

The Threat of Landfill Leachate to Drinking Water in the Hudson and Mohawk Rivers

A project of the Hudson and Mohawk Rivers Leachate Collaborative: Jen Epstein, Data Analyst; Rebecca Martin, Project Manager; and Monica Mercola (Public Employees for Environmental Responsibility/PEER), Legal Consultant

Introduction/Problem Background

The Hudson and Mohawk Rivers are primary drinking water sources for more than 200,000 people, including groups that disproportionately experience environmental harms. Potentially hazardous or toxic compounds from landfills threaten these drinking water sources and communities because the municipal wastewater treatment plants (WWTPs) that discharge to these rivers handle the disposal of leachate from solid waste landfills. As municipal WWTPs are not required to monitor all contaminants and are not equipped to filter harmful substances found in leachate, some pollutants flow through municipal WWTPs into rivers. This project will deliver resources that summarize flows of landfill leachate into Hudson and Mohawk River drinking water supplies via municipal wastewater treatment plants.

Leachate is the liquid that results from decomposition within, and rainfall percolating through, a landfill. Leachate accumulates pollutants from the waste materials. Some landfills drain leachate in perforated pipes, and some pretreat leachate, but advanced treatment to remove broad classes of harmful contaminants is not required. In some cases, landfill leachate is trucked to municipal WWTPs for disposal. The majority of leachate

contaminants pass through the WWTPs and are discharged into surface waters, simply in more dilute concentrations. This effluent may contain potentially hazardous or toxic compounds, such as heavy metals or emerging chemical pollutants that persist in the Hudson and Mohawk Rivers.

For example, the Albany North WWTP is not equipped to filter out certain per- and polyfluoroalkyl substances (PFAS), which have been associated with cancer, birth defects, thyroid disruption, and other health problems. In 2022, Dunn Landfill reported PFOA concentrations in leachate shipped to Albany North WWTP between 20-240 parts per trillion (ppt). As municipal WWTPs are not equipped to remove these contaminants, the majority of the PFOA would have passed through the WWTP and been discharged into the Hudson River. Moreover, WWTPs like Albany North are not required to monitor contaminants like PFOA, as such very little is known about the types of pollutants which enter the Hudson and Mohawk Rivers through landfill leachate.

Under the Clean Water Act, WWTP permits, issued by NYS with Environmental Protection Agency (EPA) approval, are supposed to be the ultimate backstop for enforcing leachate limits. But regulatory loopholes allow pollutants to pass through municipal WWTPs into drinking water sources with minimal oversight. This project will illuminate these regulatory gaps and review the different types of pollutants in landfill leachate and recommend that the New York Department of Environmental Conservation should regulate major classes of leachate pollutants to prevent them from entering drinking water sources and aquatic habitats in the first place.

Project Purpose

The purpose of this project is to analyze landfill leachate disposal through municipal wastewater treatment plants in the parts of the Hudson River and Mohawk River that are used as drinking water supplies.

The project will address the following questions:

- Which municipal wastewater treatment plants are receiving leachate, and what are the leachate volumes?
- What are the types and volumes of solid wastes generating this leachate?
- How are these municipal wastewater treatment plants and the discharge volumes distributed in the region?
 - What is the proximity of these discharges to surface drinking water supplies?
 - What is the proximity of these discharges to Potential Environmental Justice Areas?
- What are the main types of potentially harmful chemicals in these flows?
- What pollutants in landfill leachate are being monitored at the landfills, the municipal wastewater treatment plants, or the drinking water treatment plants?
- What pollutants are required to be removed at the landfills, the municipal wastewater treatment plants, or the drinking water treatment plants?

Anticipated Outcomes

We will produce materials that can:

- Explain the connections between solid waste and drinking water quality;
- Explain the regulatory loopholes that exist in the management of landfill leachate, wastewater, and drinking water;
- Show how landfill leachate moves from landfills to surface water, via municipal wastewater treatment plants.

Timeline and methods

1. Research: Compile facility lists and submit Freedom of Information Law/Act document requests;
2. Partnership development: Meet with advocates, including indigenous and environmental justice leaders, who are working on issues of drinking water protection in the study area, to listen to concerns and identify common goals;
3. Data analysis: Create database, perform data analysis, and summarize results;
4. Synthesis: Interpret findings and create materials to share results (e.g., StoryMap, issue brief); and
5. Outreach: Collaborate with partners to create events that share results.

OUR TEAM

Jen Epstein, Data Analyst

Jen is a freshwater ecologist, geospatial scientist, and water quality advocate who combines data and policy analysis to untangle complex problems and achieve insights to help fix them. She is particularly interested in stormwater and wastewater management in towns and small cities, especially ways to restore ecosystems while reconnecting people with nature. Her past work includes building and managing Riverkeeper's community-based water quality monitoring program, mapping restoration outcomes at NYC Parks, and helping design and implement urban and brownfield restorations. A native of Poughkeepsie, Jen currently lives in Santa Cruz de la Sierra, Bolivia, with her husband and two kids. When she is not working, you can find her planning mountain or water adventures for her family, or reading science fiction.

Monica Mercola, Legal Consultant (PEER)

Monica received her law degree from Brooklyn Law School where she developed an interest in the connection between civil rights issues and environmental issues and was published in the Brooklyn Law School Journal of Law and Policy. Previously, she studied Philosophy at Northeastern University. Prior to joining PEER, Monica has worked at Earthjustice as a Summer Law Clerk and at a variety of state and federal agencies including the New York State Department of Environmental Conservation. Monica enjoys biking around New York City, going to the farmer's market, and making paella.

Rebecca Martin, Project Manager

Rebecca Martin has more than 20 years of experience building effective campaigns and projects through coalition-building and collaborative strategies with targeted communications in the mid-Hudson valley. As a skilled organizer, she launched KingstonCitizens.org to better understand the inner workings of local government. She served as Executive Director of the Kingston Land Trust. As Campaign Manager and Director of Community Partnerships for Hudson Riverkeeper, Rebecca built a geographic grassroots organizing platform, co-created the youth-led Water Justice Lab and helped to establish the Hudson 7, the first drinking water Intermunicipal council on the Hudson River. This council was formed by seven municipalities in Ulster and Dutchess Counties to protect the Hudson River as a drinking water source for more than 100,000 people.