

Urban and industrial areas, like Greenpoint, tend to have higher soils lead levels than more rural or residential areas. There are many reasons why soils in urban areas are frequently contaminated with lead. While not specific to Greenpoint, the following factors played a significant role in the neighborhood's lead profile.

## EXHAUST

Lead was an additive to gasoline for most of the 20th century until it was banned in 1995. Heavy truck traffic and the Brooklyn-Queens Expressway spread emissions throughout Greenpoint. Lead from vehicle exhaust often settled onto nearby soils resulting in increased soil lead levels near roadways.

## PAINT

Prior to being banned in NYC residential buildings in 1960 (and nationally in 1978), lead-based paint was frequently used in homes, both indoors and outdoors. Most older homes and apartment buildings in Greenpoint likely have layers of lead-based paint on their walls. Soils can be contaminated by fallen paint chips and when lead dust settles after demolition and renovation of older buildings. While soils may have tested at low lead levels in the past, nearby construction can create new sources of contamination.

## HISTORIC FILL

In the past, various types of debris were used to fill in marshlands, raise land elevation and expand waterfront property along shorelines. Historic fill was frequently composed of industrial waste products, demolition materials, solid waste, and material dredged from waterways, some of which may contain lead and other hazardous materials. Historic fill is one of the reasons lead levels may vary so drastically within a very small area.

## SOURCES AND FURTHER READING

Brooklyn's Historic Greenpoint,  
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Columbia University, Earth Institute.

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Factories, Foundries and Refineries: A History of Five Brooklyn Industries. Joshua Brown and David Ment. 1980.  
Greenpoint Petroleum Remediation Project

<http://nysdecgreenpoint.com>

Historic Greenpoint

<https://historicgreenpoint.wordpress.com>



*The USS Monitor, a Civil War era warship, was the most famous ship built in Greenpoint. It was the Union Navy's first ironclad warship and merged two Greenpoint industries, shipbuilding and iron production. Watercolor by Oscar Parkes.*



This brochure is part of Strengthening Our Common Ground: Lead in Soils in Greenpoint, a project made possible with funding provided by the Office of the New York State Attorney General and the New York State Department of Environmental Conservation through the Greenpoint Community Environmental Fund.



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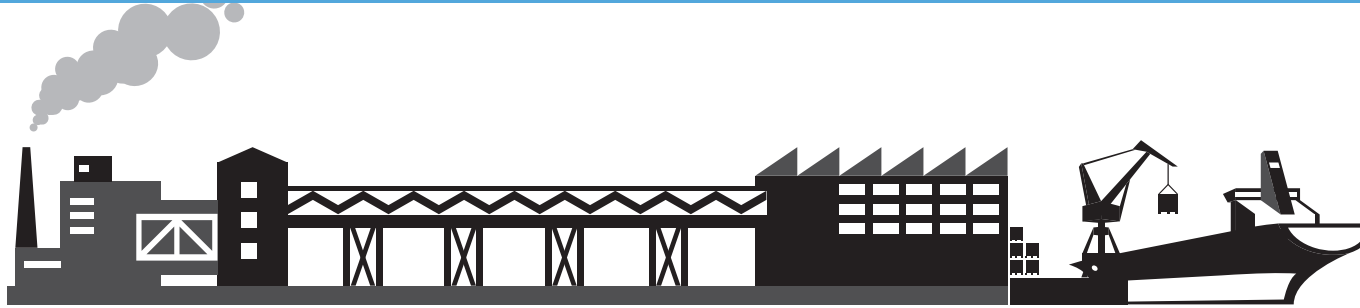
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# LEAD IN URBAN SOILS: GREENPOINT'S LEAD (Pb) HISTORY

# LEAD IN INDUSTRY



The specific industries that comprise Greenpoint's history provides additional clues about sources of soil lead contamination. In the mid-19th century, the shipbuilding industry shifted to Greenpoint to take advantage of the area's prime East River location. Other industries soon followed. The area's large tracts of land and access to waterways helped companies centralize production and reduce costs for shipping goods and raw materials.

Many of the industries in Greenpoint at the time required high heat and had large energy inputs. Smoke and soot from burning coal spread lead and other toxins throughout the area, settling onto the soil. The following industries established roots in Greenpoint and contributed to the lead levels in the neighborhood's soils.

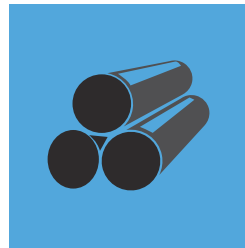


**Porcelain** (mid-1800s -1900s): The porcelain industry began with a number of small artisans producing ceramics and grew over time to encompass a section of Greenpoint known as Pottery Hill. One of the most notable companies, Union Porcelain Works, initially produced hardware before becoming a renowned maker of fine china with uniquely American designs. Firing porcelain requires high heat, and lead was frequently used in ceramic glaze, paint, or other protective coating.



**Glass** (mid -1800s - mid -1900s): Much like the porcelain industry, the glassmaking industry was known for its innovation rather than for mass production. In 1860, Greenpoint Glassworks was founded and became known for its quality. It was so highly regarded that First Lady Mary Todd Lincoln commissioned pieces. Glassmaking is energy-intensive because it requires high heat. Lead was also an integral part of many glass operations of the time:

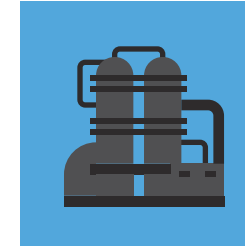
historically crystal's high levels of lead gave it extra sparkle and lead was also used to hold small pieces of glass together in window panes and stained glass.



**Iron** (mid -1800s - present): Iron was an important part of New York buildings in the 19th century as it was used in a variety of architectural and ornamental work and is still visible all over the city. At the time, cast iron was also mistakenly believed to be fireproof and was used abundantly in architecture. In addition, the iron industry forged other useful items such as steam boilers, gas tanks, and gas works. As with other industries, the smoke and soot from the foundries and smelters blanketed the skies, containing lead and other harmful pollutants.

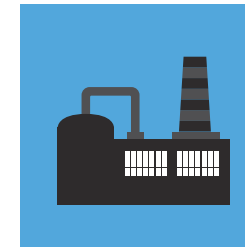


**Lead smelting** (1900s): Valuable metals are frequently found in rocks or sediments and need to be separated from other material before use. Smelting is the process of using heat to extract the metal from the host material. The Non-Ferrous Processing Company, a lead-smelting plant, was operating in Greenpoint for decades. As of 1980, it was emitting more than 40 tons of lead per year, far greater than the national health standard.



**Petroleum Oil Refining** (mid -1800s - 1900s): Charles Pratt and Astral Oil pioneered Greenpoint's petroleum oil industry in the mid-1800s. In 1874 the company merged with John D. Rockefeller's Standard Oil Trust. Soon over 50 small refineries were located on Newtown Creek before the majority were eventually bought by Standard Oil Trust. Both Exxon and Chevron are direct descendants of this company. Oil

refineries came with a host of health and safety hazards for workers and nearby residents. Refuse drained into creeks, killing marine life. In 1919, a huge fire involving over 100 million gallons of oil spilled oil into nearby soil and waterways, only to resurface decades later. In the 1920s, companies began to blend lead with gasoline. Refinery activity in Greenpoint continued into the 1960s and storage continues through today. Spillage from operations and leakage from storage tanks has added leaded gasoline to the 1919 oil spill. Millions of gallons of oil have not yet been recovered.



**Incineration** (1900s): Incinerators burn waste until it is reduced to ash to produce energy and reduce the mass and volume of the input, usually before being disposed of in a landfill. The Greenpoint Incinerator burned waste for over 35 years, ceasing operations in 1994. During this time, the EPA found that the incinerator had very high lead emissions because of insufficient pollution controls and poor combustion efficiency.

## STAYING SAFE



Understanding the history of Greenpoint offers insight as to where soil lead contamination is likely to be found. However, with so many possible sources of contamination and because the amount of lead in soils can vary greatly within just a few feet, it is vital that Greenpoint residents are aware of this possible danger and take steps to stay safe, such as testing soil and taking precautionary measures as outlined in Lead in Urban Soils: Safety Basics.

Learn more about your soil by getting it tested through programs at Cornell University, Brooklyn College Urban Soils Lab, the NYC Urban Soils Institute, or the Columbia/Barnard Soil Lead Study.