

Super Sleuths Seek Energy Savings

While 95% of New York City's drinking water is supplied by gravity, it takes a little more "current" to treat the wastewater for more than 8 million residents. In fact, DEP is one of the largest municipal electricity users, second only to the Department of Education. The electricity-free journey provided by gravity ends fairly abruptly once the city's water enters the sewer system.

More than three-quarters of the heat and power used by DEP as an agency is consumed by the 14 in-city wastewater treatment plants run by the Bureau of Wastewater Treatment (BWT). As anyone at BWT can tell you, treating sewage is a pungent business. It is also an incredibly energy intensive process,



or in other words, very expensive. Few people know this better than **Jim Mueller**, Assistant Commissioner for Planning and Capital Projects with BWT. In April 2010, Jim and his team began looking at energy bills and consumption patterns

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Spotlight on Safety

National Safety Month: Week 2 – Ergonomics

In the context of workplace safety, ergonomics focuses on the intersection between job function and the physical demands on an employee. Ergonomics involves designing the job environment (including equipment, biomechanics, procedures and human factors) to fit the person.

Good ergonomics in the workplace can prevent problems such as overexertion, the third leading cause of unintentional injury. In some operational areas at DEP, ergonomic injuries consistently make up the largest proportion of injuries. Typical ergonomic conditions are disorders of the muscles, tendons, ligaments, joints, cartilage, blood vessels, and spinal discs.

While many people typically think of ergonomic injuries as related to computer use and workstation design and seating, the highest frequency of ergonomic injuries has occurred in DEP's field operations—

involving lifting, pushing, or pulling large objects such as jackhammers, valves, hydrants, manhole covers, tools and various materials. The second most frequent cause of ergonomic injury occurred while using or operating tools and machinery such as valves, turning bars, jackhammers, chisels, sledgehammers, and wrench hammers.

DEP is proactive in its approaches to reducing ergonomic injuries. Field ergonomic assessments are being conducted in Bureau of Water and Sewer Operations' Field Operations division, to identify the risks that potentially contribute to these injuries. Solutions are being implemented that include adjustment of work practices and equipment, and educating workers. The results of these assessments will be shared and leveraged to other bureaus as needed. By working smarter, we work safer.

For more information click here: [👉](#)

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



DEP regulates heating oil, boilers, and industrial equipment to control air pollution, and the permitting process can be rigorous. That's why it is incumbent upon us to provide outstanding customer service to businesses and property owners, and last Friday we took a major step toward making their interactions with DEP easier than ever by launching the Clean Air Tracking System (CATS). This program allows for boiler registrations, renewals, and payment of fees online. This saves time and paperwork and reduces the cost of complying with new boiler emission standards. DEP requires registration of all boilers with at least 350,000 BTUs of power, and those with greater than 2.8 million BTUs require Certificates to Operate—which will also be obtainable online by late 2012. CATS allows account holders to track current and prior filings, and consolidates multiple properties with a single owner or manager under one online account. After logging in, owners can register their email addresses to track registrations and payment histories, and can sign up to receive reminders, alerts, and other messages such as notices of imminent expiration of registrations. Prior to the new online system, building owners and managers were required to register boilers in-person or by mail. As the program expands in the coming years, it will offer online services for other industrial processes and materials, a helpful tool for businesses such as dry cleaners, nail salons, garages and other sources of air emissions in the city. I thank **Krish Radhakrishnan**, and **Eduardo Hernandez** for leading this effort, as well as our partners at the Department of Information Technology and Telecommunications for helping get this important initiative off the ground.

The efforts to enhance operational efficiency are occurring across the board at DEP. Last Tuesday I visited the Bowery Bay Wastewater Treatment Plant, which has been in operation since 1939 and now serves nearly 850,000 residents. It is critical that all of our plants, including our older plants, function as efficiently as possible—especially in the consumption of energy. Superintendent **Frank Vocasek** and Deputy Superintendents **Nick Scotto** and **Chris Martell** guided me through the plant's new boiler and electrical wings and newly installed aeration blowers, all of which will improve energy efficiency. The reduction of energy and therefore greenhouse gas emissions from our 14 in-city wastewater treatment plants will take DEP a long way toward the PlaNYC goal of reducing citywide emissions by 30%, and energy initiatives at DEP are some of the key initiatives of Strategy 2011-2014. [👉](#)

Our strategic goals include partnerships in the watershed that will allow us to manage and maintain our reservoirs. Last Tuesday, DEP announced the beginning of a \$1 million partnership with Delaware County to improve the roadway surrounding the Pepacton Reservoir. [👉](#) DEP maintains 40 miles of public roads near the Pepacton and Cannonsville reservoirs in Delaware County. This work along NYC Highway 30A will improve driving conditions and enhance safety by replacing the roadway and guardrails, grading the shoulders and side slopes, improving roadway markings to enhance visibility, and cleaning roadside drainage ditches. Whether in-city or upstate, by continually improving our operations, we can improve customer service while also working to become more transparent, efficient, and sustainable.

Focus on the Field



When DEP is looking for energy solutions at city wastewater treatment plants, **Luis Carrio** is the go-to person for answers. Luis oversees the Bureau of Wastewater Treatment's (BWT) sustainability initiatives, including energy analysis and planning, to help the bureau achieve **Mayor Bloomberg's** PlaNYC goal to reduce greenhouse emissions. Luis continually looks for innovative ways to improve operational efficiencies in the wastewater treatment process, while continuing to achieve high levels of pollutant removal.

Luis has been developing various approaches to optimize existing systems and has been implementing new technology to save energy. Having worked at DEP for more than 30 years, he knows the wastewater treatment process better than almost anyone. "You really have to know all of the intricacies of our wastewater treatment plants and their particular processes to determine specific

ways to improve them," said Luis.

To achieve his vision, Luis has been looking at every corner of the 14 wastewater treatment plants to make sure all aspects are analyzed for future initiatives that can lead to improvements and savings. For instance, several plants are now optimizing the output of air for biological aeration and plans are underway to increase the use of digester gas. Luis was also part of the BWT team that discovered significant electrical billing irregularities at Tallman Island.

Luis is proud of the many projects he's been working on, and one that comes to mind is the biological nitrogen removal (BNR) program. Luis developed many of the techniques that were designed into the BNR program that have significantly reduced the footprint of such systems. "It feels good when you are making a difference in the environment," he said.

Luis has always worked in BWT and he knows that being at the helm of a new unit working on energy saving projects is a big responsibility. He is developing protocols to achieve continual improvement, to help make DEP the most energy efficient water utility in the nation. "We are always looking for ways to improve and to make a difference," said Luis.

Luis is also a proud father of five children and he spends much of his free time with his family.

Event Calendar

VISITOR CENTER AT NEWTOWN CREEK SPRING SPEAKER SERIES: Tuesday, June 19, 6:30 pm; Dissecting the Greenpoint Art Community. For more information, please click here [🔗](#).

DEP JUNE BLOOD DRIVE: **Lefrak:** 3rd Floor Cafeteria; high-rise building: 6/12-6/14, 7:45 am to 1:30 pm; **Downsville Fire Department,** 6/13, 9:00 am to 2:00 pm; **Sutton Park:** 2nd Floor, 6/21, 8:30 am to 2:15 pm. Please click [🔗](#) to see the email from the Commissioner and [🔗](#) for the list of blood drive captains.

Kudos Corner

Thank you to DEP staff whose hard work made the 26th annual Water Resources Art and Poetry Contest and award ceremony such a great success. Special thanks to BCIA's **LaKeisha Bradshaw** and **Girma Moges** and OIT's **Michael Shum** for all their work behind the scenes to make the contest and the award ceremony a rewarding event for all the participating watershed and NYC students.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov. [🔗](#)

Press Box

TO CREATE ART AND POETRY – JUST ADD WATER: "This year's Water Resources Art and Poetry Contest, organized by the city's Department of Environmental Protection...drew 700 submissions from around 50 schools around the city. The participants, from grades 2 to 12, were honored on Wednesday at a ceremony at Citi Field in Queens..." From a June 7 New York Times piece [🔗](#) on DEP's 26th annual Art and Poetry Award Ceremony.

BACK TO NATURE: "Tucked away amid the man-made structures of the city, is something special...the Newtown Creek Nature Walk..." From a June 11 Epoch Times article [🔗](#) on a walking tour of the Newtown Creek Nature Walk led by environmental artist **George Trakas**.

(Super Sleuths Seek Energy Savings... continued)

to identify potential savings. What they found surprised just about everyone.

Using actual energy consumption data, BWT conducted a detailed review of their system-wide usage. Nobody expected that Jim's team would find that the city was receiving and paying New York Power Authority bills that were in some cases much higher than actual consumption. Jim and his team discovered that the Tallman Island plant was being inaccurately billed based on estimated usage that was out-of-date, costing the city millions of dollars. Thanks to this effort, the city was issued a multi-million dollar credit.

BWT's in depth analysis discovered two more billing errors that will eventually result in additional credits and significant cost savings in the years ahead. Although Jim described these savings as "low hanging fruit" compared to the kinds of capital investments that are normally required to generate similar cost savings, this understates the level of detailed analysis that

was required to uncover billing mistakes that had been overlooked for years. In addition to achieving immediate savings from billing irregularities, BWT's Comprehensive Wastewater Treatment Plant Energy Analysis identified opportunities for energy conservation on a plant by plant basis. Jim and his team expect to complete a thorough study of each plant's energy consumption in the coming months. Once implemented, these energy efficiency measures will allow DEP to reduce both its carbon footprint and its operating budget.

With results like these, it is no surprise that DEP continues to attract attention throughout the industry. Jim recently presented DEP's findings to the New York Water Environment Association's spring meeting in Buffalo. With a list of future projects that includes harnessing the on-site production of natural gas, water conservation, and coping with climate change, it is no wonder that DEP continues to cement its reputation as an industry leader.

Beyond New York



The world's highest sewage treatment plant is the Chamdo Sewage Treatment Plant in Tibet. This plant is currently the highest in terms of altitude and is located 10,800 feet above sea level with a total design processing capacity of four million gallons per day.