McCafferty Brinson consulting

Client
Broward County Water and Wastewater Services (BCWWS)
MBC Subconsultant to Prime Consultant

Scope of Services
Professional engineering services to identify and evaluate treatment technology alternatives to comply with proposed PFAS regulations at the District 1A and 2A Water Treatment Plants.

Contact
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Start Date
August 2023

Completion Date
March 2024

Key MBC Staff
Frank A. Brinson, P.E.
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Key Features
Project included identification of appropriate treatment technology alternatives for PFAS treatment upgrades (i.e., anion exchange, granular activated carbon, nanofiltration (NF), and reverse osmosis (RO)), development of conceptual design options for each treatment plant and capital cost estimates, and recommendations for the most effective approach at each facility.

PFAS Water Treatment Impact Assessment
Broward County, Florida

Background

PFAS represents a group of thousands of synthetic chemicals that persist in the environment because they do not readily degrade. The United States Environmental Protection Agency (USEPA) proposed a National Primary Drinking Water Regulation (NPDWR) for certain identified per- and polyfluoroalkyl substances (PFAS) with an estimated compliance date for the proposed PFAS NPDWR of April 2029. BCWWS has identified the presence of certain PFAS constituents in the raw water supplies for the County's two water treatment plants (District 1A and District 2A) at levels that exceed the proposed maximum contaminant levels (MCLs) for the proposed regulated PFAS constituents. Both water treatment plants use conventional lime softening, granular gravity filtration, and disinfection for their treatment processes. These technologies do not provide significant removal of PFAS. Consequently, the current finished water quality will not comply with the proposed regulations, and both water treatment plants will require treatment process upgrades to comply with the proposed regulations. The USEPA has identified three treatment technologies as the "best available technologies" (BAT) for the removal of PFAS in drinking water supplies: membranes (nanofiltration, NF, and reverse osmosis, RO), granular activated carbon (GAC), and anion exchange (AIX).

The Project

The County retained an engineering team, including McCafferty Brinson Consulting, LLC (MBC), to conduct a conceptual-level evaluation of potential NF, GAC, and AIX upgrades at each of the County's plants. This assessment was intended to chart the County's course to further refine and implement improvements required to meet the proposed PFAS regulations. The scope of services included the development of conceptual designs and layouts, conceptual-level cost estimates, and the identification and evaluation of subjective considerations for each technology alternative, such as residuals disposal issues and adaptability of the technology to other currently unregulated emerging contaminants. MBC was responsible for all components of the study scope related to the membrane (NF) alternatives at each facility. Based on the study, the County is currently in design of recommended PFAS upgrades.