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MERCURY EMISSIONS FROM HIGH-TEMPERATURE SOURCES IN THE NY/NJ HUDSON-RARITAN BASIN

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ABSTRACT

This report presents some of the results of a study conducted for the New York Academy of Sciences on the sources of past and current emissions of mercury in the Hudson-Raritan basin (HRB), an area of 42,000 square kilometers with a population of fifteen million. Mercury emissions to the atmosphere are reported from all high temperature processes, such as utility, commercial and residential boilers, secondary iron and steel smelters, Waste-to-Energy (WTE) plants, and sewage sludge incinerators. At present, the primary sources of atmospheric emissions in HRB are utility and industrial boilers (873 kilograms of mercury/year), secondary iron and steel plants (595 kg), Waste-to-Energy plants (147 kg), and sewage sludge incinerators (90 kg). The total deposition of mercury from the atmosphere on the surface of HRB was estimated at about 1,100 kilograms per year. The study examined in detail the decrease in mercury emissions from WTE plants. A metric was developed that expresses emissions from WTE plants as kilograms of mercury per million tons of MSW combusted. It was shown that reported annual emissions of mercury from the U.S. WTE plants have decreased from a high of 81,800 kilograms in 1989 to an estimated 2,200 kilograms at the present time.

The Hudson-Raritan Basin (HRB)