

Moore-Love, Karla

From: Janice Thompson <janice@oregoncub.org>
Sent: Tuesday, March 07, 2017 12:19 PM
To: Moore-Love, Karla
Subject: CUB testimony on Agenda Item #235 on 3/8 agenda
Attachments: CUB support for corrosion control treatment pilot.docx

Hello – Attached is testimony from CUB on tomorrow's agenda item #235. Please include it in the record.

A question, though, do you also distribute written testimony submitted in advance to Council offices?

Thanks for your help with that question – I don't want to be duplicative. Thanks - Janice

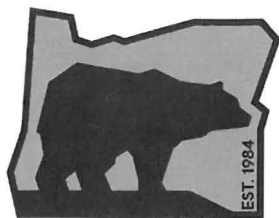
Janice Thompson
Advocacy Director



C: 503-890-9227
O: 503-227-1984 x24
www.oregoncub.org

CONFIDENTIALITY NOTICE :

This e-mail may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. If you are not the addressee or it appears from the context or otherwise that you have received this e-mail in error, please advise me immediately by reply e-mail, keep the contents confidential, and immediately delete the message and any attachments from your system.



188272

Oregon Citizens' Utility Board

610 SW Broadway, Suite 400
Portland, OR 97205

(503) 227-1984
www.oregoncub.org

March 7, 2017

To: Portland City Council
From: Janice Thompson, Advocacy Director
Re: Support for Corrosion Control Treatment Pilot Project proposed by Portland Water Bureau
Agenda Item # 235 on March 8, 2017 Council Agenda

The Oregon Citizens' Utility Board (CUB) urges a "yes" vote on Agenda Item #235 on the March 8, 2017 City Council agenda. Approving the Portland Water Bureau's (PWB) request for a contract with Confluence Engineering Group for a Corrosion Control Treatment Pilot Project is a prudent and scientifically based action to address public health and water quality concerns.

CUB has researched Portland's history of Lead and Copper Rule compliance and PWB's ongoing review of corrosion control options. CUB has also monitored presentations to the Portland Utility Board and the City Council and I greatly appreciate detailed meetings with PWB staff. Acting on scientific findings and careful adherence to input from regulators - the Environmental Protection Agency (EPA) and Oregon Health Authority (OHA) - is a hallmark of the PWB's approach and reflects CUB's evaluation priorities.

CUB will monitor future Council discussions about Corrosion Control Treatment Facility design and construction. Right now, the prudent step is to begin the Corrosion Control Treatment Pilot Project.

I also want to provide a personal observation regarding the discussion at your March 1 hearing about home plumbing replacement. As PWB staff indicated, compared to indoor plumbing replacement, corrosion control treatment is more cost effective and is the EPA and OHA accepted option for Lead Copper Rule compliance.

In addition, however, my home demonstrates the challenge of figuring out what indoor plumbing would need replacing. My house is old enough that it would not be included in the high-risk pool for plumbing replacement, especially since all the visible plumbing is galvanized pipe. But there have been remodeling projects with pipes behind a bathroom wall. I don't know the age of those newer pipes, so how would my home be evaluated under a pipe replacement scenario? In other words, how could the customer or PWB be certain about what indoor plumbing to replace? Conversely, without extensive testing how could the PWB be sure that it isn't paying to replace acceptable home plumbing? Obviously, there is a known group of higher risk homes, but not all the risk is likely to be found in just those homes.

Presumably, this conversation is different in communities where public utilities used lead service lines or haven't removed lead pigtailed between service lines and water mains, but that is not the situation in Portland. Public education is still needed and replacing indoor plumbing fixtures in public buildings merits discussion. The EPA, OHA, and PWB, however, appropriately focus their compliance efforts on the water flowing through indoor pipes and not the indoor plumbing itself.

Moore-Love, Karla

From: Mark Bartlett <bartlett.m@comcast.net>
Sent: Monday, March 06, 2017 1:08 PM
To: Moore-Love, Karla; Wheeler, Ted; Commissioner Fish; Saltzman, Dan; Commissioner Fritz; Chloe.eaudaly@PortlandOregon.gov; Parsons, Susan; Mark Bartlett
Subject: PWB contract for Confluence; agenda Item 235 for 3-8-17

*Hi Karla,
 Please enter this into the open record and provide distribution to Council and staff.
 Thank you,
 Mark

Agenda Item

235 <<https://www.portlandoregon.gov/auditor/article/630019>>* Authorize a contract with Confluence Engineering Group, LLC in the amount of \$664,930 for the Corrosion Control Treatment Pilot Project (Second Reading Agenda 215)

Mayor Wheeler and Council members,
 I write to ask that you closely read the language in the contract put forward by PWB / Com Fish.

Given the history of PWB, they have in past used the budgeting process to skirt proper public notice and processes in requesting and getting other funding approvals from Council. In their view this approval and inclusion in their 2017 budget could provide all of the public notice and process they require to complete ALL phases regardless of benefit or cost.

Under Project Schedule: Notice to proceed is not specific to preliminary phases but to ALL phases. (page 11/20 under P2.T6)

Anticipated and known omissions / defects:

Again PWB has a history of taking a small funding approvals and making them into much larger projects. This is no exception.

In their recent Washington Park project the initial cost estimate approved by Council was for \$70+/- Million. What they now put forward is one that will cost \$190+ Million for a project with an entirely different scope of work than that which was initially put forward in the land use application and approved by Council. The \$190 Million is not the final amount either.

In Mt Tabor, they put forward a project with a scope of work first estimated at \$110,000 which then became more than \$5 Million for the very same project and scope of work.

In both applications, PWB put forward material misrepresentations of the facts in violation of our City Charter, and Title 33 requirements.

- 1) Where is the cost benefit analysis?
- 2) specifically what are the health benefits, how are they to be realized?
- 3) as compared to what or which alternatives? and

4) at what cost for those alternatives, with of course their specific respective health benefits?

5) Should an unknown outcome for testing be substantial evidence of a need to build a facility given that a notice of approval states that it includes ALL phases? (ie.. to begin simultaneously without any proposed cost limitations of any kind)

6) How would those following phases then be funded (if approved or would this approval cover all as I anticipate)? and

7) What are the criteria for Council to select and approve this alternative when no others are offered for scrutiny, as far as effectiveness and or cost or even practicability?

Please note that this does not even address whether they can build any facility at Lusted since clearly it will not fit within that very small building. Further what is the proposed use for that facility? ONLY for this purpose? or for Fluoridations, and others..

I believe reason for the rush by PWB to place this into the 2017 budgeting process is clear. And that it might be better for all since each of us drinks the water, for Council to withdraw this and have some discussion as to costs, alternatives, and whether there are better options than rushing an undefined project with unknown complications and costs into this 2017 budget year.

Thank you,
Mark Bartlett

2747 N E 22nd ave
Portland, OR 97212

Moore-Love, Karla

From: Scott Fernandez <scottfernandez.pdx@gmail.com>
Sent: Thursday, March 02, 2017 11:19 AM
To: Moore-Love, Karla; Scott Fernandez
Subject: Scott Fernandez memo- Question to Mayor Wheeler, comments

Thank you Karla,

Scott

Mayor Wheeler,

Thank you for the opportunity to testify about the corrosion problems and the public benefits of unidirectional flushing. We heard from water representative that phosphoric acid could line the distribution pipes. With the pipes now filled with biofilm, sediments and microorganism colonies how can added phosphoric acid or any other corrosion chemicals penetrate distribution system materials accumulated for many years? The answer is: they cannot penetrate efficiently, thus negatively impacting the study outcome.

Among America's 75 biggest water providers, only one has recently exceeded federal standards for elevated lead levels (April 9 2016 Oregonian) in the drinking water of high-risk homes, Portland. Kids are paying the price We need to provide the best public health/lead study possible, and that begins with a full scale city wide unidirectional flushing, providing health benefits for all schools, homes, and businesses, not just selected parts of the city. A good chemistry/scientific study must have consistency in the methods they use for a fair and meaningful outcome. The solution begins with unidirectional flushing.

Thank you,

Scott Fernandez

WATER CORROSION CONTROL TREATMENT PILOT PROJECT
CONTRACT WITH CONFLUENCE ENGINEERING GROUP

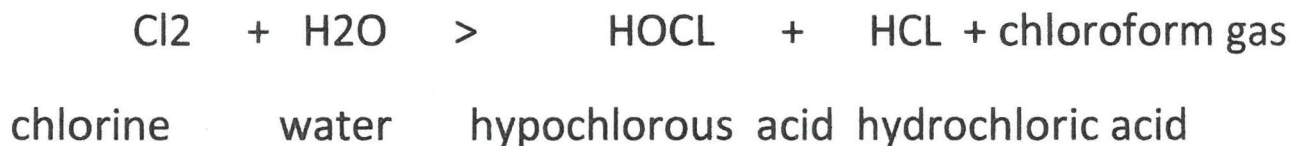
IF YOU WISH TO SPEAK TO CITY COUNCIL, **PRINT** YOUR NAME, ADDRESS, AND EMAIL.

NAME (PRINT)	ADDRESS AND ZIP CODE (Optional)	Email (Optional)
SCOTT FERNANDEZ	1821 N. 865 PDX	
Floy Jones	2204 S.E. 59 th PDX	
Dee Whitt	3836 SE 49 th PDX	
Julia DeGraw	1216 SE 88 th Ave. Portland, OR	jdegrow@confluenceeng.org

Scott Fernandez
3/01/17
188272

Corrosion issue can be simplified- simplest solution is preferred

- Many terms appointed by mayors on Water Quality Advisory Committee and Portland Utility Review Board
- Negligence of distribution system maintenance
- Auditors report showed +25,000 hours deferred maintenance ,we requested PWB do it, PWB did little
- Pipes became biofilm and sediment filled, harboring microbes
- **Chloramine broke down to ammonia because biofilm was consuming chlorine, leaving ammonia, we have nitrification issues in dark pipes, covered reservoirs.**
- **PWB responded with shock chlorination increasing chlorine to bind ammonia. Acidic action leaching lead**
- I got many calls - strong chlorine smell, tastes bad, chloroform
- Chlorine reacts with water and rapidly hydrolyzes to hypochlorous acid(HOCL) and hydrochloric acid(HCL)



- New water changing taste, consistency etc: **sodium bicarbonate (NaHCO₃), carbon dioxide (CO₂), sodium hydroxide (NaOH), sodium carbonate (Na₂CO₃), calcium hydroxide (Ca(OH)₂, orthophosphate (phosphoric acid PO₄³⁻) and zinc orthophosphate (Zn₃(PO₄)₂)**
- **Delay engineering contracts, Initiate new full scale flushing maintenance program, no new- retain same corr. chemicals.**

Portland Water Bureau

From forest to faucet, we deliver the best drinking water in the world.

GENERAL INFORMATION: 503-823-7404 1120 SW Fifth Ave, Suite 600, Portland, OR 97204

More Contact Info (<http://www.portlandoregon.gov/water/article/398208>)



Unidirectional Flushing



NOTIFICATIONS

Winter 2017

Starting in January 2017, the Water Bureau will be conducting flushing of water mains in several North and Northeast Portland neighborhoods.

Flushing is occurring in parts of the Kenton, Portsmouth, Bridgeton, East Columbia, Piedmont, Woodlawn, Sunderland, Concordia, PDX Airport, Cully, and Sumner neighborhoods.

Flushing will be conducted between 8 a.m. and 1:30 p.m., Monday through Friday.

CLICK HERE (<http://www.portlandoregon.gov/water/article/531024>) to view a map of the current flushing area.



(<http://www.portlandoregon.gov/water/article/531024>)

What is unidirectional flushing?

Drinking water systems, especially unfiltered systems like Portland, need to routinely clean the network of pipes to improve water quality. Over time, very fine sediment and organic matter from the Bull Run settle out of the water and accumulate in the bottom of the pipes. While the sediments are generally harmless, they can make the disinfectant in the water less effective. Additionally, sudden changes in the flow of water can disturb these sediments resulting in discolored water (<http://www.portlandoregon.gov/water/article/524707>).

The Portland Water Bureau uses three techniques to clean and maintain the drinking water system: spot flushing, autoflushing, and unidirectional flushing.

Spot flushing is used when a water quality problem has been identified. This includes when drinking water is discolored due to a disturbance in the system such as construction or other hydrant activity. Portland Water Bureau crews open fire hydrants to flush this water out of the system and bring fresh water into the pipes.

Autoflushing is similar to spot flushing and is used to maintain water quality in potential problem areas. This type of flushing uses an automatic flushing device, called an autoflusher, which is connected to hydrants and programmed to flush water at certain time intervals and flow rates. Using an autoflusher reduces the amount of staff time needed to maintain consistently better water quality at certain location in the distribution system, while using water in a more efficient manner.

Unidirectional flushing is not used in response to a specific water quality issue but instead is used as routine maintenance to prevent problems from arising. The goal of unidirectional flushing is to scour and clean the insides of the water delivery pipes. Cleaning the pipes removes sediment that build up in the pipes. This reduces the potential for water quality problems. Unidirectional flushing works by forcing water in the pipes to flow at much higher speeds than normal. Flushing crews first open and close valves to isolate sections of pipe, and then the water and any sediments in the pipes are flushed out through an open fire hydrant.

Improving and Maintaining High-Quality Drinking Water

Unidirectional flushing is used to improve and maintain our high-quality drinking water. Sediments and deposits in the pipes can discolor drinking water. The high speed water flows used in unidirectional flushing is an efficient and cost-effective way to remove sediments and deposits from the pipes and prevent potential water quality issues.

Flushing in Your Neighborhood

Unidirectional flushing will have minimal impacts to customers. If you see hydrant flushing crews working in the area, please drive carefully and treat them like any other road construction crew.

Flushing usually occurs Monday through Friday, between 8 a.m. and 1:30 p.m.

During Flushing

Residents in the immediate vicinity of flushing may notice temporarily discolored water (<http://www.portlandoregon.gov/water/article/524707>) and lower than normal water pressure. The discoloration does not pose a health risk. However, avoid using tap water or running the washing machine or dishwasher until flushing is complete.

After Flushing

If you experience some discoloration in your water (<http://www.portlandoregon.gov/water/article/524707>) from nearby flushing, run the water at one tap for 5 minutes to see if it clears. If it does not clear wait an hour and try again. When the water runs clear, flush any taps where discolored water was present.

Need Assistance?

The Water Line is available 8:30 am – 4:30 pm Monday-Friday at 503-823-7525 or WBWaterLine@portlandoregon.gov (<http://www.portlandoregon.gov/mailto:WBWaterLine@portlandoregon.gov>). If you have a discolored water-related emergency after these hours, please call 503-823-4874 to speak with a Water Bureau Emergency Dispatcher. To learn more about home water quality, visit the Water Bureau's Drinking Water Quality at Home (<http://www.portlandoregon.gov/water/68778>) page.

Current Flushing Map - Winter 2017 (<http://www.portlandoregon.gov/article/531024>)

Flushing North and Northeast Portland



Search Public Health...

[About Us](#) | [Contact Us](#) | [Jobs](#)
[Topics
A to Z](#)
[Data &
Statistics](#)
[Forms &
Publications](#)
[News &
Advisories](#)
[Licensing &
Certification](#)
[Rules &
Regulations](#)
[Public Health
Directory](#)

Public Health > [Healthy Environments](#) > [Drinking Water](#) > [Water System Operations](#) > Shock Chlorination for Storage Tank, Well and Distribution System - Procedure and Volume Calculation

Shock Chlorination for Storage Tank, Well and Distribution System - Procedure and Volume Calculation

Introduction

This Web page focus on assisting water system operators in utilizing the shock chlorination procedure, including the [Shock Chlorination Calculation tool \(xls\)](#), for disinfecting drinking water storage facilities. For more information about this procedure, please [contact Drinking Water Services \(DWS\)](#).

- Shock chlorination is a procedure used whenever there is a need for emergency disinfection of tanks, wells and/or distribution systems where there is confirmed evidence of microbiological contamination (i.e., positive [coliform or E. coli \(pdf\)](#) samples). Again, this procedure is for emergency purposes only and should not to be used on a regular basis.
- See the DWS [Well Disinfection \(pdf\)](#) technical bulletin for shock chlorinating a well and small distribution system (no storage tank).
- Shock chlorination of a storage tank or reservoir consists of the following steps:
 1. [Calculate tank water volume](#)
 2. [Determine the time frame or "Method Exposure"](#)
 3. [Add the correct amount of bleach](#) using the [Shock Chlorination Calculation tool \(xls\)](#)
 4. [Wait for disinfection to occur](#)
 5. [Flush tank volume](#)
 6. [Take special coliform samples](#)
- In order to appropriately utilize the [Shock Chlorination Calculation tool \(xls\)](#), users must enter data in the yellow-highlighted areas, and know the required residual chlorine concentration **AND** tank, well, or piping volume to be shock chlorinated.
- If using a volume representing tanks, pipes, and wells, please apply the highest chlorine residual concentration and the longest time needed to disinfect any one of the above components.

1. Calculate Tank Water Volume

Information on tank water volume should be on file with the water system. If water volume information is not readily available, please use the storage tank dimensions (**measured in feet**) as the data for calculations. Included below are formulas for determining rectangular and circular-shaped tank water volume. Please use the appropriate formula.

- **Rectangular tanks:** Water volume is length times width times height of the overflow port height (use the top, to be conservative) times 7.48 gallons per cubic foot.
 - Example: $\text{Volume}_R = \text{Length} \times \text{Width} \times \text{Height of overflow port} \times 7.48$
- **Circular tanks:** Water volume is the radius (i.e., half the diameter) squared times π (pi; i.e., 3.1416) times the overflow port height times 7.48 gallons per cubic foot.
 - Example: $\text{Volume}_C = \text{Radius}^2 \text{ (or } (0.5 \times \text{diameter})^2) \times 3.146 \times \text{Height of overflow port} \times 7.48$

2. Determine Time Frame or "Method Exposure"

- There are three exposure time-frames that can be used: 3-hour, 6-hour, and 24-hour.
- Permissible exposure time depends on the chlorine concentration applied and whether the chlorine can be added as the tank is being filled.
- Paired time and concentration is referred to as a "Method" as per Standard C652-11 of the American Water Works Association. Exposures of longer duration are regarded as conservative and generally result in better disinfection.

3. Add the Correct Amount of Bleach

- After determining the tank, well, and/or pipe water volume, you can input that value (in gallons) in the [Shock Chlorination Calculation tool \(xls\)](#) in the yellow-highlighted cell labeled "Volume to be disinfected =".
- Entering or changing the tank volume will automatically update the values under the "Chlorine Source Material..." heading, which report the volume (gallons) or weight (pounds) of chlorine needed to achieve the target dose depending on the form of chlorine used.

More Resources

[Drinking Water Data Online](#)
[Site Map](#)
[For Consumers](#)

Contact Us

[Center for Health Protection](#)
[Drinking Water Services](#)

- The desired chlorination dose is either 10 or 50 mg/L (unless the "Method" is spray application); these chlorine concentrations are indicated in the yellow-highlighted cells directly beneath the "Method A" and "Method B" column headings. Verify the dose by analyzing for free chlorine concentration and add more [bleach](#) if necessary to achieve the Method's concentration.

4. Wait for Disinfection to Occur

In order to fully and appropriately utilize this procedure, the water system operator must wait the full duration of the "Method Exposure Time" specified in the [Shock Chlorination Calculation tool \(xls\)](#). Below is an example of a procedure and situation:

- **Question:** Given that the tank storage volume is 10,000 gallons, there is no other storage for the system, and we need to get water production back online as soon as possible (thus using the 6-hour time-frame, Method B), how much normal household bleach do I need to add in order to disinfect my tank? Also, when does the "Method Exposure Time" start?
- **Answer:** Based on the [Shock Chlorination Calculation tool \(xls\)](#), add 10 gallons of normal household (5%) bleach to disinfect the tank (see [BLEACH WARNING](#), or the [Technical Bulletin: Well Disinfection \(pdf\)](#)). Measure the chlorine concentration. If the bleach was well mixed in the tank and the measured concentration is 45 mg/L, add about 10% of the original dose, or 1 gallon of bleach and mix. Say the measured concentration is now 54 mg/L (more than 50 mg/L), so start the clock on the 6-hour interval.
 - **Note:** Mixing can be achieved by re-circulating water in the tank. Chlorine demand is not usually so high that Method B would require 10% more dose than calculated in the [Shock Chlorination Calculation tool \(xls\)](#).

5. Flush Tank Volume

This step is analogous to that described in the [Technical Bulletin: Well Disinfection \(pdf\)](#). Confirm that the chlorine residual is <4 mg/L. Disposal should conform to [Oregon Department of Environmental Quality requirements \(pdf\)](#).

- **Warning:** Bleach used in this disinfection process must be flushed thoroughly from all service lines. This procedure is for shock disinfection only, and should not to be used on a regular basis. Bleach contains chlorine and is harmful to organisms living in water and soil. Human exposure to strong bleach solutions (i.e., over 4 ppm chlorine) may cause severe irritation to eyes and skin. Bleach solutions over 4 ppm chlorine can be harmful if swallowed. Please use appropriate protection and precautions when handling bleach and provide notification to any customers who may be receiving highly chlorinated water before the system is flushed.

6. Taking Special Coliform Samples

- After flushing tank volume, special [coliform \(pdf\)](#) (i.e., microbiological analysis) samples will need to be taken in order to determine if the above chlorination procedure was effective. For more about laboratory reporting and special coliform reporting forms, visit the [Laboratory Reporting](#) page.
- The entire chlorination process above might have to be repeated if [coliform bacteria \(pdf\)](#) are found to be present in the special samples. Consult with DWS Technical Services staff for more information.

Dee White, SE Portland, OR
Public Testimony

Agenda Item 215: Authorize a contract with Confluence Engineering Group, LLC in the amount of \$664,930 for the Corrosion Control Treatment Pilot Project (Ordinance introduced by Commissioner Fish) 90 minutes requested

This contract should not be approved in its current form. The last task in Phase 2 (Task P2.T5 – Develop Full –Scale Facility Plan) should be amended or deleted before this contract is approved. You can find this task outlined on page 10 of the contract. The contract reads:

Task P2.T5. - Develop Full-Scale Facility Plan

The land use study shall include preparing the land use application and leading the public review process.

Among the deliverables: a finalized land use application narrative, a finalized Wildlife Conservation Plan, a permitting strategy, coordination of landscape planning documents, further meetings with Multnomah County, meetings with PWB and preparations for and participation in a public hearing.

This is just plain wrong and is so unfair to the ratepayers. **There is no justification or need for a new facility even presented in this contract, in the ordinance or in the Community Impact Statement.** So much for transparency.

The vaguely defined scope of this contract goes beyond a corrosion control project to a full blown land use process – **and this is to be completed before the final design and approval of a new facility even begins!** (Is this even legal?)

This is pork-barrel legislation crafted for the benefit of Water Bureau contractors and not the ratepayers. This embedding of plans for a new facility, an approved land use application, and an approved Wildlife Conservation Plan is very poor public contracting policy and irresponsible governing. The final task in the contract is highly questionable with regard to spending ratepayer money wisely.

Where is any input from the PUB on this contract? Are they even aware that this contract also includes an approved land use application?

There is clearly a need to reduce the lead in our drinking water as soon as possible, as ordered by OHA and EPA. Letters to the Water Bureau from the OHA clearly state that the Water Bureau is to increase corrosion treatment **using current facilities**. In a letter to the Water Bureau dated November 4, 2016 OHA stated:

"...we direct the Water Bureau to take the following interim actions.

1. Increase corrosion treatment using current facilities."

In a letter dated January 24, 2017, OHA approved the action items proposed in the interim plan. OHA states:

"These interim measures reflect best management practices to reduce lead at taps with the infrastructure currently available."

In 2012 and 13 around \$5 million was spent in facility expansion at Lusted Hill in anticipation of adding fluoride to our water. Flouride was voted down, but the expansion plans were completed. Has this expansion been considered publically in lieu of constructing a new building? No.

I urge all of you, please do not abuse your powers by approving this contract. Mayor Wheeler you have pledged to govern this city with honesty and integrity; Commissioner Fish, you have pledged full transparency with Water Bureau policy and contracting. Please move to withdraw this contract for further consideration and amendment for the sake of principled governance. Please fix our dire water quality problems without unnecessarily burdening the ratepayers with more debt for new infrastructure that has not been thoroughly vetted.

Thank you.



PUBLIC HEALTH DIVISION
Center for Health Protection, Drinking Water Services
Kate Brown, Governor

Oregon
Health
Authority

800 NE Oregon Street, Suite #640
Portland, OR 97232-2162
(971) 673-0405
(971) 673-0694 – FAX
<http://healthoregon.org/dwp>

January 24, 2017

Mike Stuhr, PE, Administrator
Portland Water Bureau
1120 SW 5th Street, Rm 600
Portland, OR 97204-1926

Dear Mr. Stuhr:

The Oregon Health Authority (OHA) has received your Interim Lead Reduction Plan dated December 2, 2016. You provided this plan in response to our requirement for immediate interim measures in our November 4, 2016 letter approving your schedule to improve corrosion control to reduce lead at Portland Water Bureau customer taps. We have since reviewed your plan with careful consideration, assuring that the strongest public health protections are in place by reducing lead levels at the tap in both the short- and long-term.

OHA approves the action items proposed in your interim plan. These interim measures reflect best management practices to reduce lead at taps with the infrastructure currently available. Specifically, we approve raising the pH at the entry point to the distribution system from the current target of 8.0, to 8.2, as recommended by the Environmental Protection Agency. We understand the Portland Water Bureau will raise the pH to 8.1 within two weeks, and up to 8.2 after the spring 2017 lead and copper tap sample results are analyzed. OHA will establish minimum regulatory pH values based on lead levels found in the spring 2017 sampling. Future adjustments to the regulatory minimum may be necessary.

Your interim plan also included a schedule update because the Portland Water Bureau announced that it intends to begin the Corrosion Control Study earlier than originally anticipated. Other schedule modifications may be appropriate. OHA will address official schedule modifications in a subsequent letter.

We look forward to receiving quarterly status reports and updates to the lead hazard reduction plan in addition to these interim action items. Thank you for your cooperation in this important public health matter.

Sincerely,

Jere High, ND, Administrator
Center for Health Protection
OHA Public Health Division

cc: Marie Jennings, Region 10 Environmental Protection Agency
Dan Opalski, Region 10 Environmental Protection Agency

OREGON STATE PUBLIC HEALTH DIVISION
Office of the State Public Health Director

Kate Brown, Governor



800 NE Oregon Street, Suite 930
Portland, OR 97232
Phone: 971-673-1229
Fax: 971-673-1299

November 4, 2016

Mr. Michael Stuhr,
P.E. Administrator
Portland Water Bureau
1120 S.W. 5th Ave., Room 600
Portland OR 97214-1926

Dear Mr. Stuhr:

Thank you for your September 8 proposed schedule to enhance corrosion control treatment and further reduce lead levels at the tap. We have carefully considered your proposal, conferred with experts at EPA, and appreciate your clarifying of issues and questions during our evaluation process. We appreciate the steps the Bureau has taken to improve corrosion treatment. Portland needs to take additional immediate steps to reduce levels of lead in drinking water. Given the known elevated lead levels at some taps in the Portland water service area, we direct the Bureau to take the following interim actions take to further protect public health as it implements the corrosion control treatment improvement schedules committed to and described in this communication:

- 1. Increase corrosion treatment using current facilities:** We expect the Bureau to move quickly to further reduce lead levels at the tap as much as possible using the existing treatment and water system facilities. While we agree that Portland must upgrade its water treatment facilities and infrastructure to achieve significant reductions in lead levels, there are short-term steps Portland must take within its current system to treat water and reduce lead. We expect the Bureau to submit a plan to OHA for interim lead reduction by December 2, 2016. This interim plan should include immediate steps and intermediate steps to reduce lead in drinking water. We then expect the Bureau to fully implement an OHA-approved plan as quickly as possible and report on deadlines.
- 2. Implement changes in Lead Hazard Reduction Program to protect vulnerable populations:** We expect the Bureau to aggressively conduct, assess, and improve the components of the Lead Hazard Reduction Program: 1) water treatment, 2) free lead in water education and testing, 3) public outreach and education, and 4) lead hazard reduction. The bureau must focus its efforts on vulnerable populations such as pregnant women and children under the age of six. We also expect the Bureau to aggressively and fully implement any recommendations identified by OHA Program Design and Evaluation Services in its evaluation of program elements by December 31, 2017. The Bureau must increase reporting to OHA on status, changes and improvements in the Lead Hazard Reduction Program to quarterly from semi-annually.

We recognize the efforts the Bureau is making to evaluate the impact of corrosion treatment and plan for the construction of a new water treatment facility, which is necessary to make significant and systematic reductions of lead in Portland's drinking water. The Bureau took the first step in this process in spring 2014, when it initiated the water quality corrosion study which is currently underway, and which you have been updating OHA and EPA on its progress. OHA looks forward to reviewing this study when it is completed, no later than July 1, 2017.

We concur with the Bureau's corrosion control treatment improvement schedule as proposed. The action steps of the schedule are listed below with completion dates.

Action Step	Completion Date
Complete Water Quality Corrosion Study	June 1, 2017
Review study data and agree with OHA on treatment options; submit recommendation to City Council for consideration	June 30, 2017
Submit Water Quality Corrosion Study final report to OHA	July 01, 2017
Submit Corrosion Control Treatment Pilot Study Plan to OHA	September 30, 2017
Submit Corrosion Control Treatment Pilot Study results and treatment	December 31, 2018
Begin Improved Corrosion Control Treatment Facility Design	January 01, 2019
Submit Improved Corrosion Control Treatment Plans and Specifications to OHA	September 30, 2020
Begin Corrosion Control Treatment Facility Construction	January 01, 2021
Complete Improved Corrosion Control Treatment Facility	September 30, 2022
Complete demonstration tap monitoring round	November 30, 2022
Comply with Minimum Water Quality Parameters	March 01, 2023

Yet, land use app is supposed to be ready for public hearing!!
Backwards + WRONG

OHA considers the above a compliance schedule. Steps, due dates, and completion dates will be posted and tracked on the Drinking Water Services website. Any modification requires OHA approval in advance, should unforeseen technical or permitting delays occur.

If you have questions, please contact me.

Sincerely,



Lillian Shirley, BSN, MPH, MPA
Public Health Director
Oregon State Public Health Division

Cc: Lynne Saxton, Director, Oregon Health Authority
Jere High, Administrator, Center for Prevention and Health Promotion