



OFFICIAL NOTICE & AGENDA REGULAR MEETING

MEETING: Wausau Water Works Commission
DATE/TIME: Wednesday, August 12, 2026 at 11:30 AM
LOCATION: Wausau City Hall — Council Chambers
407 Grant Street, Wausau WI, 54403

MEMBERS:
Mayor Doug Diny (P) Deb Hadley
Micheal Martens Aaron Van Krey
Peter Gelhar

1 Consideration of the minutes of the preceding meeting(s).

July 14, 2026 Regular Wausau Water Works Commission Minutes.

2 Director's Reports.

- a. Drinking Water Division- Fluoride Reduction Due to Global Supply Disruptions.
- b. Drinking Water Division- 1st GAC Changeout Scheduled.
- c. Drinking Water Division- GAC Performance Update.
- d. Wastewater Division- Update on Headworks Screening and Cherry Street Lift Station Project.

3 Presentation.

- a. Presentation by CDM Smith- Wausau Water Works Corrosion Control Treatment Study.

4 Discussion and Possible Action.

- a. Approving PFAS Process Waste Tank and Chemical Room Project Proposal.

5 Adjournment.

**Next meeting scheduled for September 1, 2026 @ 11:30 AM.*

Mayor Doug Diny, President

NOTICE POSTED AT CITY HALL (407 GRANT STREET) AND
TRANSMITTED TO THE OFFICIALLY DESIGNATED NEWSPAPER

DATE: 08/05/2026

TIME: 12:10 PM

POSTED BY: Wausau Water Works



This meeting can be viewed on
YouTube and Channel 981 on Cable TV

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City of Wausau
(715) 261-6500 | clerk@wausauwi.gov
wausauwi.gov





OFFICIAL MINUTES REGULAR MEETING

MEETING: Wausau Water Works Commission
DATE/TIME: Tuesday, July 14, 2026 at 11:30 AM
LOCATION: Wausau City Hall — Council Chambers
407 Grant Street, Wausau WI, 54403

MEMBERS:
Mayor Doug Diny Deb Hadley
(P) Aaron Van Krey
Micheal Martens
Peter Gelhar

Members Present: Doug Diny, Deb Hadley, Peter Gelhar, Michael Martens, Aaron Van Krey

Members Not Present:

Members Excused:

Present 5, Not Present 0, Excused 0

Noting the presence of a quorum, the Chairperson called the meeting to order at 11:31 AM.

1 Consideration of the minutes of the preceding meeting(s).

June 2, 2026 Regular Wausau Water Works Commission Minutes.

Motion to Approve minutes of June 2, 2026 by Gelhar. Seconded by Hadley.

Motion carried 5-0.

2 Director's Reports.

Report Placed on File.

a. Drinking Water Division- Nitrification Investigation at Municipal Community Water Systems

Boers explained that the DNR is investigating nitrification, requiring ammonia testing in raw water due to issues seen in other municipalities and all drinking water providers will need to comply. Sampling all six wells will likely be required, and while testing protocols haven't been provided yet, it's simpler/cheaper to take samples rather than dispute the request. Past testing shows some wells exceed the 0.2 mg/L follow-up threshold, suggesting this may become a new ongoing monitoring protocol but DNR will follow up. Martens asked whether our treatment process removes nitrates. Boers clarified that nitrate levels are generally low, and ammonia is added to form chloramines for longer-lasting disinfection, a practice implemented under the regulated lead and copper rule in the 1990s. Diny noted this appears to be a statewide, catch-all requirement. No further questions/discussions, placed on file.

b. USEPA 6th Unregulated Contaminant Monitoring Rule (UCMR6).

Lindman explained that USEPA's UCMR provides early insight into potential future regulations and contaminants, helping guide planning and treatment designs. Updates are brought to the commission as they are released. In response to Hadley's question, Lindman noted PFAS checks have been reduced by USEPA, but the DNR continues to push for multiple tests. No further questions/discussions, placed on file.

c. Wastewater Division- Update on the Headworks Screening Project and Cherry St. Lift Station Project

Lindman reported the Headworks screening project remains on schedule for completion in November 2026. The Cherry St. Lift Station is fully operational, with final electrical, communications, and SCADA punch-list items underway. No further questions/discussions, placed on file.

3 Discussion and Possible Action.

a. Approving a mandatory Lead Service Line Replacement ordinance.

Lindman reported that a Committee of the Whole meeting on 7/13/26 reviewed future funding for Lead Service Line (LSL) replacements and the Mandatory LSL Ordinance. The ordinance, drafted with the Attorney's Office and previously amended by the City Council, needs reconsideration because funding rules prohibit partial replacements and additional challenges have also been outlined in past memos. There is currently no mechanism to ensure

compliance. EPA regulations require full lead removal by 2037, and non-compliance could result in yet-unknown charges, fines, or restrictions. After extensive discussion, Hadley motioned to remove the first paragraph and retain the second and third paragraphs on page 47 under Section 9.13.66.080 (Financing of replacement). Gelhar seconded. Motion carried 5-0. The revised language will be sent back to the City Council for consideration.

4 Discussion.

a. Discussion on selecting an August 2026 meeting date.

After discussion, Commission meeting will be Wednesday, August 12, 2026 at 11:30 AM.

5 Adjournment.

Motion to adjourn by Van Krey. Seconded by Martens. Motion carried 5-0. Meeting adjourned at 12:04 PM.

**The recording of this meeting may be viewed on
YouTube [@CityofWausauMeetings](#)**



City of Wausau
(715) 261-6500 | clerk@wausauwi.gov
wausauwi.gov





To: Wausau Water Works Commission

From: Scott Boers, Water Operations Superintendent

Date: August 12, 2026

Subject: Fluoride Reduction

All,

Due to global supply disruptions, we have reduced the level of Fluoride we are adding to the finished water. Typical levels for water in the distribution system range from 0.6 mg/l to 0.8 mg/l with a target of 0.7. For the time being the target will be 0.35 mg/l. Depending on future availability, we may possibly be forced to discontinue fluoride addition to our water supply.

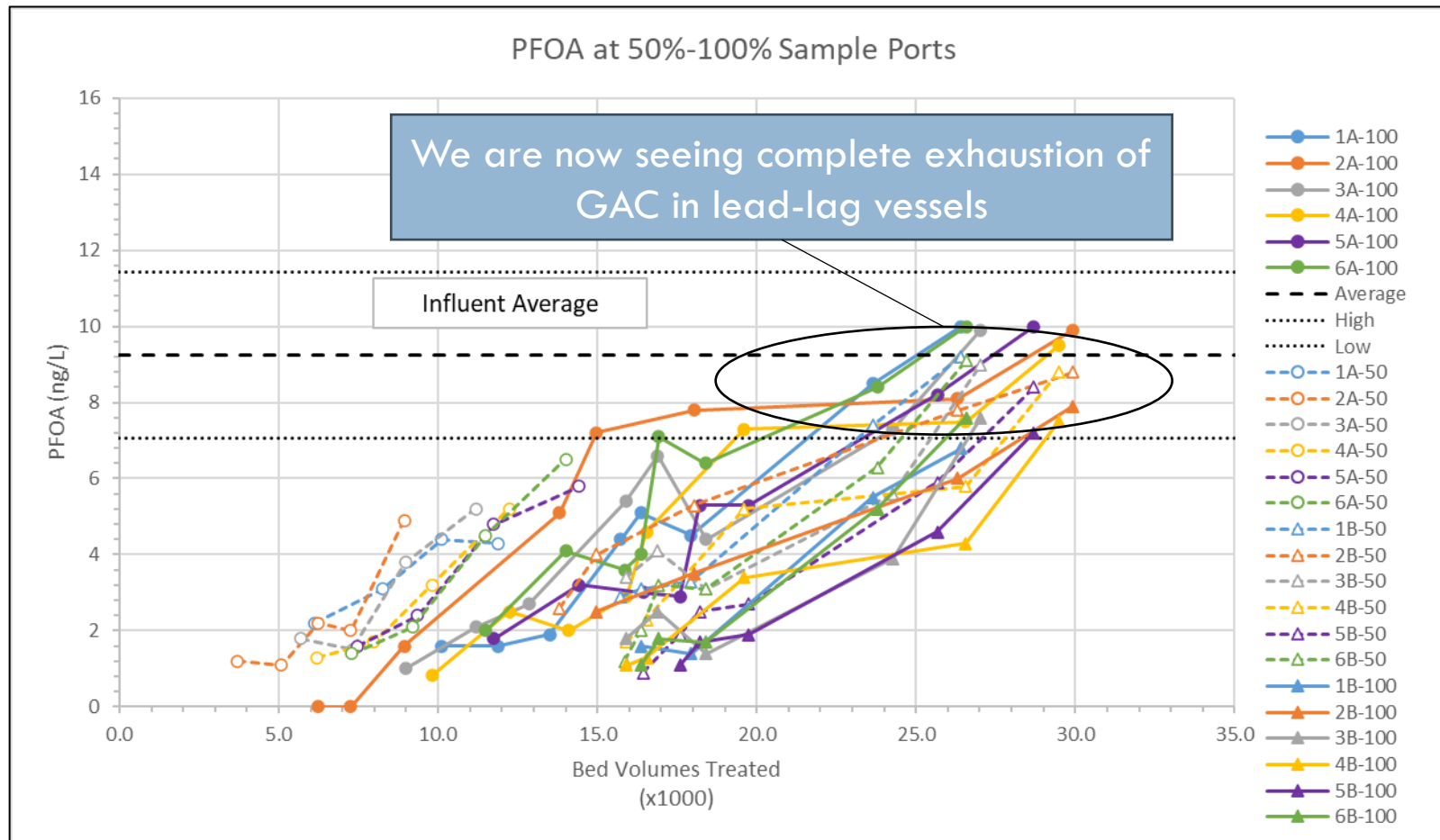


City of Wausau

Granular Activated Carbon PFAS Treatment Update

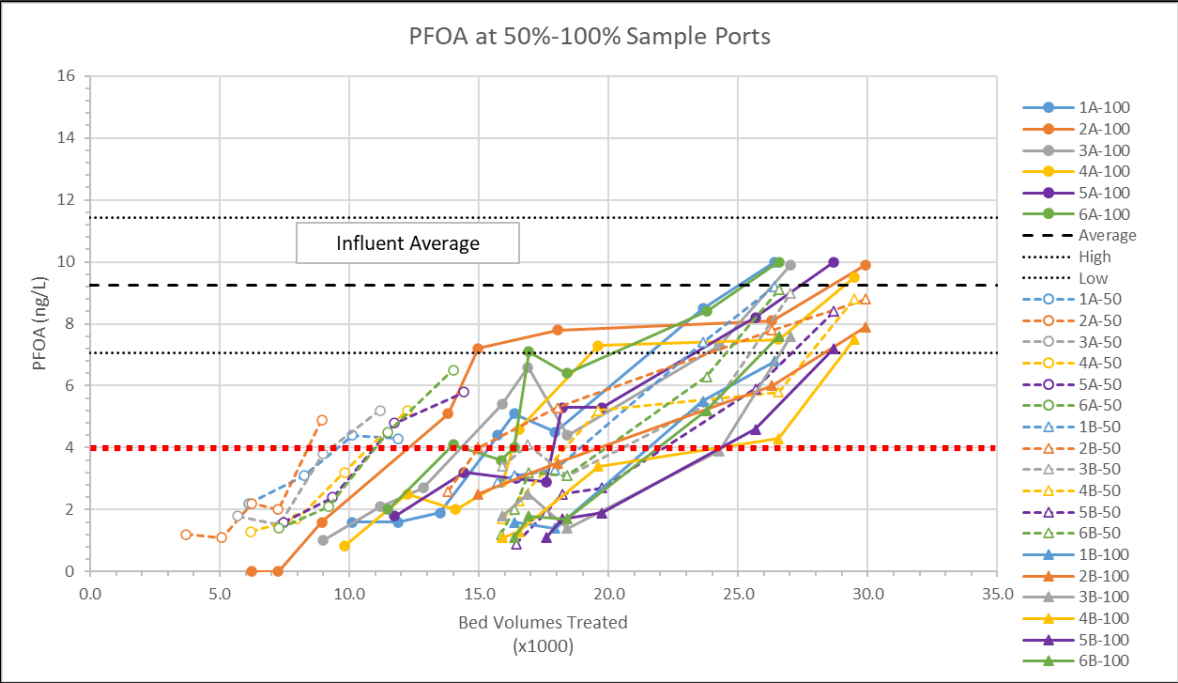
Updated Results

- We plot bed volumes (BV) treated (rather than time) vs. PFOA concentration at each sample point to provide an equal basis of comparison between systems 1-6.



Results

- If we are to define breakthrough as time at which PFOA = 4 ppt



Parameter	Units	A-50	A-100	B-50	B-100
Median Bed Volume at Breakthrough, per Vessel	BV (x1000)	10.2	15.0	18.6	23.1
Median Vol. Treated at Breakthrough, per Vessel	Mgal	106.0	156.1	194.2	241.3

Lead Vessel Lag Vessel

- In the virgin GAC (lead vessel), 15k BV to breakthrough
- Vs lag vessel, which took only ~8k BV to breakthrough after breakthrough of lead vessel
- There is a difference in performance between virgin GAC and pre-loaded GAC that will affect long-term changeout frequency

GAC Use Rate and Predicted Changeout Frequency

- Virgin GAC Use Rate
 - 307 lbs of GAC for every Mgal of treated water
- Pre-Loaded GAC Use Rate
 - 562 lb-GAC/Mgal-water
- The above use rates are consistent with literature estimates of GAC use rates
- Replacement frequency of pre-loaded GAC approximately double that of virgin GAC

2.5 | Determination of GAC Use Rates

The GAC use rate describes how frequently GAC must be replaced (Adams and Clark 1989) and is expressed as the mass of fresh GAC (m_{GAC}) required per volume of water treated (V_{H2O}) to a specific breakthrough criterion (Equation 3). The volume of water treated at the breakthrough target is the product of the GAC bed volume (V_{bed}) and the number of bed volumes of water treated (BV).

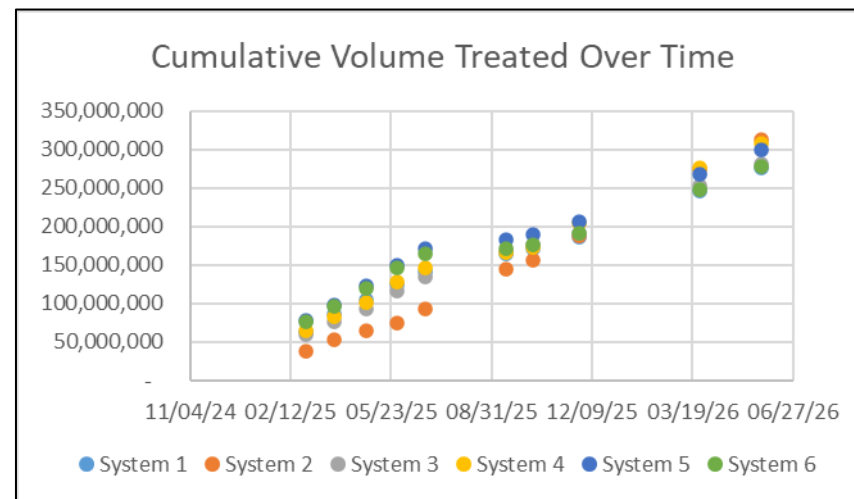
$$GAC\ use\ rate = \frac{m_{GAC}}{V_{H2O}} = \frac{\rho_{bed}}{BV} \tag{3}$$

Source: Tang, T., Knappe, D.R.U., and P. Meng, AWWA Water Science, 8:e70053 2026.

Parameter	Units	Recent historical avg.	GAC system design avg.
		@ 3.7 MGD	@ 4.8 MGD
Replacement frequency, Virgin GAC	days	253	195
Replacement frequency, Pre-loaded GAC	days	138	106

Note on GAC vessel operations

- System 2 breakthrough occurred significantly earlier than other systems but received much lower flows than other systems. Early breakthrough might have occurred due to channeling, which can occur below a threshold loading rate of ~ 2 gpm/sf, or as recommended by the GAC supplier.
- Try to have minimum flow through each system/vessel of 233 gpm. If total treated flow drops below 1400 gpm (2 MGD), it is advised to close off one system and utilize 5 systems rather than 6. Operators should rotate the system that is offline at a prescribed frequency as recommended by the GAC supplier.





Wausau Water Works
Ben Brooks, Wastewater Superintendent

DATE: August 12, 2026
TO: Wausau Water Works Commission
SUBJECT: Wastewater Division- Update on Headworks Screening and Cherry Street Lift Station Project.

PURPOSE

Updates for the Headworks Screening and Cherry Street Lift Station Projects

BACKGROUND

Headworks Screening Project Update:

- Ahern & Subcontractors mobilized on site: 06/16/2025
- Substantial Completion Date: 10/15/2026
- Final Completion Date: 11/15/2026
- Painters and floor coating subcontractors to return in early September to finish work.
- New HydroDyne step screens have been working well.

Cherry St. Lift Station Project Update:

- Integrity mobilized on site: 09/08/2025
- Substantial Completion Date: 01/31/2026 (new lift station operating with demo work completed)
- Final Completion Date: 05/15/2026 (all work complete, with grass actively growing)
- One punch list item remains. Once this item has been completed, a final payment request from Integrity is expected to follow.

RECOMMENDATION



Wausau Water Works Corrosion Control Treatment Study



A. Atassi J. Locsin S. Heffner J. Cummings S. Wothke

August 12, 2026





Agenda

1. Introductions and Agenda
2. Project Background and Objectives
3. Review of Water Quality and Compliance
4. Evaluation of Orthophosphate Treatment for Lead and Copper Corrosion Control
5. Summary of CCT Study
6. WDNR Requirements
7. CDM Smith Recommendations

Project background and objectives

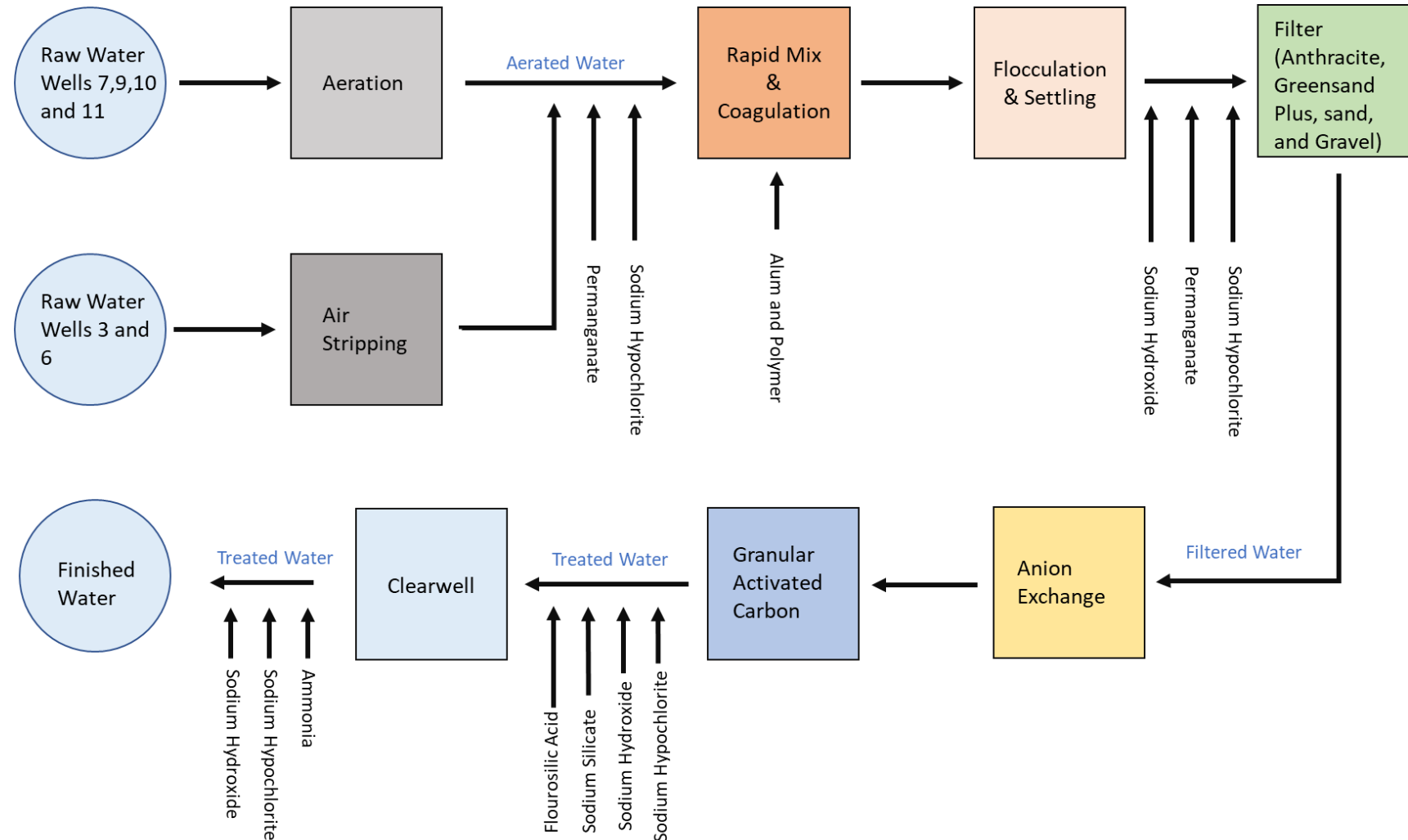
- Wausau Water Works (WWW) transitioned to a new water treatment plant (WTP) on December 20th, 2022

- Key service line materials include:

- Lead
- Copper installed before the lead ban

- Key considerations:

- Galvanic corrosion
- Stricter regulations



Lead and Copper Rule Improvements (LCRI, November 2027)

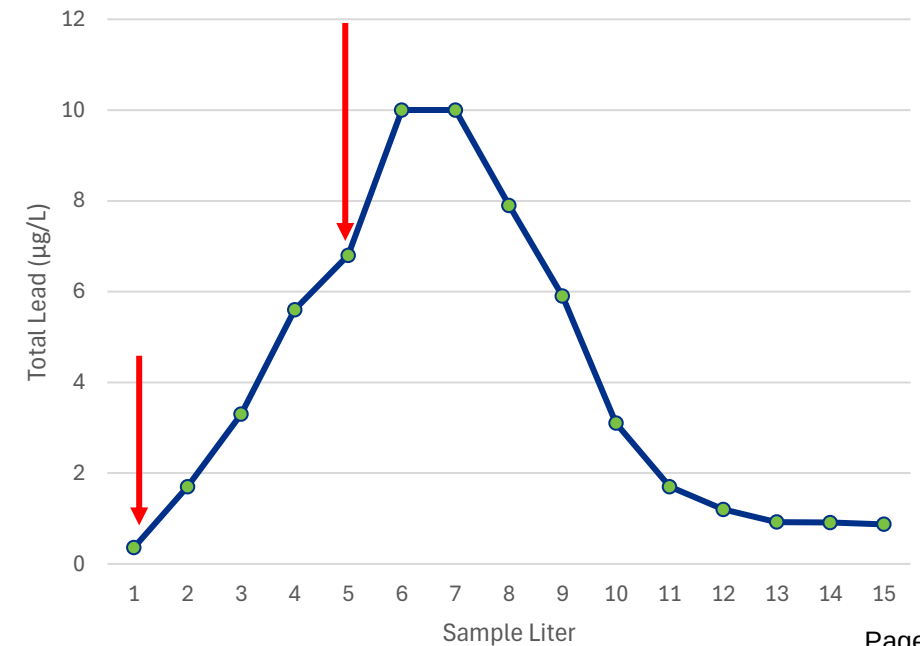
■ Lower Lead Action Level

- Reduced from 15 µg/L → 10 µg/L
- More systems expected to exceed the action level
- Greater emphasis on corrosion control optimization

1st round sampling in
January to June 2028

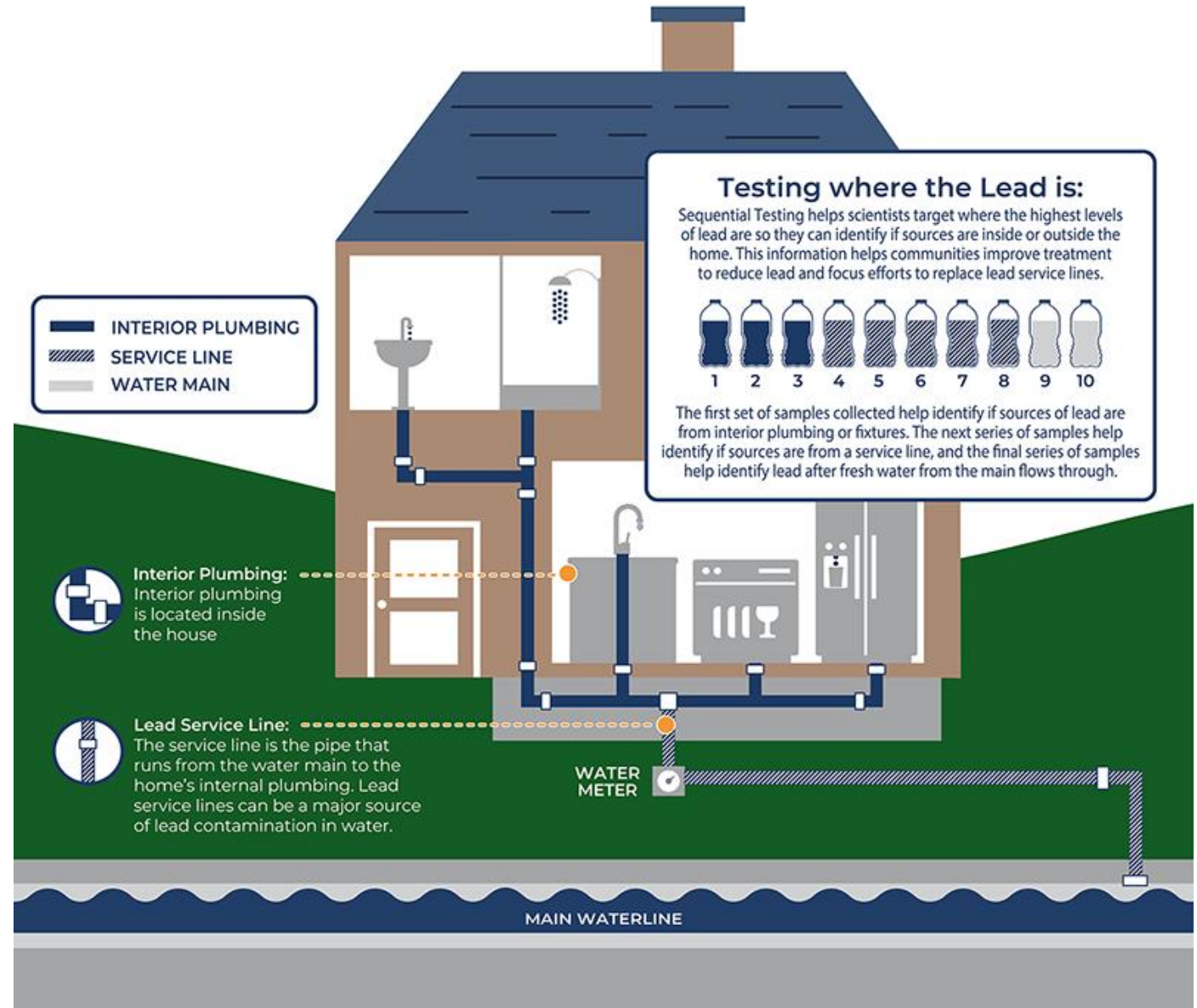
■ More Representative Sampling

- Systems with LSLs must sample from LSLs
- Fifth-liter sampling targets lead service lines
- Higher measured lead concentrations are anticipated



Why Sampling Changed

- 1st L mostly represents:
 - Household plumbing
 - Faucets
 - Fixtures
- 5th L better represents:
 - Water sitting within the service line
 - Worst-case exposure



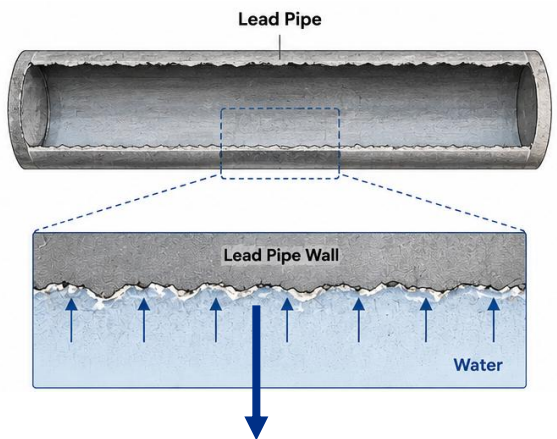


Potential Challenges

- Higher lead concentrations measured using 5th-liter sampling at LSL sites
- Exceedance will trigger:
 - Treatment optimization
 - Corrosion control optimization studies with flow-through pipe loops (e.g., orthophosphate treatment)
 - LSL replacement
 - Increased public communications
 - Tier 1 public notification within 24-hrs of exceedance
 - Other requirements specified by WDNR

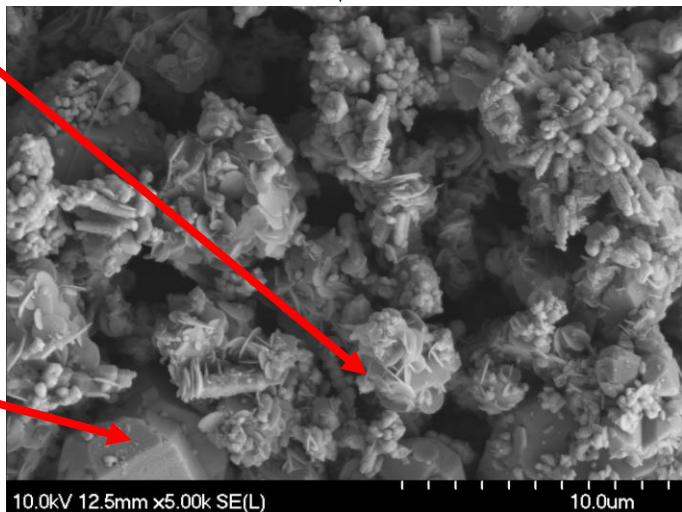
Lead and Copper Corrosion

UNIFORM CORROSION



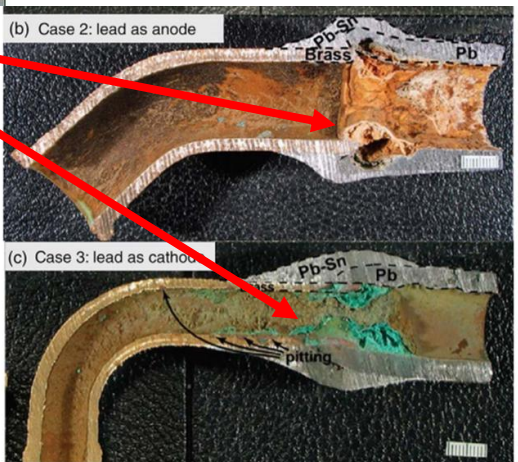
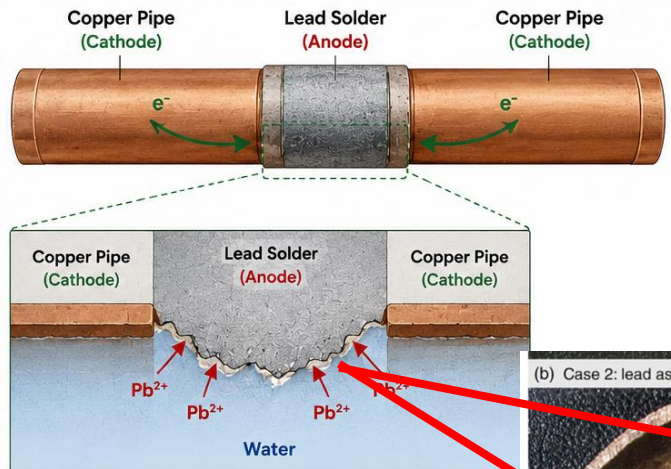
Hydrocerussite

Cerussite



From Locsin, 2022

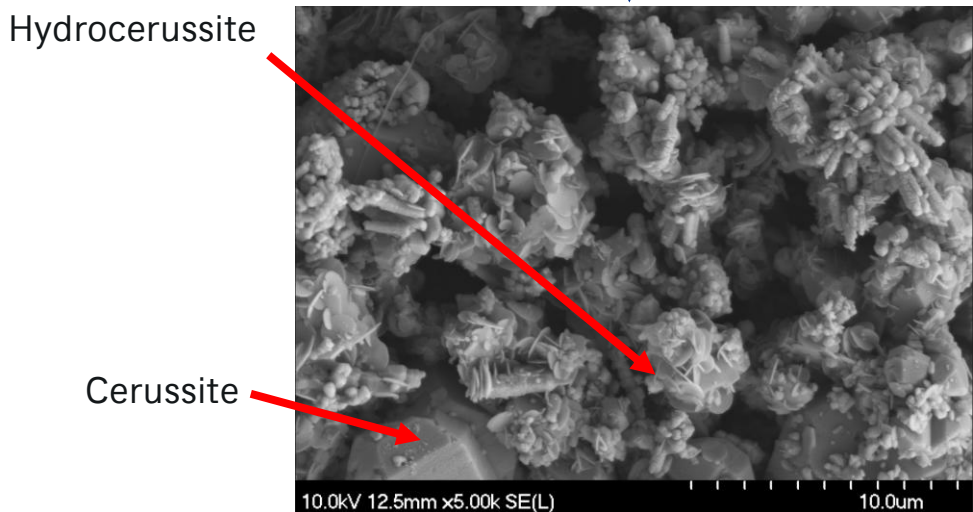
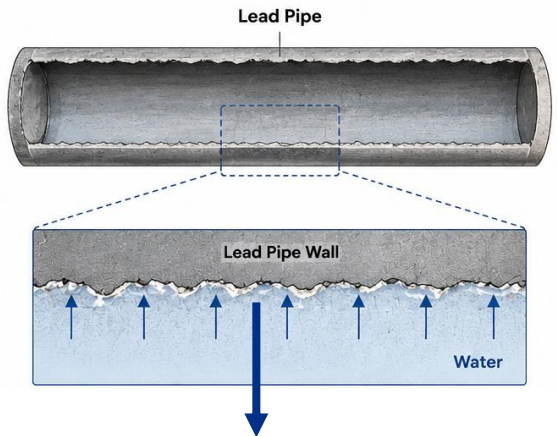
GALVANIC CORROSION



From DeSantis et al., 2018

Lead and Copper Corrosion

UNIFORM CORROSION

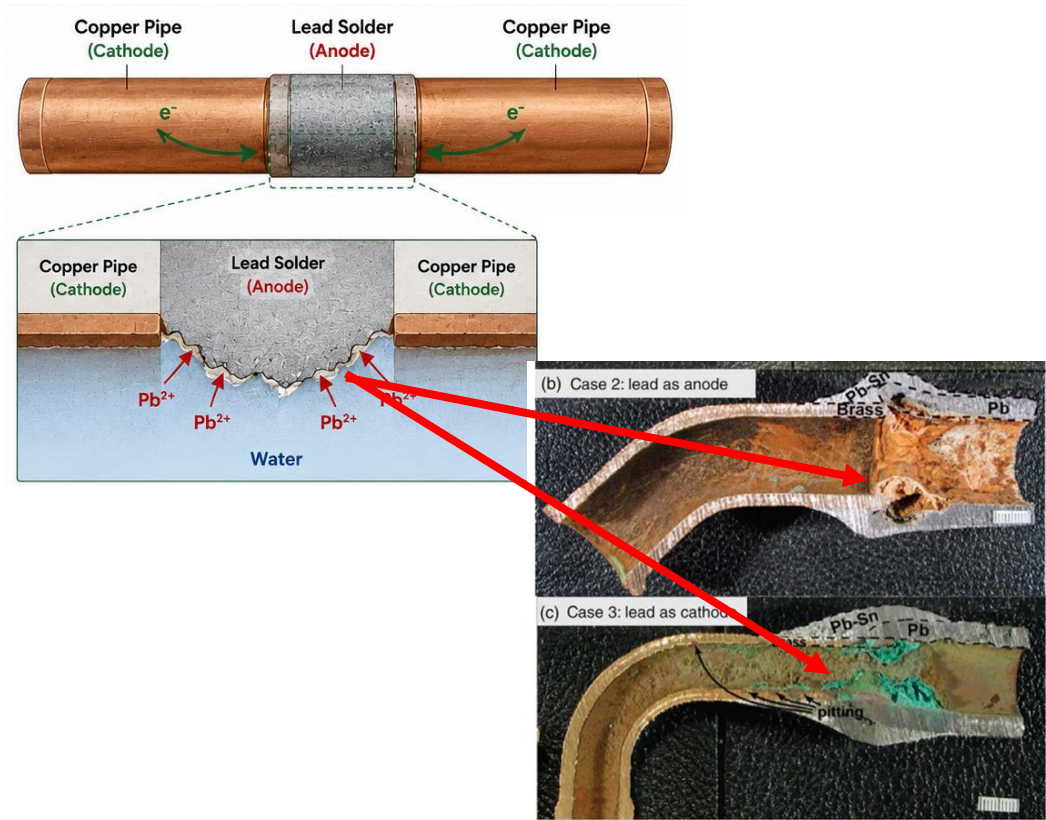


From Locsin, 2022

Parameter	Lead	Copper
pH	↓pH = ↑ corrosion	↑ pH = ↑ corrosion
Alkalinity	↑Alkalinity = ↓corrosion	↑Alkalinity = ↑corrosion
Orthophosphate	↑orthophosphate = ↓corrosion	↑orthophosphate = ↓corrosion

Lead and Copper Corrosion

GALVANIC CORROSION

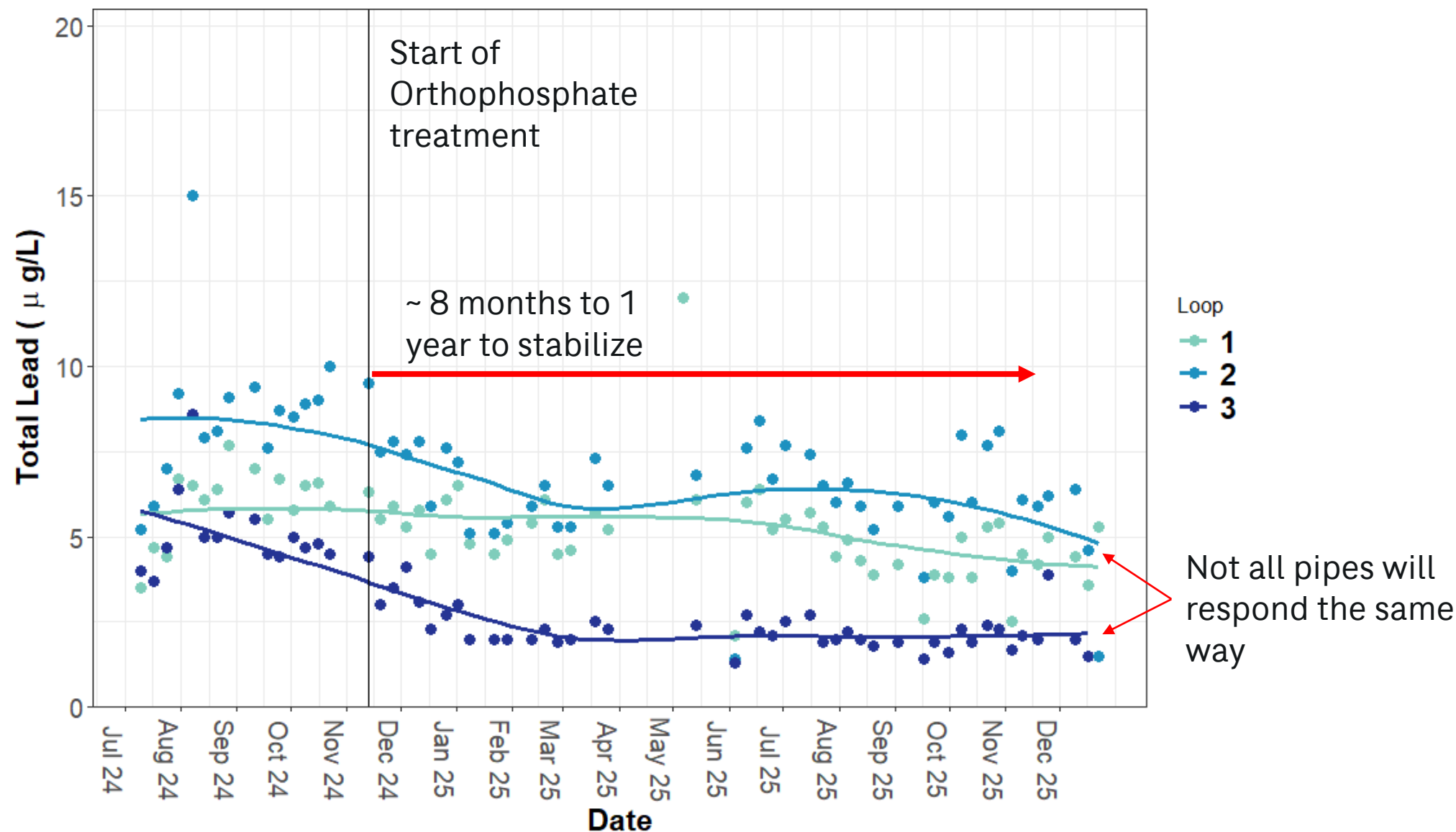


From DeSantis et al., 2018

Parameter	Lead	Copper
Orthophosphate	↑ orthophosphate = ↓ corrosion	↑ orthophosphate = ↓ corrosion
Chloride	↑ Chloride = ↑ corrosion	↑ Chloride = ↑ corrosion
Chloride-to-sulfate Mass Ratio	↑ CSMR = ↑ corrosion	↑ CSMR = ↑ corrosion

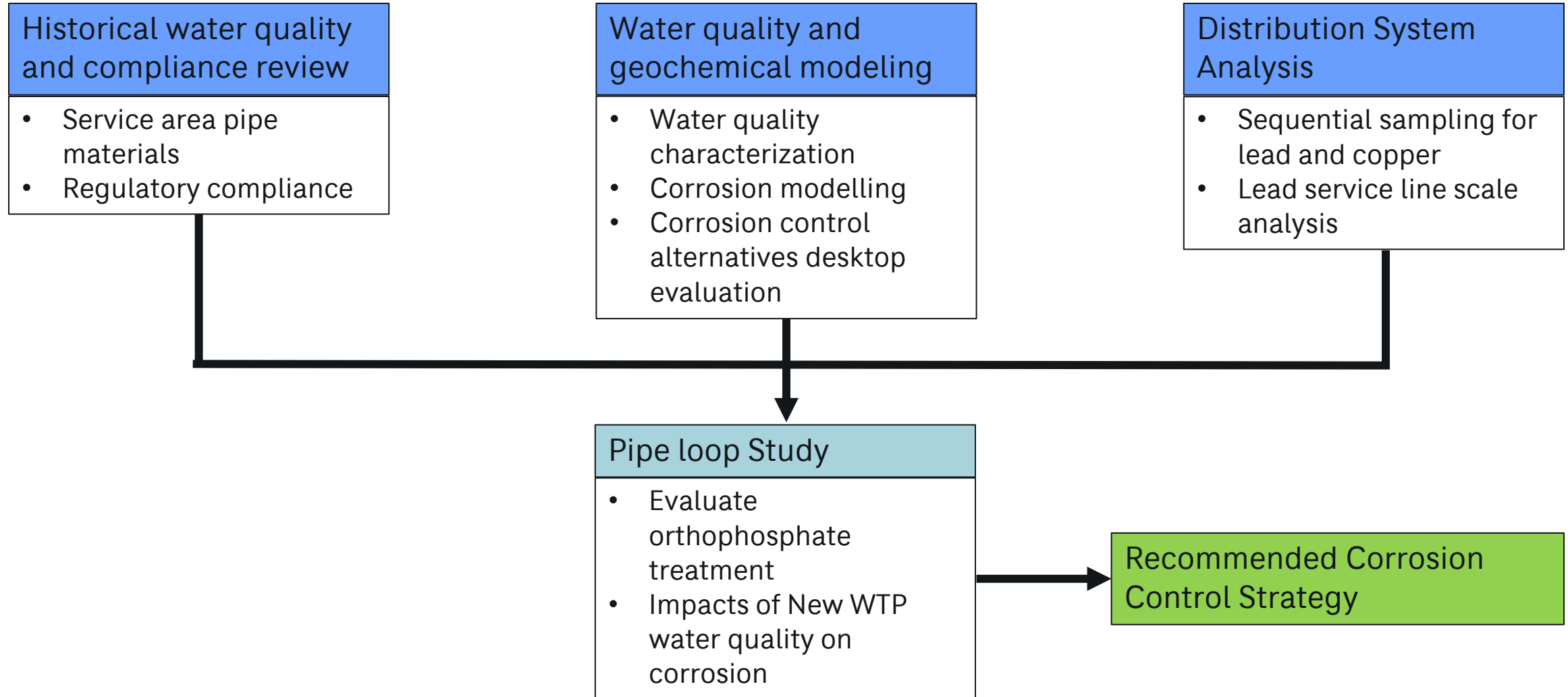
Reference:
DeSantis, Michael K., Simoni Triantafyllidou, Michael R. Schock, and Darren A. Lytle. (2018). Mineralogical evidence of galvanic corrosion in drinking water lead pipe joints. *Environmental science & technology* 52 (6), 3365–3374

Building protection with orthophosphate takes time



Note: Time series of pipe loop with orthophosphate treatment

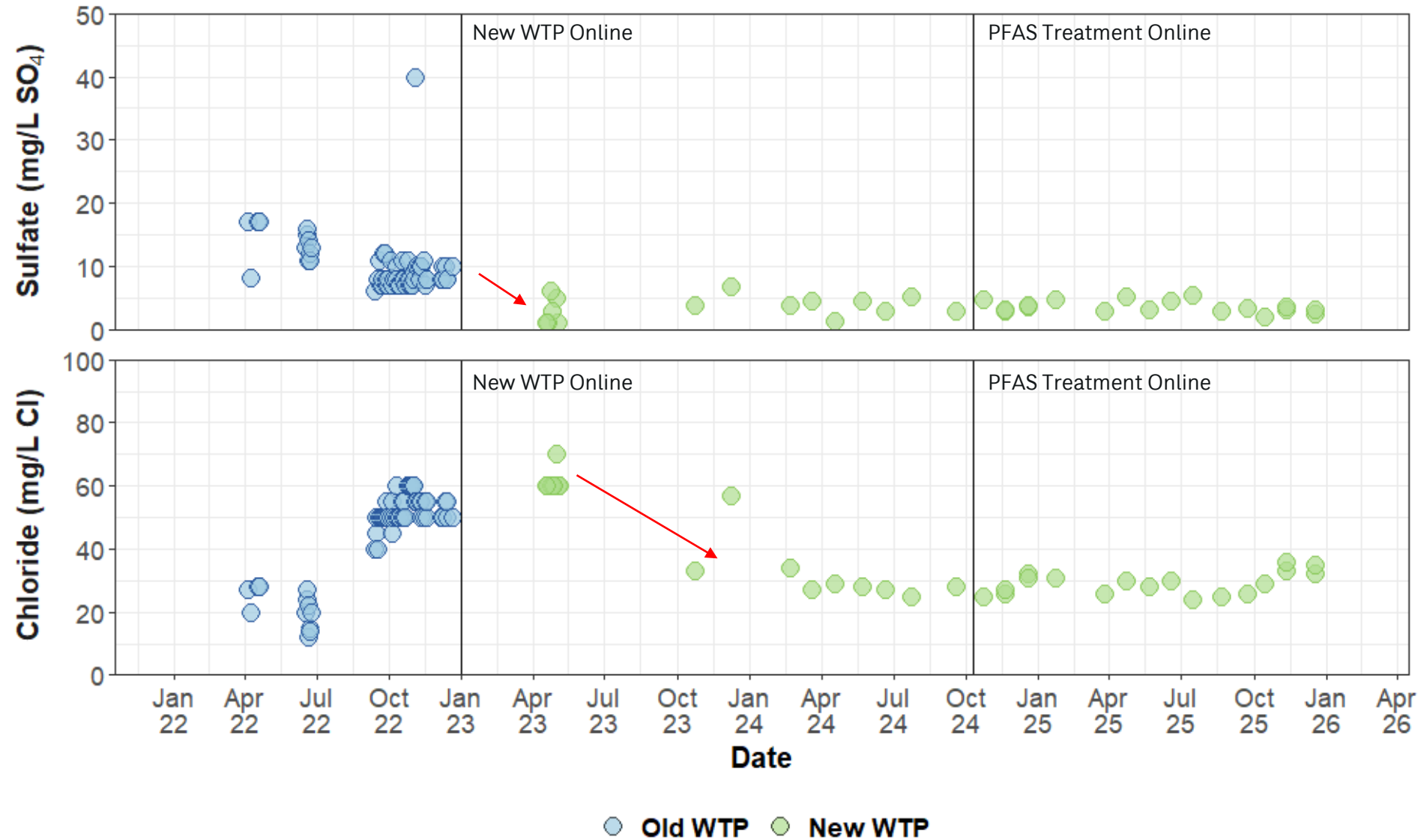
Multi-faceted approach for evaluating corrosion control treatment (CCT)



Aside from Chloride and Sulfate, similar water quality between Old and New WTP

Parameter	Old WTP	New WTP
pH (S.U.)	8.7 (8.5-8.9)	8.5 (8.0-8.8)
Alkalinity (mg/L as CaCO ₃)	84 (70-100)	86 (10-100)
Hardness (mg/L as CaCO ₃)	88 (78-102)	82 (64-99)
Calcium (mg/L as Ca)	24 (21-26)	15 (14-21)
Magnesium (mg/L as Mg)	4.8 (4.5-5.1)	5.3 (5.2-7.1)
Chloride (mg/L as Cl)	50 (23-60)	31 (26-60)
Sulfate (mg/L as SO ₄)	8.0 (7.0-14)	3.4 (1.0-5.1)

Chloride and Sulfate decreased with New WTP



The New WTP did not significantly change lead mineral scales in harvested LSLs

- Lead minerals:

- Cerussite
- Hydrocerussite

- Other minerals:

- Calcite
- Calcium-lead-phosphate

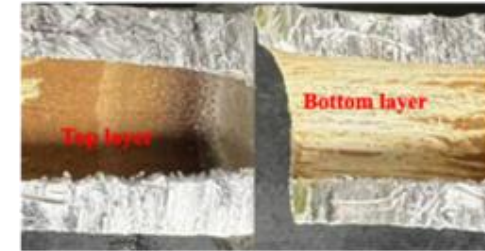
- Amorphous layers:

- Aluminum
- Manganese
- Phosphorus
- Silica
- Zinc

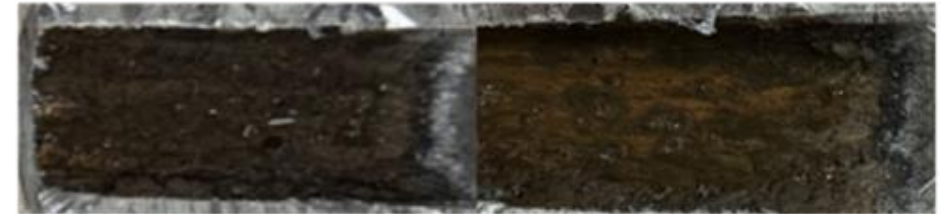
Pipe 1221
(2022)

Top Layer

Bottom Layer



Pipe 1316
(2024)



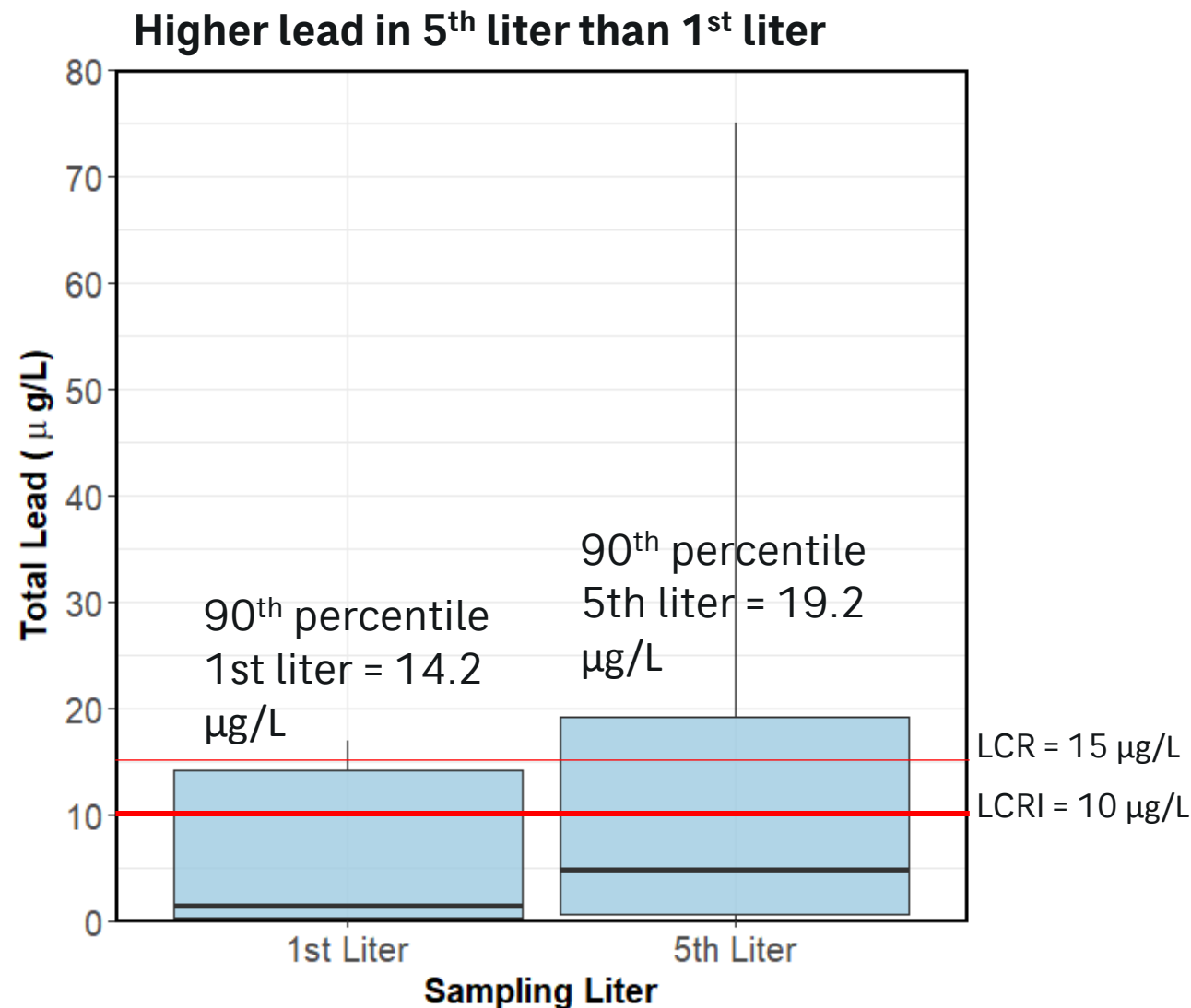
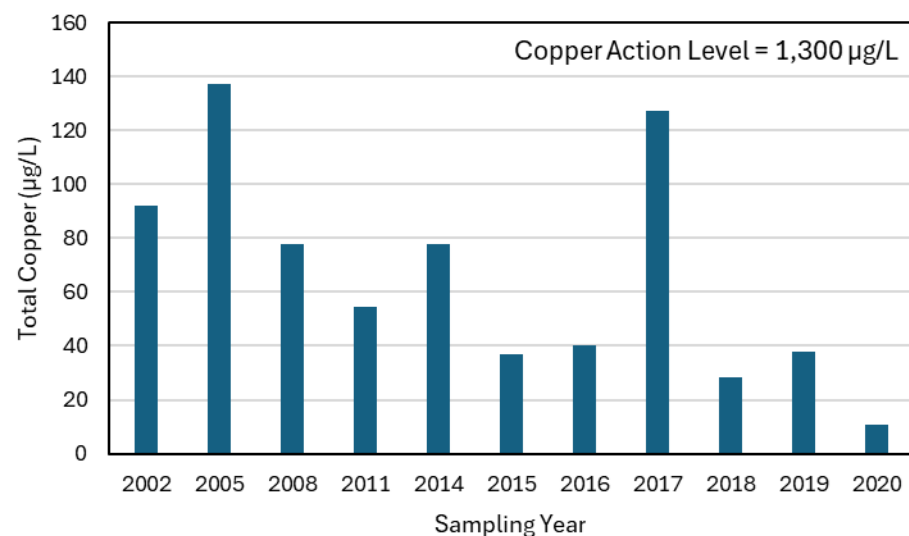
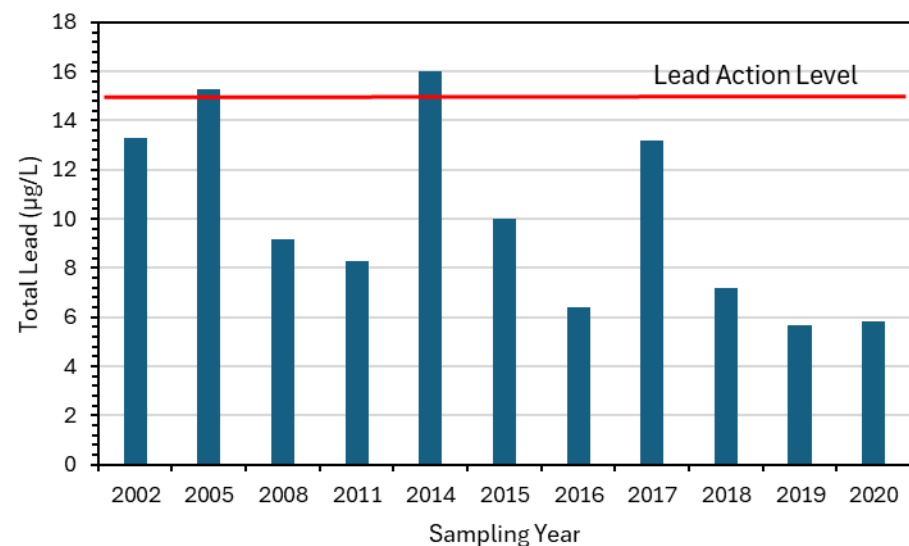
Pipe 3025
(2024)



Pipe 105
(2025)

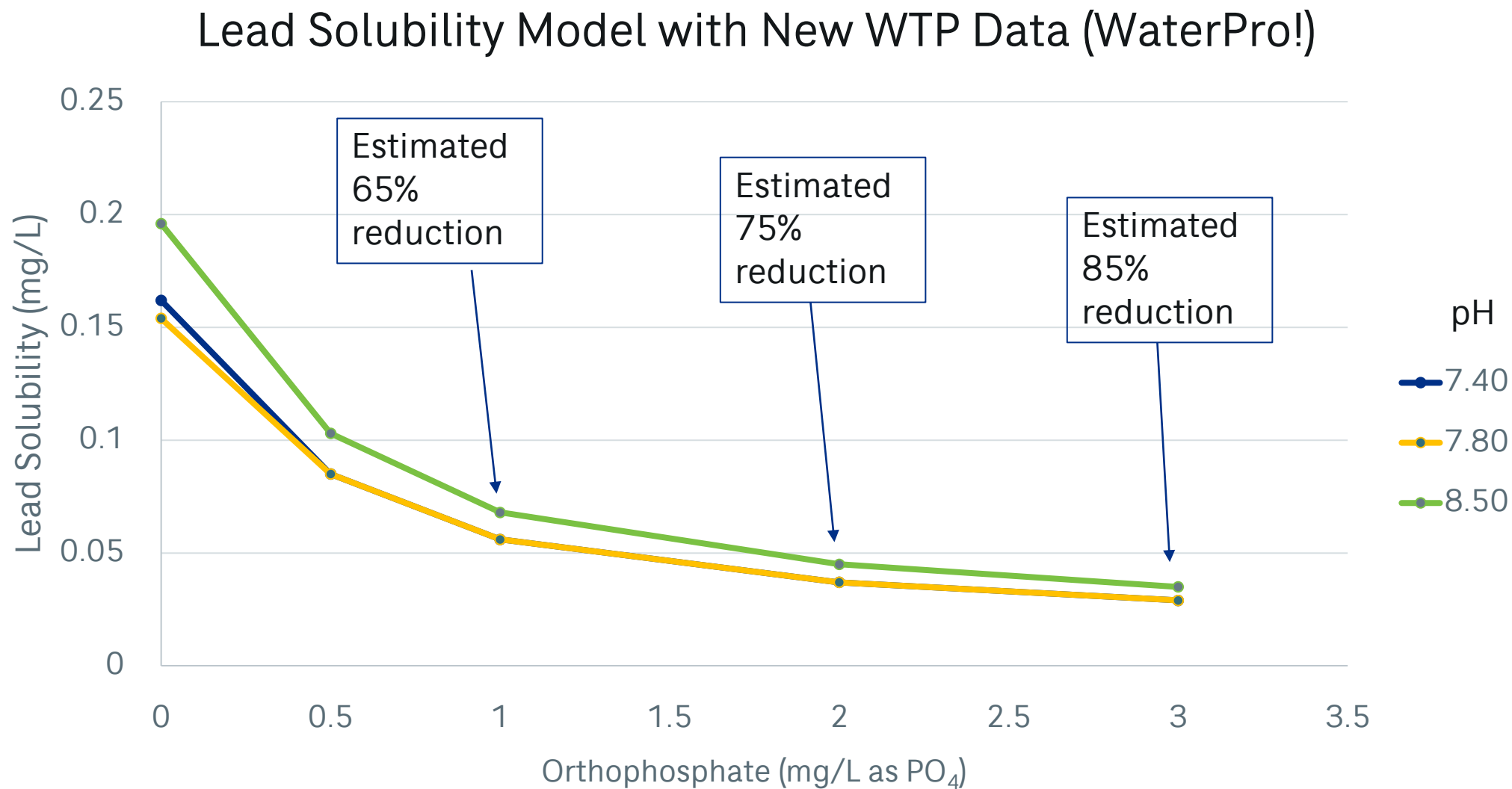


Sequential sampling: Potential impacts of LCRI on compliance



NOTE: From 10 samples collected in 2022 and 2024

Moderate orthophosphate may improve lead corrosion control

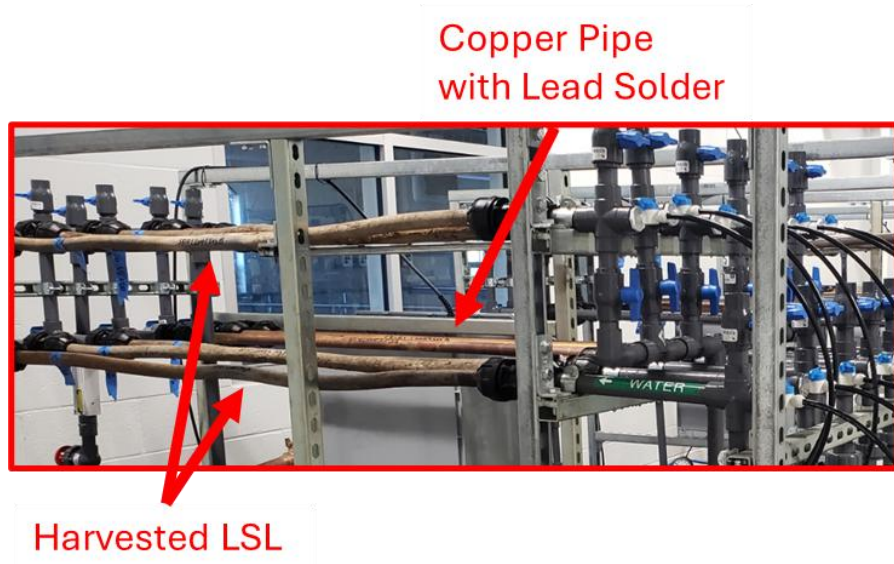




Key considerations for orthophosphate treatment

- Forms low-solubility lead phosphate, reducing dissolved lead.
- More effective for lead than copper.
- Maintain adequate orthophosphate residual and water quality throughout the distribution system.
- Full effectiveness may take months to over a year; higher doses yield diminishing returns.
- Excess dosing can release particulate lead and increase wastewater phosphorus loading.
- Need to monitor for biological growth and water quality

Pipe loop study configuration



Test Conditions

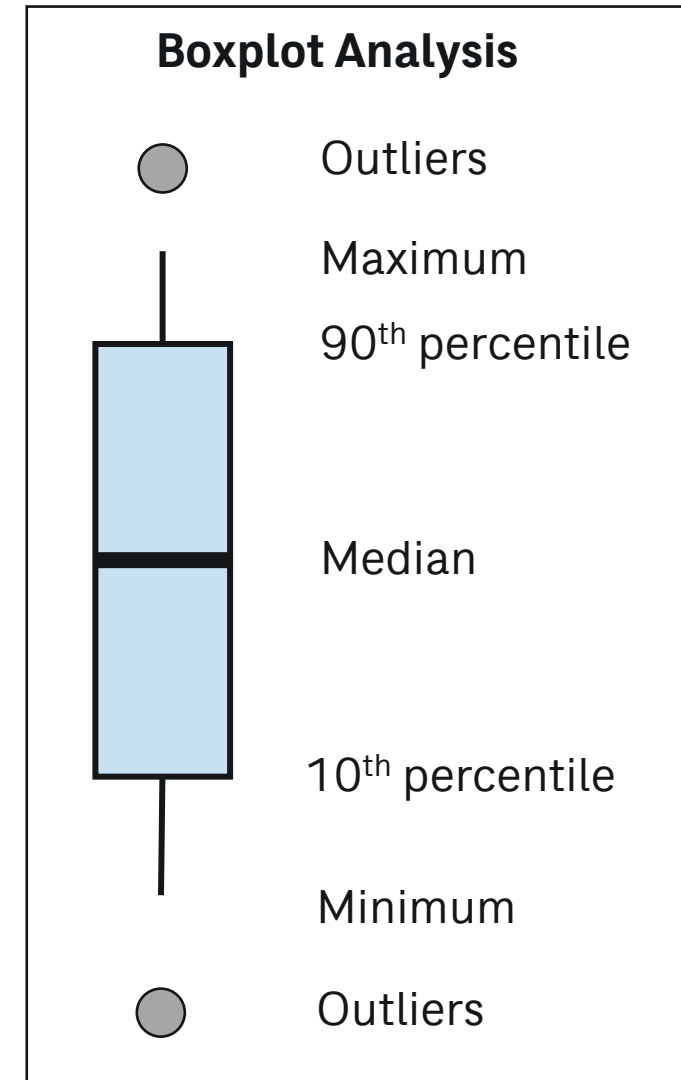
WTP Finished Water

1.0 mg/L PO_4

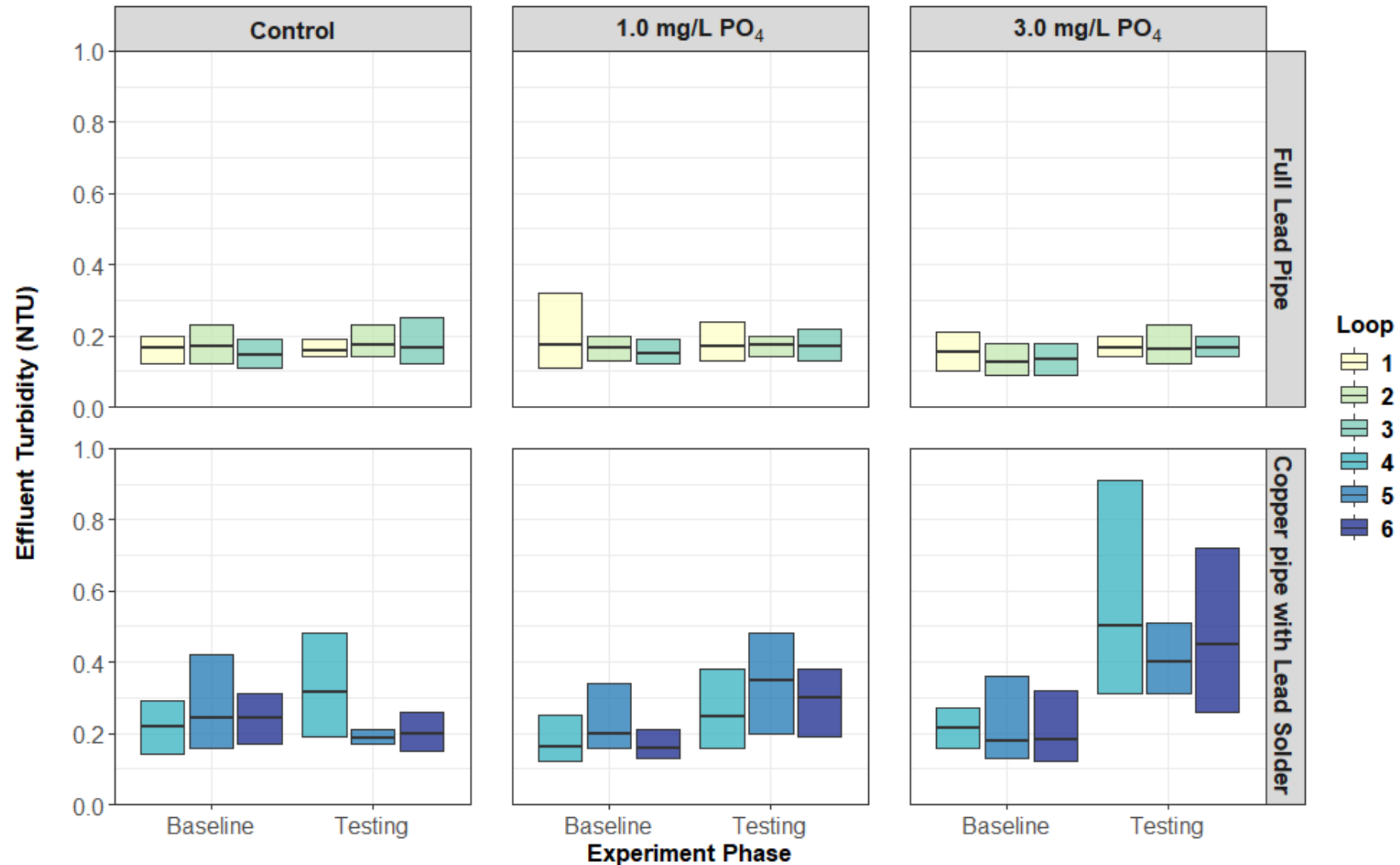
3.0 mg/L PO_4

Pipe loop study: Key sample parameters

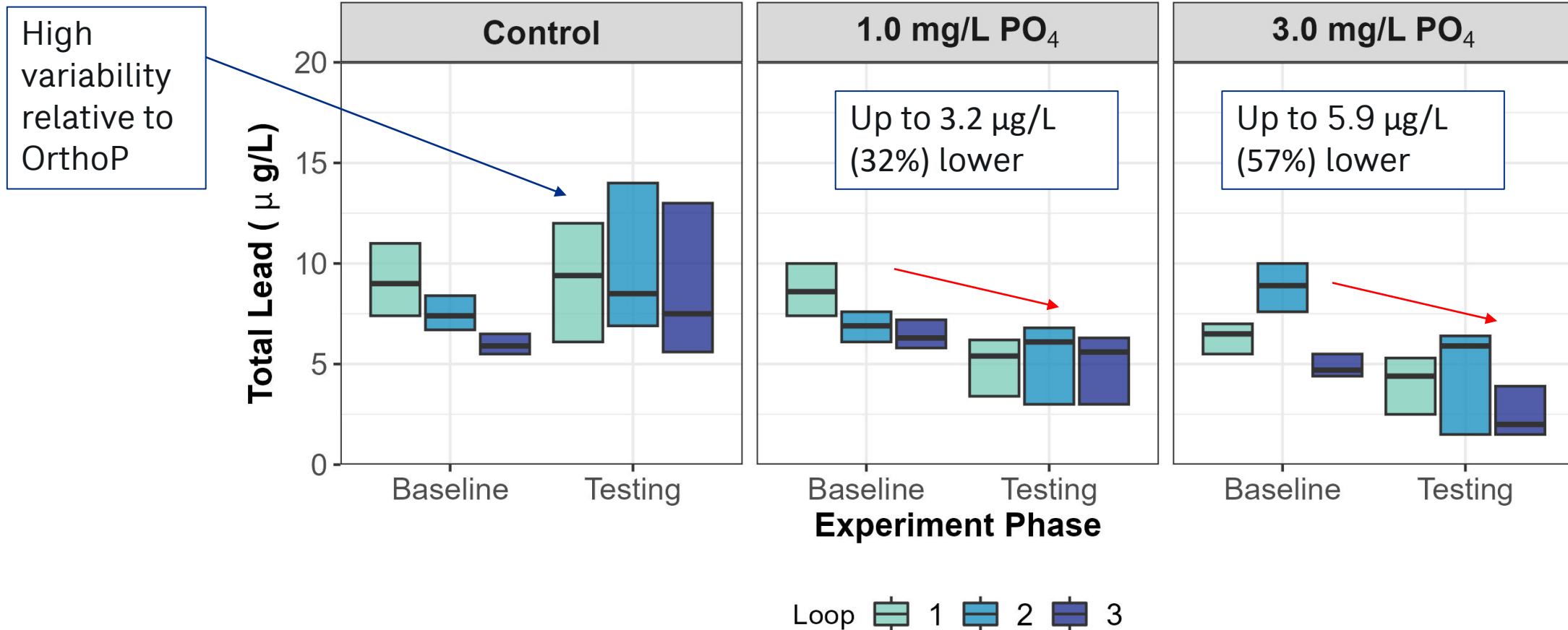
- pH
- Alkalinity
- Chloride
- Sulfate
- Lead release
- Copper release
- Turbidity
- Orthophosphate (corrosion control)
- Total chlorine (disinfectant)



OrthoP did not appear to impact turbidity EXCEPT in copper pipes with lead solder

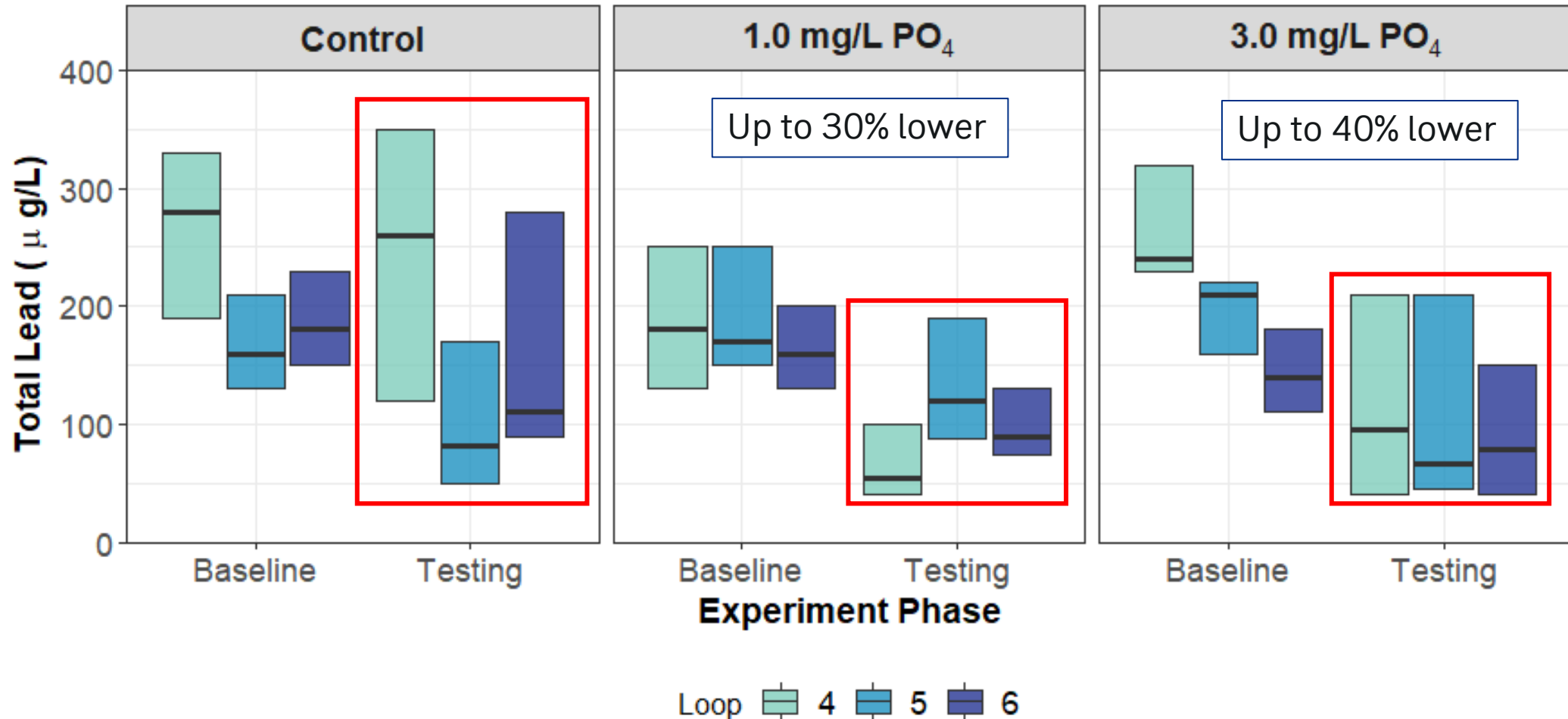


OrthoP improved lead release in lead pipes



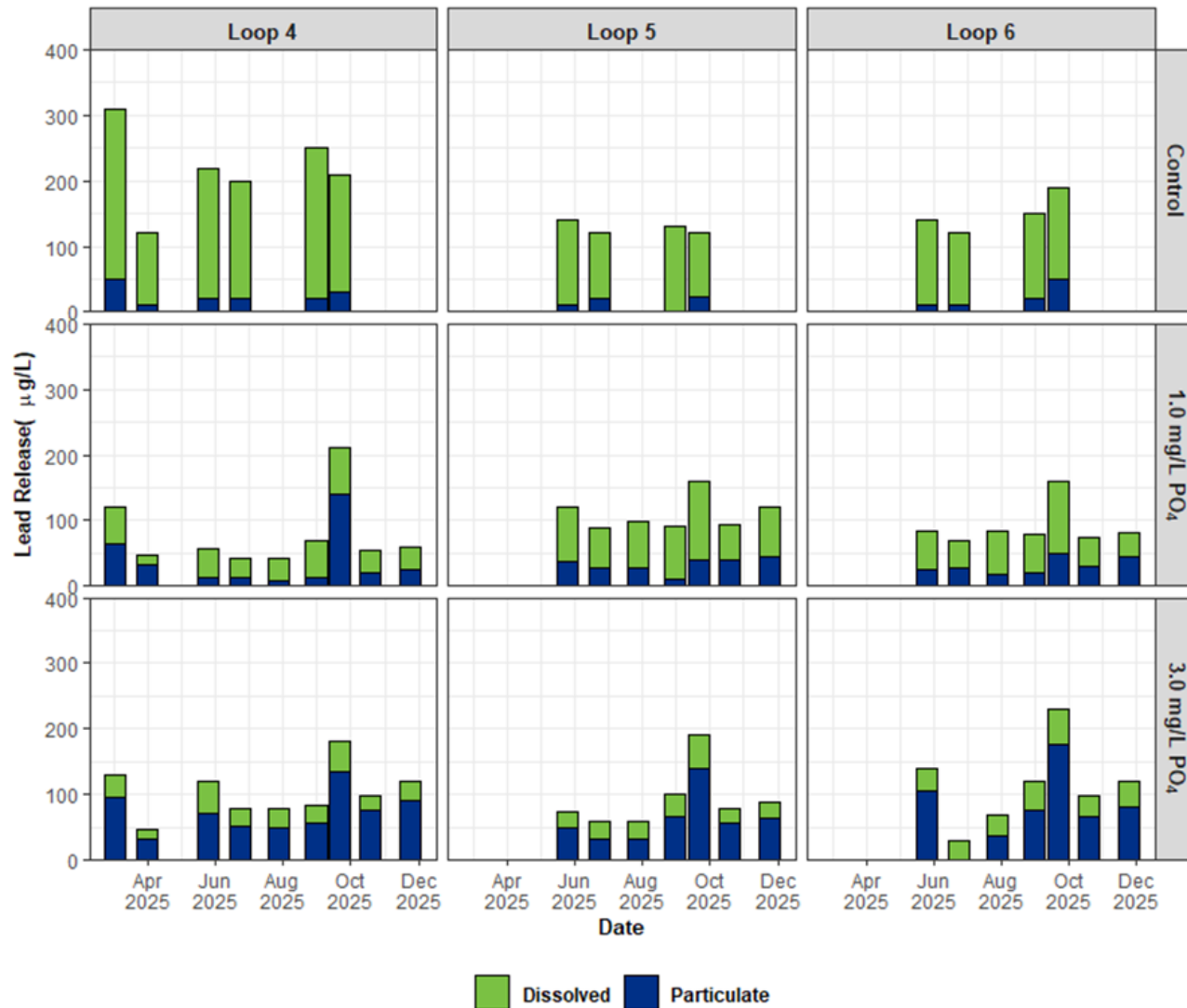
Note: The horizontal line denotes the median, boxes represent the 10th and 90th percentiles, and vertical lines indicate the minimum and maximum observed values in the last 7 consecutive weekly samples. Boxes overlap the whiskers when percentile ranges are similar to the minimum and maximum.

1.0 mg/L as PO₄ improved lead in copper pipes with lead solder; higher doses showed minimal benefit

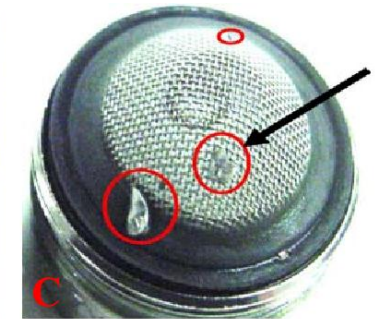


Note: The horizontal line denotes the median, boxes represent the 10th and 90th percentiles, and vertical lines indicate the minimum and maximum observed values in the last 7 consecutive weekly samples. Boxes overlap the whiskers when percentile ranges are similar to the minimum and maximum.

3.0 mg/L as PO₄ increased particulate lead fraction

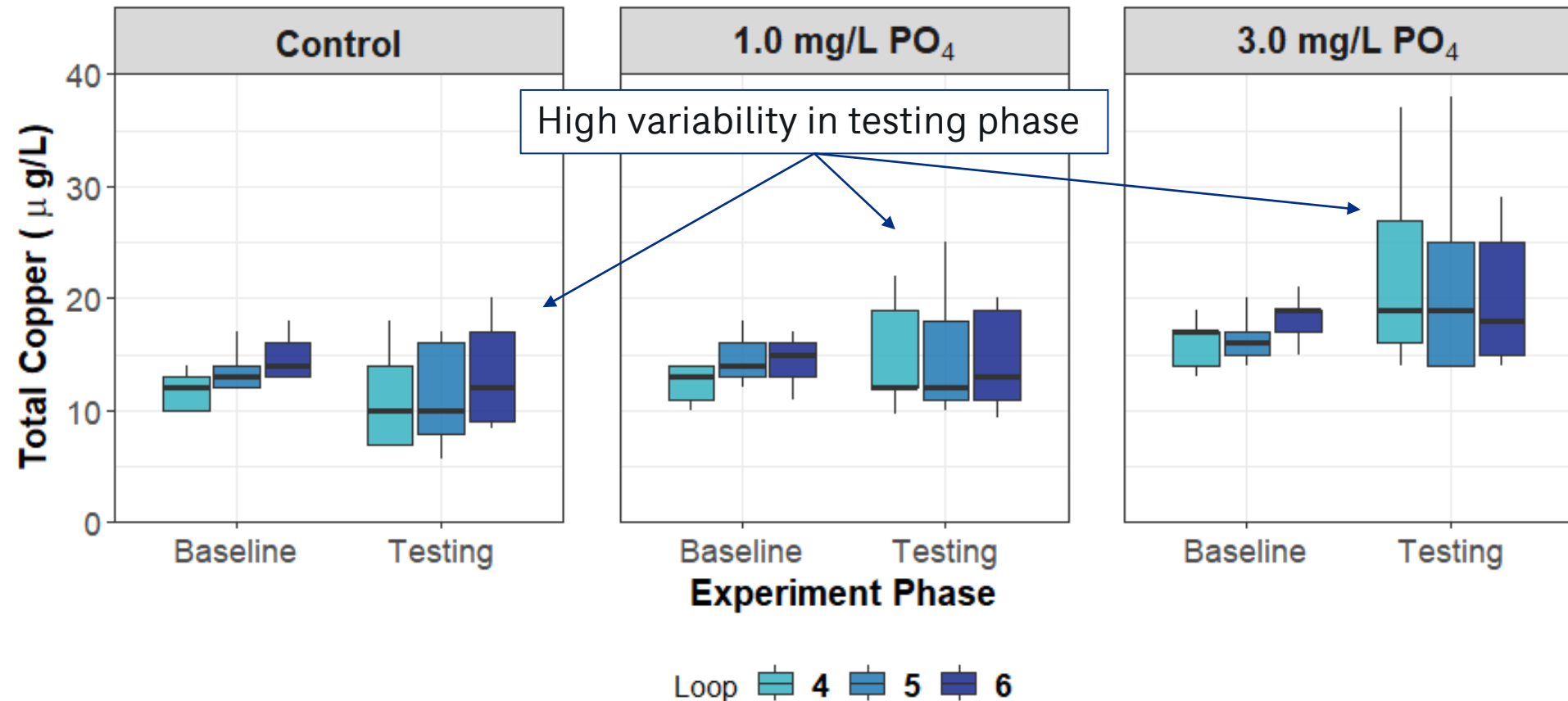


Example of particulate lead



From Triantafyllidou, 2011

Increase in copper release not clearly attributable to orthophosphate or pH variability



Note: The horizontal line denotes the median, boxes represent the 10th and 90th percentiles, and vertical lines indicate the minimum and maximum observed values in the last 7 consecutive weekly samples. Boxes overlap the whiskers when percentile ranges are similar to the minimum and maximum.

Summary of CCT Study

Orthophosphate at 1.0 mg/L as PO₄ improved lead. Minimal extra benefit anticipated at 3.0 mg/L as PO₄

1.0 mg/L PO ₄	3.0 mg/L PO ₄
- No anticipated pH or turbidity impacts - Up to 3.2 µg/L lower lead in lead pipe loop effluent - Up to 30% lower lead in copper with lead solder pipe loop effluent - No anticipated increase in copper corrosion	- No anticipated pH or turbidity impacts - Up to 5.9 µg/L lower lead in lead pipe loop effluent - Up to 40% lower lead in copper with lead solder pipe loop effluent - Increase in particulate lead fraction in copper pipes with lead solder - No anticipated increase in copper corrosion

WDNR Requirements

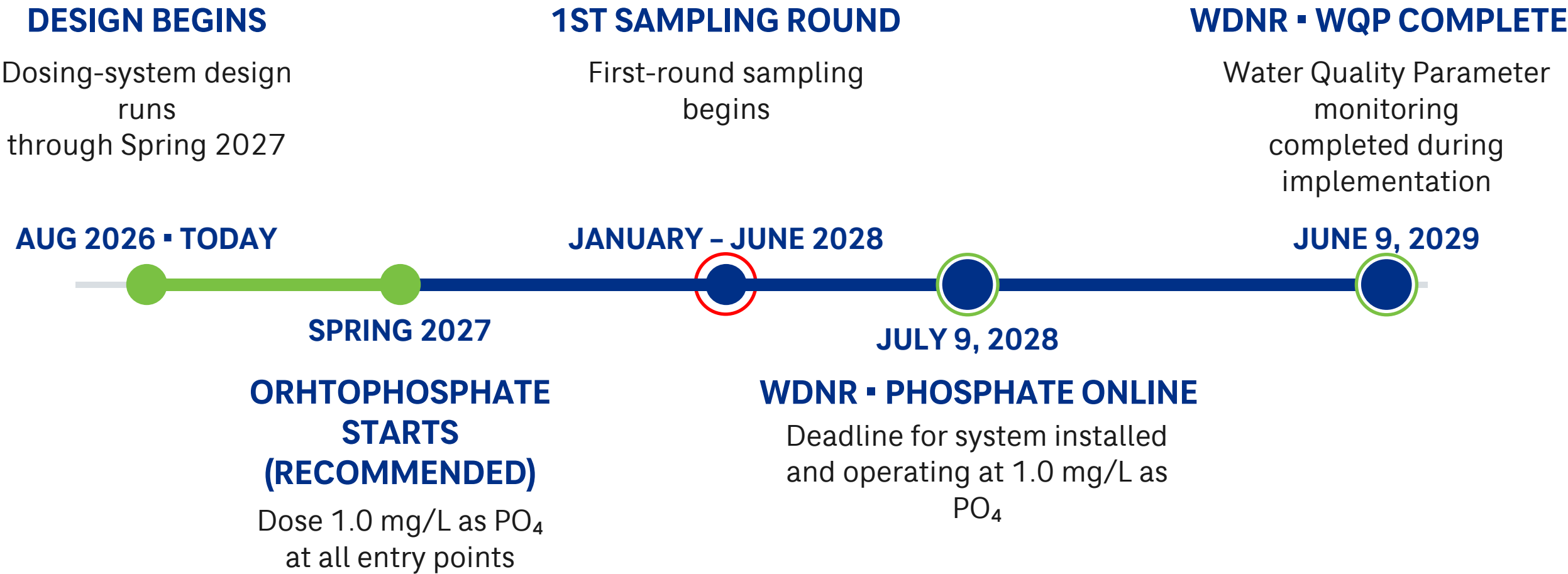
- Wausau must dose 1 mg/L as PO₄ at all entry points by **July 9, 2028**
 - Chemical Feed System Plan Review and Approval
- Complete Water Quality Parameter (WQP) monitoring by **June 9, 2029**
 - Each six-month round:
 - Distribution: 2 pH + orthophosphate samples at 10 sites, **every 6 months**
 - Entry points: 1 pH + orthophosphate sample per entry point, **every 2 weeks**
 - LCR: 2 consecutive six-month standard monitoring rounds (60 samples).



CDM Smith Recommendations

- Develop a full-scale transition plan for phased orthophosphate implementation and water quality monitoring
- Design orthophosphate dosing system
- Use existing conditioned pipe loops to track long-term changes in metal release and corrosion control performance
- Prepare for LCRI sampling requirements
- Continue to monitor distribution system health

Recommended Implementation Timeline





listen. think. deliver.





TASK ORDER NO. 6 TO
CONTINUING PROFESSIONAL SERVICES AGREEMENT
Between City of Wausau (Owner) and
Donohue & Associates, Inc. (Donohue)
Date of Original Executed Agreement: March 17, 2022

TASK ORDER NAME/DESCRIPTION

Drinking Water Treatment Facility Addition Design and Bidding – The City of Wausau received a \$1,667,000 Congressionally Directed Spending grant for “Drinking Water PFAS Response Project.” This project will provide an additional process waste tank to support the PFAS treatment and space for additional chemical feed system for corrosion control treatment (CCT). CCT will be installed to deliver 1.0 mg/L as orthophosphate at all drinking water system entry points. The CCT system must be operational no later than July 9, 2028.

The purpose of this Task Order is as follows: [1] produce Bidding Documents for an addition to the drinking water treatment facility with below grade process waste tank, process waste pumps and interconnection to existing process waste tank and above grade chemical feed systems [2] support public bidding of the Work required to construct the DWTF addition, [3] support Owner with funding that may obtained through a Senator Baldwin Congressionally Directed Spending Request, [4] provide construction administration and observation services, and [5] provide commissioning services for process waste and CCT systems.

A. SCOPE OF SERVICES

#	Design: Project Coordination and Agency Approval
105	Conduct Internal Weekly Coordination Meetings The Donohue project manager will lead these meetings, which are intended to coordinate design-related efforts between design team disciplines and members.
110	Conduct External Bi-Weekly Status Meetings/Calls The Donohue project manager will lead these meetings, which are intended to keep the Owner informed of project activities and progress. The meetings will also provide a regular opportunity to request and exchange information, particularly Owner preferences and requirements.
120	Produce and Provide Monthly Status Reports The Donohue project manager will produce and submit monthly written status reports that accompany monthly invoices. These reports will document activities during the previous period, anticipated near-term activities, schedule status, and budget status. <u>Deliverable(s)</u> Monthly Status Reports

#	Design: Project Coordination and Agency Approval
125	Informal Coordination and Communication Some information exchanges between Donohue, Owner, and/or regulatory personnel cannot and need not wait until the more formal status meetings. This Task recognizes and funds these informal and expedient coordination efforts and communications.
130	Pursue and Obtain PSC Construction Authorization The Donohue project manager and senior process engineer(s) will review relevant aspects of the project with the Wisconsin Public Service Commission (PSC) for the purpose of receiving PSC approval for construction of water system improvements.
135	Pursue and Obtain WDNR Bidding Documents Approval Submit Reviewable Bidding Documents to WDNR for review and approval. Reply to WDNR questions and, where necessary, incorporate Bidding Document revisions that satisfy WDNR comments and lead to WDNR approval for construction. <u>Deliverable(s)</u> Reviewable Bidding Documents Responses to WDNR Comments and Questions
140	Provide Grant Funding Assistance Work with EPA and the Owner to administer grant funding during the award period with submittal of reimbursement requests and reporting as required by the funding program.

#	Design: Bidding Documents Production
205	Prepare for, Conduct, and Document Design Workshop 1: Initiation Conduct a Workshop to review the design phase workplan: objectives, tasks, schedule, budgets, and communication protocols. Attendees will also discuss potential configuration and operating strategies. Donohue will solicit or confirm design-related preferences as they relate to configurations, operating strategies, process equipment, and construction materials. The process waste pumps will match the existing process waste pumps and the CCT system will match existing chemical feed systems at the drinking water treatment facility. <u>Deliverable(s)</u> Workshop Materials Workshop Notes
210	Collect Site Conditions: Survey, As-Built Conditions, and Discipline Review Collect survey, geotechnical, and as-built information relevant to defining the Work and producing Bidding Documents.

215	Produce Conceptual Layout Drawings and Materials Using the current conceptual site layout and Corrosion Control Treatment Study approved by Wisconsin Department of Natural Resources on July 9, 2026, define process equipment requirements: capacities, dimensions, weights, lifting requirements, access requirements, and utility requirements. Produce a motor list for new equipment. Produce conceptual flow sheet drawings (schematics) depicting new and modified unit processes. Produce conceptual layout drawings depicting one or several configurations for the new CCT and modified process waste unit processes. <u>Deliverable(s)</u> Process Equipment List Motor List Conceptual Flow Sheet Drawings Conceptual Layout Drawings
220	Prepare for, Conduct, and Document Design Workshop 2: Conceptual Design Conduct a Workshop to review and discuss the conceptual design materials delineated in the previous task. The purpose of this Workshop is to solicit Owner preferences, requirements, and instructions. <u>Deliverable(s)</u> Workshop Materials Workshop Notes
225	Produce Preliminary Layout Drawings and Materials Advance the design with the Owner preferences, requirements, and instructions provided at the previous Workshop. Produce preliminary Process and Instrumentation Diagrams (PIDs) for new and modified unit processes. Produce preliminary layout drawings depicting new and modified unit processes. In general, these drawings will show the items listed below, which were not shown or provided on the conceptual layout drawings: major structural features; major equipment access and removal devices, like bridge cranes, monorails, and hoists; process piping and valves with pipe sizes, flow stream identifiers, and elevations; major electrical equipment like switchgear, emergency generators, MCCs, VFDs, transfer switches, and lighting panels; major controls equipment and panels; major HVAC equipment like boilers, make-up air units, furnaces, and air conditioners; major HVAC ductwork and piping; site plan showing all structures, major above grade site features, major buried process piping, and major buried utilities; and overall electrical one-line diagram(s). Develop a construction cost opinion reflecting the current version of the preliminary layout drawings and PIDs. The construction cost opinion will be a takeoff based and organized by specification division. <u>Deliverable(s)</u> Preliminary PIDs Preliminary Layout Drawings Construction Cost Opinion

230	Prepare for, Conduct, and Document Design Workshop 3: Preliminary Design Conduct a Workshop to review and discuss the preliminary design materials delineated in the previous task. The purpose of this Workshop is to solicit Owner preferences, requirements, and instructions. <u>Deliverable(s)</u> Workshop Materials Workshop Notes
235	Produce Final Layout Drawings and Materials Finalize the size and location of major equipment; the major process equipment requirements: dimensions, weights, lifting requirements, access requirements, and utility requirements; and operating and control strategies for the new and modified unit processes. Prepare final layout drawings for all structures affected by the Work of the Project. These drawings will incorporate Owner preferences and requirements and will be developed to a higher degree of completion than the preliminary layout drawings. In general, these drawings will show the items listed below, which were not shown or provided on the preliminary layout drawings: site plan details such as yard piping; sidewalks and parking; and grading plan; process details such as sample taps, chemical injection points, flow meters and other connections; structural details such as roof framing; wall and roof type; floor, roof, and wall openings; elevators, overhead doors, and lifting equipment; equipment pads; floor hatches; floor slopes; roof drain systems; hoisting equipment; framing; beams; and columns; HVAC equipment such as ducts; air handling equipment; windows, louvers, intakes, and grilles; fire protection system; and hazardous ratings electrical components such as electrical duct banks; generators; and building lighting; plumbing components such as fixture dimensions and the floor drain system; eyewashes and emergency showers; and instrumentation and control components. Produce Work sequences and constraints to be incorporated into the Bidding Documents. Update the construction cost opinion. <u>Deliverable(s)</u> Final Layout Drawings Construction Cost Opinion
240	Prepare for, Conduct, and Document Design Workshop 4: Final Layout Design Conduct a Workshop to review and discuss the final layout drawings delineated in the previous task. The purpose of this Workshop is to solicit Owner preferences, requirements, and instructions. <u>Deliverable(s)</u> Workshop Materials Workshop Notes
245	Produce Reviewable Bidding Documents Coordinate the PIDs between disciplines to produce final PIDs. Advance the final layout drawings to show and define the Work consistent with the Owner preferences, requirements, and instructions provided at the previous Workshop. Produce specifications that define the

	Work consistent with the Owner preferences, requirements, and instructions provided at the previous Workshop. Update the construction cost opinion.
250	Conduct Final Designer Reviews and Incorporation Perform multi- and cross-discipline designer reviews of the drawings and specifications. Revise the drawings and specifications to address designer comments.
255	Conduct Final QA/QC Reviews and Incorporation Perform multi- and cross-discipline quality assurance/quality control (QA/QC) reviews of the drawings and specifications. Revise the drawings and specifications to address review comments.
260	Prepare for, Conduct, and Document Design Workshop 5: Reviewable Bid Documents Submit Reviewable Bidding Documents and an updated construction cost opinion to Owner. Conduct a Workshop to review and discuss the Reviewable Bidding Documents. The purpose of this Workshop is to solicit Owner comments related to the Bidding Documents. <u>Deliverable(s)</u> Reviewable Bidding Documents Construction Cost Opinion Workshop Notes
275	Incorporate Final Owner Review Comments Produce the Final Bidding Documents by incorporating Owner comments related to the Reviewable Bidding Documents.

#	Bidding
305	Conduct Pre-Bid Conference Assist Owner with advertising the project for bids. Conduct a pre-bid conference to familiarize bidders with the Work, Bid Form, bidding requirements, and unique project requirements. <u>Deliverable(s)</u> Pre-Bid Presentation Material
310	Respond to Questions by Bidders
315	Issue Addenda as Necessary <u>Deliverable(s)</u> Addenda
320	Attend Virtual On-Line Bid Opening <u>Deliverable(s)</u> Bid Tabulation

325	Review Bids and Provide a Recommendation
	<u>Deliverable(s)</u> Letter of Recommendation

#	Construction: Contracting and Conformed Documents
405	Construction Contract Execution and Notice to Proceed Prepare and provide the Contract Documents for Contractor signature. Prepare and provide a Contract Execution Letter to the Contractor. After the Contractor provides an executed Agreement with the proper bonds and insurance certificate(s), prepare and provide the Contract Documents for Owner signature.
410	Conformed to Contract Documents Prior to the Pre-Construction Meeting, produce and provide Conformed to Contract (CTC) Documents. The CTC Documents will incorporate design changes issued and authorized by Addenda during the Bidding Phase.
415	Pre-Construction Conference Conduct one Pre-Construction Conference at the GBMSD prior to commencement of the Work. Prepare for Owner review and, after review, distribute agenda and meeting notes.

#	Construction: Engineering Services During Construction	Assumptions
505	Construction Contract Administration Throughout the construction period, consult with the Owner and act as Owner's representative as provided in the General Conditions of the Contract Document as included in the Project Manual.	4 HR per WK over 12 MO construction schedule
510	Construction Progress Meetings Attend monthly on-line progress meetings during construction. The Contractor will schedule and conduct the meetings. The Contractor will prepare and distribute the agenda and notes documenting the meetings. Attend less formal weekly or bi-monthly progress meetings on site with Contractor.	12 Meetings
515	Observation of Construction Provide on-site observation to observe, as an experienced and qualified design professional, the progress and quality of the Work. Such visits and observations are not intended to be exhaustive or to extend to every aspect of the Contractor's Work in progress or to involve detailed inspections of the Contractor's Work in progress beyond the responsibilities specifically assigned to the Engineer in this Agreement and the Contract Documents, but rather are to be limited to spot checking and general observation of the Work based on the exercise of professional judgment.	16 HR per WK over 9 MO of active construction

#	Construction: Engineering Services During Construction	Assumptions
	a. The purpose of the visits to, and representation by the Resident Project Representative (RPR) at the Project site, will be to enable Donohue to better carry out the duties and responsibilities assigned to and undertaken by Donohue during the Construction Phase. Donohue shall not, during such visits or as a result of such observations of the Contractor's Work in progress, supervise, direct, or have control over the Contractor's Work, nor shall Donohue have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by the Contractor, for safety precautions and programs incident to the Contractor's Work, or for any failure of the Contractor to comply with Laws and Regulations applicable to the Contractor furnishing and performing the Work. Accordingly, Donohue neither guarantees the performance of the Contractor nor assumes responsibility for the Contractor's failure to furnish and perform its Work in accordance with the Contract Documents. b. Donohue will prepare and forward to the Owner a copy of field and inspection reports. Reports shall include items such as date of observation, contractors on site, construction activities, discussions of and decisions made concerning construction, observations made, testing witnessed, information relative to questions of extras or deductions, and photos taken. c. Donohue will take pictures of actual construction and deliver to the Owner copies of construction photos in digital format.	
520	Designer Site Visits Designer will visit the site to observe the progress and quality of the Work. Such visits and observations are not intended to be exhaustive or to extend to every aspect of the Work in progress or to involve detailed inspections of the Work in progress beyond the responsibilities specifically assigned to Donohue in the Contract Documents. Designer will use one or several of the site visits to produce their respective punchlists.	Process = 2 Civil = 1 Structural = 1 Mechanical = 1 Electrical = 1 Controls = 1
525	Requests for Clarifications and Interpretations Provide written responses to the Contractor's written Requests for Information (RFI). Provide the necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the Work. Such clarifications and interpretations will be consistent with the intent of and interpretations reasonably inferable from the Contract Documents.	20 RFI at 4 HR EA

530	Change Orders, Work Change Directives, and Cost Proposal Requests Provide input to Owner regarding Change Orders and Work Change Directives. Prepare Cost Proposal Requests, Change Orders, and Work Change Directives as required for Owner review and approval.	5 RFP at 8 HR EA
535	Shop Drawings and Samples Provide a technical review and approve or take other appropriate action in respect to Shop Drawings and Samples and other data the Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the Project as a functioning whole as indicated in the Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of Construction or to safety precautions and programs.	30 submittals at 4 HR EA. Includes resubmittals.
540	Substitutes and "or-equal" Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by a Contractor.	5 HR
545	Applications for Payment Review and provide input to Owner regarding monthly applications for payment and accompanying supporting documentation from the Contractor. Document conformance with Wisconsin Clean Water Fund Program requirements.	12 Applications at 2 HR EA
550	Punchlist Preparation, Review, and Documentation Review the Work to produce a punch list following the Contractor's request for Substantial Completion or Partial Utilization of portions of the Work. Review will evaluate the installed condition for conformance with Contract Documents. Review the Work to confirm the Contractor has completed the punch list items. Coordinate with the Contractor for the submittal of the City-required Close-out Documents.	3 Site Visits + 8 HR to prepare/update
555	Record Documents Receive annotated record documents from the Contractor, which are to be assembled by the Contractor in accordance with the Contract Documents to obtain final payment. Prepare Record Drawings showing appropriate record information based on the Project annotated record documents received from the Contractor.	30 HR
560	Archive Documents Deliver archive from Document Management web site, containing all files submitted between Contractor and Donohue. Files will include correspondence, meeting notes, submittals, requests for	4 HR

	information, requests for proposals, change orders, punch lists, pay applications, test results, and pictures. Archive shall be delivered on a portable hard drive or similar device.	
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#	Construction: Commissioning	Assumptions
605	Vendor Provided Training and Operation and Maintenance Materials Review vendor provided training and operation and maintenance materials to confirm compliance with the contract documents. Forward materials to the Owner that meet the requirements of the Contract Documents.	6 HR
610	Start-up Planning and Commissioning Prepare a Contractor Startup Checklist to aid the Contractor in preparing for and conducting the required equipment check-out and start-up. Review the Contractor Startup Checklist with the Contractor and Owner to receive their input and revise the checklist accordingly. Participate in the Contractor/Vendor check-out and start-up of the appropriate unit process systems.	10 HR to prepare checklist. 10 HR to review Contractor checklist. 16 HR on site to review check-out.
615	Active Start-Up Observation and Assistance Provide operational assistance after the various unit process systems have been in operation. Additionally, teleconferencing and email will be used for further communications.	Three site visits
620	Standard Operating Procedures Provide standard operating procedures (SOPs) for new or upgraded process systems. Submit draft for Owner review. Submit final that addresses Owner comments. Provide process system training using the SOPs.	20 HR to produce draft and final CCT and update process waste SOP

B. PROJECT TIMING

Submit Final Bidding Documents to Owner five months after this Task Order is executed, to allow for construction to be completed so that the CCT system is operational no later than July 9, 2028.

C. COMPENSATION

Compensation for this Task Order will not exceed \$481,255 without prior written authorization from the Owner. Charges will be in accordance with Donohue's standard charge out rates in effect at the time the Services are performed. Subconsultants and expenses will be billed at cost without markup. The attached tables show estimated levels of effort, fees, and expenses.

APPROVED FOR OWNER

By: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED FOR DONOHUE

By: _____

Printed Name: Michael W. Gerbitz, PE

Title: President

Date: _____

Levels of Effort (Hours) by Task

		Project Roles										
		Principal	Project Manager Lead Process	Process Designers	Civil Designers	Structural Designers	Mechanical Designers	Electrical Designers	Controls Designers	Construction Administrator	Construction and Ops Field Personnel	Admin
Team Members		Gerbitz	Wojtkiewicz	TBD	TBD	TBD	TBD	TBD	TBD	Hermesen	TBD	Treft
100 Design: Coordination and Agency Approval												
105	Conduct Internal Weekly Coordination Meetings		20									
110	Conduct External Bi-Monthly Coordination Meetings		20									
115	Attend Commission Meetings (2)											
120	Produce Monthly Status Reports		10									
125	Provide Informal Coordination and Communication		10									
130	Obtain PSC Construction Authorization		20									
135	Obtain WDNR Bidding Documents Approval		15									
140	Grant Funding Assistance	2	20									
Totals		2	115	0	0	0	0	0	0	0	0	0
200 Design: Bidding Documents Production												
205	Conduct Worksop 1		8	8								
210	Gather Site Conditions: Survey		2		2							
215	Gather Site Conditions: Geotechnical		2			2						
220	Produce Conceptual Layout Drawings and Materials		8	15	5	3	3	3	5			
225	Conduct Workshop 2		8	8								
230	Produce Preliminary Layout Drawings and Materials		8	20	10	10	10	10	10			
235	Conduct Workshop 3		8	8								
240	Produce Final Layout Drawings and Materials		8	20	20	20	20	20	20			
245	Conduct Workshop 4		8	8								
250	Produce Designer Review and QC Review Bidding Documents		25	20	20	20	20	20	20			
255	Perform Designer Review and Incorporation		10	10	10	10	10	10	10			2
260	Perform Quality Control Review and Incorporation		10	10	10	10	10	10	10			2
265	Produce Reviewable Bidding Documents		10	20	10	10	10	10	10			5
270	Conduct Worksop 5		8	8								
275	Produce Final Bidding Documents	4	5	5	5	5	5	5	5			5
Totals		4	128	160	92	90	88	88	90	0	0	14
300 Bidding												
305	Conduct Pre-Bid Conference		8									
310	Answer Bidder Questions		2	1	1	1	1	1	1			
315	Produce Addenda		3	1	1	1	1	1	1			
320	Attend Bid Opening		1									
325	Review Bids and Provide Recommendation	2	4									
Totals		2	18	2	2	2	2	2	2	0	0	0
400 Construction: Contracting and Conformed Documents												
405	Construction Contract Execution and Notice to Proceed		3	3								
410	Produce Conformed to Contract Documents		3	5								
415	Pre-Construction Conference		8							8		
Totals		0	14	8	0	0	0	0	0	8	0	0

Labor Fees and Expenses by Task

Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
20	\$4,400			\$4,400
20	\$4,400			\$4,400
0	\$0			\$0
10	\$2,200			\$2,200
10	\$2,200			\$2,200
20	\$4,400			\$4,400
15	\$3,300			\$3,300
22	\$4,990			\$4,990
117	\$25,890	\$0	\$0	\$25,890
Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
16	\$3,280	\$420		\$3,700
4	\$820		\$5,000	\$5,820
4	\$820		\$5,000	\$5,820
42	\$8,220			\$8,220
16	\$3,280	\$420		\$3,700
78	\$15,060			\$15,060
16	\$3,280	\$420		\$3,700
128	\$24,560			\$24,560
16	\$3,280	\$420		\$3,700
145	\$28,300			\$28,300
72	\$13,840			\$13,840
72	\$13,840			\$13,840
85	\$16,100			\$16,100
16	\$3,280	\$420		\$3,700
44	\$8,580			\$8,580
754	\$146,540	\$2,100	\$10,000	\$158,640
Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
8	\$1,760	\$210		\$1,970
8	\$1,580			\$1,580
9	\$1,800			\$1,800
1	\$220			\$220
6	\$1,470			\$1,470
32	\$6,830	\$210	\$0	\$7,040
Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
6	\$1,230			\$1,230
8	\$1,610			\$1,610
16	\$3,400	\$420		\$3,820
30	\$6,240	\$420	\$0	\$6,660

500	Construction: Engineering Services During Construction											
505	Construction Contract Administration	4	5						192			
510	Construction Progress Meetings		5						96			
515	Observation of Construction									576		
520	Designer Site Visits		16	8	8	8	8	8				
525	Requests for Clarifications and Interpretations		10	20	10	10	10	10				
530	Change Orders, Work Change Directives, and Cost Proposal Requests		5	5	5	5	5	5	5			
535	Shop Drawings and Samples		5	25	10	10	10	10			40	
540	Substitutes and "Or Equals"		5									
545	Applications for Payment								24			
550	Punchlist Preparations, Review, and Documentation		5						32			
555	Record Documents			10	4	4	4	4				
560	Archive Documents										4	
Totals		4	35	81	37	37	37	37	37	349	576	44

600	Construction: Commissioning Services										
605	Vendor Provided Training and O+M Manuals									6	
610	Start-Up Planning and Commissioning									36	
615	Active Start-Up Observation and Assistance									24	
620	Standard Operating Procedures									20	
Totals		0	0	0	0	0	0	0	0	86	0

Total Hours All Phases	12	310	251	131	129	127	127	129	357	662	58
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Labor Fee Summary by Phase

	Project Roles	Principal	Project Manager Lead Process	Process Designers	Civil Designers	Structural Designers	Mechanical Designers	Electrical Designers	Controls Designers	Construction Administrator	Construction and Ops Field Personnel	Admin
	Team Members	Gerbitz	Wojtkiewicz	TBD	TBD	TBD	TBD	TBD	TBD	Hermesen	TBD	Treft
Hourly Labor Charge-Out Rates		\$295	\$220	\$190	\$190	\$190	\$190	\$190	\$190	\$205	\$190	\$120
Design: Coordination and Agency Approval		\$590	\$25,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design: Bidding Documents Production		\$1,180	\$28,160	\$30,400	\$17,480	\$17,100	\$16,720	\$16,720	\$17,100	\$0	\$0	\$1,680
Bidding		\$590	\$3,960	\$380	\$380	\$380	\$380	\$380	\$380	\$0	\$0	\$0
Construction: Contracting and Conformed Documents		\$0	\$3,080	\$1,520	\$0	\$0	\$0	\$0	\$0	\$1,640	\$0	\$0
Construction: Engineering Services During Construction		\$1,180	\$7,700	\$15,390	\$7,030	\$7,030	\$7,030	\$7,030	\$7,030	\$71,545	\$109,440	\$5,280
Construction: Commissioning Services		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,340	\$0
Totals		\$3,540	\$68,200	\$47,690	\$24,890	\$24,510	\$24,130	\$24,130	\$24,510	\$73,185	\$125,780	\$6,960

Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
201	\$41,640			\$41,640
101	\$20,780	\$2,520		\$23,300
576	\$109,440	\$15,120		\$124,560
56	\$10,640	\$1,470		\$12,110
80	\$15,500			\$15,500
40	\$7,825			\$7,825
120	\$20,150			\$20,150
5	\$950			\$950
24	\$4,920	\$420		\$5,340
37	\$7,660	\$420		\$8,080
30	\$5,700			\$5,700
4	\$480			\$480
1,274	\$245,685	\$19,950	\$0	\$265,635

Total Hours	Labor Fee	Travel Expenses	Other Expenses	Totals
6	\$1,140			\$1,140
36	\$6,840	\$420		\$7,260
24	\$4,560	\$630		\$5,190
20	\$3,800			\$3,800
86	\$16,340	\$1,050	\$0	\$17,390

Total Labor Hours and Fee Summary

Labor Hours	Labor Fee	Expenses	Total Fee
117	\$25,890	\$0	\$25,890
754	\$146,540	\$12,100	\$158,640
32	\$6,830	\$210	\$7,040
30	\$6,240	\$420	\$6,660
1274	\$245,685	\$19,950	\$265,635
86	\$16,340	\$1,050	\$17,390
2293	\$447,525	\$33,730	\$481,255

Construction Cost (OPCC)

\$2,000,000

Services	Fee	% of OPCC
Design	\$184,530	9.2%
Bidding	\$7,040	0.4%
Pre-Construction	\$6,660	0.3%
Construction	\$265,635	13.3%
Commissioning	\$17,390	0.9%
Total	\$481,255	24.1%