

EXHIBIT H



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

City of Benton Harbor Water System

Water System History and
Compliance and Enforcement Update

September 2, 2021

City of Benton Harbor

- Population ~ 10,000
- WTP expansion to 12 MGD
- Loss of Wholesale Customer (Twp)



2018

- Near turbidity violation → Compliance Communication
- TOC treatment technique violation, jar testing
- **Sanitary Survey**
- **Lead ALE**



2018

Sanitary Survey

- Shift in EGLE approach
- 8 Significant Deficiencies
- 4 Minor Deficiencies
- Lack of TMF

Lead ALE

- No change in source/tmnt
- Tier 1 locations?
- 30 Samples*
- 22** ppb 90th percentile

* 1st liter only per Michigan regulations

2019

SS->ACO

- Moved Alum Feed
- SCADA and chlorine analyzer
- Hired a new Distribution operator (started rate collecton)
- Four extension requests

Lead ALEs

- Corrosion Treatment Installed in March
- Finished Water Meter Installed
- Two more lead ALEs***
- Monitoring violations (lack of samples: 46 (2020-1), then 39 (2020-2))

* Michigan's 1st/5th liter sampling methodology began in 2019

Alum underfeed

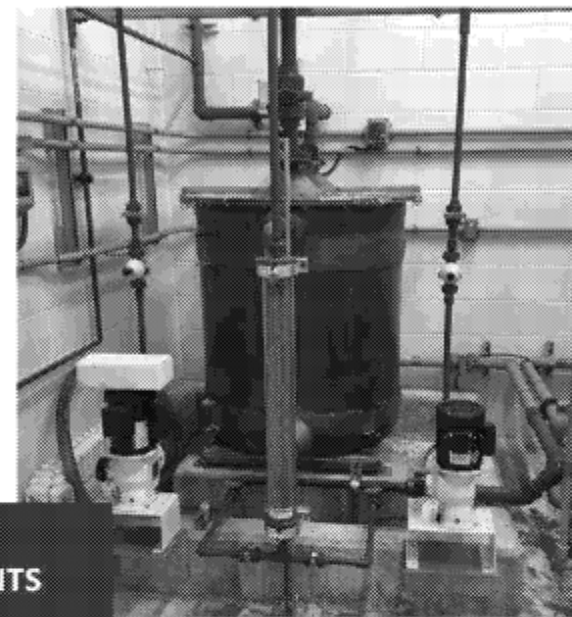
First identified in Sept 2019

-Operators forgot to
turn on alum manually




-Repeated in Nov 2020

-Repeated in May 2021

(crypto sampling of distribution)



**FILTER AND BOIL WATER ADVISORY
FOR CITY OF BENTON HARBOR RESIDENTS**

 +  = 


Filter or Flush Boil Consume

Remember to filter and boil any water that will go into your mouth, such as drinking water, cooking water, baby formula, ice, brushing your teeth, etc.

We advise that you replace your filter cartridge after the boil water advisory is lifted. Here's where you can go for a filter cartridge or water filter:

- 1 Visiting the Berrien County Health Department Benton Harbor office at 2149 E. Chapin Ave., Monday-Friday from 8:30am-5pm.
- 2 Calling the Berrien County Health Department at 1-800-815-5485 Water Response Hotline to request a replacement filter or cartridge be mailed to your home.
- 3 Visiting the Spectrum Health Lakeland Center for Better Health at 100 W. Main Street, Benton Harbor. The Center is open Monday-Saturday, but hours of operation vary by day. See shlcenterforbetterhealth.org or call 269-408-2258 for updated business hours.

www.bchdmi.org | 1-800-815-5485

 **BERRIEN COUNTY
HEALTH DEPARTMENT**
WORKING TOGETHER TO IMPROVE COMMUNITY HEALTH

2020

ACO

- EGLE changes strategy after talks with city/F&V
- Amended ACO: focus on TMF Capacity Study
- Hired a new Operator in charge (contract operations firm)

Lead ALEs

- EGLE directs adjustment to Corrosion Treatment in March
- Used volunteers to get required # of samples
- Two more lead ALEs**

2021

ACO

-EGLE funded TMF study is underway, due Feb 7, 2022

-Focusing on SOP development

-ACO items hinge on TMF:

- cross connection
- valve & hydrant
- financial revenues

Lead ALE

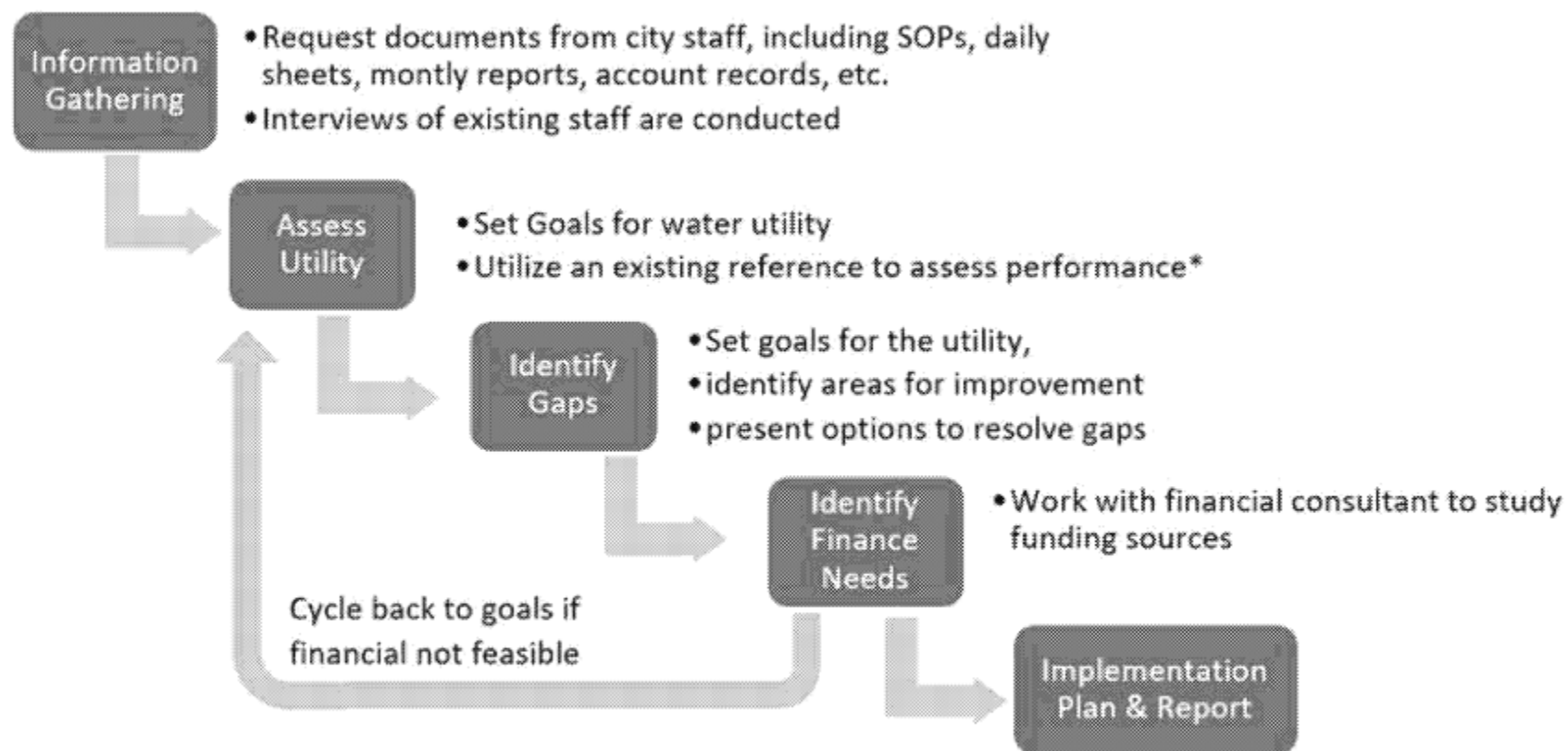
- EPA funded corrosion study is underway, wrapping up '22

-Refocusing sampling locations to known lead service lines and done by in-house staff for current round

-PO4 levels finally reach 3.0 mg/L

-Continued lead ALE

TMF Study: Workflow & References



*Consider referencing Effective Utility Management (EUM), AWWA G100, G200, G400, Partnership for Safe Water

EPA info:

<https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=P100MEW9.txt> (assessing capacity)

<https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000284Z.txt> (EPA Handbook for Developing Capacity)

<https://www.epa.gov/dwcapacity/technical-managerial-and-financial-tmf-capacity-resources-small-drinking-water-systems-0>

Public Communication from City of BH

Lead Communications

- 10/24/2018 – Press Conference
- 10/24/2018 – Public Advisory
- 11/29/2018 – Public Education
- 1/24/2019 – Public Meeting
- 7/29/2019 – Public Advisory
- 8/28/2019 – Public Education
- 1/22/2020 – Public Advisory
- 2/26/2020 – Public Education
- 7/4/2020 – Public Advisory
- 8/2020 – Public Education (missed section of town)
- 1/3/2021 – Public Advisory
- 2/2021 – Public Education
- 7/1/2021 – Public Advisory
- 8/28/2021 – Public Education

Other Water Communications

- 8/1/2018 – missed E Coli PN
- 8/7/2018 – TOC removal PN
- 12/1/2018 TOC removal PN
- 7/1/2019 - CCR included many violations
- 7/1/2020 - CCR included many more violations
- 12/1/2020 – Boil Water Advisory
- 2/1/2021 – Missed PE distribution PN
- 6/1/2021 – Boil Water Advisory
- 7/1/2021 – CCR included many violations

Enhanced Outreach

- Gather Stakeholders
- Identify roadblocks
- Make a plan
- Communicate



Serving the Michiana Area, Benton Harbor and Southwest Michigan to South Bend, Indiana

Working Together to Reduce Lead Exposure in Benton Harbor

You may have been informed that recent testing discovered a problem with high lead levels in tap water in Benton Harbor. State and local partners are working together to make sure that you have the information needed to protect your family. This fall, we will host a three-part series in the Benton Spirit Community Newspaper to share an overview of when we discovered lead in water in Benton Harbor, what we're doing to support to community residents and what's being done to address the issue and remove lead service lines in Benton Harbor. The Benton Harbor Community Water Council, the City of Benton Harbor, Benton County Health Department, Andrews University, Freshwater Future, and the Benton Spirit Community Newspaper, along with the Office of the Clean Water Public Advocate, Michigan Department of Environment, Great Lakes, and Energy, and the Michigan Department of Health and Human Services are joining forces to ensure that Benton Harbor residents have access to information and free resources to reduce lead in water.

What actions have been taken since the City learned of the lead issue in tap water?

Though the water treatment plant is relatively new, Benton Harbor's water distribution system is about 100 years old with much of the original infrastructure still in use, including water mains and service lines. It is known that a high number of lead service lines were installed in the first half of the 20th century and many homes built before the 1960s are likely to have lead service lines or pipes that pose a health risk to residents.

Elevated lead levels were first discovered during routine testing in 2016. The first action that was taken was to tell Benton Harbor residents that there were elevated levels of lead in the drinking water and how to protect themselves by flushing their water, and/or, by obtaining a lead-reducing water filter. The Benton County Health Department (BCHD) began providing filters in 2016. The Michigan Department of Health and Human Services provided the funding for the filter and BCHD provides staffing and location to distribute the filters.

For help with securing a water filter, go to:
bentoncounty.org/155266/Tip-of-Benton-Harbor

The City installed corrosion control treatment to help reduce the amount of corrosivity of the water, which will reduce lead levels, and has begun the process of replacing lead service lines determined to be L011 level. This is an important step because the best way to reduce lead levels is by removing the sources of lead in the system. The City has also increased the monitoring of lead and copper. The City is now sampling twice as many homes as they were previously, and they are sampling those homes more often (every six months instead of every three years). This sampling is done so that everyone knows the levels of lead and copper in the system, and to show when the corrosion control treatment has become effective in lowering the levels of lead.

Can you get water tested for lead? If so, how?

To determine if your home qualifies to be included in City testing (homes with lead service lines) and also determine the L011 level, if you have any questions for our community outreach there are water testing for testing. The City may be able to connect you to a certified lab of your choice (noted on the attached list). A list of certified labs is available at bentonharbor.org.

Water System History

1914 and previous
Construction of a water tower at Benton Harbor, helping to keep pressure in the system and provide water for the city.

1945
Construction of a water tower replacement that has been in use since 1945.

1970
Expansion of water treatment plant to replace existing, adding pumping and chemical treatment.

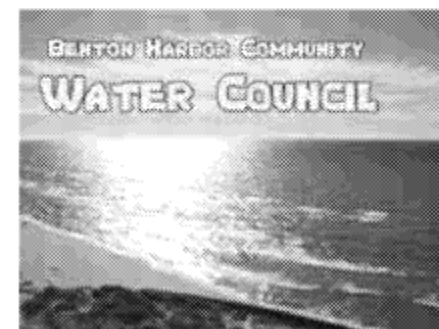
2011-2013
Lead of Corrosion Control System installed 2011-2013.

2020
Expansion of the distribution system to replace aging water pipe and lead service lines, and replace the water tower.

Benton Harbor Community Water Council

EGLE

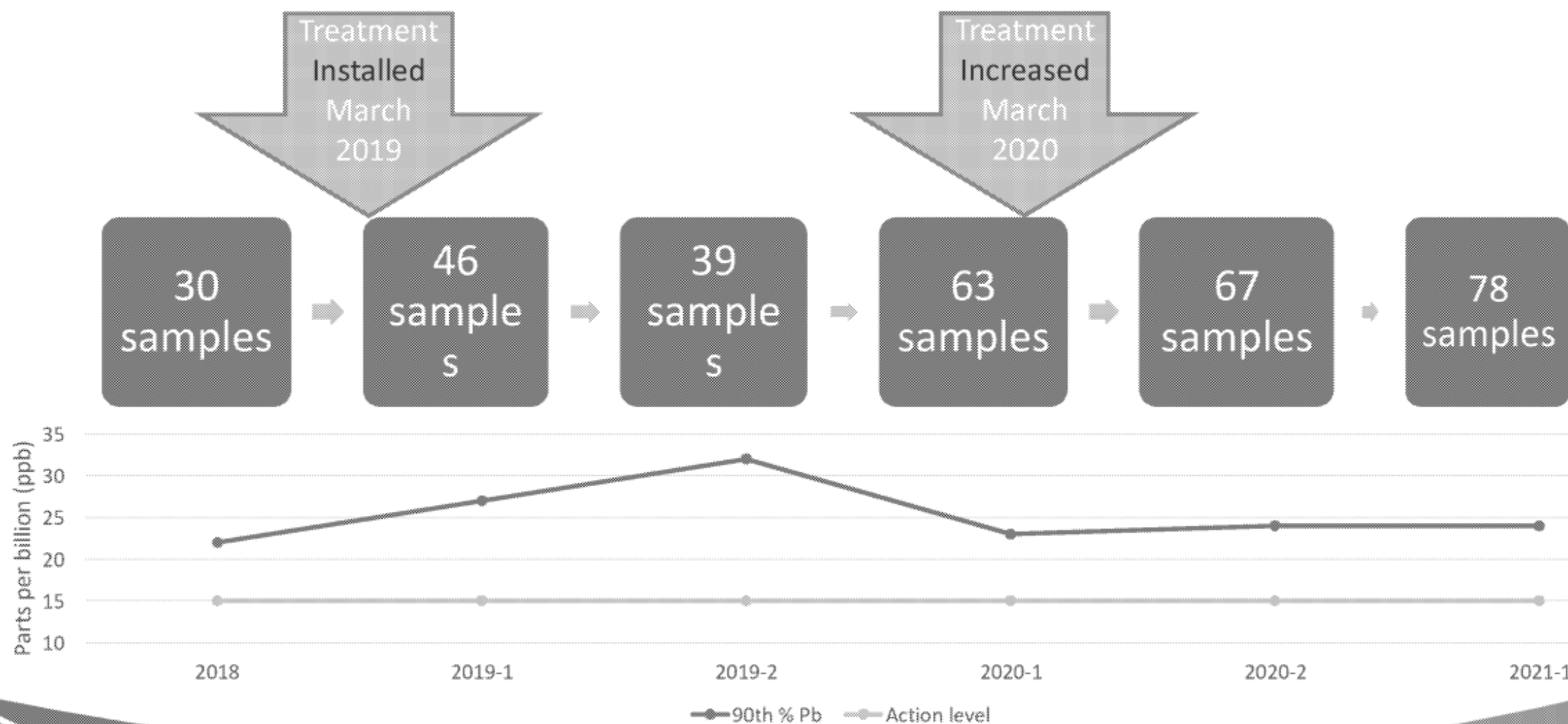
EGLE Clean Water



Progress - ACO

- Complete a water rate study
- Maintain water plant computer system
- Install flow metering capability at the plant
- Employ a full-time water distribution operator
- Installed corrosion control treatment
- Improved treatment chemical injection at WTP
- Begin implementing SOP for staff (startup, filter backwash)

Timeline



What's Been Done on Lead?

- **Work closely with partners to communicate to public**
- Water filters are FREE to all residents through State/Local Health Department
- *Installed* treatment to help corrosion
- *Increased* treatment to help corrosion
- Started identifying lead service lines
- Started replacing lead service lines
- Begin corrosion treatment STUDY

Trends

- Disinvestment/Deferred Maintenance → Re-investment
- Lack of Organization → Better recordkeeping, less violations
- Inability to Manage → Communication & Accountability



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Questions?

Contact Info:

Michael Bolf, bolfm@michigan.gov, 906-630-4107

Ernie Sarkipato, sarkipatoe@michigan.gov, 616-307-0261