

Well 15 PFAS Treatment Facility

MUNIS # 10492; Contract #9342

Project Manager: Joseph Grande, Water Quality Manager, Madison Water Utility

Project Engineer: Adam Wiederhoeft, P.E., Madison Water Utility

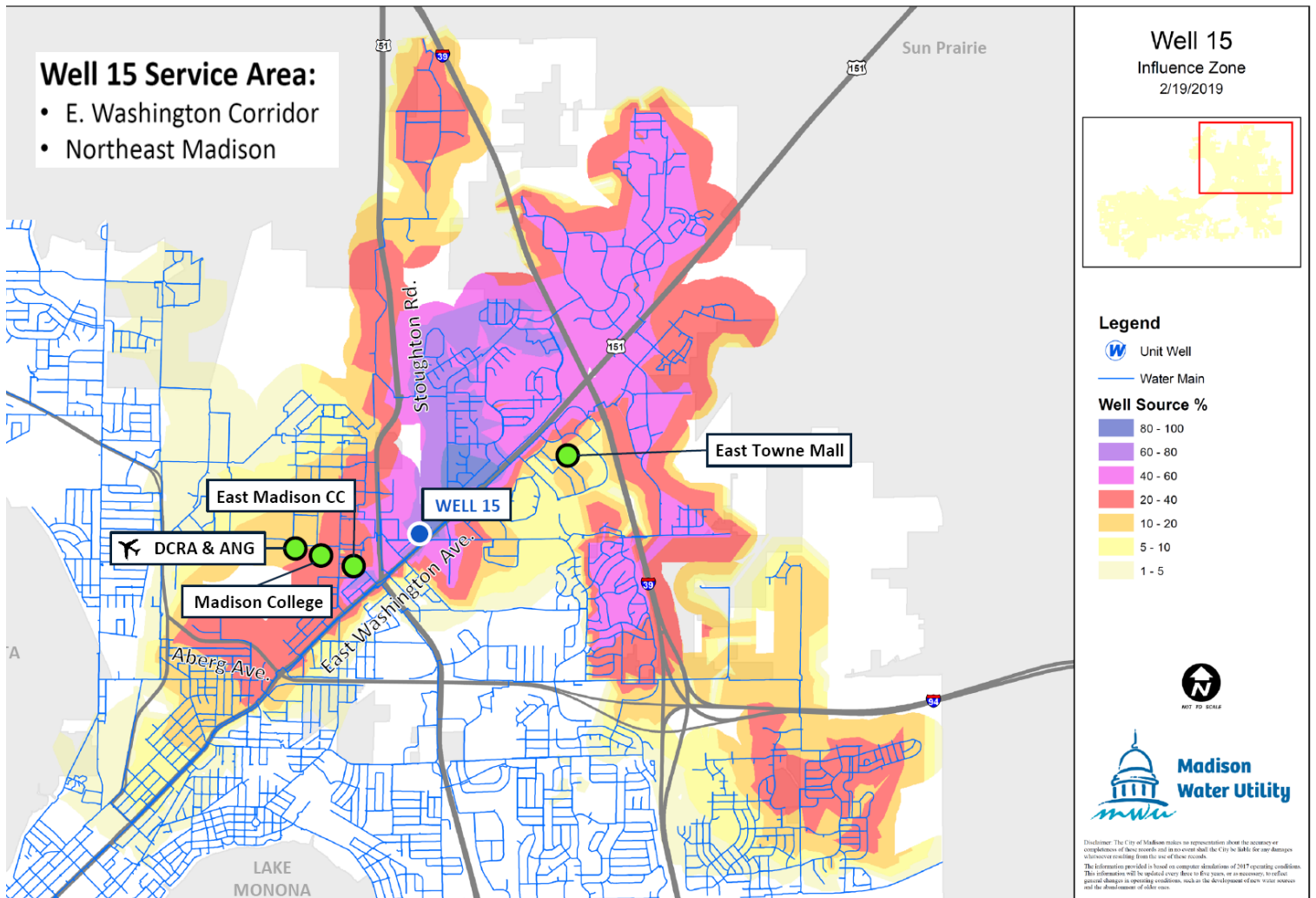
Design Engineer: Angel Gebeau, P.E., AECOM, Inc.

Alder: Latimer Burris, District 5

Project Objective

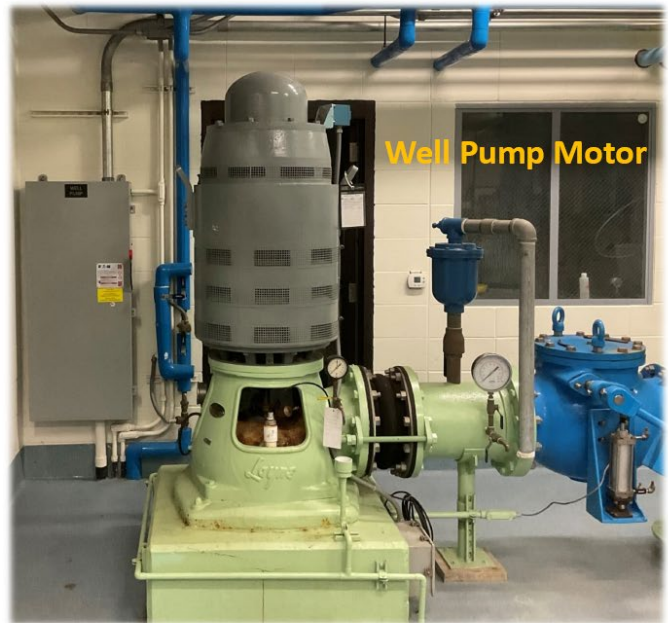
The objective of the Well 15 PFAS Treatment Facility (UW15) project is to remove existing water treatment equipment from the facility and modify existing building and reservoir layout in order to accommodate installation of new PFAS treatment equipment and related facility/equipment upgrades.

Project Location and Service Area



Existing Facility and Background Information

Unit Well 15 was constructed in 1965. It has long-served as a “workhorse” supply facility for Madison’s east side – pumping as much as one billion gallons per year. In 2012/2013 an air stripper filtration system was added to treat for contaminants, such as volatile organic compounds, in the source water. PFAS was first detected at Well 15 in 2017 and the well was shut down in early 2019. Madison Water Utility will not operate Well 15 until PFAS treatment has been integrated into the supply facility.



Well 15 PFAS Action Plan

■ Contaminants Targeted for Removal:

- Per and Polyfluoroalkyl Substances (PFAS) – PFOA & PFOS
- Volatile Organic Compounds (VOC) – PCE & TCE

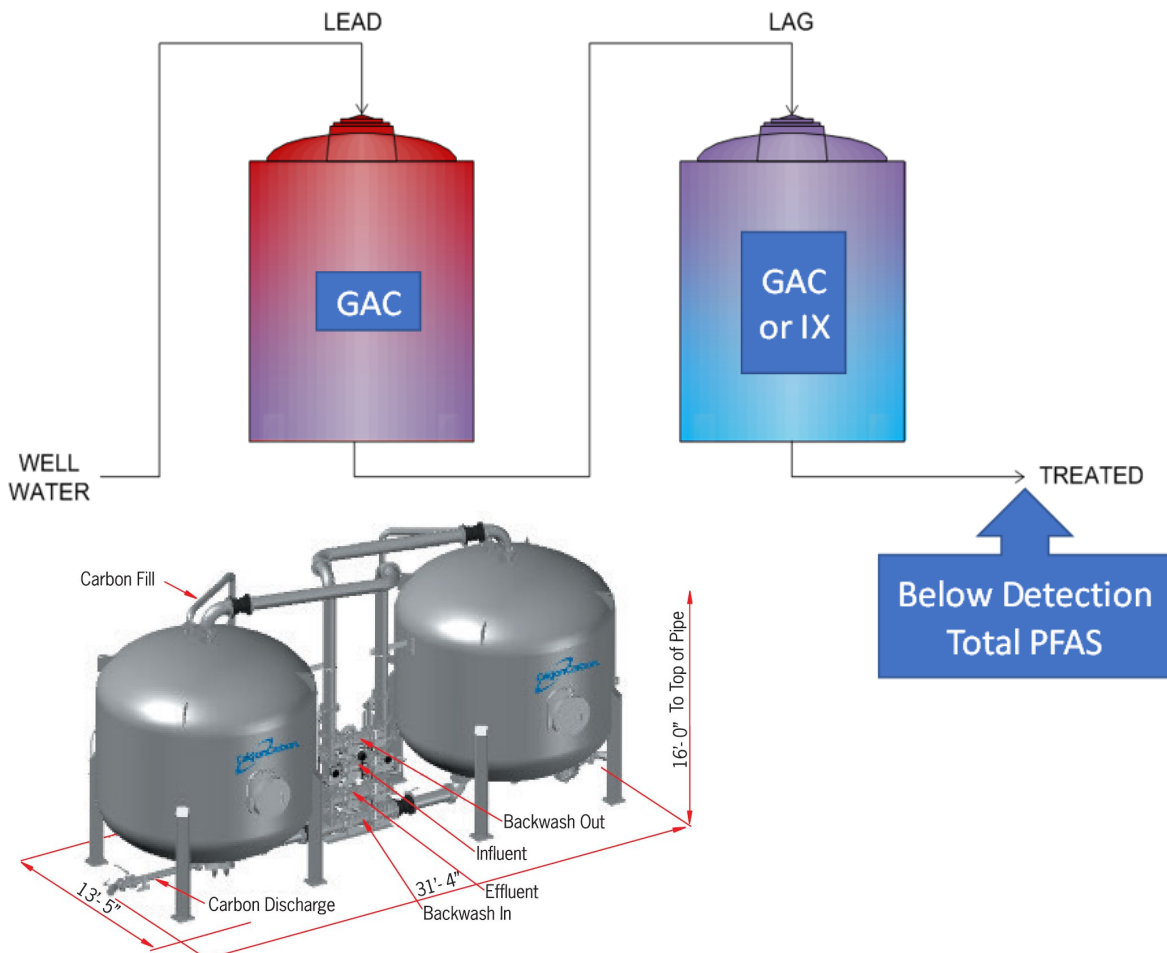
■ Required Treatment Objectives:

- Non-detect for PFOA & PFOS and all other PFAS chemicals analyzed
- Non-detect for PCE & TCE (two VOCs)
- Meet all WI DHS PFAS guidance including a Hazard Index value that is <1
- Meet all federal and state drinking water regulations

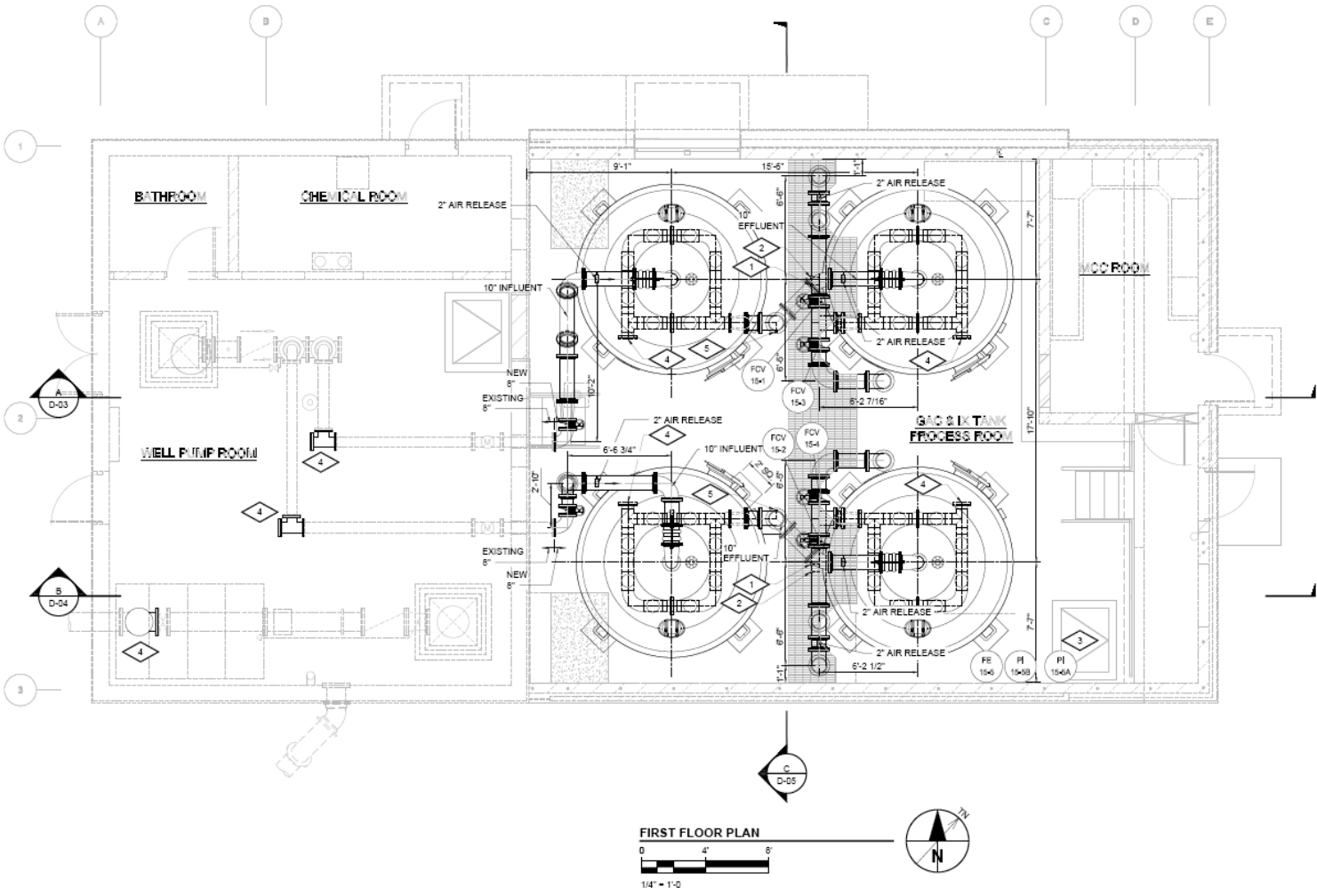
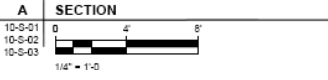
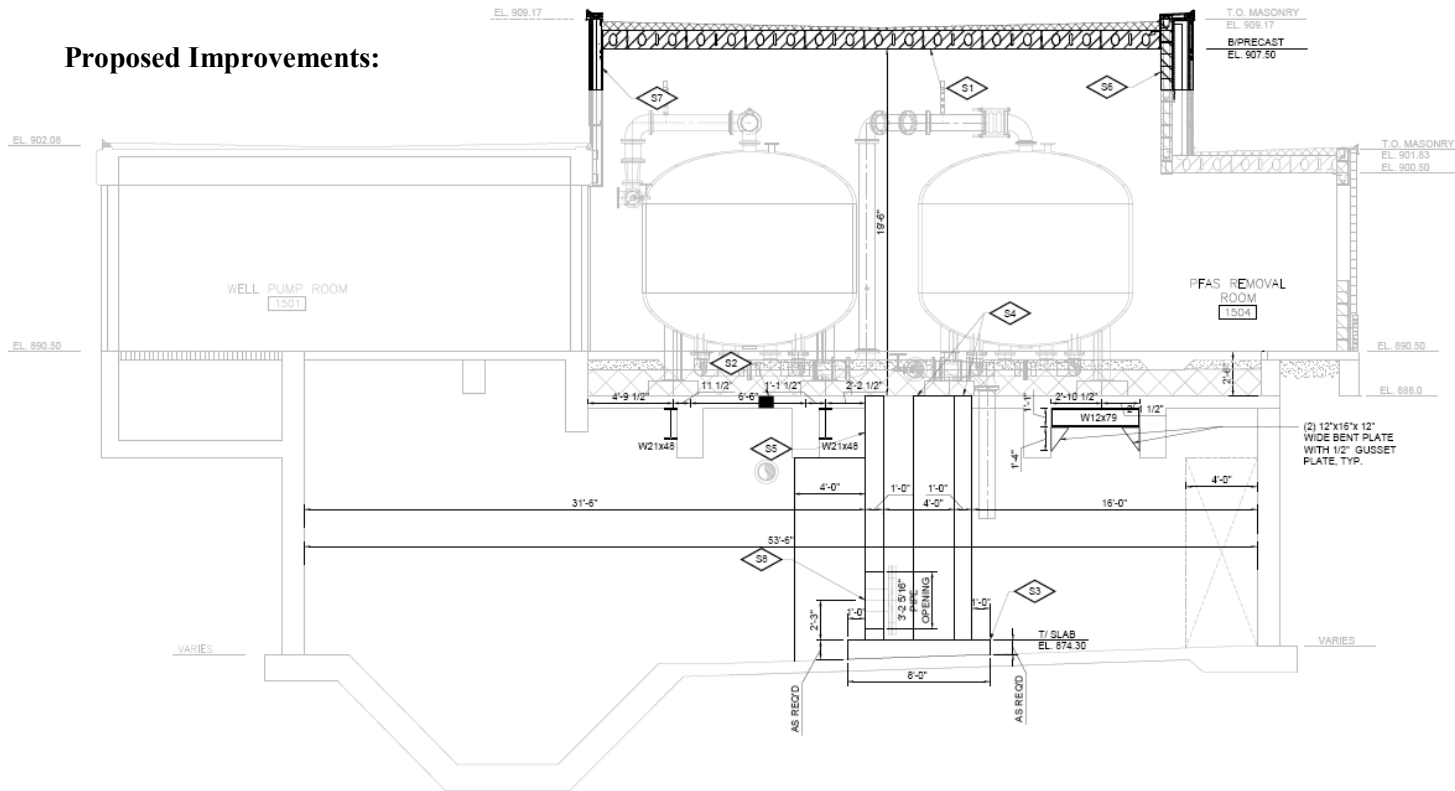
Basis for Project and Description of Project Scope

The project will address combined PFAS levels in Well 15 source water that exceed the Wisconsin Department of Health Services Hazard Index value of 1. When operational, Well 15 supplied up to 1 billion gallons of water per year along the East Washington Corridor and northeast Madison. PFAS were detected in Well 15 in 2017 and the well was shut down in early 2019. In 2021, Madison Water Utility (MWU) completed a Well 15 PFAS treatment feasibility study and in 2022 MWU engaged engineering services for bench-scale testing, treatment system design and construction services. Well 15 also has a history of producing water containing manufactured organic contaminants - specifically volatile organic compounds (VOC) including tetrachloroethene (PCE) and trichloroethene (TCE) - which will be addressed by the proposed treatment process.

Significant project components include: Treatment plant that includes process equipment (pre-treatment and VOC & PFAS removal as well as chemical feed), piping and valves, building modifications/construction, controls system changes and site modifications. The two-phase granular activated carbon (GAC) plus ion-exchange (IEX) process sequence was established to be the most efficient and effective treatment system combination to achieve the project objectives.



Proposed Improvements:



Cost Breakdown:

Assessments: \$ 0

Construction Cost: \$ 4,550,000

Consultant Fees: \$ 850,000

Internal Costs \$ 500,000

Total Estimated Project Cost: \$ 5,900,000

Schedule:

Advertise for bids: December 2023

Contract Award: February 2024

Contractor Purchasing and Submittals: Early Spring 2024

Construction Start: Late Spring 2024

Construction Completion: Summer 2025