NYC Environmental Protection
Michael R. Bloomberg, Mayor
Cas Holloway, Commissioner

WEEKLY PIPELINE

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Ladies and Gentlemen, Meet SHARON

It's the largest nitrogen reduction project of its kind in the world.

Developing and implementing cutting edge energy efficiency projects at the City's fourteen wastewater treatment plants is a key goal of **Mayor Bloomberg's** PlaNYC. An outstanding example of DEP's efforts in reaching this goal is a new process for removing nitrogen from wastewater at the Wards Island Wastewater Treatment Plant – the SHARON Process. Online since November, SHARON stands for Single Reactor System for High Ammonia Removal Over Nitrate. The SHARON process was developed in the Netherlands at Delft University and is being marketed by the Dutch firm Grontmij. This state-of-the-art demonstration process had never been implemented at this scale in the world. Wards Island was selected for the SHARON process because it has a high nitrogen loading due to its large capacity – 275 million gallons a day (mgd) – and the fact that it processes biosolids that are shipped from four other plants. The liquid centrate that is squeezed out during the dewatering process contains around 800 mg/L of ammonia-nitrogen, which must be treated before being discharged into the Upper East River. "Our sewage treatment plants are essentially landlocked," said Deputy Commissioner, Wastewater Treatment, **Vincent Sapienza**. "We don't have much room to grow." Even though the Wards Island plant had very little available space, the compact layout of the SHARON system was able to be squeezed in.

Besides providing a relatively compact solution, the new process was found to cost significantly less than conventional methods for reducing nitrogen concentrations in such high strength streams found in the centrate from the dewatering centrifuges. Under conventional biological nitrogen removal (BNR), centrate is

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Spotlight on Safety

March is Workplace Eyes Health & Safety Month!

Eye Safety Tips

1. **Create a safe work environment** Minimize hazards from falling or unstable debris.

   Keep bystanders out of the hazard area.

2. **Evaluate safety hazards -** Identify the primary hazards at the site.

   Identify hazards posed by machinery and falling debris.

3. **Wear the proper eye and face protection -** Select the appropriate eye protection for the hazard.

   Make sure the eye protection is in good condition.

4. **Use good work practices -** Do not rub eyes with dirty hands or clothing.

   Clean eyewear regularly.

5. **Prepare for eye injuries and first aid needs.**

Have an eyewash or sterile solution on hand.

At DEP, everyone is responsible for safety. If you or anyone on your team is concerned about your working conditions, it's okay to ask your supervisor or your bureau's EHS liaison how they can help. If you've still got questions, you can call the EHS Employee Concerns Hotline. It's DEP's responsibility to acknowledge and fix unsafe situations, procedures, and practices. With your help, we'll not only get the job done, we'll make it safer for ourselves, our coworkers, our families, and our city.

CALL (800) 897-9677 OR SEND A MESSAGE THROUGH PIPELINE. HELP IS ON THE WAY.

Commissioner's Corner

This past week was a great one for water quality, and the groundbreaking initiatives that we're pioneering here at DEP to achieve it. Last Thursday, **Mayor Bloomberg** announced a 10-year commitment, backed by $115 million of investments in nitrogen-removal technology and marshland restorations that will reduce nitrogen discharges in Jamaica Bay by nearly 50%. The Mayor was joined by New York State Department of Environmental Conservation (DEC) Commissioner **Pete Grannis**, Deputy Mayor for Operations **Edward Skyler**, Natural Resources Defense Council Executive Director **Peter Lehner**, Major **Mike Clancy** from the Army Corps of Engineers, members of local environmental groups and DEP staff, all of whom worked together for months to reach this agreement. As a result, nitrogen discharges into Jamaica Bay will be measurably reduced this year, and not be delayed by a lengthy court battle. Special thanks to NRDC—particularly their counsel, **Larry Levine** and **Brad Sewell**—for working hard to get this done.

On Saturday, I took a Confined Space Entry course at our training facility at the 26th Ward Wastewater Treatment Plant, along with Deputy Commissioner for Operations **Kathryn Garcia**, DC for Wastewater Treatment **Vincent Sapienza**, and Plant Ops Director **John Petito**. BWT's Training Chief **Walter Dobkowski** and Safety Chief **Joseph Reddington** described the requirements for entering confined spaces, including the monitoring, permitting, and personal protective equipment that is required to safely enter a confined space. After the classroom instruction, we geared up and entered the simulator. After a few minutes down in the hole, the lights went dark, smoke filled the space, and alarms went off. We used the knowledge that we had learned earlier in the day to put on our escape packs and safely exit the area. I'm now looking forward to entering real confined spaces to see the great work that the men and women of DEP do every day. After the training, 26th Ward Plant Superintendent **Joseph Garibaldi** and his senior staff gave me a tour of the plant, explaining some of the challenges of operating a plant that is under construction. Joe showed me one of the oldest pieces of sewer infrastructure in the system - the 26th Ward Regulator #1 – which was built in 1894 and is still in operation today.

On Sunday, DC **James Mueller** and AC **Kathryn Mallon**, with support from the capital teams at BEDC and in every borough, hosted an 8-hour review of DEP's $14.439 billion 10-year capital plan that is part of our strategic planning process. A special thanks to the capital groups in every borough for their hard work putting this together and for a great day.

Focus on the Field

Ask **Dave Tobias,** Deputy Chief, Watershed Lands & Community Planning, Land Acquisition Program within BWS under DC **Paul Rush** why the USEPA awarded New York City a 10-year Filtration Avoidance Determination (FAD) in 2007 for the Catskill/Delaware Water Supply Systems, and he will answer, "Because the City has been successfully fulfilling its commitments under the historic 1997 NYC Watershed Memorandum of Agreement (MOA) and FAD. These commitments include implementing a series of long-term watershed programs to protect the quality of New York City's surface water supply for the unfiltered Cat/Del systems (east and west of the Hudson). This goal is being accomplished in part by the acquisition of sensitive watershed lands and the proactive stewardship of natural resources, which protect property from future development and pollution."

Dave says that LAP is a " 'willing seller/willing buyer' program through which land is purchased outright ('fee simple'), or protected by conservation easements that allow landowners to retain rights to ownership of their land, along with certain uses that are compatible with water quality. The City also funds the Farm Easement Program, managed by our partner, the non-profit Watershed Agricultural Council (WAC)." In the last 13 years, the City has committed $541 million to acquisitions, and to date has secured 103,700 acres in the Cat/Del watersheds and, with another $38 million, secured over 1,900 acres in the Croton watershed. These acquisitions are in addition to the 78,294 acres of watershed land and reservoirs that the City owned prior to 1997 and continues to proactively protect.

Excluding the reservoirs, which are all open for fishing, DEP has opened over 59,000 acres for recreation with the majority of that being the recently acquired lands. DEP believes low-impact recreational uses of its lands are compatible with water quality and goes a long way towards building partnerships with upstate communities and contributing towards their economic well-being. Dave's concluding remarks were, "In the future, LAP will continue to focus efforts on identifying and purchasing parcels that will yield the highest level of water quality protection."

DEP: Then & Now

Then: Drill machine rigged to take rock core samples in preparation for City Water Tunnel No. 1 construction in Upper Manhattan. Challenges included using tons of explosives to blast tunnel in heavily populated neighborhoods, disposing millions of tons of debris and avoiding interference with subway and sewer lines. 10/13/1909

Now: DEP faces the same challenges working with tight spaces when drilling for core samples for City Water Tunnel No. 3. 2/26/2003

Ask Cas

askcas@dep.nyc.gov

Q. Dear Cas: I'm a die-hard and loyal New York City tap water drinker. But here's my problem: the guy I'm dating insists on drinking bottled water wherever we go; restaurants, a ball game, long walks in Prospect Park. I really like him but I'm conflicted. Should I simply go with the flow or is the relationship going down the drain? Submitted by **Adrift in NYC**

A. Dear Adrift: thanks for your question. You've made the right choice…at least when it comes to quenching your thirst. As for your significant other, my advice is to simply flood him with the facts: it is estimated that bottled water costs between 240 and 10,000 times the cost of tap; and, that is without factoring in the environmental cost to produce the plastic bottles and transport it. Hopefully, this flow of facts will set everything straight. Either he gets it and your relationship goes forward swimmingly or he doesn't and it's man overboard.

Did You Know?

…DEP collects more than 3,999 water samples per month from up to 1,400 locations from both the watershed (upstate) and distribution (in-City). Water samples are analyzed for bacteria, chlorine levels, pH, inorganic and organic pollutants, turbidity, odor, and many other water quality indicators.

(SHARON... - continued)

treated in a four step process: (1) ammonia to nitrite, (2) nitrite to nitrate, (3) nitrate to nitrite, and finally (4) nitrite to nitrogen gas. The SHARON process is able to remove ammonia from the centrate stream utilizing a two step process – ammonia to nitrite to nitrogen gas. There is a 25% reduction in oxygen usage between the two processes – conventional BNR vs. SHARON. This reduction in oxygen usage therefore translates into a reduction in power needed to provide additional blower capacity. Additionally, about 40% less chemicals are needed for the SHARON process, which will save several hundred thousand dollars per year.

"To place this in perspective - the centrate would be analogous to the water from your washing machine spin cycle," says Chief **Keith Beckmann,** from the Process Planning Section, at BWT. "SHARON provides cutting edge treatment for this waste stream."

Milestones

Congratulations to the following employees for 20 years of service at DEP: **Virginia Cheng**, BEC, **Kim Estes-Fradis**, BCIA, **Linda Gamble**, BEC, **Muhammad Islam**, BWT, **Alan Kelly**, BWS, and **William Mellett**, BWT.

Event Calendar:

2010 College Fair, March 06, 12:00-5:00 pm - Riverbank State Park – Open to Middle School and High School students; free workshops in Admissions Prep, SAT, essay writing, financial aid, careers in medicine, athletic scholarships, and more.

Thank You DEP Volunteers!

A note of Appreciation from Commissioner Robert V. Hess - Department of Homeless Services (DHS)

Thanks to all the DEP volunteers who turned out for HOPE 2010 on January 25 who helped us survey the number of unsheltered homeless people living on the streets or in parks or the subway system in New York City. They played a vital role in helping us carry out this important effort.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov.