the years, contamination from the battery plant had migrated to the yards of nearby residents in the town of Cold Spring. The Agency for Toxic Substances and Disease Registry, a federal partner with EPA that conducts risk assessments at Superfund sites, recommended a cleanup level for cadmium in soil at 20 parts per million (ppm). EPA removed the top layer of contaminated soil and relandscaped those areas where concentrations exceeded 20 ppm.

EPA completed the design work on the residential yards in 1991 and completed excavation and relandscaping in mid-1992. NYSDEC officials took additional precautions by cleaning up the soil of those residences with cadmium levels between 10 and 20 ppm, bringing the total residential cleanup to 17 homes.

Area III: The Coves and Cold Spring Pier

Engineering designs for Area III began in mid-1989 and were completed in early 1992. Following a series of negotiations assisted by the U.S. Department of Justice, previous property owners signed a Consent Decree that was entered by the court in April 1993. Under this decree, Gould agreed to conduct the cleanup, while Marathon Battery Co. and the U.S. Army paid \$41 million into a trust fund for cleanup operations, in addition to \$11 million previously placed in the trust fund for Area II.

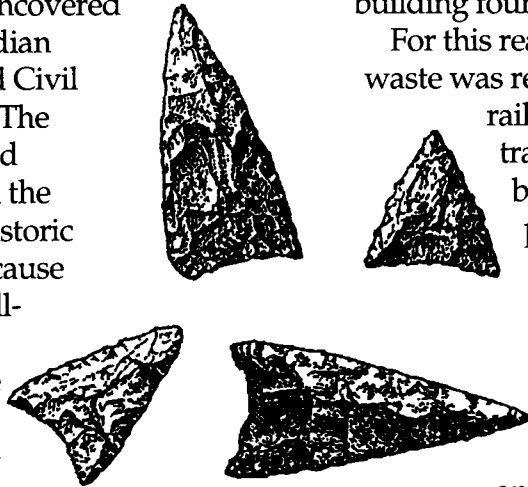
Dredging of sediments started later that year from East Foundry Cove and the Hudson River in the vicinity of Cold Spring Pier. Sediments were thickened, chemically fixed, and disposed off site. Concurrent excavation operations in Area I should be completed by the fall of 1994 and replanting efforts by 1995. West Foundry Cove was not disturbed, since contamination will be naturally covered by clean sediments over time.

In addition, the responsible parties agreed to reimburse EPA for \$9 million in past costs, \$1.5 million for prior cleanup activities, and up to \$3 million for oversight costs.

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Cleanup Develops Into Archaeological Dig

During site investigation and sampling activities, engineers uncovered valuable Indian artifacts and Civil War relics. The town of Cold Spring is on the National Historic Register because of some well-preserved architecture and Civil War significance. Because some of the town's streets are very narrow, heavy dump trucks laden with construction equipment and soil sediments



from the site would have damaged the historic streets and building foundations.

For this reason, contaminated waste was removed on a short rail spur built over a track originally used by a foundry that produced Civil War cannons.

EPA retained professional archeologists to assist with the proper removal and recording of artifacts, providing an exciting glimpse into the history of Native American Indians and the Civil War in New York.

Success at Marathon Battery Co.

This large and diverse site with ecological sensitivity, endangered species, contaminated residential yards, and archaeological significance has required careful and painstaking cleanup procedures. EPA made considerable progress at the site by tailoring remedies to specific areas, using private resources for cleanup efforts, and involving citizens in decisions. Wetland recovery efforts and ground water monitoring will continue for the next 30 years.

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