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HHS students practice chemistry at PVSC

Story By Ron Leir | Observer Correspondent 04/28/2015

NEWARK – Twenty-two Harrison High School juniors from Amanda Wagner's chemistry class participated in a unique field trip last Thursday.

They were guests of the Passaic Valley Sewerage Commission's wastewater treatment plant in Newark – the fifth largest in the nation – to mark World Lab Day, an annual event that celebrates advancements that improve the world.

PVSC Executive Director Michael DeFrancisci said it was the first time the plant had invited students for the occasion. "Yesterday was the 45th anniversary of Earth Day and, with today being Lab Day, we thought it would be a good idea to bring in the students because people don't realize that a lot of science goes into [the wastewater treatment process]."

Students visited with lab technicians to observe firsthand how wastewater samples are analyzed for any deviations from the standards set by the state and federal environmental agencies before the treated product is discharged into public waterways.

Anthony Scalera, lab director, said the plant serves a population of 1.4 million from 48 municipalities in Hudson, Bergen, Essex, Union and Passaic counties, including a host of industrial plants.

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PVSC personnel collect wastewater samples directly from those industries and bring them to the lab to be checked for concentrations of everything from oil and grease to cyanide.

Scalera said there is evidence that because there are “fewer industries today” in the region and because many of those that remain are pretreating their wastes on-site, the wastewater effluent is getting cleaner, although he wasn’t recommending swimming in the Passaic River just yet.

Still, Scalera noted, there’s plenty of wildlife like geese and raccoons whose wastes contribute to bacterial levels in the water and are being dealt with.

Much of the plant was flooded by Hurricane Sandy in October 2012, resulting in loss of testing equipment, along with vehicles and infrastructure, Scalera told the students.

It took the plant until April 2013 to get back up to strength, including a brand new lab, although some of the sophisticated testing devices – like a $77,000 chromatography machine – remain compromised.

Indeed, DeFrancisi noted, plant administrators are “still working in trailers” because their building was saturated with flood waters. “The entire [140-acre] campus was under water,” he said, which surprised everyone since “the [Newark] bay is almost a mile away from here.”

Some of the projects being designed to prevent future post-Sandy disasters will likely not see completion until 2022, DeFrancisi said, and it won’t come cheap.

Rebuilding sections of the plant and construction of a barrier flood wall will cost an estimated $300 million and cleaning/restoring power cables should run about $50 million, he said.

There are also plans for installing an alternate generator and pump station.