



Fall Foliage

Pepacton Reservoir - New York City Water Supply System



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DEP Unveils New Nitrogen Reduction Technology at Wards Island Wastewater Treatment Plant

New York City Department of Environmental Protection (DEP) Acting Commissioner Steven W. Lawitts today announced the use of a new technology to remove nitrogen from sewage which, starting today, will be used at the Wards Island Wastewater Treatment Plant in Manhattan. The technology, patented as the SHARON (Single Reactor System for High Ammonia Removal Over Nitrate) Process, has the ability to quickly break down ammonia nitrogen at less cost and with a smaller carbon footprint than traditional technologies.

“We are always seeking ways to be more sustainable in our wastewater treatment process and new technologies such as the use of the SHARON Process, which reduces the amount of energy and resources at Wards Island Wastewater Treatment Plant, help us meet that goal,” said Acting DEP Commissioner Steven W. Lawitts.

Developing and implementing cutting edge energy efficiency projects at the City’s wastewater treatment plants is a key goal of Mayor Bloomberg’s PlaNYC for a sustainable New York City in the year 2030. These projects range from equipment upgrades to the use of anaerobic digester gas to power engines, fuel cells and boilers. Anaerobic digester gas is now viewed as a “found” renewable energy source able to cut the City’s greenhouse gas emissions. DEP is upgrading boilers at the Port Richmond Wastewater Treatment Plant on Staten Island, working with National Grid to pump gas back into the grid at Newtown Creek Wastewater Treatment Plant, and investing in fuel cells to convert the gas into electricity at the Hunts Point Wastewater Treatment Plant.

DEP has been evaluating cost-effective measures to remove nitrogen from sewage. In 2001, DEP studied technology that was being developed at Delft University in the Netherlands. In 2006, DEP contracted with Grontmij, a Dutch firm, to construct the SHARON Process at DEP’s Wards plant to demonstrate this technology for the first time in North America. The SHARON Process, which is being started up today, has the capability to treat up to 1.85

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million gallons per day of centrate, which is the ammonia-rich byproduct of the biosolids dewatering process. The SHARON system is expected to reduce the discharges of nitrogen into Long Island Sound by more than 10,000 pounds per day.

The SHARON Process is an integral part of DEP's overall nitrogen reduction program, which includes more than \$1 billion in upgrades to DEP's Hunts Point Wastewater Treatment Plant in the Bronx and the Bowery Bay and Tallman Island plants in Queens. Nitrogen improvements are also underway at two other DEP facilities (26th Ward in Brooklyn and Jamaica in Queens) that discharge into Jamaica Bay, which also experiences low dissolved oxygen levels, particularly during the summer months. DEP is actively pursuing the construction of additional separate sidestream centrate treatment processes to reduce ammonia and nitrogen in plant effluent.

The waters of Long Island Sound are periodically impacted by algae blooms, which can sometimes grow to several miles in area. These blooms depress the amounts of dissolved oxygen in the Sound, impairing the survival of fish and other marine organisms. Algal colonies propagate from sunlight and nutrients, such as nitrogen. The primary sources of nitrogen in the Sound are sewage treatment facilities that serve more than a dozen municipalities along the Connecticut and New York coasts. Most of these facilities were not built to remove the nitrogen from sanitary sewage. As a result of improved sewage treatment and capital investments, the amount of nitrogen discharged from DEP's 14 wastewater treatment plants has been reduced, and will be further reduced once the projects are completed.

The City has been monitoring the quality of its waterways for 100 years. The annual Harbor Survey started in 1909 and the data from the survey show that local waters are cleaner now than they have been at any time in the past century. The primary indicators of improved water quality—rising dissolved oxygen levels and falling bacteria levels—show marked improvement. Many local waterways, which were unfishable just 20 years ago, now meet the coliform bathing standards. The progress we have made in cleaning our waters has set the stage for meeting the Mayor's goal of opening 90 percent of our waterways to recreation.

The New York City Department of Environmental Protection manages the City's water supply, providing more than 1.1 billion gallons of water each day to more than 9 million residents throughout New York State through a complex network of nineteen reservoirs, three controlled lakes and 6,200 miles of water pipes, tunnels and aqueducts. DEP is also responsible for managing storm water throughout the City and treating wastewater at 14 in-City wastewater treatment plants. DEP carries out federal Clean Water Act rules and regulations, handles hazardous materials emergencies and toxic site remediation, oversees asbestos monitoring and removal, enforces the City's air and noise codes, bills and collects on City water and sewer accounts, and manages city-wide water conservation programs.