



South Water Treatment Plant Pilot Study Results



September 21, 2026



Background:

- Water System Masterplan and Rate Study Completed in 2024
- First Project: New Well in North Well Field – Nearly Complete
- Second Project: Addition of Greensand Filtration at the South Water Treatment Plant to Address Manganese and Iron
- NDWEE requires pilot testing of proposed treatment process prior to start of final design



Pilot Study Project Procedure:

1. Identify filter media to be considered
2. Ship in pilot equipment to Plant and install
3. Operate the pilot equipment using raw water from the system
4. Change the flow rates to determine filter performance at different loading rates
5. Track filter run times
6. Test the effluent water twice daily
7. Document and analyze findings
8. Adjust as necessary

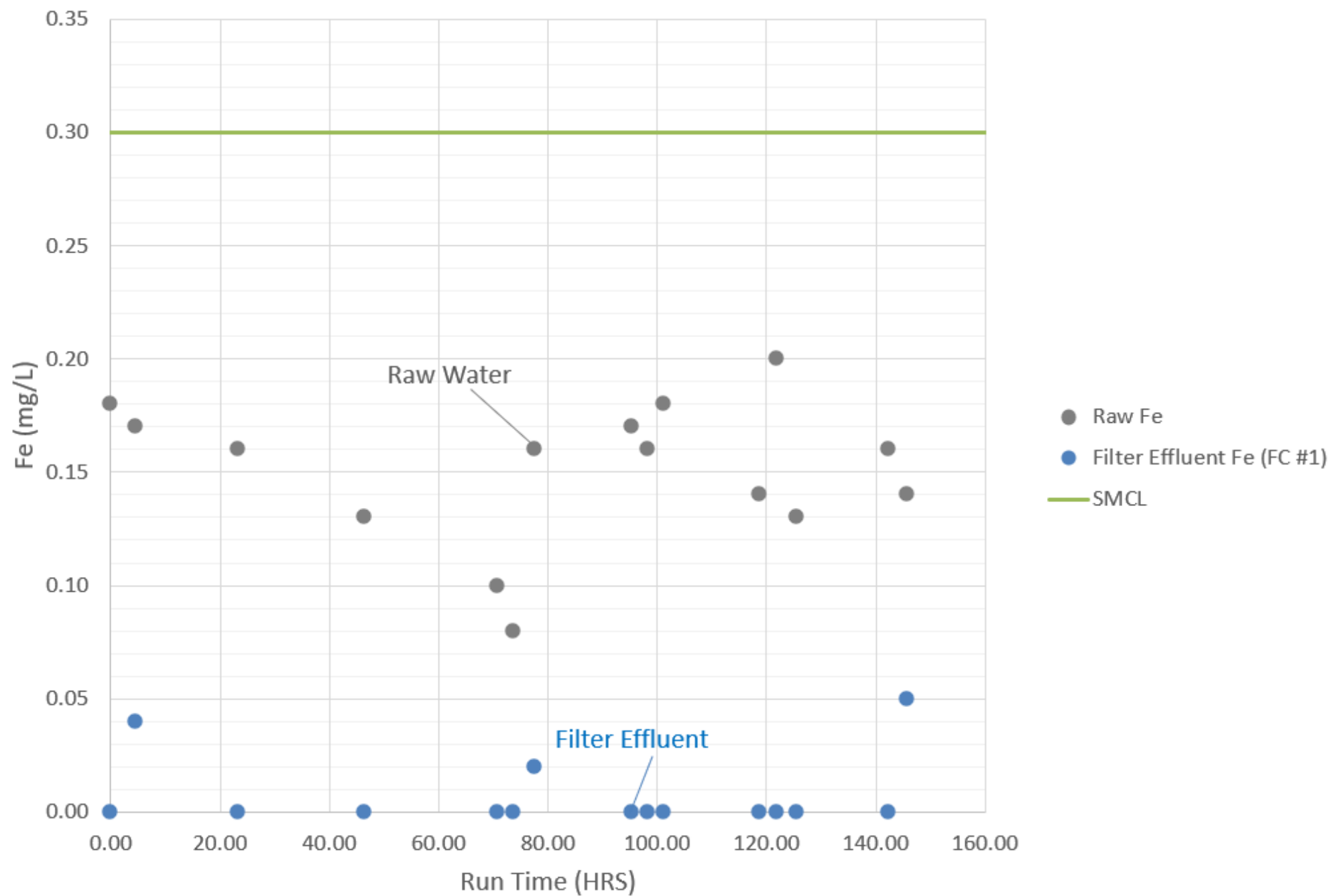




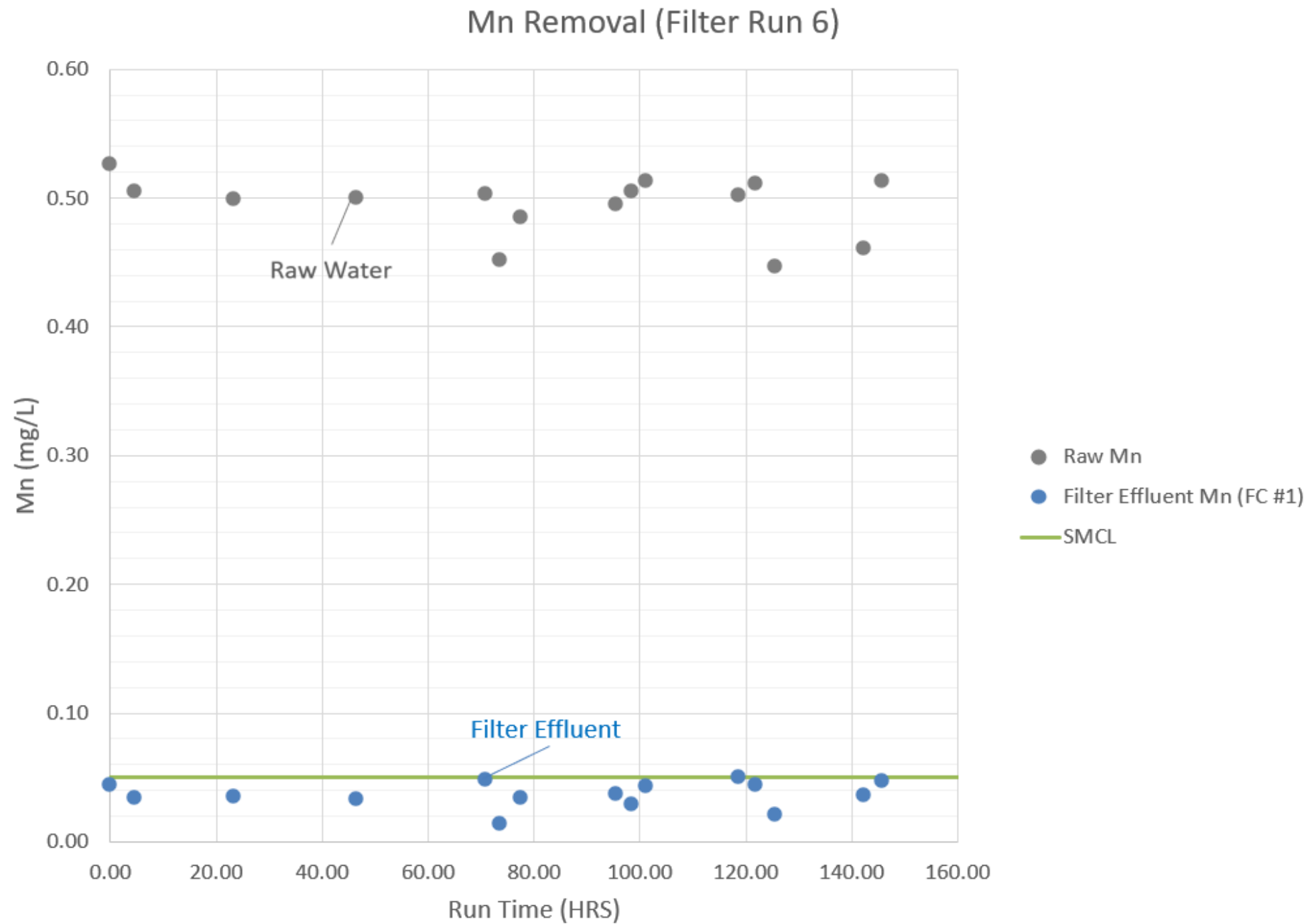


Results

Fe Removal (Filter Run 6)



Results



Pilot Study Findings:

1. Both Greensand and IMAX filter media were effective
2. Greensand was effective with a filter loading rate up to 6 gpm/SF
3. Sodium hypochlorite was effective as an oxidant
4. Potassium or sodium permanganate is not required

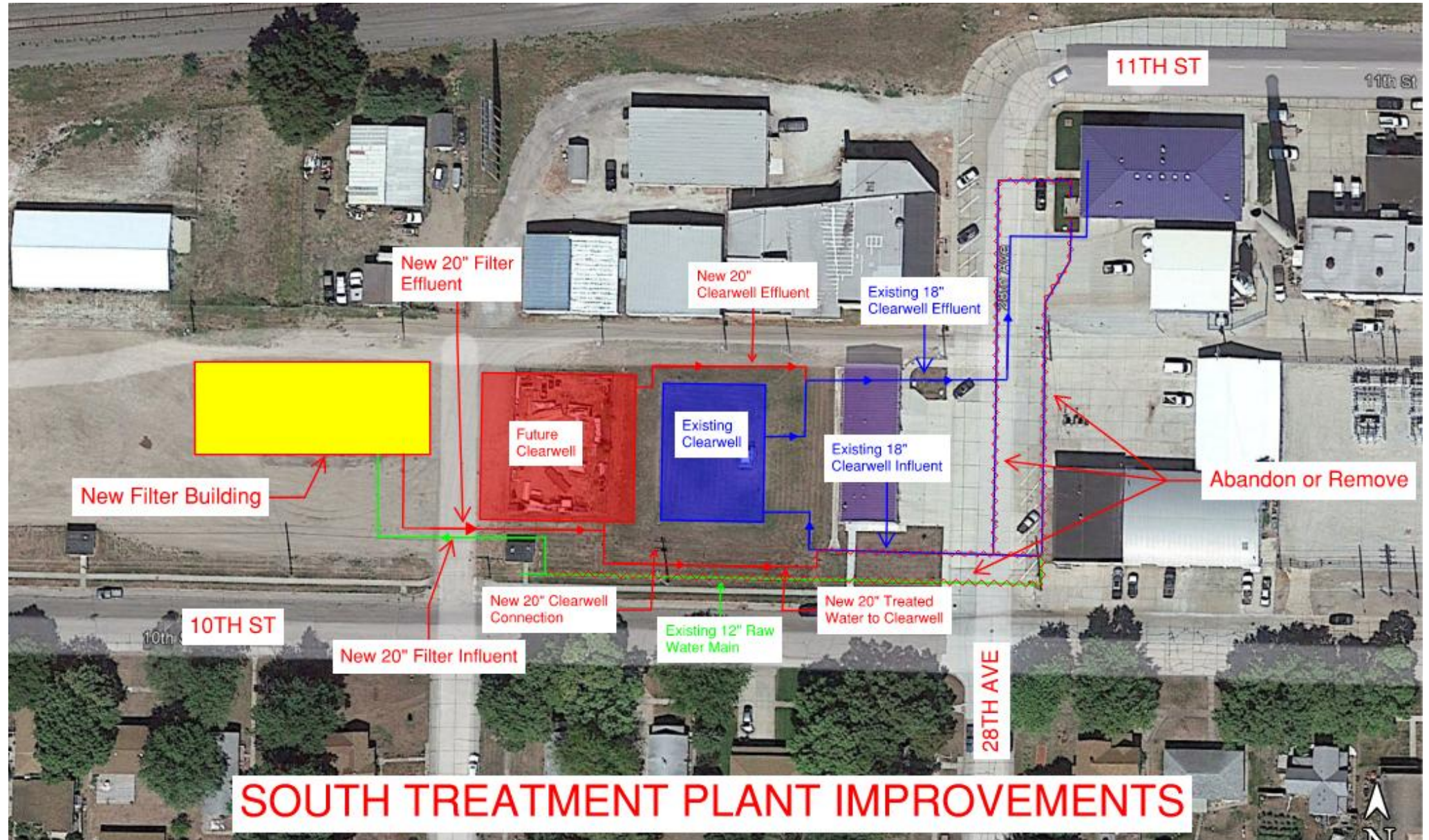


Recommendations:

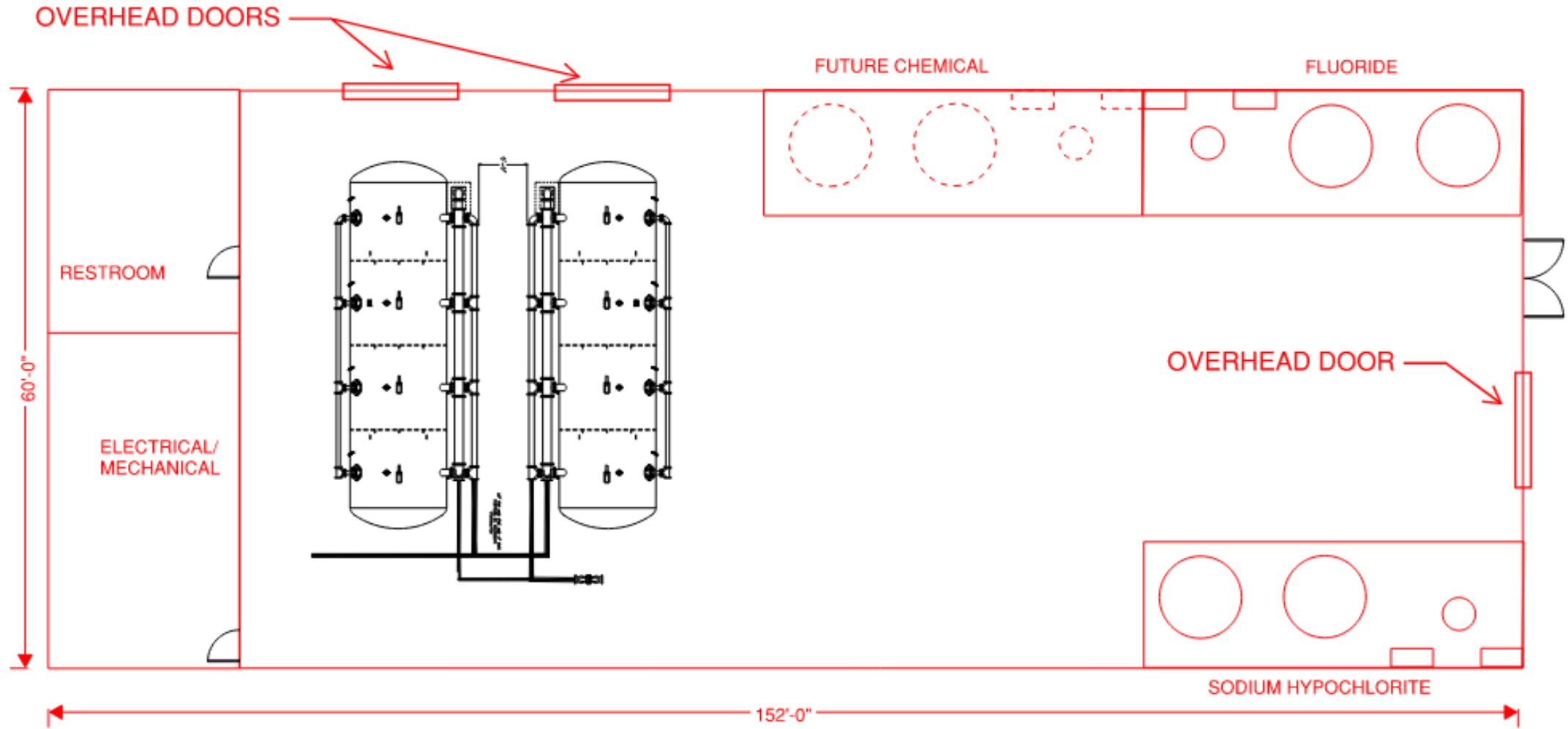
1. Proceed with design of South Treatment Plant improvements based on Greensand pressure filtration
2. Locate the new filters within a proposed building west of the clearwell on City owned property
3. Move the disinfection to the new building to streamline the treatment process
4. Re-pipe the raw water mains to the new building



Proposed Treatment Plant Improvements



Proposed Treatment Plant Improvements



Budget and Timeline:

2026 – 2027 Fiscal Year

- Design Phase Services: Budgeted Amount \$1,300,000
- Nebraska Department of Water, Energy and Environment Permit

2027 – 2028 and 2028 – 2029 Fiscal Years

- Proposed Construction and Startup
 - Estimated amount to be budgeted \$13,000,000
 - Costs are part of the 2024 Masterplan and Rate Study





Questions?

