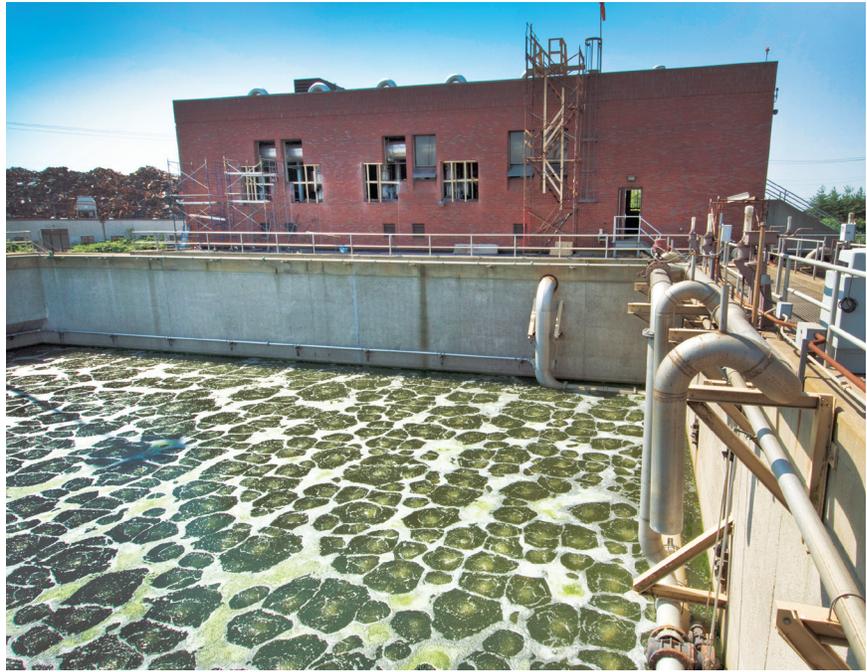


# Narragansett Bay Commission's Field's Point Integrated Fixed-Film Activated Sludge System



Location: Providence, R.I.  
 Owner: Narragansett Bay Commission  
 Designer: Kleinfelder  
 Contractors: Daniel O'Connell's Sons, Kruger  
 Manufacturers: Kruger (Veolia); Flygt, a Xylem brand; DeZURIK Inc. / El-O-Matic; Hach; Hydro-Dyne Eng. Inc.; HSI/Atlas Copco; Bau Hopkins/Pulsafeeder  
 Cost: \$31 million  
 Size: 65 mgd



DeZURIK was proud to supply pneumatically operated AWWA Butterfly Valves as part of this project. For more information on DeZURIK products, visit [www.dezurik.com](http://www.dezurik.com).

In 2003, Narragansett Bay in Providence, R.I., experienced a fish kill that resulted in the death of more than one million fish. Following this event, the Narragansett Bay Commission (NBC) was required to upgrade its two wastewater treatment facilities to meet and exceed a newly imposed permit limit of 5 mg/L total nitrogen.

At the Field's Point facility, Rhode Island's largest sewage treatment plant, the commission selected a four-stage integrated fixed-film activated sludge (IFAS) floating media system—a technology that, at the time, was primarily used in small- to mid-sized municipal wastewater treatment facilities.

Because of space constraints on the 22-acre site, NBC was unable to build additional treatment tanks. Instead, it decided to convert existing aeration tanks to enhance the IFAS technology, creating the largest IFAS system in the world. To achieve a system of this size, NBC evaluated 24 treatment technologies.

During the design phase, the team had to consider the plant's adaptability

to northern climate temperatures; ability to treat the highly variable flows of a combined sewage system; flexibility to alter the system if lower permits are issued in the future; and capacity to accommodate the flow from the existing facility as well as future expansion.

During construction, each of the aeration tanks had to be individually converted to the IFAS system while remaining in compliance with existing permit limits with significantly reduced aeration capacity. The system successfully remained in compliance throughout the process.

Since starting up in May 2014, the system has effectively reduced total nitrogen concentrations in the upper bay. The plant achieved a seasonal average of 3.4 mg/L total nitrogen in 2014—an 82% reduction from the 2003 fish kill.

"The project is fully operational and exceeding our expectations," said Raymond J. Marshall, P.E., executive director of NBC. "The technology is always popular with visitors who tour the facility, and we are seeing healthier marine populations in the upper bay." 