



## Staff Report

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**TO:** Mayor and City Council

**THROUGH:** Steve Powers, City Manager

**FROM:** Peter Fernandez, PE, Public Works Director

**SUBJECT:**

Summary of actions to address cyanotoxins in Salem's water supply.

Ward(s): All Wards

Councilor(s): All Councilors

Neighborhood(s): All Neighborhoods

**ISSUE:**

Information regarding issues and actions taken in response to the presence of cyanotoxins in the City of Salem's source water and drinking water system.

**RECOMMENDATION:**

Information only.

**SUMMARY AND BACKGROUND:**

On May 29, 2018, a water advisory for vulnerable populations was issued by the City of Salem because cyanotoxins had been detected in the City's drinking water system. The advisory was lifted on June 2 and reissued on June 6 and currently remains in effect. The most recent test results show cyanotoxins are below EPA health advisory guidelines for all populations.

Response actions now underway include conducting a robust public information program, providing water at distributions stations, and coordinating among local, state, and federal agencies. The City is also taking measures to implement additional capabilities at the water treatment facility at Geren Island that will remove cyanotoxins by using a powdered activated carbon (PAC) injection system.

Attachment 1 is a memorandum provided to the Mayor and City Councilors on Friday, June 22, 2018. The memo contains an overview of the issues and actions taken to address the risks associated with cyanotoxins in Salem's water supply. It also provides background information on Salem's water

supply, treatment system, and harmful algal blooms. Attachment 2 provides the latest data regarding water distribution and other actions. Attachment 3 provides recent photos of the work being conducted at the Geren Island Water Treatment Facility.

Below is an update to the June 22, 2018, memorandum as of approximately noon on June 25, 2018:

- The past weekend was invested in setting up equipment and material needed for the demonstration phase and testing of the various additional components to the water treatment system.
- The demonstration phase began at approximately 10:00 a.m. this morning. This phase is a single filter cell test. It involves diverting a portion of the inlet water to a side channel, treating it with powdered activated carbon (PAC) followed by polymer/alum additions, sending the water to the roughing filter, and then to one cell of one sand filter to evaluate the performance. The purpose of the demonstration phase is to evaluate injection methods, settling rates, and filter performance. See Attachment 1 for additional details on the demonstration phase.
- Pilot testing continues to evaluate the performance of PAC and the effectiveness of cationic polymer/alum combinations on PAC settling rates. Testing will continue through full implementation of PAC treatment.
- Nearly all of the equipment and other material needed to commence full scale implementation of PAC treatment is in place at the Geren Island Water Treatment Facility. The remaining components are scheduled to arrive this week. Full scale implementation is scheduled to commence on Monday, July 2, 2018.
- In order to conduct analysis for cyanotoxins, the City requires a deep freezer which is capable of rapidly freezing samples to below -70°C. The City has ordered such a deep freezer for our Willow Lake Water Pollution Control Facility laboratory and expects delivery by Wednesday. This will allow the City to analyze samples within eight to ten hour of their arrival at the lab. Testing is expected to begin by the end of this week.

Robert D. Chandler, PhD, PE  
Assistant Public Works Director

**Attachments:**

1. Memorandum to Mayor and City Councilors, "Summary of Actions to Address Cyanotoxins in Salem's Water Supply," dated June 22, 2018
2. City of Salem Water Quality Event - Water Distribution Statistics
3. Recent photos from Geren Island Water Treatment Plant