NYC Environmental Protection
Michael R. Bloomberg, Mayor
Carter Strickland, Commissioner

WEEKLY PIPELINE

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Commissioner's Corner

Earlier today, I had the honor and privilege of joining Deputy Mayor **Cas Holloway**, representatives from our Bureaus of Water Supply and Engineering, Design and Construction, the State Department of Health, the American Council of Engineering Companies, as well as union leaders, construction firms, and local officials at a ceremony celebrating the completion of a historic investment in New York City's water infrastructure—the new Catskill/Delaware Ultraviolet (UV) Disinfection Facility in Westchester County. The completion of the new UV Treatment Facility provides nearly half the State's residents with an important added layer of protection against pathogens and other harmful microorganisms that can be found in drinking water. To meet this need, DEP built the largest ultraviolet treatment facility in the world, capable of treating more than 2 billion gallons of water each day. That is more than three times the capacity of the next largest municipal treatment facility in the United States, which is currently under construction in Los Angeles.

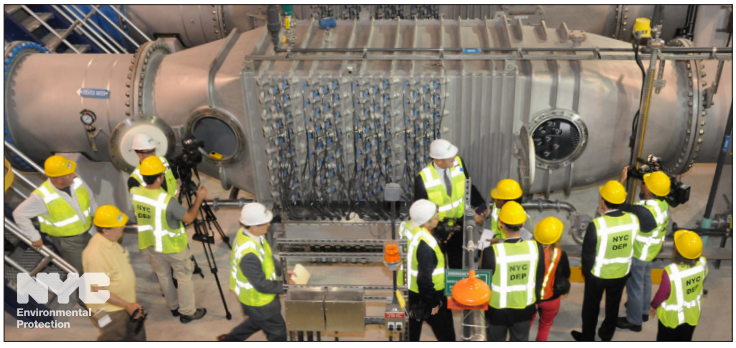
The new UV facility will provide treatment specifically for Cryptosporidium and Giardia, naturally occurring microorganisms that can be found in surface waters and can cause gastrointestinal ailments in humans. DEP's monitoring of streams and reservoirs confirms that there are very low levels of these microorganisms in the NYC watershed. As a result of a 1993 Cryptosporidium outbreak in Milwaukee, however, the EPA developed new federal regulations for treating drinking water. On a parallel path, DEP and other utilities funded studies by the Water Research Foundation in which researchers discovered that exposing water to low levels of ultraviolet light disabled the ability of Cryptosporidium and Giardia to reproduce, rendering them harmless to humans. UV treatment is cost-effective and allows us to minimize our use of chlorine and keep our drinking water tasting great.

At DEP we recognized the value behind the scientific studies and took a proactive approach by committing to build the UV Facility in 2002. Construction on the plant commenced in 2006 and from the start required an enormous amount of coordination. On any given day there were between 300 and 400 workers at the site, and at one point project managers were executing seven contracts simultaneously with more than 800 workers on-site. The scale of this project added to the complexity. Inside there is 10,000 linear feet of steel pipe; more than a mile of large, 12-ft diameter concrete lined pipes; 121,000 cubic yards of concrete; 1,200 tons of structural steel; 20,000 square feet of aluminum grating; and 11,760 UV bulbs in 56 treatment units that were the largest ever manufactured when they were installed. In addition to construction of the facility itself, this project also included deep dives in pressured suits to make improvements within the Delaware Aqueduct, some 500 feet below ground, which required months of nightly aqueduct shutdowns that were managed without compromising the delivery of water to NYC.

Our partners in industry have also recognized DEP for this important achievement. Earlier this year, the American Council of Engineering Companies awarded the project its Diamond Award for Engineering Excellence. The International Ultraviolet Association also recognized the facility with its Ultraviolet Engineering Project Award 2011-2012.

The UV facility is only the newest addition to our water supply and treatment program, which starts with the $1.5 billion DEP has invested in watershed protection since first receiving a Filtration Avoidance Determination from the EPA in 1993.

Completion of the UV Facility is a historic accomplishment for DEP. Some of the DEP employees who were most responsible for the successful design, construction, and start-up of this project include Deputy Commissioner **Kathryn Mallon**, **Michael Borsykowsky**, **Gerry Cox**, **George Schmitt**, **Paul Smith**, **Jasmin Rivera**, **Amr Sayed-Ahmed**, **Swapan Gangopadhyay**, **Heather Goetsch**, and **Ryan Cardoza**, from our Bureau of Engineering, Design and Construction, and Deputy Commissioner **Paul Rush**, and **Tina Johnstone**, **Mark Donecker**, **James Hanratty**, **Deborah Keesler**, **Edward Hughes**, **Angela DeLillo**, and **Anthony Pironti** from our Bureau of Water Supply.



Spotlight on Safety

Ultraviolet Radiation

Ultraviolet (UV) radiation can come from sources such as the sun, welding arcs, black lights, or UV lamps and lasers. If not properly controlled, exposure to UV light can result in skin and eye damage, premature aging, and even cancer. At the Catskill/Delaware Ultraviolet Light Disinfection Facility, a Job Hazard Analysis was conducted and it found that workers could be exposed to UV radiation when they remove the intensity sensors from powered units during regular maintenance. As a result, prior to workers performing this task, the facility implements an Energy Control Procedure that relieves and isolates the hazardous energy sources of the UV units. Also, employees must wear UV-rated personal protective equipment in the area and signs have been posted to warn employees of the potential for UV exposure.

For more information, see the Occupational Safety & Health Administration's Radiation Safety Tips.

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.

Focus on the Field

Protecting public health in New York City by providing a reliable supply of high quality drinking water is one of the most important aspects of DEP's mission and **George Schmitt**, an Accountable Manager with the Bureau of Engineering, Design and Construction (BEDC), has played a key role in some of the department's largest and most important capital improvement projects over the last 20 years. Born and raised in Putnam County, Schmitt attended Mahopac High School and earned a degree in civil engineering from the University of Pittsburgh.

Schmitt joined DEP in May of 1992 as a Field Inspector and spent his first five years working on the tunnel boring and shaft construction for Stage 2, the Queens/Brooklyn leg, of City Tunnel 3. In 1998 he was brought up to Hillview Reservoir in Yonkers and, a year later, became a Resident Engineer on one of the numerous upgrade projects taking place at the last stop for drinking water before it enters the City's distribution tunnels. For eight years, Schmitt helped oversee more than $41 million in critical projects such as the alternate draining and cleaning of the east and west basins, buttressing of the dividing wall, and the rehabilitation and modernization of the four chamber buildings.

In 2005, Schmitt became a licensed P.E. by New York State and, in 2006, he was brought on as the Accountable Manager for the construction of the Catskill/Delaware Ultraviolet Light Disinfection facility in Westchester County. At that point the design for the plant was substantially complete, but the site was just open City-owned land with an existing shaft serving the Delaware Aqueduct. The facility would be built on a hillside, so the excavation required going as deep as eight stories on one end, and less than ten feet on the other. Perimeter security measures were also one of the first items to be completed.

After approximately eighteen months of work, excavation was complete and the team had carefully uncovered the Delaware Aqueduct shaft that was built in the 1930's. "It's really a testament to the type of work our predecessors did on the water supply system," said Schmitt. "Although it was built more than 80 years ago, the Shaft structure remains in pristine condition."

In January of 2008, construction of the facility itself got underway in earnest. On any given day there were between 300 and 400 workers at the site, and at one point they were executing seven contracts simultaneously with more than 800 workers on-site. Initial construction included building a forebay on either side of the existing shaft, and laying a foundation for the facility, which included more than a mile of cement-lined 12 foot diameter piping. Next came the construction of the building itself, along with the installation of HVAC, and electrical systems. After four years of work, water began running through the facility in April of 2012 in order to test the facilities systems, including valves and pumps. Following that, water was run through the UV Units and related equipment for testing and commissioning. Finally, the facility began providing a secondary level of treatment for all of New York City's water, or more than a billion gallons a day, in late 2012, and full construction of the facility, including the offices and landscaping, has just recently been completed.

"Building the largest UV facility in the world was certainly a challenge to the entire team, but the truly complex part was maintaining a sufficient volume of water heading to Hillview for consumption while we connected the new forebays and piping to the existing shaft to test the equipment," said Schmitt. "Close collaboration amongst BEDC and the Bureaus of Water Supply and Water and Sewer Operations ensured the smooth transition."

Since the beginning of this year, Schmitt has spent an increasing amount of his time at the Rondout-West Branch Bypass Tunnel shaft sites in Orange and Dutchess Counties as the Accountable Manager for this mega-project. Site prep, including the clearing of trees and initial blasting, has been going on since the spring and Schmitt expects they will begin blasting for the shafts this fall.

"George has excelled at building strong partnerships with our contractors, including a commitment to the safety of the workers, and has ensured compliance through regular audits," said BEDC Deputy Commissioner **Kathryn Mallon**. "This resulted in the UV project coming in on time, under budget, and with injury rates well below the industry average."

(Focus on the Field… continued)

Over the last few years, Schmitt has lived in Putnam, Westchester, and Dutchess counties. He is an avid softball player and enjoys an occasional round of golf as well. But, with so much of his time spent at construction sites, he most enjoys a quiet night at home with his wife and seven year old daughter.

DEP Built and Kid Approved!

Last week, DEP celebrated the opening of a "green" playground at P.S. 65 in Cypress Hills, Brooklyn. The playground is one of up to 40 new playgrounds that will be built through a partnership with the Trust for Public Land, the Department of Education, and the School Construction Authority. DEP funded the installation of green infrastructure that will capture all the stormwater that falls on the playground, or more than 300,000 gallons annually, thereby easing pressure on the city's sewer system and reducing overflows into Jamaica Bay. Deputy Commissioner for Sustainability **Angela Licata** joined **Mary Alice Lee** and **Marc Matsil** from the Trust for Public Land at the ribbon cutting. Click here to see before and after photos of the playground.

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