From: Mike O"Malley
To: Sarkipato, Ernest (EGLE)
Subject: Automatic reply RE: Drinking Water Certification - Michael O"Malley - OID #2634 -- Amendment to Fact and Conduct Briefing Memorandum (FCBM)
Date: Tuesday, November 24, 2020 11:31:16 AM

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Please forward all correspondnce to Darold Harlan at DHarlan@FV-Operations.com

From: Mike O"Malley
To: Sarkipato, Ernest (EGLE)
Subject: Automatic reply RE: Meeting: Continue discussion Alum Sludge Management and BH Water Plant
Date: Wednesday, December 2, 2020 3:02:33 PM

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Please forward all correspondnce to Darold Harlan at DHarlan@FV-Operations.com

From:	Sarkipato, Ernest (EGLE)
To:	Dean, Scott (EGLE)
Cc:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Kimberly Thompson; Bolf, Michael (EGLE); Thurston, Brian (EGLE); Courtney Davis; Sasy, Ninah (EGLE); Crider, Steven (DHHS); Keatley, Aaron (EGLE)
Subject:	City of Benton Harbor under boil water advisory
Date:	Friday, November 6, 2020 9:22:00 AM
Attachments:	Benton Harbor - Boil Water Advisory - 11-5-2020.pdf Benton Harbor Water Public Advisory for Lead ALE C.pdf

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Good morning Scott,

We are asking for your assistance with messaging in Benton Harbor regarding a boil water advisory due to a treatment failure, also in a community with an ongoing lead action level exceedance. The messaging is nuanced and difficult, bearing in mind this community has received four rounds of ALE communications similar to the attached.

The attached communication will be in today's papers. It contains some language regarding lead, as it relates to the boil notice and how best to protect public health from acute pathogen contaminants like bacteria.

We also now have a TV website with coverage that does not include the language regarding lead and boiling water. https://www.abc57.com/news/city-of-benton-harbor-under-boil-water-advisory

1. We need to work with ABC57 to add language regarding lead.
2. Can we get together to coordinate additional messaging and outreach to the public regarding this boil water issue, in the context of lead ALE?

Current PN Language (attached excerpt): *Boil water can concentrate other chemicals in the water such as lead. If you know you have a lead service line or have previously detected lead in home water samples, we recommend you not use the water for drinking and use bottled water instead. If you have a filter on your sink, we recommend you replace the filter when the advisory is lifted because it could become fouled by the questionable water quality.*

Lead Advisory Language: *please see attached recent public advisory*.

Thanks for your help, and if you are able we may want to have a group discussion regarding this messaging.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
616-307-0261

DRINKING WATER WARNING

City of Benton Harbor – Water Treatment Plant Failure
BOIL YOUR WATER BEFORE USING

Due to an interruption in the treatment process, microbial contamination may have occurred in the water system. Bacteria are generally not harmful and are common throughout our environment. However, a failure of treatment can allow disease causing microbes to get into tap water. Corrective measures are currently being undertaken to correct the situation.

What should I do?

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and preparing food. Boiling kills bacteria and other organisms in the water. Continue using boiled or bottled water until further notice.

Special notice on lead:

Boil water can concentrate other chemicals in the water such as lead. If you know you have a lead service line or have previously detected lead in home water samples, we recommend you not use the water for drinking and use bottled water instead. If you have a filter on your sink, we recommend you replace the filter when the advisory is lifted because it could become fouled by the questionable water quality.

What happened? What is being done?

These precautionary actions are being taken due to a problem at the treatment plant. For two hours water was passing through the plant without a critical treatment chemical. Some of this water mixed with properly treated water and made its way into the city distribution system.

Treatment staff has taken other remedial actions such as emptying water out of treatment basins and monitoring water quality. Samples will be collected to determine that the water quality meets the state drinking water standards. We anticipate resolving the problem within two to three days.

This boil water notice shall remain in effect until results from the sampling verify the water is safe to drink and the questionable water has been flushed from the system. **Customers will be advised when the boil water advisory has been lifted.**

For more information, please contact Ellis Mitchell, city manager of Benton Harbor at 269-927-8400 or emitchell@bhcity.us. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing

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CERTIFICATION: WSSN: [enter WSSN]

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

cc: [cc the local health department and the Michigan Department of Agriculture if the boil affects a municipal supply.]

homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

CERTIFICATION: WSSN: [enter WSSN]

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

cc: [cc the local health department and the Michigan Department of Agriculture if the boil affects a municipal supply.]

BENTON HARBOR
Port of Opportunities

July 15, 2020
For Immediate Release

Public Advisory for Drinking Water Customers in the City of Benton Harbor

(Benton Harbor) – The City of Benton Harbor has been conducting ongoing testing of the City's water supply in accordance with the regulations under the Lead and Copper Rule of the Drinking Water Act for the State of Michigan. During this ongoing compliance testing, it was found that water samples gathered in 63 residences from January through June 2020 exceeded the Action Level of 15 parts per billion (ppb) for lead within those household samples. The 90th percentile for these samples was 23 ppb for lead, with nine of the sixty-three samples having lead levels in excess of 15ppb, ranging from 21ppb to 400ppb.

Since October 2018, the City of Benton Harbor, along with many community partners, have been taking several steps to reduce resident's exposure to lead. The City of Benton Harbor has successfully started the replacement the City's lead service lines, introduced new corrosion controls in the water supply at the City's Water Plant, and provided ongoing support and education for residents for water testing and understanding how they can limit lead exposure. The City is committed to continuing to take all corrective actions necessary to educate residents, improve the community water supply, and replace lead service lines with the goal of eliminating lead exposure in drinking water for residents. Find more information regarding the Action Level Exceedance and the City's drinking water at https://bhcity.us or by contacting the City of Benton Harbor Water Plant Director Mike O'Malley at 269-363-0575 or momalley@bhcity.us

Elevated levels of lead can cause health concerns. All Benton Harbor water customers are reminded to take the following precautionary actions to reduce their exposure to lead in drinking water:

- Public health officials recommend that any household with a child or pregnant woman use cold water and a certified lead filter to reduce lead from their drinking water. Look for filters that are tested and certified to NSF/ANSI Standard 53 for lead reduction, especially when preparing baby formula. If you are not able to afford the cost of a lead filter, please contact the Berrien County Health Department. More information about obtaining a certified water filter and replacement cartridges can be found at www.bchdmi.org or by calling 800-815-5485.
- Residents who do not have a filter and have not used their water for six hours or more should flush their pipes to reduce the amount of lead in their drinking water. Pipes can be flushed by running faucets for at least five minutes, or by taking a shower, running a load of laundry or washing dishes. After flushing, run the water from your faucet until cold before drinking or cooking with the water.
- Do not use hot water for drinking, preparing food, or cooking, or preparing baby formula.
- Consider using bottled water for preparing baby formula or use Ready-to-Feed formula.
- Do not boil the water, as boiling will not reduce the amount of lead in the water.
- Clean faucets' aerators or screens at least every six months.

Additional information regarding lead in drinking water and how to reduce risk of lead exposure can be found at Michigan.gov/EGLEleadpublicadvisory, Michigan.gov/MILeadSafe, or by calling 1-800-662-9278.

Benton Harbor Water Quality: **Update for Residents**

In 2018, it was discovered that there was a problem with high lead levels in tap water in Benton Harbor. The City performed routine monitoring for lead and copper by sampling at homes connected to the Benton Harbor Water Supply and found that more than 10% of these samples exceeded the Action Level for lead. The samples collected in previous rounds did not have the same elevated results.

Can I have my tap water tested for lead? If so, how?

To determine if your home qualifies to be included in City testing (homes with lead service lines), call Mike O'Malley at 269 363-0575. If your home isn't eligible for the compliance program; there are other options for testing. The City may be able to connect you to a certified lab, or you can directly contact a certified lab. A list of certified labs is available at *Michigan.gov/EGLE lab.*

What can I do as a resident to ensure my tap water is safe?

- **Get your water moving.** Flushing water pipes can reduce the amount of lead in your water. If you have not used your water for several hours, flush your pipes following your public water supply's recommended amount of time by doing any of the following:



For more information on what to do after plumbing changes inside or outside the home, go to: *bit.lyf391ycD£.*

Use a point-of-use water filter. A certified lead-reducing filter can reduce lead in drinking water. Filters are made to reduce lead, but do not guarantee that all lead will be removed from drinking water. For more information on choosing a POU water filter, go to *bit.lyf2vaHLkO.*

Clean your faucet aerators. Clean the mesh screen, or aerator, on the end of your faucet at least every six months. If construction is being done to the water system or pipes near your home-including water meter replacement in your home-check and clean your drinking water faucet aerator every month until the work is done. Go to *bit.ly../2Jg/QvE* for more information.

Consider replacing older plumbing, pipes, and faucets that may add lead to water. Older faucets, fittings, and valves sold before 2014 may contain up to 8 percent lead, even if marked "lead-free." Look for replacement faucets made in 2014 or later and make sure they are NSF 61 certified or marked to contai 0.25 percent lead or less. Check your plumbing or hire a plumber to know what parts should be replaced to reduce lead in your drinking water.

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

Many efforts are underway to measure and minimize corrosion. **The first action that was taken was to tell the residents of the city of Benton Harbor that there were elevated levels of lead in the drinking water** and how to protect themselves by running their water, and/or, by obtaining a lead reducing water filter.

The Berrien County Health Department (BCHD) began providing filters in 2019. The Michigan Department of Health and Human Services provides the funding for the filter and BCHD provides staffing and locations to distribute the filters. For help with securing a water filter, go to https://www.berriencounty.org/1568/Lead-Drinking-Water.

The City has begun replacing lead service lines. This is an important step because the best way to reduce lead levels is by removing the sources of lead in the system . Because removal of all lead service lines is going to take quite some time, the city has also installed corrosion control treatment to help reduce the amount of corroscivity of the water, which will reduce lead levels.

The City has 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 6 months instead of every 3 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.

What remains to be done in order to reduce lead in tap water below the Action Level?

The Lead and Copper Rule requires collecting samples from a number of homes, reporting the results to the residents of those homes, and reporting the results to the state. Benton Harbor will have resolved the Action Level Exceedance when the corrosion control treatment has reduced lead levels in homes, and two back-to-back six-month rounds of sampling confirm this. Both six-month sets of sampling must have a 90th percentile that is less than 15 parts per billion. The City is also required to conduct a study of the corrosion control treatment to identify if the most effective treatment to reduce lead. Currently, the City has hired a qualified expert to propose a detailed plan and begin the study.

Since there is no lead in the water that comes from Lake Michigan or in the water as it leaves the water treatment plant, how does lead get into the water?

Drinking water is free of lead until it is in contact with lead containing materials, such as lead service lines. Then as it sits in contact with lead containing materials the lead begins to be dissolved into the water. The longer that water sits motionless and in contact with lead containing materials the more lead it can "pick up". Most of the lead containing materials *that can be* in *contact with* drinking water are found in the service line (the water line coming from the water main in the street into your home) or within your home in the form of pipes, solder, or brass.



See page one for more information on reducing the amount of lead in your drinking water.

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Darel Rice
Cc:	Nelson, Maureen (EGLE); Bolf, Michael (EGLE)
Subject:	FW: ACO Deadline reminder
Date:	Thursday, October 22, 2020 11:21:00 AM
Attachments:	00600 City of Benton Harbor Fully Executed Amended ACO - AACO-399-07-2019.pdf image001.png

Good morning,

We look forward to speaking this afternoon regarding the alum sludge management at the BH water plant.

As a reminder, since there are so many distractions, there is another ACO deadline coming up. Note, this is simply a ***PLAN***.

2.12 **Not later than November 1, 2020,** the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

Thank you,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>
Sent: Wednesday, October 14, 2020 8:47 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Subject: ACO Deadline reminder

Hi Ernie,

I know you already sent a reminder in the recent VN to the City of Benton Harbor, but I'm doing my due diligence in reminding you of the upcoming deadline of November 1, 2020 for paragraph 2.12 of

the amended ACO.

Thanks,
Maureen

--
Maureen Nelson
Enforcement Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
517-242-8328 | NelsonM2@Michigan.gov
Follow Us | **Michigan.gov/EGLE**

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

FIRST AMENDED ADMINISTRATIVE CONSENT ORDER

In the matter of: DWEHD Order No. AACO-399-07-2019

SECTION I

FACILITY OWNER/OPERATOR

NAME City of Benton Harbor	OWNER☒	OPERATOR☒
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS BUSINESS IDENTIFICATION NUMBER		
ADDRESS 200 East Wall Street		
CITY Benton Harbor	STATE Michigan	ZIP CODE 49022
CONTACT NAME/TITLE Ellis Mitchell, City Manager	PHONE # 269-927-8457	

FACILITY NAME AND LOCATION

FACILITY NAME Benton Harbor Public Water Supply		WATER SUPPLY SERIAL NUMBER 00600
FACILITY OWNER IF NOT IDENTIFIED ABOVE Ellis Mitchell, City Manager		
ADDRESS 200 East Wall Street		
CITY Benton Harbor	STATE Michigan	ZIP CODE 49022
COUNTY Berrien		
CONTACT NAME Ellis Mitchell, City Manager	PHONE # 269-927-8457	

Executive Order 2019-06, signed by Governor Gretchen Whitmer on February 20, 2019, renamed the Michigan Department of Environmental Quality (MDEQ) as the Department of Environment, Great Lakes, and Energy (EGLE). Effective April 22, 2019, a reference to the MDEQ will be deemed a reference to EGLE. After April 22, 2019, a reference to the Director of the MDEQ will be deemed to be a reference to the Director of EGLE. The Drinking Water and Municipal Assistance Division (DWMAD) was renamed the Drinking Water and Environmental Health Division (DWEHD). A reference to the DWMAD will be deemed a reference to the DWEHD and a reference to the Director of the DWMAD will be deemed to be a reference to the Director of the DWEHD.

Administrative Consent Order (ACO) ACO-399-07-2019, entered on March 5, 2019, between the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), and the City of Benton Harbor (City), is hereby amended, as follows. Upon the consent of the parties and by the authority granted to EGLE by the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), and the administrative rules promulgated thereunder, it is hereby agreed and ordered:

COMPLIANCE SCHEDULE

Paragraphs 2.1(a & b), 2.2, 2.3, 2.4, 2.5, 2.6, 2.9 have been completed and removed from ACO-399-07-2019. Reference Exhibit A, attached.

A number of the items below refer to a "Capacity Study." In this Amended Consent Order, under Paragraph 2.14, a Capacity Study refers to an assessment of a water system owner's technical, managerial, and financial capacity to consistently provide safe water to the public.

Paragraphs 2.7, 2.8, 2.10-2.13 of ACO-399-07-2019 shall be amended as specified below:

2.7 **Not later than September 30, 2020**, the City shall formally adopt a consistent and equitable rate collection program to minimize the number of unpaid bills and streamline the collections process.

2.8 **Not later than August 15, 2020,** the City shall submit the current cross connection program to the DWEHD for review. The DWEHD's review and comments on the current program will assist the City in completing the Capacity Study in paragraph 2.14. **No later than three (3) months following the completion of the Capacity Study**, an updated cross connection program must be submitted to the DWEHD for review to address any implementation changes as a result of the study.

2.10 (a) **Not later than six (6) months following the completion of the Capacity Study** in paragraph 2.14, the City shall submit a plan to the DWEHD for inventorying and ongoing maintenance of distribution fire hydrants. The plan must address fixing known broken hydrants, as well as preventative maintenance, such as hydrant inspections and flushing.

(b) **Not later than six (6) months following the completion of the Capacity Study** in paragraph 2.14, the City shall submit a plan to the DWEHD for inventorying and ongoing maintenance of distribution valves. The plan must address fixing known broken valves, as well as preventative maintenance, such as valve turning.

2.11 **Not later than August 1, 2021**, the City shall conduct professional inspections of the City of Benton Harbor water system's elevated tank, or complete the repairs and upgrades recommended during the 2008 Dixon inspection, as included in the City's asset management program dated December 2017.

2.12 **Not later than November 1, 2020**, the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

2.13 **Not later than December 31, 2020**, the City shall repair filter to waste valves at the water plant, and train operators on their use.

The following paragraphs shall be added to Section II – Compliance Schedule:

2.14 **Not later than September 30, 2020**, The City shall submit to the DWEHD, for review and approval, a project scope for completion of a technical, managerial, and financial capacity study to ensure, at a minimum, that the City has adequate staffing and financial mechanisms to carry out the operation and maintenance of the City of Benton Harbor's

water system, in compliance with Act 399. The City shall contract with a qualified consultant to complete the Capacity Study. The Capacity Study scope shall identify the organizational structure, and the required funding, to operate and manage the system, in compliance with Act 399. The Capacity Study shall also identify current staffing levels, including the number of full- and part-time employees currently dedicated to the water system, the number of employees from other departments within the City who currently provide assistance, the nature of that assistance, and the hours of assistance committed from those departments. Last, the Capacity Study shall identify any technical needs, such as development and storage of water system records to facilitate compliance with Act 399.

Not later than six (6) months following approval of the project scope, the City shall submit a completed Capacity Study for DWEHD approval.

To address any gaps identified by the Capacity Study, the Capacity Study shall include an **implementation plan** to gather sufficient resources and qualified personnel to carry out the authorities and procedures for daily operation, maintenance, and management of the City's water system. **Not later than August 1, 2021 and every six (6) months after the DWEHD approves the Capacity Study, the City shall submit a signed statement describing the City's progress** towards completing the implementation plan to achieve adequate capacity.

Capacity Study Phase	Description	Due Date
1: Project Scope and Outcomes	Submit to the DWEHD for input on the study scope and outcomes	September 30, 2020
2: Study Completion	Complete the Capacity Study based on project scope	Six months after approval of scope
3: Implementation	Progress reports to the DWEHD describing city's progress	August 1, 2021 and every six months thereafter

2.15 (a) **Not later than six (6) months following the completion of the Capacity Study** in Paragraph 2.14, as part of the implementation phase, the City shall submit to the DWEHD, a Staffing Plan to address findings from the Capacity Study. The Staffing Plan must indicate the number of staff, managerial oversight, as well as an outline of each position's duties needed to meet the operational and maintenance needs of the water system.

(b) **Not later than twelve (12) months following the DWEHD approval of the Staffing Plan,** the City shall submit to the DWEHD a certification that the staffing plan has been implemented and adequate staffing and managerial oversight is in place.

2.16 **Not later than December 31, 2020**, the City shall come into compliance with all monitoring and reporting requirements of Act 399, specifically Michigan Compiled Law (MCL) §325.1007, which requires every drinking water supply owner to collect water samples, or have them collected, and have those samples analyzed in the state laboratory or a laboratory certified by the DWEHD, or by the United States Environmental Protection Agency, for contaminants listed in the state drinking water standards. The City shall report the results of the analyses to the DWEHD in a timely manner. MCL §325.1007 also

authorizes the DWEHD to impose administrative fines for each failure to collect and analyze a water sample as required under Act 399.

2.17 **Not later than September 30, 2020**, the City shall have a qualified third-party consultant submit to the DWEHD, for review and approval, a corrosion control optimization study scope and completion schedule, in accordance with the February 13, 2020, letter the DWEHD issued to the City.

Not later than sixty (60) days following DWEHD approval of the corrosion control optimization study scope and completion schedule, the City shall secure a signed contract for the corrosion control optimization study.

GENERAL PROVISIONS

All approved work plans required by this First Amended Administrative Consent Order shall be incorporated by reference into ACO-399-07-2019 and shall be enforceable in accordance with its provisions.

All other terms and conditions of ACO-399-07-2019 shall remain in full force and effect and are not altered by this Amended Consent Order, except as specifically prescribed in this document. The effective date of this Amended Consent Order shall be the date upon which the Division Director of EGLE, DWEHD signs this document.

Signatories

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Eric J. Oswald, Director
Drinking Water and Environmental Health Division

7-August-2020
Date

I, the undersigned, CERTIFY that I am fully authorized by the party identified above to enter into this Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it. I further attest that all information provided herein is accurate and true.

CITY OF BENTON HARBOR

Marcus Muhammad, Mayor

8/5/2020
Date

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

FIRST AMENDED ADMINISTRATIVE CONSENT ORDER

DWEHD Order No. AACO-399-07-2019

EXHIBIT A

In the matter of the First Amended Administrative Consent Order between the City of Benton Harbor and the State of Michigan Department of Environment, Great Lakes, and Energy, below are listed compliance activities that have been completed and are shown for record of completion.

2.1 (a) Submit to the DWMAD a completed rate study from a qualified professional consultant. (This requirement was completed with the Asset Management Plan, dated December 2017, however, the second portion of 2.1 in the original ACO, requiring the City to submit an implementation rate increase plan, was not completed).

COMPLETION DATE: December 31, 2017

(b) Not later than December 31, 2020, the City shall begin implementation of a rate adjustment plan for the City of Benton Harbor, in accordance with the findings in the City's asset management program and rate study. The rate adjustment plan shall ensure rates are sufficient to operate and maintain the water system, in compliance with Act 399.

COMPLETION DATE: May 18, 2020

2.2 Upgrade the water plant supervisory and data acquisition (SCADA) system to allow for storage and easy access to required regulatory data, including turbidity and chlorine, alarming for regulatory minimum levels, and potentially automation of some water plant operations, no later than April 1, 2019.

COMPLETION DATE: August 12, 2019

2.3 Install metering capabilities on the finished water (completed as part of corrosion control treatment project).

COMPLETION DATE: August 12, 2019

2.4 Make necessary improvements to the water treatment facility in order to have a functioning and reliable continuous chlorine analyzer on the finished water tap, no later than April 1, 2019.

COMPLETION DATE: August 12, 2019

2.5 Obtain an adequately licensed operator-in-charge, solely dedicated to the water distribution system, no later than April 1, 2019.

COMPLETION DATE: May 7, 2019

2.6 Submit a proposal for optimal corrosion control treatment or a corrosion control study to the DWMAD, no later than April 30, 2019.

COMPLETION DATE: Treatment installed as of March 25, 2019. Corrosion control study insufficient as of June 2020, see First Amended ACO item 2.17.

2.9 Install necessary modifications at the water treatment plant to inject coagulant chemical at a DWMAD-approved rapid mix location, and develop a standard operating procedure for feeding coagulant, no later than June 1, 2019.

COMPLETION DATE: August 9, 2019



LET'S **STAY SAFE** TOGETHER

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE); Ellis Mitchell
Cc:	Darold Harlan; Darel Rice; Mike O"Malley
Subject:	Fwd: MI 0600 Benton Harbor August 2020 DBP and TOC Results
Date:	Wednesday, October 28, 2020 1:05:11 PM
Attachments:	MI 0600 Benton Harbor DBP and TOC Aug 2020 495377_20200904__BENTONHARBOR-MI_20200903.pdf

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

August is the 2nd month of the 3rd Quarter.
You were sent both the TOC for August and Stage 2, DBPs.
Read it further, it came in the same report from Eurofins Eaton Analytical.
This was one of those rare months on Lake Michigan where Benton Harbor can take either Raw or Tap < 2.0 mg/L exemption that = 100% automatically.
I do not remember what other month, you say you did not see, I'll check next.

Mike O'Malley
Benton Harbor Water Superintendent

---------- Forwarded message ---------
From: **Mike O'Malley** <momalley@bhcity.us>
Date: Tue, Sep 29, 2020 at 11:17 AM
Subject: MI 0600 Benton Harbor August 2020 DBP and TOC Results
To: EGLE Grand Rapids Distr <EGLE-DWEH-Grand-Rapids@michigan.gov>, EGLE Kalamazoo auto submit <EGLE-DWEH-Kalamazoo@michigan.gov>
Cc: Mike O'Malley <momalley@bhcity.us>

Please see

Attached: *MI 0600 Benton Harbor DBP and TOC Aug 2020 495377_20200904__BENTONHARBOR-MI_20200903*

Thanks,

Mike O'Malley
Benton Harbor Water Operator IN Charge

eurofins | Eaton Analytical

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from EEA.

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 03/14/2019

eurofins | Eaton Analytical

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South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Benton Harbor, City of

Attn: Michael O'Malley
200 East Wall Street
Benton Harbor, MI 49002

Report: 495377
Priority: Standard Written
Status: Final
PWS ID: MI0600

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4703807	#1 B&Z Const	524.2	08/20/20 08:00	Client	08/20/20 10:25
4703809	#1 B&Z Const	552.2	08/20/20 08:00	Client	08/20/20 10:25
4703808	#2 Blue Water	524.2	08/20/20 08:30	Client	08/20/20 10:25
4703810	#2 Blue Water	552.2	08/20/20 08:00	Client	08/20/20 10:25
4703811	BHWW Raw Water	5310 C	08/20/20 07:15	Client	08/20/20 10:25
4703812	BHWW Finish Water	5310 C	08/20/20 08:40	Client	08/20/20 10:25

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Pat Muff at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Pat Muff — ASM — 09/04/2020

Authorized Signature — Title — Date

Client Name: Benton Harbor, City of
Report #: 495377

Client Name: Benton Harbor, City of Report #: 495377

Sampling Point: #1 B&Z Const PWS ID: MI0600

Disinfection Byproducts									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
75-27-4	Bromodichloromethane	524.2	---	0.5	**14**	ug/L	---	08/21/20 06:58	4703807
75-25-2	Bromoform	524.2	---	0.5	< 0.5	ug/L	---	08/21/20 06:58	4703807
67-66-3	Chloroform	524.2	---	0.5	**37**	ug/L	---	08/21/20 06:58	4703807
124-48-1	Dibromochloromethane	524.2	---	0.5	**5.5**	ug/L	---	08/21/20 06:58	4703807
---	Total Trihalomethanes	524.2	80 *	0.5	**56.5**	ug/L	---	08/21/20 06:58	4703807
631-64-1	Dibromoacetic acid	552.2	---	1.0	**1.1**	ug/L	09/02/20 08:40	09/02/20 19:53	4703809
79-43-6	Dichloroacetic acid	552.2	---	1.0	**15**	ug/L	09/02/20 08:40	09/02/20 19:53	4703809
79-08-3	Monobromoacetic acid	552.2	---	1.0	< 1.0	ug/L	09/02/20 08:40	09/02/20 19:53	4703809
79-11-8	Monochloroacetic acid	552.2	---	2.0	**2.2**	ug/L	09/02/20 08:40	09/02/20 19:53	4703809
76-03-9	Trichloroacetic acid	552.2	---	1.0	**13**	ug/L	09/02/20 08:40	09/02/20 19:53	4703809
---	Total HAA5	552.2	60 *	2.0	**31.3**	ug/L	09/02/20 08:40	09/02/20 19:53	4703809

Sampling Point: #2 Blue Water PWS ID: MI0600

Disinfection Byproducts									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
75-27-4	Bromodichloromethane	524.2	---	0.5	**14**	ug/L	---	08/21/20 07:21	4703808
75-25-2	Bromoform	524.2	---	0.5	< 0.5	ug/L	---	08/21/20 07:21	4703808
67-66-3	Chloroform	524.2	---	0.5	**37**	ug/L	---	08/21/20 07:21	4703808
124-48-1	Dibromochloromethane	524.2	---	0.5	**5.8**	ug/L	---	08/21/20 07:21	4703808
---	Total Trihalomethanes	524.2	80 *	0.5	**56.8**	ug/L	---	08/21/20 07:21	4703808
631-64-1	Dibromoacetic acid	552.2	---	1.0	< 1.0	ug/L	09/02/20 08:40	09/02/20 20:29	4703810
79-43-6	Dichloroacetic acid	552.2	---	1.0	**12**	ug/L	09/02/20 08:40	09/02/20 20:29	4703810
79-08-3	Monobromoacetic acid	552.2	---	1.0	< 1.0	ug/L	09/02/20 08:40	09/02/20 20:29	4703810
79-11-8	Monochloroacetic acid	552.2	---	2.0	< 2.0	ug/L	09/02/20 08:40	09/02/20 20:29	4703810
76-03-9	Trichloroacetic acid	552.2	---	1.0	**14**	ug/L	09/02/20 08:40	09/02/20 20:29	4703810
---	Total HAA5	552.2	60 *	2.0	**26**	ug/L	09/02/20 08:40	09/02/20 20:29	4703810

Sampling Point: BHWW Raw Water PWS ID: MI0600

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**1.84**	mg/L	---	08/26/20 22:56	4703811

Client Name: Benton Harbor, City of

Report #: 495377

Sampling Point: BHWW Finish Water

PWS ID: MI0600

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**1.52**	mg/L	---	08/26/20 23:16	4703812

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Sp ke Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the cal bration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

eurofins | Eaton Analytical

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South Bend, IN 46617
T: 1.800.332.4345
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Order # 393650
Batch # 495377

www.EurofinsUS.com/Eaton

CHAIN OF CUSTODY RECORD

TA = 113

Page 1 of 1

Shaded area for EEA use only

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
Mike O'Malley MOmalley@bhcitymi.us	M. O'Malley	0600	MI	Stage 2 DBP	504396
BILL TO:	COMPLIANCE MONITORING: Yes X / No	POPULATION SERVED: 9,670	SOURCE WATER: Lake Michigan	Preservative Checks	

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	pH accep-table? √	Residual Chlorine (P/A)	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	4703807	8/20	8:00	X		#1 B&Z Const	TTHM			✓		3	SW	SW
2				X										
3	808	8/20	8:30	X		#2 Blue Water	TTHM			✓		3	SW	SW
4														
5	809	8/20	9:00	X		#1 B&Z Const	HAA5			✓		1	SW	SW
6			8:30											
7	810	8/20		X		#2 Blue Water	HAA5			✓		1	SW	SW
8														
9	811	8/20	7:15	X		BHWW Raw Water	TOC's	✓			✓	3	SW	SW
10														
11	812	8/20	0840			BHWW Finish Water	TOC's	✓		✓		3	SW	SW
12			per rick	SS		8:20:2020								
13														
14														

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Danny Edwards	8/20	915 AM PM		8/20	9:15 AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
	8/20/20	10:25 AM PM		8:20:2020	1025 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS: Fresh Draw

CONDITIONS UPON RECEIPT (check one): ____ Iced: Wet/Blue X Ambient ____ °C Upon Receipt____ N/A

MATRIX CODES:
DW-DRINKING WATER RW-REAGENT WATER GW-GROUND WATER EW-EXPOSURE WATER SW-SURFACE WATER PW-POOL WATER WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)		IV* = Immediate Verbal: (3 working days) IW*	100%
50% RW* = Rush Written: (5 working days)	75%	=Immediate Written: (3 working days) SP* =	125%
* Please call, expedited service not available for all testing		Weekend, Holiday	CALL
0% RV* = Rush Verbal: (5 working days)		STAT* = Less than 48 hours	CALL

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

06-LO-F0435 Issue 8.0 Effective Date: 2020-05-15

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

BENTON HARBOR
Port of Opportunities

PURCHASE REQUISITION

TO BE FILLED IN BY
PURCHASING AGENT

PURCHASE ORDER# _____

_____ 20 _____

REQUISITION #: S 04397

DATE: 8/28/20

PURCHASING AGENT: _____

Water Dept sampling
591.570.740 DEPARTMENT

VENDOR: Eurofins Eaton Analytical

110 S Hill St, South Bend, IN 46617

CONTACT NAME: _____

ACCOUNT	WHERE USED	QUANTITY	DESCRIPTION	UNIT PRICE ESTIMATE	UNIT PRICE QUOTED	EXTENSION	TRADE DISCOUNT	NET PRICE
		8	TTHM's					
		2	HAA5's					
		2	TOC's					

TERM: _____

APPROVAL SIGNATURE: _____

Designed & Printed by Berrien County Printing

Eurofins Eaton Analytical
Run Log

Run ID: **278746** Method: **524.2**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCC	4707799		RW	GI	08/21/2020 01:33	M 524 GI 08142020 THMs
CCL	4707798		RW	GI	08/21/2020 01:56	M 524 GI 08142020 THMs
LMB	4707785		RW	GI	08/21/2020 02:19	M 524 GI 08142020 THMs
FS	4703807	#1 B&Z Const	DW	GI	08/21/2020 06:58	M 524 GI 08142020 THMs
FS	4703808	#2 Blue Water	DW	GI	08/21/2020 07:21	M 524 GI 08142020 THMs
CCC	4707800		RW	GI	08/21/2020 10:04	M 524 GI 08142020 THMs

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	SS-Bromofluorobenzene	524 2	N/A	---		4.6616	5.0	ug/L	93	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	SS-1,2-Dichlorobenzene-d4	524 2	N/A	---		10 2498	10 0	ug/L	102	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	SS-1,2-Dichloroethane-d4	524 2	N/A	---		10 0493	10 0	ug/L	100	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	SS-Toluene-d8	524 2	N/A	---		9.7311	10 0	ug/L	97	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	Bromodichlorome hane	524 2	0.5	---		5.0224	5.0	ug/L	100	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	Bromoform	524 2	0.5	---		5.1885	5.0	ug/L	104	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	Chloroform	524 2	0.5	---		4.9428	5.0	ug/L	99	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCC	Dibromochloromethane	524 2	0.5	---		4.9689	5.0	ug/L	99	70 - 130	---	---	1 0	---	08/21/2020 01:33	4707799
CCL	SS-Bromofluorobenzene	524 2	N/A	---		4.6286	5.0	ug/L	93	70 - 130	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	SS-1,2-Dichlorobenzene-d4	524 2	N/A	---		9.6319	10 0	ug/L	96	70 - 130	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	SS-1,2-Dichloroethane-d4	524 2	N/A	---		10.1233	10 0	ug/L	101	70 - 130	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	SS-Toluene-d8	524 2	N/A	---		9.7470	10 0	ug/L	97	70 - 130	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	Bromodichlorome hane	524 2	0.5	---		0.4968	0.5	ug/L	99	50 - 150	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	Bromoform	524 2	0.5	---		0.4721	0.5	ug/L	94	50 - 150	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	Chloroform	524 2	0.5	---		0.4595	0.5	ug/L	92	50 - 150	---	---	1 0	---	08/21/2020 01:56	4707798
CCL	Dibromochloromethane	524 2	0.5	---		0.5564	0.5	ug/L	111	50 - 150	---	---	1 0	---	08/21/2020 01:56	4707798
LMB	SS-Bromofluorobenzene	524 2	N/A	---		4.5230	5.0	ug/L	90	70 - 130	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	SS-1,2-Dichlorobenzene-d4	524 2	N/A	---		9.7539	10 0	ug/L	98	70 - 130	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	SS-1,2-Dichloroethane-d4	524 2	N/A	---		10.1406	10 0	ug/L	101	70 - 130	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	SS-Toluene-d8	524 2	N/A	---		9.6231	10 0	ug/L	96	70 - 130	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	Bromodichlorome hane	524 2	0.5	---	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	Bromoform	524 2	0.5	---	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	Chloroform	524 2	0.5	---	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 02:19	4707785
LMB	Dibromochloromethane	524 2	0.5	---	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 02:19	4707785
FS	SS-Bromofluorobenzene	524 2	N/A	#1 B&Z Const		4.6185	5.0	ug/L	92	70 - 130	---	---	1 0	---	08/21/2020 06:58	4703807
FS	SS-1,2-Dichlorobenzene-d4	524 2	N/A	#1 B&Z Const		10.1257	10 0	ug/L	101	70 - 130	---	---	1 0	---	08/21/2020 06:58	4703807
FS	SS-1,2-Dichloroethane-d4	524 2	N/A	#1 B&Z Const		10 3353	10 0	ug/L	103	70 - 130	---	---	1 0	---	08/21/2020 06:58	4703807
FS	SS-Toluene-d8	524 2	N/A	#1 B&Z Const		9.8121	10 0	ug/L	98	70 - 130	---	---	1 0	---	08/21/2020 06:58	4703807
FS	Bromodichlorome hane	524 2	0.5	#1 B&Z Const		14		ug/L	---	---	---	---	1 0	---	08/21/2020 06:58	4703807
FS	Bromoform	524 2	0.5	#1 B&Z Const	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 06:58	4703807
FS	Chloroform	524 2	0.5	#1 B&Z Const		37		ug/L	---	---	---	---	1 0	---	08/21/2020 06:58	4703807
FS	Dibromochloromethane	524 2	0.5	#1 B&Z Const		5.5		ug/L	---	---	---	---	1 0	---	08/21/2020 06:58	4703807
FS	Total Trihalomethanes	524 2	0.5	#1 B&Z Const		56.5		ug/L	---	---	---	---	1 0	---	08/21/2020 06:58	4703807
FS	SS-Bromofluorobenzene	524 2	N/A	#2 Blue Water		4.6913	5.0	ug/L	94	70 - 130	---	---	1 0	---	08/21/2020 07:21	4703808
FS	SS-1,2-Dichlorobenzene-d4	524 2	N/A	#2 Blue Water		10.1724	10 0	ug/L	102	70 - 130	---	---	1 0	---	08/21/2020 07:21	4703808
FS	SS-1,2-Dichloroethane-d4	524 2	N/A	#2 Blue Water		10 3387	10 0	ug/L	103	70 - 130	---	---	1 0	---	08/21/2020 07:21	4703808
FS	SS-Toluene-d8	524 2	N/A	#2 Blue Water		9.6584	10 0	ug/L	97	70 - 130	---	---	1 0	---	08/21/2020 07:21	4703808
FS	Bromodichlorome hane	524 2	0.5	#2 Blue Water		14		ug/L	---	---	---	---	1 0	---	08/21/2020 07:21	4703808
FS	Bromoform	524 2	0.5	#2 Blue Water	<	0.5		ug/L	---	---	---	---	1 0	---	08/21/2020 07:21	4703808
FS	Chloroform	524 2	0.5	#2 Blue Water		37		ug/L	---	---	---	---	1 0	---	08/21/2020 07:21	4703808

QC Summary Report (cont.)															
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Dibromochloromethane	524 2	0.5	#2 Blue Water		5.8		ug/L	--	--	--	--	1 0	--	08/21/2020 07:21	4703808
FS	Total Trihalomethanes	524 2	0.5	#2 Blue Water		56.8		ug/L	--	--	--	--	1 0	--	08/21/2020 07:21	4703808
CCC	SS-Bromofluorobenzene	524 2	N/A	---		4.6193	5.0	ug/L	92	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	SS-1,2-Dichlorobenzene-d4	524 2	N/A	---		9.7311	10 0	ug/L	97	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	SS-1,2-Dichloroethane-d4	524 2	N/A	---		10 3209	10 0	ug/L	103	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	SS-Toluene-d8	524 2	N/A	---		9.5597	10 0	ug/L	96	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	Bromodichlorome hane	524 2	0.5	---		20.1510	20 0	ug/L	101	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	Bromoform	524 2	0.5	---		20 3838	20 0	ug/L	102	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	Chloroform	524 2	0.5	---		19.1055	20 0	ug/L	96	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800
CCC	Dibromochloromethane	524 2	0.5	---		20 0810	20 0	ug/L	100	70 - 130	--	--	1 0	--	08/21/2020 10:04	4707800

Eurofins Eaton Analytical
Run Log

Run ID: **278862** Method: **5310 C**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCB	4710360		RW	FO	08/26/2020 14:44	
IPC	4710362		RW	FO	08/26/2020 15:22	
LFB	4710363		RW	FO	08/26/2020 15:42	
LRB	4710364		RW	FO	08/26/2020 16:02	
CCC	4710365		RW	FO	08/26/2020 20:58	
CCB	4710366		RW	FO	08/26/2020 21:18	
FS	4703811	BHWW Raw Water	SW	FO	08/26/2020 22:56	
FS	4703812	BHWW Finish Water	DW	FO	08/26/2020 23:16	
CCC	4710367		RW	FO	08/27/2020 01:33	
CCB	4710368		RW	FO	08/27/2020 01:53	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	08/26/2020 14:44	4710360
IPC	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	08/26/2020 12:45	08/26/2020 15:22	4710362
LFB	Total Organic Carbon (TOC)	5310 C	0.500	---		4.0612	4.0	mg/L	102	90 - 110	---	---	1 0	---	08/26/2020 15:42	4710363
LRB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	08/26/2020 16:02	4710364
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		10 5069	10 0	mg/L	105	90 - 110	---	---	1 0	---	08/26/2020 20:58	4710365
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	08/26/2020 21:18	4710366
FS	Total Organic Carbon (TOC)	5310 C	0.500	BHWW Raw Water		1.84		mg/L	---	---	---	---	1 0	---	08/26/2020 22:56	4703811
FS	Total Organic Carbon (TOC)	5310 C	0.500	BHWW Finish Water		1.52		mg/L	---	---	---	---	1 0	---	08/26/2020 23:16	4703812
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		4.0257	4.0	mg/L	101	90 - 110	---	---	1 0	---	08/27/2020 01:33	4710367
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	08/27/2020 01:53	4710368

Eurofins Eaton Analytical
Run Log

Run ID: **279146** Method: **552.2**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCL	4714634		RW	BP	09/02/2020 16:52	m 552.2 081120BP
LMB	4714630		RW	BP	09/02/2020 17:29	m 552.2 081120BP
FS	4703809	#1 B&Z Const	DW	BP	09/02/2020 19:53	m 552.2 081120BP
FS	4703810	#2 Blue Water	DW	BP	09/02/2020 20:29	m 552.2 081120BP
CCC	4714638		RW	BP	09/03/2020 01:55	m 552.2 081120BP

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCL	SS-2-Bromopropionic acid	552 2	N/A	---		5.1064	5.0	ug/L	102	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	Dibromoacetic acid	552 2	1.0	---		1.2206	1.0	ug/L	122	50 - 150	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	Dichloroacetic acid	552 2	1.0	---		1.3385	1.0	ug/L	134	50 - 150	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	Monobromoacetic acid	552 2	1.0	---		1.1880	1.0	ug/L	119	50 - 150	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	Monochloroacetic acid	552 2	2.0	---		2.4684	2.0	ug/L	123	50 - 150	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	Trichloroacetic acid	552 2	1.0	---		1.2699	1.0	ug/L	127	50 - 150	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
CCL	IS-1,2,3-Trichloropropane	552 2	N/A	---		1411	1218	ug/L	116	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 16:52	4714634
LMB	SS-2-Bromopropionic acid	552 2	N/A	---		4.5563	5.0	ug/L	91	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	Dibromoacetic acid	552 2	1.0	---	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	Dichloroacetic acid	552 2	1.0	---	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	Monobromoacetic acid	552 2	1.0	---	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	Monochloroacetic acid	552 2	2.0	---	<	2.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	Trichloroacetic acid	552 2	1.0	---	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
LMB	IS-1,2,3-Trichloropropane	552 2	N/A	---		1381	1218	ug/L	113	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 17:29	4714630
FS	SS-2-Bromopropionic acid	552 2	N/A	#1 B&Z Const		4.1839	5.0	ug/L	84	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Dibromoacetic acid	552 2	1.0	#1 B&Z Const		1.1		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Dichloroacetic acid	552 2	1.0	#1 B&Z Const		15		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Monobromoacetic acid	552 2	1.0	#1 B&Z Const	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Monochloroacetic acid	552 2	2.0	#1 B&Z Const		2.2		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Trichloroacetic acid	552 2	1.0	#1 B&Z Const		13		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	IS-1,2,3-Trichloropropane	552 2	N/A	#1 B&Z Const		1391	1218	ug/L	114	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	Total HAA5	552 2	2.0	#1 B&Z Const		31.3		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 19:53	4703809
FS	SS-2-Bromopropionic acid	552 2	N/A	#2 Blue Water		4.9515	5.0	ug/L	99	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Dibromoacetic acid	552 2	1.0	#2 Blue Water	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Dichloroacetic acid	552 2	1.0	#2 Blue Water		12		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Monobromoacetic acid	552 2	1.0	#2 Blue Water	<	1.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Monochloroacetic acid	552 2	2.0	#2 Blue Water	<	2.0		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Trichloroacetic acid	552 2	1.0	#2 Blue Water		14		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	IS-1,2,3-Trichloropropane	552 2	N/A	#2 Blue Water		1399	1218	ug/L	115	70 - 130	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
FS	Total HAA5	552 2	2.0	#2 Blue Water		26		ug/L	---	---	---	---	1 0	09/02/2020 08:40	09/02/2020 20:29	4703810
CCC	SS-2-Bromopropionic acid	552 2	N/A	---		5.6083	5.0	ug/L	112	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	Dibromoacetic acid	552 2	1.0	---		20.7651	20 0	ug/L	104	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	Dichloroacetic acid	552 2	1.0	---		19 0830	20 0	ug/L	95	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	Monobromoacetic acid	552 2	1.0	---		19.4844	20 0	ug/L	97	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	Monochloroacetic acid	552 2	2.0	---		39.7403	40 0	ug/L	99	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	Trichloroacetic acid	552 2	1.0	---		15.6318	20 0	ug/L	78	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638
CCC	IS-1,2,3-Trichloropropane	552 2	N/A	---		1321	1218	ug/L	108	70 - 130	---	---	1 0	09/02/2020 08:40	09/03/2020 01:55	4714638

Sample Type Key

Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCB	Continuing Calibration Blank		
CCC	Continuing Calibration Check		
CCL	Continuing Calibration Low		
FS	Field Sample		
IPC	Instrument Performance Check		
LFB	Laboratory Fortified Blank		
LMB	Laboratory Method Blank		
LRB	Laboratory Reagent Blank		

END OF REPORT

From: Mike O"Malley
To: EGLE-DWEH-Grand-Rapids; Sarkipato, Ernest (EGLE)
Cc: Mike O"Malley; Darold Harlan; Darel Rice; Lesia Osler; Ellis Mitchell
Subject: MI 0600 Benton Harbor ACO Timeline Extension 2 Items
Date: Thursday, November 5, 2020 2:12:58 PM
Attachments: MI 0600 Benton Harbor ACO request to extend deadlines.pdf

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Benton Harbor Water Team is respectfully asking to extend the deadlines for ACO orders:

1. Intake Treatment
2. Filter to waste

Attached: *MI 0600 Benton Harbor ACO request to extend deadlines.pdf*

Mike O'Malley
Benton Harbor Water Operator IN Charge

BENTON HARBOR
PORT OF OPPORTUNITIES
City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Benton Harbor Water Team

Memo: MI 0600 ACO Schedule Requests

Date: November 5, 2020

To: Ernie Sarikipato, EGLE DW-MAD, Surface Water Specialist

CC: Ellis Mitchell, City Manager & Water Team

From: Mike O'Malley

Re: Request for Extension of ACO Intake, restore Zebra Mussel Control; & Repair of Filter to Waste Valves; and the Filter to Waste valves.

Ernie,

The City of Benton Harbor is requesting an extension for the Administrative Consent Order in terms of the Intake.

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

FIRST AMENDED ADMINISTRATIVE CONSENT ORDER

In the matter of: DWEHD Order No. AACO-399-07-2019

2.12 **Not later than November 1, 2020**, the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

The water plant had engaged a dive team earlier this summer to investigate the needs of the Intake Structure. During that investigation, the divers found that:

1. The Structure was heavily infested with zebra mussels around the outside.
2. The divers proceeded to clean enough to see outside and inside.
3. The divers reported that 90% of the wood slats used for screening were damaged severely or completely missing.
4. The Divers then moved to detach the existing Chlorine Halo, and it disintegrated in their hands.

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City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

5. Before, during and after this dive session:
    a. An air compressor was running, to guide the divers. The air compressor never built any pressure in the line.
    b. The divers reported they never saw any air bubbles.
    c. After the divers left, water plant operators turned off the air compressor; opened all the intake chemical feed valves; and attempted to feed carrier water.
    d. The carrier line ran up to pressures exceeding the Chlorine Pump's capacity.
    e. No Chlorine pumping was initiated and the situation has been checked several times since then with the same results.
6. The Divers then provided a quotation to replace all missing louvers and do an extensive cleaning of the inside of the structure and short portion of the actual Intake pipe.
    a. The City approved the cost of work and issued an emergency Purchase Order.
    b. Correspondence between the water plant Supervisor and the Diver were on-going all summer and into fall.
    c. The last call on November 1st to the divers resulted into:
        i. Delivery of the wood slats, drilled and necessary hardware to the plant.
        ii. And again a promise to return the 1st chance in the spring 2021.

Without any additional information, and facing a very expensive replacement, the City will need more time to effectively restore treatment to the Intake.

2 thoughts are in the water operator's mind set:

1. Abandon, removed or left, the present treatment pipe that is inside the intake pipe.
2. Have a new treatment line placed outside the intake pipe.
3. Use an alternative oxidant, (as recommended by the USEPA for reducing TOC precursors) such as Sodium Permanganate, The manufacturer of Sodium Caurs' Carusol liquid Permanganate labels their product for:
    a. Reduction of DBP precursors by oxidation into settle able solids (and any inorganics, like iron)
    b. It's mainstay as a Taste and Odor control chemical.

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c. And creating a poor environment for Zebra Mussels to survive and populate.

2.13 **Not later than December 31, 2020**, the City shall repair filter to waste valves at the water Plant, and train operators on their use.

The Benton Harbor Water Plant has had our IT technician:

1. Replace the existing SCADA Server with a new Desktop Computer
2. Agreed to all the Wonderware Upgrade Systems in the new computer and the newer historian.
3. The day before he arrived to install all of that equipment, EGLE ordered the IFE turbidities due to 1 questionable CFE result (0.27 ntu)
4. Our IT guy helped the water plant resolve that issue and found that the data was literally lost during some kind of power surge.
5. At that point, I spoke with him to move the Filter to waste focus to turbidity collection, access, and retention.
6. Then he was lost to Covid and was quarantined for quite some time.
7. He returned recently and worked out the mechanical turbidity collection issues. Upgraded the SCADA to properly handle the data and make it available to the operators.
8. He has had very little success with the Pratt Valve Co. And recommended he go ahead and seek equipment from other valve manufacturers.
9. The IFE turbidity still has some quirks, so I said we will wait on the FTW until the turbidity is to a high quality and reliable system well into the future.
10. We have to this point, Filter to waste capabilities on 5 filters (and it served us well 11/04/2020), as did all the new IFE turbidity data.

The Benton Harbor Water Plant is respectfully request and additional 3-months to allow us to finish up with the last 3 filters, which still require Filter to waste.

Mike O'Malley _____ Date: 11/5/20

Benton Harbor Community Water Supply Operator IN Charge.

From:	Mike O"Malley
To:	EGLE-DWEH-Grand-Rapids; Sarkipato, Ernest (EGLE); Bolf, Michael (EGLE)
Cc:	Mike O"Malley; Ellis Mitchell
Subject:	MI 0600 Benton Harbor Water Plant Emergency Report
Date:	Thursday, November 5, 2020 3:45:21 PM
Attachments:	MI 0600 Benton Harbor Water Plant Emergency Report.pdf

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Michael, I attached you to this for a demonstration of the IFE data collection that we are able to do.
Unfortunately, I was unable to provide this to you as you requested after the CFE 0.27 issue. As, I had said, some time in that month our computer system was damaged in-so-much that we lost some 49 days of data.

As I had promised, we have nearly revamped all the IFE data. It still has tweaks, but it is available as you see it for our uses.

I am overwhelmed with emergencies all over the water system. This was important so, I saw to it that I could finish by days end.

Note: Our reservoir is 2 MG and our community uses around 1 MG. So, no worries of water lost to the community.

Attached: *MI 0600 Benton Harbor Water Plant Emergency Report.pdf*

Sincerely,

Mike O'Malley
Benton Harbor Community Water Supply Operator IN Charge

MI 0600 DRINKING WATER EMERGENCY REPORT

The Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules promulgated thereunder (Act 399), Rule 2304 (2) requires that a written report be filed by the supply within ninety days after an emergency.

Please Complete and Return to :

Mr. Ernie Sarkipato
Grand Rapids District / Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
sarkipatoe@michigan.gov

Water Supply:	City of Benton Harbor
WSSN:	0600
County:	Berrien
Address:	200 East Wall St
City:	Benton Harbor
State/Zip:	MI. 49022
Report Prepared Date:	11/5/20
Report Prepared By:	Mike O'Malley

Briefly describe the following. Attach additional pages as necessary.

1. Discovery of the emergency

The water plant operator on Tuesday, November 4, 2020 after a few hours of operation discovered the IFE turbidity was rising to high levels. He immediately shut the plant down and washed the 3 filter that appeared to be the culprit. After that he was going to re-start the plant and realized that the Alum Feed system had not been started.
He immediately called me, and I returned from an emergency in the water system.

2. Cause of the emergency

No Alum treatment to the incoming raw water.

3. Area of the system effected by the emergency

The Plate Settler and the filters that were in operation.

4. Duration of the emergency

Turbidity duration to finished water was approximately 2 hours.
The effects were longer in the plant only for 2-3 more hours.

5.	Procedures by which the public was notified
None	

6.	Corrective actions taken during the emergency

3 filters were turned off and washed
Plate settler in operation, water contents were released to spare plate settler.
That drain was opened to release the water to the lagoons.
All of the filters that were in operation were dumped to the lagoon via the waste valve.
Low service pumping was turned back on with double the alum dose.
Filter to waste in the 5 filters were used to release that filtered water to waste, to the lagoon.
The lagoon was approaching the overflow to the "waters of the state" and all systems were turned off.
Treatment ceased and remained off until the next morning.
We found that we had additional space in the lagoon, and repeated the same pumping and filter to waste sequence as we did previously.
The turbidities improved enough and we were getting very close to overflowing the lagoons, so the filter to waste sequence was turned off and we proceeded to treat water with a high doseage of Alum.
Thankfully, we had good IFE turbidity monitoring so we could watch the improvement.
Attached is the appropriate IFE turbidity.

7.	Steps that will be taken by the supply to prevent future emergencies

It was unfortunate that the Alum Treatment was not initiated as is routine. Start-up includes quite a walk for all parameters.
Unfortunately, under the ACO that required Alum Feed to the Rapid Mixers, places this treatment far away from the feed room across the hall from the operator's desk. It will now likely be prudent to have some kind of relay back to the operations computer for operation, or verification and checks.
The IFE turbidity was helpful as the original equipment was not much help.

MI 0600 Benton Harbor MI Water Operator IN Charge

Mike O'Malley: _____ Date: 11/5/20

DateTime	Filter5Turbidity	Filter6Turbidity	Filter7Turbidity	Filter8Turbidity	Filter9Turbidity	Filter10Turbidity	Filter11Turbidity	Filter12Turbidity	
11/4/20 7:01:12 AM	0.033750001	0.026562503	0.035312504	0.028125001	0.030937502	0.042812504	0.104062505	0.020312501	
11/4/20 7:16:12 AM	0.033437502	0.026250001	0.029687501	0.027187502	0.030937502	0.042812504	0.103125006	0.020312501	
11/4/20 7:31:12 AM	0.033437502	0.026562503	0.029687501	0.027812501	0.030937502	0.042500004	0.101875007	0.020312501	
11/4/20 7:46:12 AM	0.033437502	0.026250001	0.030000001	0.027812501	0.030937502	0.039062504	0.101875007	0.020625001	
11/4/20 8:01:12 AM	0.033437502	0.026250001	0.030312503	0.028125001	0.030937502	0.039375003	0.100312509	0.020000001	
11/4/20 8:16:12 AM	0.033437502	0.025937501	0.030625002	0.030000001	0.030937502	0.040625002	0.09937501	0.021250002	
11/4/20 8:31:12 AM	0.033437502	0.026250001	0.032187503	0.034687504	0.030937502	0.045312501	0.09937501	0.020312501	
11/4/20 8:46:12 AM	0.033437502	0.026250001	0.035625003	0.045312501	0.030937502	0.056875005	0.09843751	0.021875001	
11/4/20 9:01:12 AM	0.033437502	0.026250001	0.041875005	0.065937504	0.030937502	0.080312505	0.136875004	0.021875001	
11/4/20 9:16:12 AM	0.033750001	0.027500002	0.050625004	0.101875007	0.030937502	0.109062508	0.412500024	0.022500001	
11/4/20 9:31:12 AM	0.033437502	0.027812501	0.068437502	0.18187502	0.030625002	0.110000007	0.844375074	0.020000001	Caught Operator's attention and he started backwash
11/4/20 9:46:12 AM	0.033437502	0.026562503	0.064687505	0.056562506	0.030625002	0.109687507	1.595000148	0.020625001	
11/4/20 10:01:12 AM	0.033437502	0.028437503	0.066250004	0.045625005	0.030937502	0.109375007	0.612500072	0.019687502	
11/4/20 10:16:12 AM	0.051562503	0.029062502	1.046250105	0.048125003	0.030625002	0.109687507	0.478125036	0.020000001	
11/4/20 10:31:12 AM	5.00531292	0.092187509	2.8681252	0.695625067	0.030625002	0.112500004	1.282812595	0.019375002	
11/4/20 10:46:12 AM	1.068750024	5.002812862	2.137500048	0.423125029	0.030625002	0.124375008	0.400000036	0.0190625	Proceeded to dump Took Plant off Line.
11/4/20 11:01:12 AM	0.890000045	4.445937634	0.857187569	0.36937502	0.030312503	0.115625009	0.386250019	0.020312501	
11/4/20 11:16:12 AM	0.868750036	2.933125257	0.763437569	0.651875019	0.030312503	0.405312538	2.558750153	0.020312501	
11/4/20 11:31:12 AM	0.868125081	2.385625124	0.745000064	0.487812549	0.030312503	0.83593756	2.185312748	0.019687502	
11/5/20 4:16:12 AM	0.550312519	1.116875052	0.283750027	0.383750021	0.030312503	0.163125008	0.332500011	0.154375017	
11/5/20 4:31:12 AM	0.611875057	1.115000129	0.28343752	0.383437514	0.030312503	0.16187501	0.335625023	0.146562517	
11/5/20 4:46:12 AM	0.575937569	1.115312576	0.283125013	0.379062533	0.030000001	0.163437515	0.342500031	0.134687513	
11/5/20 5:01:12 AM	0.571875036	1.110312581	0.282187521	0.376875013	0.030000001	0.162187517	0.340937525	0.144062504	
11/5/20 5:16:12 AM	0.556562543	1.104687572	0.284687519	0.374375015	0.030000001	0.16125001	0.340312511	0.115937509	
11/5/20 5:31:12 AM	0.510312557	1.108750105	0.284062535	0.36937502	0.030000001	0.159375012	0.336250037	0.146875009	
11/5/20 5:46:12 AM	0.610625029	1.11156261	0.284375012	0.367812514	0.030000001	0.160937518	0.344687521	0.133437514	
11/5/20 6:01:12 AM	0.633750021	1.110937595	0.284375012	0.360625029	0.030000001	0.158750013	0.345000029	0.132812515	
11/5/20 6:16:12 AM	0.595625043	1.099375129	0.284687519	0.352812529	0.030000001	0.157187507	0.345625013	0.138750017	Ran Filter to waste Sequence again before actual Start up treatment
11/5/20 6:31:12 AM	0.60375005	1.1059376	0.285000026	0.353125036	0.030000001	0.155625015	0.342812538	0.117500007	
11/5/20 6:46:12 AM	0.593125045	1.101562619	0.285312533	0.360625029	0.030000001	0.155937508	0.342500031	0.100312509	
11/5/20 7:01:12 AM	0.622812569	1.104687572	1.816250086	0.348125011	0.029687501	0.161562517	0.42187503	0.121562511	
11/5/20 7:16:12 AM	0.592187524	4.063125134	0.145000011	0.39843753	0.030000001	0.157187507	0.175937518	0.165000007	
11/5/20 7:31:12 AM	0.552187562	2.112812757	0.195000008	0.330000013	0.030000001	0.089062504	0.270625025	0.123437509	

From:	Sarkipato, Ernest (EGLE)
To:	James McPhail; Mike Kalin (mike@kalininc.com)
Cc:	Mike O"Malley - City of Benton Harbor (momalley@bhcity.us); Demetris Meeks (dmeeks@cityofbentonharbormi.gov); Bob Marvin (bmarvin@kalininc.com); Mike Kalin (mike@kalininc.com); Eric Kamps; Worthington, David (EGLE); Chris J Cook; Tim Drews; Dan Dombos
Subject:	RE: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13
Date:	Monday, October 26, 2020 1:39:00 PM
Attachments:	Lead Service Line Permit cover letter.docx

Thank you for including me on the construction updates for these projects in Benton Harbor. The importance of property sign-offs cannot be overstated, especially in a community with an Action Level Exceedance. Act 399 does not allow partial service line replacements if there is lead present, due to increased exposure. Attached is a letter to this effect which should have gone out with the permit.

If you have questions about this process please contact me,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

From: James McPhail <jmcphail@abonmarche.com>
Sent: Thursday, October 22, 2020 12:55 PM
To: Mike Kalin (mike@kalininc.com) <mike@kalininc.com>
Cc: Mike O'Malley - City of Benton Harbor (momalley@bhcity.us) <momalley@bhcity.us>; Demetris Meeks (dmeeks@cityofbentonharbormi.gov) <dmeeks@cityofbentonharbormi.gov>; Bob Marvin (bmarvin@kalininc.com) <bmarvin@kalininc.com>; Mike Kalin (mike@kalininc.com) <mike@kalininc.com>; Eric Kamps <ekamps@abonmarche.com>; Worthington, David (EGLE) <WORTHINGTOND@michigan.gov>; Chris J Cook <cjcook@abonmarche.com>; Tim Drews <tdrews@abonmarche.com>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Dan Dombos <ddombos@abonmarche.com>
Subject: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

All,

Please find attached a copy of the progress meeting minutes for this weeks meeting.

Regards,

JD McPhail
Construction Manager
Abonmarche
C 574.850.0195

O 574.232.8700
www.abonmarche.com



"Rest at the end, not in the middle"

CONFIDENTIALITY NOTICE: This e-mail and any attachments are for the exclusive and confidential use of the intended recipient. If you are not the intended recipient, please do not read, distribute or take action in reliance upon this message. If you have received this e-mail in error, please notify us immediately and promptly delete this message and its attachments from your computer system. We do not waive any work product privilege by the transmission of this message.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

LIESL EICHLER CLARK
DIRECTOR

TO: Community Public Water Supply Owner or Operator

FROM: Brian E. Thurston, P.E., Field Operations Section Manager
Drinking Water and Environmental Health Division

DATE: Click or tap to enter a date.

SUBJECT: Presence of Lead Service Lines in the Proposed Project Area

During our permit review process, we became aware that existing lead service lines may be present in the proposed project area.

Installation and replacement of customer service lines is not evaluated as part of the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) permit approval process under 1976 PA 399 (Act 399); therefore, this permit has been issued without consideration to the presence of lead service lines within the project area. However, EGLE wishes to remind you that service line installation and replacement must comply with all applicable laws and plumbing codes. Please note that this includes the 2018 Lead and Copper Rule, which prohibits the partial replacement of lead service lines.

When conducting service line replacements, no portion of the service line consisting of lead, or galvanized piping currently or previously connected to lead, may remain in place, whether publicly or privately owned. Restoring water service to the service line prior to the removal of all lead, or galvanized piping currently or previously connected to lead, constitutes a partial lead service line replacement, and is banned. The expense of the replacement of privately-owned portions of customer service lines shall be covered by the water supply owner, per R 325.10604f(5)(c) and R 325.10604f(6)(e) of Act 399.

It is recommended that full lead service line replacements be conducted per American Water Works Association (AWWA) Standard C810-17, *Replacement and Flushing of Lead Service Lines.*

If you have any questions, please contact Brandon Onan, Lead and Copper Unit Supervisor at 616-307-6736, or by email at OnanB@Michigan.gov. Thank you for your continued effort to ensure the drinking water is safe for your residents. For more information, visit the Web site at: http://www.Michigan.gov/drinkingwater.

From:	Sarkipato, Ernest (EGLE)
To:	momalley@bhcity.us; Ian Septoski
Cc:	kthompson@bhcity.us; emitchell@bhcity.us; Thurston, Brian (EGLE); Bolf, Michael (EGLE); Carpenter, Koren (EGLE); Schmidt, Scott (EGLE); Oswald, Eric (EGLE); Wener, Gillian (AG); Ruch, Suzann (EGLE)
Subject:	RE: Drinking Water Certification - Michael O"Malley - OID #2634 -- Amendment to Fact and Conduct Briefing Memorandum (FCBM)
Date:	Tuesday, November 24, 2020 11:31:00 AM
Attachments:	image001.png 2020-11-19 OMalley FCBM amendment - FINAL.pdf 2020-11-23 OMalley FCBM amendment ltr FINAL.pdf

Mr. Septoski, we acknowledge that Mr. O'Malley likely does not have access to his city email address at this time. Can you please acknowledge receipt of this correspondence from yesterday, and ensure Mr. O'Malley has the attached documents?

Alternatively, if you have a different email address for Mr. O'Malley, we will use for communications moving forward.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
616-307-0261

From: Ruch, Suzann (EGLE) <RuchS@michigan.gov>
Sent: Monday, November 23, 2020 11:11 AM
To: momalley@bhcity.us
Cc: kthompson@bhcity.us; emitchell@bhcity.us; Thurston, Brian (EGLE) <THURSTONB@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Carpenter, Koren (EGLE) <CarpenterK5@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Schmidt, Scott (EGLE) <SchmidtS@michigan.gov>; Oswald, Eric (EGLE) <OswaldE1@michigan.gov>; Wener, Gillian (AG) <WenerG@michigan.gov>; Ian Septoski <ISeptoski@krisorlaw.com>
Subject: Drinking Water Certification - Michael O'Malley - OID #2634 -- Amendment to Fact and Conduct Briefing Memorandum (FCBM)

Good Morning:

Attached is correspondence from Mr. Eric J. Oswald, Director, Drinking Water and Environmental Health Division, Michigan Department of Environment, Great Lakes, and Energy, and the noted attachment (FCBM), regarding the Drinking Water Operator Certification for Mr. Michael O'Malley, Operator ID # 2634.

For your reference, the email sent November 5, 2020, which includes the letter and FCBM, is also attached to this email.

This is being send via email; if a copy is required via United State Postal Service, please advise.

Thank you.

Suzann J. Ruch
Senior Executive Management Assistant to Eric J. Oswald
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
P.O. Box 30817
Lansing, Michigan 48909-8311
517-284-6544 | RuchS@Michigan.gov
Follow Us | **Michigan.gov/EGLE**





LET'S STAY SAFE TOGETHER

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)

TO: Eric J. Oswald, Director
Drinking Water and Environmental Health Division

FROM: Ernie Sarkipato, Surface Water Treatment Specialist

DATE: November 19, 2020

SUBJECT: **AMENDMENT TO** Operator Certification Fact and Conduct Briefing Memorandum (FCBM)
Michael O'Malley, Operator Identification # 2634
F-1 Certification for Period of:
January 16, 2018, through January 15, 2021

BACKGROUND

An amendment to the FCBM is necessary to document events and communications with the subject operator, Mr. Michael O'Malley, between the dates of November 4 and November 5, 2020. These events occurred after the Department of Environment, Great Lakes, and Energy (EGLE) issued the first FCBM dated November 4, 2020. This amendment will document facts and conduct pertaining to these events. The basis for this amendment is the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), and the administrative rules promulgated thereunder.

This incident pertains to the addition of a necessary coagulant chemical called aluminum sulfate. The role in treatment of a coagulant is to create settleable or filterable floc, which aids in the reduction of turbidity. Turbidity, in turn, is used as a surrogate measurement of the possible presence of disease-causing pathogens in the drinking water. R 325.11008(2) of the administrative rules states *"A sufficient primary coagulant dose shall be added to create a settleable or filterable floc at all times that a conventional filtration or direct filtration plant is in operation."* The below investigation results indicate this was not the case for a period, and contamination of the water supply could not be ruled out.

In addition, R 325.12304(1) of the administrative rules states *"When an emergency affecting a public water supply is discovered, the public water supply shall immediately notify the department by telephone of that emergency. The public water supply shall indicate in that notification the type of emergency, its discovery, the cause, the corrective actions planned to meet the emergency, and plans for notification to customers or users of the public water supply affected."*

From R 325.10104(m) under the administrative rules, "Emergency" means a situation in a public water supply that results in contamination, loss of pressure, lack of adequate supply of water, or other condition that poses an imminent hazard or danger to the public health.

The below investigation results indicate Mr. O'Malley did not take immediate action during an emergency as required by the administrative rules promulgated under Act 399 and, in fact, approximately 30 hours passed after the incident before a report was made to EGLE.

INVESTIGATION

The investigation consisted of an EGLE staff phone conversation with Mr. O'Malley on November 5, 2020; an emergency report submitted by Mr. O'Malley via email at 3:45 p.m. on November 5, 2020; and turbidimeter data requested by EGLE and provided by city of Benton Harbor officials on November 14, 2020.

INVESTIGATION RESULTS

The investigation revealed the following facts:

1. On November 4, 2020, around 7:00 a.m., upon startup of the water plant by the operators, water was pumped and treated for a number of hours without the addition of aluminum sulfate.
2. Around 9:15 a.m. on November 4, 2020, turbidities began to increase in water coming from the filters. This caused alarm with the operators and they began to take steps to diagnose the cause of the turbidity increase.
3. Around 11:00 a.m. on November 4, 2020, the operators decided to stop treating water altogether as turbidities continued to be high. The water plant was taken offline.
4. Around 6:00 a.m. on November 5, 2020, the operators again started the plant taking care to make sure the aluminum sulfate was also turned on. The plant began to operate within acceptable parameters.
5. Around 3:45 p.m. on November 5, 2020, EGLE received an email from Mr. O'Malley that included an incident report outlining the events starting around 7:00 a.m. on November 4, 2020.
6. Upon receipt of the email, EGLE spoke with Mr. O'Malley on the phone. He had not started any efforts to notify the public and did not support any public notification.
7. EGLE indicated to Mr. O'Malley a threat to public health could not be ruled out and, therefore, immediately began drafting a boil water advisory.
8. Around 5:25 p.m. on November 5, 2020, EGLE issued a boil water advisory to the city of Benton Harbor, coordinating with the Berrien County Health Department and other officials as needed.

RECOMMENDATION

Based upon the findings of the investigation, revocation of Mr. O'Malley's license is further supported and is recommended. Such enforcement actions are justified given how critical the removal of turbidity is to the safety of treated surface water. The lack of timely reporting and failure to notify EGLE immediately of this event places the public health at risk.

These actions further eroded confidence in Mr. O'Malley's duty, as operator in charge, to protect public health. The actions are also contrary to the spirit of the certification requirements for water system operators which is to ensure protection of public health and the environment. To this end, EGLE's obligation in implementing Part 19 of the administrative rules is to classify water systems, train operators, certify operators, renew certification, and, when necessary, revoke certification.

Please reference the FCBM dated November 4, 2020, for additional information regarding this amendment and the recommended action of revocation.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

LIESL EICHLER CLARK
DIRECTOR

November 23, 2020

VIA EMAIL

Mr. Michael O'Malley, Operator ID Number 2634
[redacted]
St. Joseph, Michigan 49085

Dear Mr. O'Malley:

SUBJECT: Amended Fact and Conduct Briefing Memorandum (FCBM)

On November 5, 2020, you received a letter via email from the Department of Environment, Great Lakes, and Energy (EGLE) transmitting an Operator Certification FCBM, issued under the Safe Drinking Water Act (SDWA), 1976 PA 399, as amended, (Act 399) and the administrative rules promulgated thereunder. This letter shall serve to transmit an amendment to the FCBM, responding to events that occurred on November 4 and November 5, 2020.

The amended FCBM addresses two egregious violations of the administrative rules. R 325.11008(2) of the administrative rules states *"A sufficient primary coagulant dose shall be added to create a settleable or filterable floc at all times that a conventional filtration or direct filtration plant is in operation."* The FCBM finds that for a period of approximately three hours on the morning of November 4, 2020, a primary coagulant was not fed and, furthermore, contamination of the water supply could not be ruled out.

In addition, R 325.12304(1) of the administrative rules states *"When an emergency affecting a public water supply is discovered, the public water supply shall immediately notify the department by telephone of that emergency. The public water supply shall indicate in that notification the type of emergency, its discovery, the cause, the corrective actions planned to meet the emergency, and plans for notification to customers or users of the public water supply affected."*

From R 325.10104(m) under the administrative rules, "Emergency" means a situation in a public water supply that results in contamination, loss of pressure, lack of adequate supply of water, or other condition that poses an imminent hazard or danger to the public health.

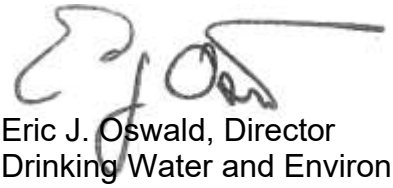
The amended FCBM finds you did not take immediate action during an emergency as required by the administrative rules promulgated under Act 399 and, in fact, approximately 30 hours passed after the incident before a report was made to EGLE.

This amendment to the FCBM is necessary because events of November 4 and November 5, 2020, were not included in the FCBM, as they occurred after the FCBM was sent initially. These events are included to inform regarding EGLE's consideration in this matter.

Please review the attached amendment to the FCBM, and incorporate into your preparations for our remote meeting on Wednesday, November 25, 2020, at 1:00 p.m.

If you have any questions regarding this matter, please contact me.

Sincerely,



Eric J. Oswald, Director
Drinking Water and Environmental Health Division
517-284-6524

Enclosures
eo/mb/sr

cc: Mr. Ellis Mitchell, Manager, City of Benton Harbor
Ms. Kimberly Thompson, Clerk, City of Benton Harbor
Mr. Ian Septoski, Krisor & Associates
Ms. Gillian Wener, Michigan Department of Attorney General
Mr. Brian Thurston, EGLE
Mr. Michael Bolf, EGLE
Ms. Koren Carpenter, EGLE
Mr. Ernest Sarkipato, EGLE
Mr. Scott Schmidt, EGLE

From:	Sarkipato, Ernest (EGLE)
To:	rrice@bhcity.us; drice@bhcity.us; momalley@bhcity.us; dharlan@fv-operations.com; emitchell@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Sellers, Fred (EGLE); Xing, Fangli (EGLE); Bolf, Michael (EGLE)
Cc:	rrice@bhcity.us; EGLE-DWEH-Grand-Rapids
Subject:	RE: Meeting to discuss Alum Sludge Management at BH Water Plant
Date:	Friday, October 23, 2020 8:57:00 AM
Attachments:	EGLE Sludge permit records.pdf image001.png

Thank you for meeting yesterday to discuss the sludge removal practices at the Benton Harbor water plant, and thanks for your patience as our staff figured out the call-in to google meet. During the meeting, EGLE confirmed that WTP alum sludge must be disposed to a licensed Part 115 landfill, including all previously disposed material. EGLE staff agreed to entertain a proposal from the City of Benton Harbor water team for annual removal goal in cubic yards or tons, based on a financial analysis of feasibility, rather than complete removal this year.

For financial piece, I've heard from two other plants now, sludge removal quotes between $25/cyd - $31/cyd, though it all depends on tipping fees and contractor quotes. Please follow the advice of Mr. Sellers and "shop around" landfills and contractors.

In addition to delving into the water system finances, the city agreed to work some calculations to estimate the total volume of sludge. In doing so please reference the attached permit with design calculations for the lagoons. Feel free to run your calcs by me any time so we are on the same page. Please do an estimate of cumulative sludge production since construction, as sludge has never been removed. We are also interested in hearing the water team's thoughts on a plan for the future dewatering practices, as the system as constructed doesn't allow for effective dewatering.

The group agreed to reconvene in 1 month to discuss the city's findings. **Can we plan on Monday morning, 11/23, 10:00AM?** If acceptable, can Roena send another google meet invite?

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
(CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
Required under the Authority of 1976 PA 399, as amended

This application becomes an Act 399 Permit only when signed and issued by authorized DEQ Staff.
See instructions below for completion of this application.

1. Municipality or Organization, Address and WSSN *that will own or control the water facilities to be constructed. This permit is to be issued to:*

City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600

Permit Stamp Area (DEQ use only)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMIT NO. W095025 APR 06 '09

EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976

2. Owner's Contact Person (provide name for questions):

Contact: Mr. Michael O'Malley
Title: Plant Superintendent
Phone: 269-927-8471

3. Project Name (Provide phase number if project is segmented):

Backwash Lagoon

4. Project Location
(City, Village, Township):
City of Benton Harbor

5. County (location of project)

Berrien

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

cc: Mr. Dale Ehinger, DEQ
Mr. Kameron Jordan, DEQ
cc/enc: Mr. Kenton C. McAndrew, P.E., Abonmarche Consultants, Inc.

Issued by: _____
Gary Wozniak, P.E., District Engineer

Reviewed by: _____
Gary Wozniak, P.E., District Engineer

☐ **If this box is marked see attached special conditions.**

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. *Print or type* all information except for signatures. Mail completed application, plans and specifications, and any attachments to the Michigan Department of Environmental Quality District Office having jurisdiction in the area of the proposed construction.

Please Note:

a. This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended. Depending on the specific conditions of the project, other permits from this Department or other governmental agencies may be required.
b. This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
c. Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
d. Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
e. All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
f. All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
g. Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.

RECEIVED
MICH. DEPT. OF ENVIRONMENTAL QUALITY
APR 07 2009
WATER BUREAU
Kalamazoo District Office

CONTINUE APPLICATION ON THE FOLLOWING PAGES

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
(CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
Required under the Authority of 1978 PA 399, as amended

This application becomes an Act 399 Permit only when signed and issued by authorized DEQ Staff.
See instructions below for completion of this application.

1. ***Municipality or Organization, Address and WSSN*** *that will own or control the water facilities to be constructed. This permit is to be issued to:*
City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022
WSSN: 0600

Permit Stamp Area (DEQ use only)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMIT NO. W095080 OCT 26 '09

EXAMINED AND APPROVED FOR COMPLIANCE
WITH ACT 399, P.A. 1976

2. **Owner's Contact Person** (provide name for questions):
Contact: Mr. Mike O'Malley
Title: Water Operator
Phone: 269-927-8471

3. **Project Name** (Provide phase number if project is segmented):
Benton Harbor Water Plant
DWRF #7273-01

4. **Project Location**
(City, Village, Township):
City of Benton Harbor

5. **County** (location of project):
Berrien

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

cc: Mr. Darwin Watson, Interim Manager, City of Benton Harbor
Berrien County Health Department
cc/enc: Mr. Kenton McAndrew, P.E., Abonmarche
Mr. Clarence Jones, DEQ

Issued by: _____
Gary Wozniak, P.E., District Engineer

Reviewed by: _____
Gary Wozniak, P.E., District Engineer

☒ **If this box is marked see attached special conditions.**

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. Print or type all information except for signatures. Mail completed application, plans and specifications, and any attachments to the Michigan Department of Environmental Quality District Office having jurisdiction in the area of the proposed construction.

Please Note:

a. This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended.
b. The issuance of this **PERMIT** does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other DEQ permits, or approvals from other units of government as may be required by law.
c. This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
d. Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
e. Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
f. All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
g. All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
h. Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.

RECEIVED
MICH. DEPT. OF ENVIRONMENTAL QUALITY
SEP 14 2009
WATER BUREAU
Kalamazoo District Office

CONTINUE APPLICATION ON THE FOLLOWING PAGES

BENTON HARBOR WATER FILTRATION PLANT
PLANT FILTER BACKWASH AND CLARIFIER
BLOW OFF DISCHARGE ANALYSIS
Updated April 3, 2009

I. ***Process Discription***

The existing water plant backwash and clarifier waste lines currently discharge to a nearby wet land which feeds into the Paw Paw River. This project considers rerouting the discharges to a perculation pond for subsurface discharge.

II. ***Givens***

A. Waste Streams

1. Accelators

Blow offs from both accelators is 90,000 gallons per day
Chemicals = Aluminum Sulfate at 2.4 mg/l
Chlorine at 1.2 mg/l
Blow offs = Once every 4 hours = 12 blow offs per day
Volume / blow off = 5,000 to 10,000 gallons
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 178 mg/l TSS at 90,000 gpd = 134 ppd

2. Filter Backwash Waste

Chemicals = Chlorine at 1.2 mg/l
Backwash Volume = 45,000 gallons / backwash
Backwash Cycles = 70 hours
Backwash Rates = 5,200 to 5,500 gpm
Backwash Volume Per Day = 124,000 gallons per day
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 124,000 gpd = 186 ppd

3. Filter Surface Wash

Chemicals = Chlorinated at 1.2 mg/l
Wash Rate = 2,000 gpm for 2 minutes
Wash Discharge Volume = 4,000 gallons
Frequency = 70 hours
Filter Surface Wash Volume Per Day = 11,000 gallons
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 11,000 gpd = 17 ppd

4. Filter to Waste

Chemicals = Chlorinated at 1.2 mg/l
Waste Rate = 700 gpm
Waste Discharge Volume = 700 gpm @ 5 minutes = 3,500 gal/cycle
Frequency = 70 hours
Filter to Waste Volume Per Day = 10,000 gallons
Projected Solids Loadings / Discharges – 0.5 mg/l TSS at 10,000 gpd = 0.04 ppd (Insignificant)

5. Total Waste Flow Discharged Per Day

Blow Offs	90,000 gallons
Backwash	124,000 gallons
Surface Wash	11,000 gallons
Filter to Waste	10,000 gallons
TOTAL	**235,000 gallons = 31,500 CF**

6. Alum Waste Loadings

Solution – Aluminum Sulfate $Al_2(SO_4)_3$

Dosage rate for pure aluminum 2.42 mg/l

Average daily usage in aluminum = 2.42 mg/l x 8.34 x 6 mgd = 52 ppd applied.

Discharge is 44% of applied = 52 ppd x 44% = 23 ppd discharged

7. Total Waste Solids Discharged Per Day

Blow Offs	134 ppd
Backwash	136 ppd
Surface Wash	17 ppd
Filter to Waste	insignificant
Alum	23 ppd
Total Suspended Solids	**310 ppd**

B. Original Design / Lagoon

1. Location between the finished water storage tanks and Jean Klock Park Drive

2. Layout of 1950 Site Plan
   Radius of 100'
   ½ Circle
   Natural sand bottom and sides
   Top of dike 585.00
   Invert elevation of 30" inlet pipe 583.64
   18" CIP overflow pipe out to current discharge location – See #4 below
   Bottom of basin at inlet was ±580.00 falling off towards Jean Klock Park Drive to 575.00

3. Surface Area of Original Basin
   Basin bottom + sides = $115^2 \Gamma$ x .5 = 20,774 SF

4. Overflow Structure
   Inlet = 4' square manhole – top of casting 586.00
   Side openings = 4" high x 18" wide (bottom elevation @ 582.0 and 583.0)
   Outlet Pipe = 34 LF of 18" CIP 580.00 IE to 579.00 IE
   Note: there is an existing design flaw, the top of lagoon dike wall is lower than the overflow grate.

5. Flood Elevation ± 585.00

C. Soils
Existing soils per USGS are classified as duneland. Duneland soils do not have a permeability factor but the surrounding soils 80, 10D, 28B have a permeability factor of 6-20 inches per hour. The duneland soils should be higher.

III. ***Proposed Lagoon Sizing***

A. Perculation Rates

The current soils permeability is 6-20 inches per hour.
Based on a 2" per hour rate, the area required for 31,500 CF of waste loadings per day is = 2.0 inches per hour = 48 inches per day = 8,000 square feet per lagoon

Proposed lagoon A and B = 37,000 SF

Proposed perculation rate = 37,000 SF / 31,500 CF = 0.85 feet or 10 inches /day

B. Lagoon Water Levels

Normal WL after backwash = 583.00 pond bottom + 0.85 = 583.85
At 100 year flood Elevation 585.00 + 0.85 = 585.85

C. Existing Piping

Total Maximum Flow Influent

Blow offs 2 @ 1,000 gpm each =	2,000 gpm
Filter Backwash 1 @ 5,500 gpm =	5,500 gpm
TOTAL	**7,500 gpm**

Existing Pipe 30" ϕ concrete

#1 Manhole at accelators to downstream corner 585.71–585.54	55' length
#2 Corner manhole @ 585.54 to corner manhole 585.17	92' length
#3 Corner manhole @ 585.17 to downstream manhole 584.88	100' length
#4 Manhole 584.84 to manhole 584.27	205' length
#5 Manhole 584.27 to outfall 583.64	200' length

#1 Manhole = 0.31% slope
#2 Manhole = 0.40% slope
#3 Manhole = 0.29% slope
#4 Manhole = 0.28% slope * = 9,000 gpm
#5 Manhole = 0.31% slope
* Pipe has sufficient capacity

D. Existing Overflow Pipe

Total flow discharge to lagoon per day is 235,000 gallons. Over a 12 hour period (filters washed during the day) flow would be (235,000/1,440) x 2 = 326 gpm

E. Check Hydraulic Grade Line
Bottom of filter wash water through (in building) 587.75
100 flood elevation 585.00
Available hydraulic grade 2.75 feet

IV. ***Proposed Piping***

A. Energy Dispensation Considerations

At 7,500 gpm we need to slow the discharge of water down so it dosen't wash out the pond bottoms or undermine structures or piping.
The energy needs to be dispensated. Start with slowing water down in the influent pipe by going to a 48" diameter pipe.

Velocity in 36" pipe flat = 2.3 fps
Velocity in 48" pipe flat = 1.3 fps
Use – 48" RCP

B. Effluent Discharge Control

To spread out the 7,500 gpm flow over a larger area, use a effluent weir for the water to flow over. If we stay with a 48" pipe cut out top and use both edges as a weir (without end contractions).
Try 20 foot long pipe = 40' weir length = 3" or 188 gpm / lf - TOO HIGH
Try 40 foot long pipe = 80' weir length = 2" or 94 gpm / lf – TOO HIGH
Try 60 foot long pipe = 120' weir length = 1.5" or 63 gpm / lf - OK
Try 80 foot long pipe = 160' weir length = 1.2" or 47 gpm / lf – NOT MUCH TO GAIN

USE: 60 feet of double weir pipe 48" diameter

C. Pond Overflow Control

Daily influent volume into ponds per day = 235,000 gallons
235,000 gallons per day / 1440 = 163 gallons per minute
USE: 18" diameter pipe which could handle 1800 gpm @ 2.3 fps

Set Overflow Weir Elevation
Pond bottom – 583.00
Rise in WL from one backwash cycle = 0.85
HWL after backwash = 583.85
WL after backwash during 100 year flood conditions = 585.85
Add +/- 0.5 foot freeboard so say 586.25 for weir elevation
Water crest height based on 4 foot diameter manhole = 8.5 weir length.
Crest = 0.03 feet

4-3-2009

VIII. **FILTERS**
Location Existing Process Building
Quantity – 12 beds
Type – Two (2) media sand and
Operation

XI. **HIGH SERVICE (HS) PUMPS**
Location – Main Building
Type – Turbines
Quantity – 5
High Service Pump #1 – 1,410 gpm @ 200' TDH – 100 HP
High Service Pump #2 – 2,980 gpm @ 200' TDH – 200 HP
High Service Pump #3 = 3,000 gpm @ 202' TDH – 200 HP
High Service Pump #4 – 3,000 gpm @ 202' TDH – 200 HP
High Service Pump #5 – 1,410 gpm @ 200' TDH – 100 HP

XII. DISTRIBUTION SERVICE

Plant Discharges – 2 @ 20"
Venturie Flow Meters on each 20" discharge
Design plant discharge – 12 MGD
Discharge Velocities with both discharges on line at 12 MGD = 4.2 feet per second
Discharge Velocities with one discharges on line at 12 MGD = 10.5 feet per second
Discharge Velocities with both discharges on line at 18 MGD = 6.4 feet per second

XIII. PLANT DRAIN AND BACKWASH SOLIDS DISPOSAL

Type – Lagoon system
Number of cells – 2 (one primary and one secondary)
Total liquid solids discharged per day (initial) – 235,000 gallons
Total alum waste solids discharged per day (initial) – 310 ppd

Soils
Type – dune sand
Soils perculation rate – 6 to 20 inches per hour
Peak max design perculation rate – 2 inches per hour

Lagoon
Bottom surface area – 36,800 SF
Perculation rate – 235,000 gpd / 37,000 SF = 6.4 gallons per SF per day
10 inches per day or 0.42 inches per hour

Bottom elevation – 583.00
100 year Flood elevation – 585.00
Normal lagoon HWL after filter backwash – 583.85
Lagoon HWL after filter backwash with 100 year floor – 585.85
Overflow weir elevation – 586.25
Lagoon high water elevation at overflowing conditions – 586.28

Frequency of lagoon cleaning – once per year (summer)



LET'S **STAY SAFE** TOGETHER

From: Sarkipato, Ernest (EGLE)
To: rrice@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Bolf, Michael (EGLE); drice@bhcity.us; momalley@bhcity.us; Sellers, Fred (EGLE); dharlan@fv-operations.com; Xing, Fangli (EGLE); emitchell@bhcity.us
Subject: RE: Meeting: Continue discussion Alum Sludge Management and BH Water Plant
Date: Wednesday, December 2, 2020 3:02:00 PM

Please remember to use the telephone to call in, not the computer.

-----Original Appointment-----
From: rrice@bhcity.us <rrice@bhcity.us>
Sent: Monday, November 23, 2020 9:12 AM
To: rrice@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Sarkipato, Ernest (EGLE); Bolf, Michael (EGLE); drice@bhcity.us; momalley@bhcity.us; Sellers, Fred (EGLE); dharlan@fv-operations.com; Xing, Fangli (EGLE); emitchell@bhcity.us
Subject: Meeting: Continue discussion Alum Sludge Management and BH Water Plant
When: Wednesday, December 2, 2020 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where:

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This event has been changed.

Meeting: Continue discussion Alum Sludge Management and BH Water Plant

When **Changed:** Wed Dec 2, 2020 3pm – 4pm Eastern Time - New York

Joining info Join with Google Meet
meet.google.com/ufn-hhxy-rue

Join by phone
(US) +1 224-880-0665 (PIN: [redacted]

More phone numbers

Calendar sarkipatoe@michigan.gov

Who
- rrice@bhcity.us - organizer
- ehingerd@michigan.gov
- klangj@michigan.gov
- sarkipatoe@michigan.gov
- bolfm@michigan.gov
- drice@bhcity.us
- momalley@bhcity.us
- sellersf@michigan.gov
- dharlan@fv-operations.com
- xingf@michigan.gov
- emitchell@bhcity.us

more details »

Meeting requested by Ernie Sarkipato to continue Alum Sludge Management at BH Water Plant discussion

Going (sarkipatoe@michigan.gov)? **Yes** - **Maybe** - **No** more options »

Invitation from Google Calendar

You are receiving this courtesy email at the account sarkipatoe@michigan.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at https://calendar.google.com/calendar/ and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to send a response to the organizer and be added to the guest list, or invite others regardless of their own invitation status, or to modify your RSVP. Learn More.

From: Mike O"Malley
To: Bolf, Michael (EGLE); Denny Edwards; Darel Rice
Cc: Darold Harlan; Sarkipato, Ernest (EGLE); Mike O"Malley
Subject: Re: City of Benton Harbor Interruption in Treatment
Date: Sunday, November 8, 2020 12:12:39 PM
Attachments: image001.png

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Sorry, this is late but I just managed to get into my email.

Benton Harbor Susspended me with pay over the EGLE what evers.

I probably was in trouble for sending the Water Plant Emergency lack of alum feed.

The City has taken all my access to the City short of this email.

Denny said a guy from F&V was at the water plant Rob Jonns?. And that Floyd went in to flush hydrants, both on Saturday.
let's hope they told someone to collect Cl2 residuals.

Looks like I will not receive and City help in the conference for my license challange.

In an emergency call my wife's cell phone [redacted]

Mike O'Malley
Suspended Community Water Operator

On Thu, Nov 5, 2020 at 5:26 PM Bolf, Michael (EGLE) <BOLFM@michigan.gov> wrote:

> Mike & Darold,
>
> We can talk some more tomorrow, but after thinking this through some more with our team, we recommend that you increase the chlorine dosage and thoroughly flush the distribution system. We can lift the boil water advisory when chlorine monitoring indicates the system has been flushed.
>
> Darold, I forgot to cc you on the attached message.
>
> Michael Bolf, P.E.
>
> Engineering Unit Supervisor

Drinking Water and Environmental Health Division

Michigan Department of Environment, Great Lakes, and Energy

906-630-4107 (mobile) | bolfm@michigan.gov





LET'S STAY SAFE TOGETHER

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE); Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Nelson, Maureen (EGLE); Bolf, Michael (EGLE); Xing, Fangli (EGLE); Sellers, Fred (EGLE)
Cc:	emitchell@bhcity.us; Darold Harlan; Darel Rice; Mike O"Malley; Tim Drews; Chris Cook; Dan Dombos
Subject:	Re: Discharges to ground/groundwater at a WTP
Date:	Tuesday, October 13, 2020 4:54:06 PM
Attachments:	image003.png

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Ladies and Gentlemen,
I would propose to City Manager Ellis Mitchell, that the City discuss the management of the sludge lagoon with the appropriate EGLE representatives.
As a few of you know, I have been involved in this process in my on and off again Water Supervisor with Benton Harbor.
I would further like to have Abonmarche Representatives accompany us; as they were the officials in engineering, design, construction, etc.

I am curious, have you the Permit to Construct, or any available correspondence from the former Kalamazoo rep, Mr. Dannafel, or even records from Gary Wozniac
I have not been successful at finding them, maybe Abonmarche can help.

And, sort of an FYI, your description of the lagoons are a bit lacking, particularly absent was the idea that they were to be "Drying Beds"
A point that is essentially mute, during the present day high ground water levels.

We are very busy here at Benton Harbor's Water Department, so please consider patients.

Sincerely,

Mike O'Malley
Benton Harbor Water Operator In Charge

On Fri, Oct 9, 2020 at 7:16 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Benton Harbor water team,
>
> Attached is a multi-division letter that addresses the management of alum sludge on the water plant property. I assume the city will be requesting a meeting to discuss and would be happy to arrange such a meeting.

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, August 26, 2020 8:31 AM
To: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Thank you, I will let you know.

Are you serious!

This Lagoon was **demanded by Greg Dannefell the Kalamazoo Director of MIDNRE** or whatever they called themselves then.

If not for that, the original 1950 solution would have remained the same with the discharge going into the lake on the eastern edge of Harbor Shores Hole(s) #7; #8; #9.

A project that was supported by the state; Whirlpool; Corp and the whole Southwest MI & Berrien County Economic Development groups agreements!

It went (late) into the DWRLF Permitting

Funds were borrowed from the State of MI.

The State approved the permit.

40% of those funds were forgiven with the Federal Act the American Resource and Recovery Act

And the rest, the city is paying back with loan payments.

As I have told you, I have a plan to dewater the sludge lagoons into the abandoned Clarifiers, but it will take some doing and cash.

Which will take longer the permit to put it higher up in the property; or the permit to change the means it is cleaned.

If you want to do something worthwhile; approve the Alum Sludge for Land Application similar to the WWTPs

Mike O'Malley

Benton Harbor Water Operator IN Charge

Mike O'Malley

On Tue, Aug 25, 2020 at 5:04 PM Ehinger, Dale (EGLE) <EHINGERD@michigan.gov> wrote:

> Mike,
>
> At this time, we believe a discharge from the sludge dewatering process to the

groundwater, as proposed, would have to be permitted to not be a violation of the Part 22 Groundwater Quality Rules. If you are interested in obtaining a permit an application can be submitted through the Benton Harbor WTP site in MiWaters. Water Resources Division is evaluating the issue but needs some additional time to review before providing additional guidance to move forward.

If you have time to hold off on the discharge or can find an alternative solution (e.g. sludge drying beds at a wastewater treatment plant or utilize your surface water discharge authorization if you believe you can meet permit limits) we recommend delaying a discharge, from the proposed sludge dewatering, to the ground until it is permitted or it is determined to be exempt. We understand that an emergency could arise requiring you to act to protect the integrity of the Water Treatment Plant and Public Health. If you determine that an unpermitted discharge is your only option, please let us know.

Thank you,



Dale Ehinger, PE

District Engineer

Water Resources Division/Kalamazoo District Office

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Ph: 269-716-8305

ehingerd@michigan.gov

Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Tuesday, August 25, 2020 4:11 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Mike and all – per Dale's email and to clarify my own below, there may also be

implications for groundwater discharge under EGLE's Water Resources Division. Sounds like WRD is currently discussing the plan and any requirements they may have.

Ernie

From: Sarkipato, Ernest (EGLE)
Sent: Monday, August 24, 2020 1:33 PM
To: 'Mike O'Malley' <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Thank you Mike. I know you are in a tough spot, and appreciate your ability to get stuff done in short order and with few resources. From this discussion, I don't believe moving the alum sludge for further dewatering from one unlined lagoon to another 280 ft away is going to appreciably change any current influence on the groundwater in the area.

I guess my only remaining concern is one of liability – without a well built, maintained, and functioning berm, this proposal could result in seepage/runoff/alum sludge leaving the water plant property. I believe we can verbally approve this temporary arrangement as it pertains to EGLE-DWEH's approval of the city's plan for handling alum sludge and the dewatering process. However, please consult with your internal team whether this is a good idea *legally speaking.*

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Monday, August 24, 2020 11:26 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

The drawing you are using does not accurately serve as a site plan.

Attached is an annotated version: : *site grading_sludge loc corrected Mike O.jpeg*

The next drawing is from the Berrien County Beacon System :

I annotated it some : mostly the boundary of Jean Klock Park and Klock Road. All of which are in the City Limits

And a way for you to see the waste flows before and after. *Berrien County Beacon map Jean Klock Park and BHWW annotated.jpeg*

Similar but a **whole lot easier** than the rendering I had to do in the Discharge Permit application in 2011.

Mike O'Malley

Benton Harbor Water Operator IN Charge

On Mon, Aug 24, 2020 at 9:02 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> For everyone's benefit, I was able to find the attached permit drawings which seem to indicate the lagoons are indeed unlined and therefore intended for infiltration, and confirm Dale's description.
>
> I'm also looking at the site grading drawing, and wondering where exactly the wtp property line falls in the area you are looking at south of the driveway? I'm not certain that is on the WTP property.
>
> Please confirm the property ownership of the area you are proposing for drying the alum sludge.
>
> Ernie
>
> ---
>
> **From:** Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
> **Sent:** Monday, August 24, 2020 8:15 AM
> **To:** Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Mike O'Malley <momalley@bhcity.us>
> **Cc:** emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>
> **Subject:** RE: Discharges to ground/groundwater at a WTP
>
> Ernie,
>
> My recollection of the WTP Lagoon project is that a two cell lagoon would be constructed with an emergency overflow to a surface water discharge. The first lagoon

was to settle out sludge and I believe it was designed to infiltrate. The second lagoon was unlined and intended for infiltration. I believe the overflow was only intended for high use times or emergency operations (i.e. the lagoons would typically infiltrate but occasionally a surface water discharge would occur).

I do not recall any seeing anything on plans or procedures for handling sludge but it was a long time ago and I do not have easy access to the files. Due to the age the files may have been sent to records center. The files should be available (if they exist) but would take some time to retrieve. Let me know if you need anything else.

Thank you,



Dale Ehinger, PE

District Engineer

Water Resources Division/Kalamazoo District Office

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Ph: 269-716-8305

ehingerd@michigan.gov

Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, August 21, 2020 3:09 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: RE: Discharges to ground/groundwater at a WTP

Dan and Dale – do you know if the constructed sludge lagoons have a clay liner that would impede infiltration to the ground?

From: Mike O'Malley <momalley@bhcity.us>
Sent: Friday, August 21, 2020 9:27 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: emitchell@bhcity.us; Mike O'Malley <momalley@bhcity.us>; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

That is very cool.

I was a water superintendent in those years; full time for St. Joseph and Part Time for Benton Harbor.

St. Joseph had a reclaim basin for filter wastes, including backwash water.

In those days regulations were written to allow Plants to recirculate the backwash water into the treatment scheme of a SWR Plant.

Benton Harbor's water treatment was considerably more interesting and simple.

The new filter plant was built in the late 1940's early 1950's.

At that very same time MDOT built a clover leaf system for US-31 at Klock Road.

In order to do that, the MDOT had to deadhead a loop of the Pawpaw River.

I know this because Counser Towsend documents show that the 20-inch distribution main from the plant were required to follow:

- The North 20-inch was to turn Northeast , follow the ramp, cross the highway; turn southeast to pair up with the South 20-inch.
- The South 20-inch was to turn Southeast, follow the ramp, to a City Interconnect; cross the highway and turn Southeast to pair up and cross the Pawpaw River.
- That created a substantial depression Northeast of the plant, when the river dried

out.
- During that time, the City was improving Jean Klock beach and the water plant extended the existing backwash drain to that depression.

Treatment wastes from then on were contained in the depression bounded by Jean Klock Park road to the west; Grand Blvd to the north; Highway -31 ramps to the East; and Klock Road (Upton Dr) to the south.

For decades, this became known as BHWW Pond.

Around the time the water plant got into trouble with the sanitary survey (2004) and began the process of applying for Revolving Loan money, Greg Dannefel of MDEQ Kalamazoo found an old aerial photograph that showed the bow in the Pawpaw river.

He contacted Greg Alimenti and Pete Mitchell to develop a discharge plant that would right the decades old environmental illicit discharge to the Pawpaw river.

I do not know where that aerial photo is, but I have attached another that indicates the work done and change in the Pawpaw river by the construction of the US31 Cloverleaf.

Attached: *Aerial view US 31 BHWW.pdf*

Mr. Dannefell did not particularly like the pock marked pond discharge scheme that Benton Harbor came up with.

Add to that the Harbor Shores Golf group who wanted that area for it's choice holes of #7; #8; #9, also agreeing to do a great deal of environmental clean up all around the Pawpaw river and North Benton Harbor City.

Now I saw the aerial photograph, and listened sadly to Greg Dannefel's insistance that backwash water can no longer be allowed to be discharged to the Pawpaw river.

Hence the almost too late change order to build the backwash lagoons with additional DWRLF dollars, and of course the debt forgiveness in the Federal Resource and Recovery Act.

And so began the lagoon project right alongside the Harbor Shores hole #9 construction.

It was too late for the City to get additional space for a lagoon that had room to work around, so it was jammed into the obstructions, particularly the high slope of the East end of the Water Plant and the south side of the beach enterence.

When the contractor needed to build the Inlet structure they had to de-water some groundwater in order to pour concrete.

Benton Harbor managed to clean out the sludge solids in 2011; 2012, 2017; & 2018.

In 2017, the groundwater levels around Klock Road and every low lying area were starting to make an impact on homeowners and storm drain infrastructure

After the summer of 2018, it was all but certain that the sludge drying lagoon would seemingly not dry the alum any more.

I watched almost every day after a backwash, that the water would be only 6 inches below the concrete diversion wall but would fall a few inches every time.

Essentially to the accumulating sludge of the smaller 1st lagoon.

Then out of desperation I channeled the water into the 2nd and larger lagoon, to try and dry the primary lagoon enough for cleaning.

We did manage, but a fair portion of the bottom was still mushy.

I would like to put this lagoon back into service before the summer runs out.

My proposal would be to move this mostly dry alum sludge to the space between the water plant's driveway, inside the fence, on Klock road.

1. I had much of that area's brush cleared off.
2. Diked up a rim of topsoil in a curl pattern.
3. And installed a silt fence.

In the hopes that we would be allowed to remove the almost dry sludge 100 yards south west and dump it into the newly designed containment to dry out.

As I said, the sludge will not dry out in the high ground water zone.

I have another plan to begin pumping alum sludge to store in the abandoned clarifiers, but I probably will not have enough time to make that successful, before winter sets in.

Benton Harbor still has to run the plate settlers and filters.

And I would NOT like to fill the larger lagoon with Alum solids and have to figure out how to get rid of them.

And to make sure, Filter Alum will accumulate into a heavy sludge under water and it is nearly impossible to dilute that sludge with water.

As per 3-3 in the MDPH regs, let me know what I'll need to do.

Please help

Mike O'Malley

Benton Harbor Water Superintendent

On Thu, Aug 20, 2020 at 8:46 PM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Hi Mike,
>
> I was curious to try and find the ancient document I could remember seeing that allows a WTP to discharge backwash water to the lagoons without a discharge permit. I did find the attached, and thought it was pertinent to our conversation today.
>
> On page 3, I am seeing number 3 as being somewhat limiting. In essence, the current plan is to use the lagoons as constructed. By moving the location or changing the way the dewatering occurs, I'm not certain there won't be impacts to groundwater.
>
> As a next step to explore that option, I'd be willing to contact the groundwater permit section chief for the Water Resources Division, who actually jumped shop from the Drinking Water program a few years back.
>
> Ernie Sarkipato, P.E.
>
> Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile



www.michigan.gov/drinkingwater

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE)
Cc:	Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Nelson, Maureen (EGLE); Bolf, Michael (EGLE); Xing, Fangli (EGLE); Sellers, Fred (EGLE); emitchell@bhcity.us; Darold Harlan; Darel Rice; Tim Drews; Chris Cook; Dan Dombos
Subject:	Re: Discharges to ground/groundwater at a WTP
Date:	Wednesday, October 14, 2020 5:22:07 PM
Attachments:	image005.png image002.png BHWW BW Pond Bulletin 33.pdf

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Ernie and team (City; Abonmarche; and EGLE)

It appears by sending the same items sent before, that you and your team have created a great deal of unknown and very expensive work for the City Water Department without any knowledge or premise of what this Alum Sludge Maintenance project was built for in the 1st place, back in 2011.

I told you this before, the lagoon was NOT lined.

The access road was constructed to facilitate dredging. It was not in the original scope and was added by City Water Funds.
We had it built based upon the advice of 2 contractors that suggested we would have no means to clean it otherwise.
Of particular concern are the AEP High voltage line that runs over the south edge of the lagoon west to east.

And here is something regarding a permit to construct, that took me a long time to find:

Attached email correspondence: *BHWW BW Pond Bulletin [redacted].pdf*

Sure would have liked to have seen any documentation you have found from Dannefell and an actual Permit to Construct, said Alum Solids Treatment Equipment.
Maybe the contents of the bulletin 33 will provide the link you need.

And, Dale Eheringer,
I apologize that I got you caught up in all this. You have been a godsend for all of the lagoon, sanitary sewer, MS4, the FOIA and MI Waters, I have had to deal with. Both before I was fired and when I returned, Thank you!

Mike O'Malley
Benton Harbor Water Superintendent

On Wed, Oct 14, 2020 at 10:33 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Mr. O'Malley,

I can take the lead on scheduling that conversation with the City Manager, with his approval. We do acknowledge the many issues the city is dealing with on top of, now, construction! As for lagoon VS drying bed, I think the main question is whether they are lined with clay, concrete or some other impermeable material as they sometimes are (true evaporation beds). They appear to be unlined, and therefore designed for both evaporation and/or infiltration.

What I have access to in the EGLE office is a paper copy of the permit drawings and specifications. I had previously sent the attached email with a couple photos of those permit drawings, but it would be ideal to have **PDF copies of as-builts** (*Abonmarche*?).

We also may have some correspondence from the permit review process, which I can dig for. However it does seem unlikely to me that it will exist.

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Tuesday, October 13, 2020 4:54 PM

To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>; Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Xing, Fangli (EGLE) <XingF@michigan.gov>; Sellers, Fred (EGLE) <SELLERSF@michigan.gov>
Cc: emitchell@bhcity.us; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>; Tim Drews [redacted]@icloud.com>; Chris Cook <cjcook@abonmarche.com>; Dan Dombos <ddombos@abonmarche.com>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ladies and Gentlemen,

I would propose to City Manager Ellis Mitchell, that the City discuss the management of the sludge lagoon with the appropriate EGLE representatives.

As a few of you know, I have been involved in this process in my on and off again Water Supervisor with Benton Harbor.

I would further like to have Abonmarche Representatives accompany us; as they were the officials in engineering, design, construction, etc.

I am curious, have you the Permit to Construct, or any available correspondence from the former Kalamazoo rep, Mr. Dannafel, or even records from Gary Wozniac

I have not been successful at finding them, maybe Abonmarche can help.

And, sort of an FYI, your description of the lagoons are a bit lacking, particularly absent was the idea that they were to be "Drying Beds"

A point that is essentially mute, during the present day high ground water levels.

We are very busy here at Benton Harbor's Water Department, so please consider patients.

Sincerely,

Mike O'Malley

Benton Harbor Water Operator In Charge

On Fri, Oct 9, 2020 at 7:16 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Benton Harbor water team,
>
> Attached is a multi-division letter that addresses the management of alum sludge on the water plant property. I assume the city will be requesting a meeting to discuss and would be happy to arrange such a meeting.
>
> Ernie Sarkipato, P.E.
>
> Surface Water Treatment Specialist
>
> Drinking Water and Environmental Health Division
>
> MI Department of Environment, Great Lakes, and Energy
>
> 616-307-0261 mobile
>
> 
>
> www.michigan.gov/drinkingwater
>
> ---
>
> **From:** Mike O'Malley <momalley@bhcity.us>
> **Sent:** Wednesday, August 26, 2020 8:31 AM
> **To:** Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>

Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Thank you, I will let you know.

Are you serious!

This Lagoon was **demanded by Greg Dannefell the Kalamazoo Director of MIDNRE** or whatever they called themselves then.

If not for that, the original 1950 solution would have remained the same with the discharge going into the lake on the eastern edge of Harbor Shores Hole(s) #7; #8; #9.

A project that was supported by the state; Whirlpool; Corp and the whole Southwest MI & Berrien County Economic Development groups agreements!

It went (late) into the DWRLF Permitting

Funds were borrowed from the State of MI.

The State approved the permit.

40% of those funds were forgiven with the Federal Act the American Resource and Recovery Act

And the rest, the city is paying back with loan payments.

As I have told you, I have a plan to dewater the sludge lagoons into the abandoned Clarifiers, but it will take some doing and cash.

Which will take longer the permit to put it higher up in the property; or the permit to change the means it is cleaned.

If you want to do something worthwhile; approve the Alum Sludge for Land Application

similar to the WWTPs

Mike O'Malley

Benton Harbor Water Operator IN Charge

Mike O'Malley

On Tue, Aug 25, 2020 at 5:04 PM Ehinger, Dale (EGLE) <EHINGERD@michigan.gov> wrote:

> Mike,
>
> At this time, we believe a discharge from the sludge dewatering process to the groundwater, as proposed, would have to be permitted to not be a violation of the Part 22 Groundwater Quality Rules. If you are interested in obtaining a permit an application can be submitted through the Benton Harbor WTP site in MiWaters. Water Resources Division is evaluating the issue but needs some additional time to review before providing additional guidance to move forward.
>
> If you have time to hold off on the discharge or can find an alternative solution (e.g. sludge drying beds at a wastewater treatment plant or utilize your surface water discharge authorization if you believe you can meet permit limits) we recommend delaying a discharge, from the proposed sludge dewatering, to the ground until it is permitted or it is determined to be exempt. We understand that an emergency could arise requiring you to act to protect the integrity of the Water Treatment Plant and Public Health. If you determine that an unpermitted discharge is your only option, please let us know.
>
> Thank you,
>
> 
>
> Dale Ehinger, PE
>
> District Engineer

Water Resources Division/Kalamazoo District Office

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Ph: 269-716-8305

ehingerd@michigan.gov

Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Tuesday, August 25, 2020 4:11 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Mike and all – per Dale's email and to clarify my own below, there may also be implications for groundwater discharge under EGLE's Water Resources Division. Sounds like WRD is currently discussing the plan and any requirements they may have.

Ernie

From: Sarkipato, Ernest (EGLE)
Sent: Monday, August 24, 2020 1:33 PM
To: 'Mike O'Malley' <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Thank you Mike. I know you are in a tough spot, and appreciate your ability to get stuff done in short order and with few resources. From this discussion, I don't believe moving the alum sludge for further dewatering from one unlined lagoon to another 280 ft away is going to appreciably change any current influence on the groundwater in the area.

I guess my only remaining concern is one of liability – without a well built, maintained, and functioning berm, this proposal could result in seepage/runoff/alum sludge leaving the water plant property. I believe we can verbally approve this temporary arrangement as it pertains to EGLE-DWEH's approval of the city's plan for handling alum sludge and the dewatering process. However, please consult with your internal team whether this is a good idea *legally speaking*.

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Monday, August 24, 2020 11:26 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

The drawing you are using does not accurately serve as a site plan.

Attached is an annotated version: : *site grading_sludge loc corrected Mike O.jpeg*

The next drawing is from the Berrien County Beacon System :

I annotated it some : mostly the boundary of Jean Klock Park and Klock Road. All of which are in the City Limits

And a way for you to see the waste flows before and after. *Berrien County Beacon map Jean Klock Park and BHWW annotated.jpeg*

Similar but a **whole lot easier** than the rendering I had to do in the Discharge Permit application in 2011.

Mike O'Malley

Benton Harbor Water Operator IN Charge

On Mon, Aug 24, 2020 at 9:02 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> For everyone's benefit, I was able to find the attached permit drawings which seem to indicate the lagoons are indeed unlined and therefore intended for infiltration, and confirm Dale's description.
>
> I'm also looking at the site grading drawing, and wondering where exactly the wtp property line falls in the area you are looking at south of the driveway? I'm not certain that is on the WTP property.

Please confirm the property ownership of the area you are proposing for drying the alum sludge.

Ernie

From: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Sent: Monday, August 24, 2020 8:15 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>
Subject: RE: Discharges to ground/groundwater at a WTP

Ernie,

My recollection of the WTP Lagoon project is that a two cell lagoon would be constructed with an emergency overflow to a surface water discharge. The first lagoon was to settle out sludge and I believe it was designed to infiltrate. The second lagoon was unlined and intended for infiltration. I believe the overflow was only intended for high use times or emergency operations (i.e. the lagoons would typically infiltrate but occasionally a surface water discharge would occur).

I do not recall any seeing anything on plans or procedures for handling sludge but it was a long time ago and I do not have easy access to the files. Due to the age the files may have been sent to records center. The files should be available (if they exist) but would take some time to retrieve. Let me know if you need anything else.

Thank you,



Dale Ehinger, PE

District Engineer

Water Resources Division/Kalamazoo District Office

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Ph: 269-716-8305

ehingerd@michigan.gov

Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, August 21, 2020 3:09 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: RE: Discharges to ground/groundwater at a WTP

Dan and Dale – do you know if the constructed sludge lagoons have a clay liner that would impede infiltration to the ground?

From: Mike O'Malley <momalley@bhcity.us>
Sent: Friday, August 21, 2020 9:27 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: emitchell@bhcity.us; Mike O'Malley <momalley@bhcity.us>; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

That is very cool.

I was a water superintendent in those years; full time for St. Joseph and Part Time for Benton Harbor.

St. Joseph had a reclaim basin for filter wastes, including backwash water.

In those days regulations were written to allow Plants to recirculate the backwash water into the treatment scheme of a SWR Plant.

Benton Harbor's water treatment was considerably more interesting and simple.

The new filter plant was built in the late 1940's early 1950's.

At that very same time MDOT built a clover leaf system for US-31 at Klock Road.

In order to do that, the MDOT had to deadhead a loop of the Pawpaw River.

I know this because Counser Towsend documents show that the 20-inch distribution main from the plant were required to follow:

- The North 20-inch was to turn Northeast , follow the ramp, cross the highway; turn southeast to pair up with the South 20-inch.
- The South 20-inch was to turn Southeast, follow the ramp, to a City Interconnect; cross the highway and turn Southeast to pair up and cross the Pawpaw River.
- That created a substantial depression Northeast of the plant, when the river dried out.
- During that time, the City was improving Jean Klock beach and the water plant extended the existing backwash drain to that depression.

Treatment wastes from then on were contained in the depression bounded by Jean Klock Park road to the west; Grand Blvd to the north; Highway -31 ramps to the East; and Klock Road (Upton Dr) to the south.

For decades, this became known as BHWW Pond.

Around the time the water plant got into trouble with the sanitary survey (2004) and began the process of applying for Revolving Loan money, Greg Dannefel of MDEQ Kalamazoo found an old aerial photograph that showed the bow in the Pawpaw river.

He contacted Greg Alimenti and Pete Mitchell to develop a discharge plant that would right the decades old environmental illicit discharge to the Pawpaw river.

I do not know where that aerial photo is, but I have attached another that indicates the work done and change in the Pawpaw river by the construction of the US31 Cloverleaf.

Attached: *Aerial view US 31 BHWW.pdf*

Mr. Dannefell did not particularly like the pock marked pond discharge scheme that Benton Harbor came up with.

Add to that the Harbor Shores Golf group who wanted that area for it's choice holes of #7; #8; #9, also agreeing to do a great deal of environmental clean up all around the Pawpaw river and North Benton Harbor City.

Now I saw the aerial photograph, and listened sadly to Greg Dannefel's insistance that backwash water can no longer be allowed to be discharged to the Pawpaw river.

Hence the almost too late change order to build the backwash lagoons with additional DWRLF dollars, and of course the debt forgiveness in the Federal Resource and Recovery Act.

And so began the lagoon project right alongside the Harbor Shores hole #9 construction.

It was too late for the City to get additional space for a lagoon that had room to work around, so it was jammed into the obstructions, particularly the high slope of the East end of the Water Plant and the south side of the beach enterence.

When the contractor needed to build the Inlet structure they had to de-water some groundwater in order to pour concrete.

Benton Harbor managed to clean out the sludge solids in 2011; 2012, 2017; & 2018.

In 2017, the groundwater levels around Klock Road and every low lying area were starting to make an impact on homeowners and storm drain infrastructure

After the summer of 2018, it was all but certain that the sludge drying lagoon would seemingly not dry the alum any more.

I watched almost every day after a backwash, that the water would be only 6 inches below the concrete diversion wall but would fall a few inches every time.

Essentially to the accumulating sludge of the smaller 1st lagoon.

Then out of desperation I channeled the water into the 2nd and larger lagoon, to try and dry the primary lagoon enough for cleaning.

We did manage, but a fair portion of the bottom was still mushy.

I would like to put this lagoon back into service before the summer runs out.

My proposal would be to move this mostly dry alum sludge to the space between the water plant's driveway, inside the fence, on Klock road.

1. I had much of that area's brush cleared off.
2. Diked up a rim of topsoil in a curl pattern.
3. And installed a silt fence.

In the hopes that we would be allowed to remove the almost dry sludge 100 yards south west and dump it into the newly designed containment to dry out.

As I said, the sludge will not dry out in the high ground water zone.

I have another plan to begin pumping alum sludge to store in the abandoned clarifiers, but I probably will not have enough time to make that successful, before winter sets in.

Benton Harbor still has to run the plate settlers and filters.

And I would NOT like to fill the larger lagoon with Alum solids and have to figure out how to get rid of them.

And to make sure, Filter Alum will accumulate into a heavy sludge under water and it is nearly impossible to dilute that sludge with water.

As per 3-3 in the MDPH regs, let me know what I'll need to do.

Please help

Mike O'Malley

Benton Harbor Water Superintendent

On Thu, Aug 20, 2020 at 8:46 PM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Hi Mike,
>
> I was curious to try and find the ancient document I could remember seeing that allows a WTP to discharge backwash water to the lagoons without a discharge permit. I did find the attached, and thought it was pertinent to our conversation today.
>
> On page 3, I am seeing number 3 as being somewhat limiting. In essence, the current plan is to use the lagoons as constructed. By moving the location or changing the way the dewatering occurs, I'm not certain there won't be impacts to groundwater.
>
> As a next step to explore that option, I'd be willing to contact the groundwater permit section chief for the Water Resources Division, who actually jumped shop from the Drinking Water program a few years back.
>
> Ernie Sarkipato, P.E.
>
> Surface Water Treatment Specialist
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MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

Bulletin No. 33

Project: Benton Harbor Water Filtration Plant
Project No.: M8-0668
Date: November 29, 2010

Changes & Clarifications to the Outflow Pond & Structures:

The attached bulletin drawings revise or replace all information shown on sheets, C1.2, C1.3, C1.7 & C3.1 of the original bid documents regarding the outflow pond structure, weirs, separation wall and overflow structure.

Sheet B-33-1	Revised site plan – plant overflow & detail
Sheet B-33-2	Enlarged outflow & overflow structure plan
Sheet B-33-3	Structure sections & details
Sheet B-33-4	Cell A sluice gate details
Sheet B-33-5	Cell B canal gate details
Sheet B-33-6	Outflow structure details

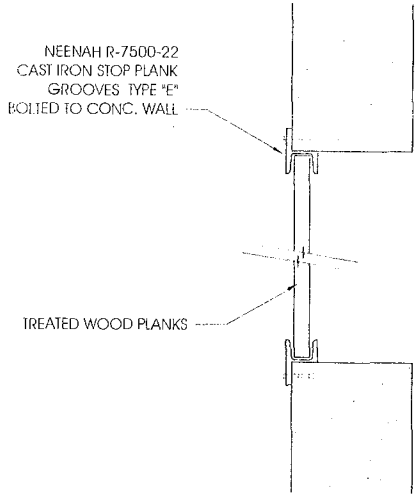
Gary Folino

gnf
CC: Darwin Watson, City of Benton Harbor
Kenton McAndrew, P.E., Abonmarche
Rick Smigielski, Project Manager, Abonmarche
Jeff Buck, Abonmarche

END OF BULLETIN NO. 33

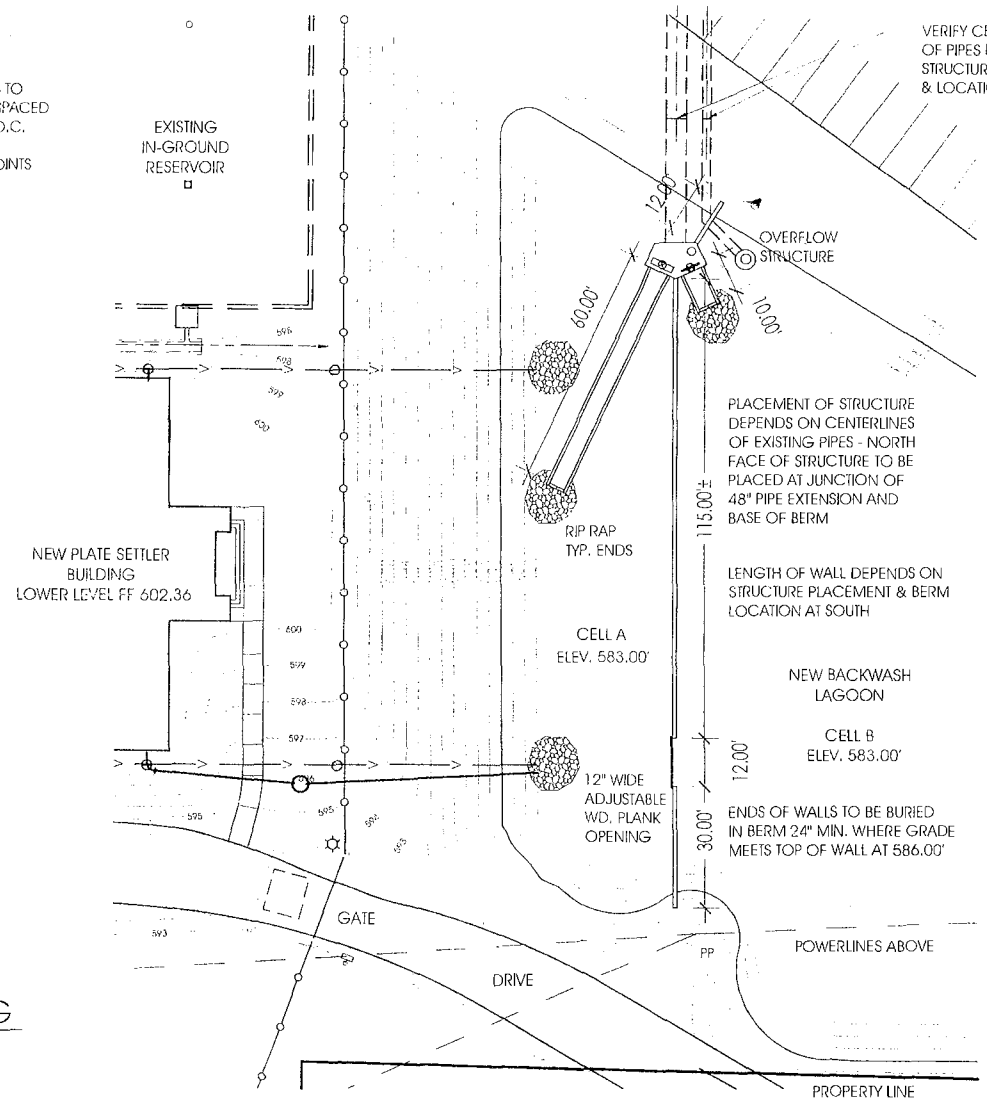
NOTE: ALL CONC. WALLS TO HAVE CONTROL JOINTS SPACED NOT MORE THAN 30'-0" O.C.

CONC. WEIR TO HAVE JOINTS 20'-0" O.C.



ADJUSTABLE WALL OPENING

SCALE: 1" = 1'-0"



SITE PLAN - PLANT OUTFLOW

SCALE: 1" = 30'-0"

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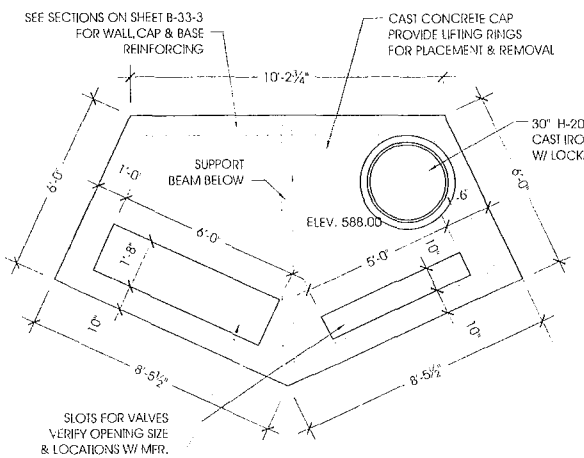
MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

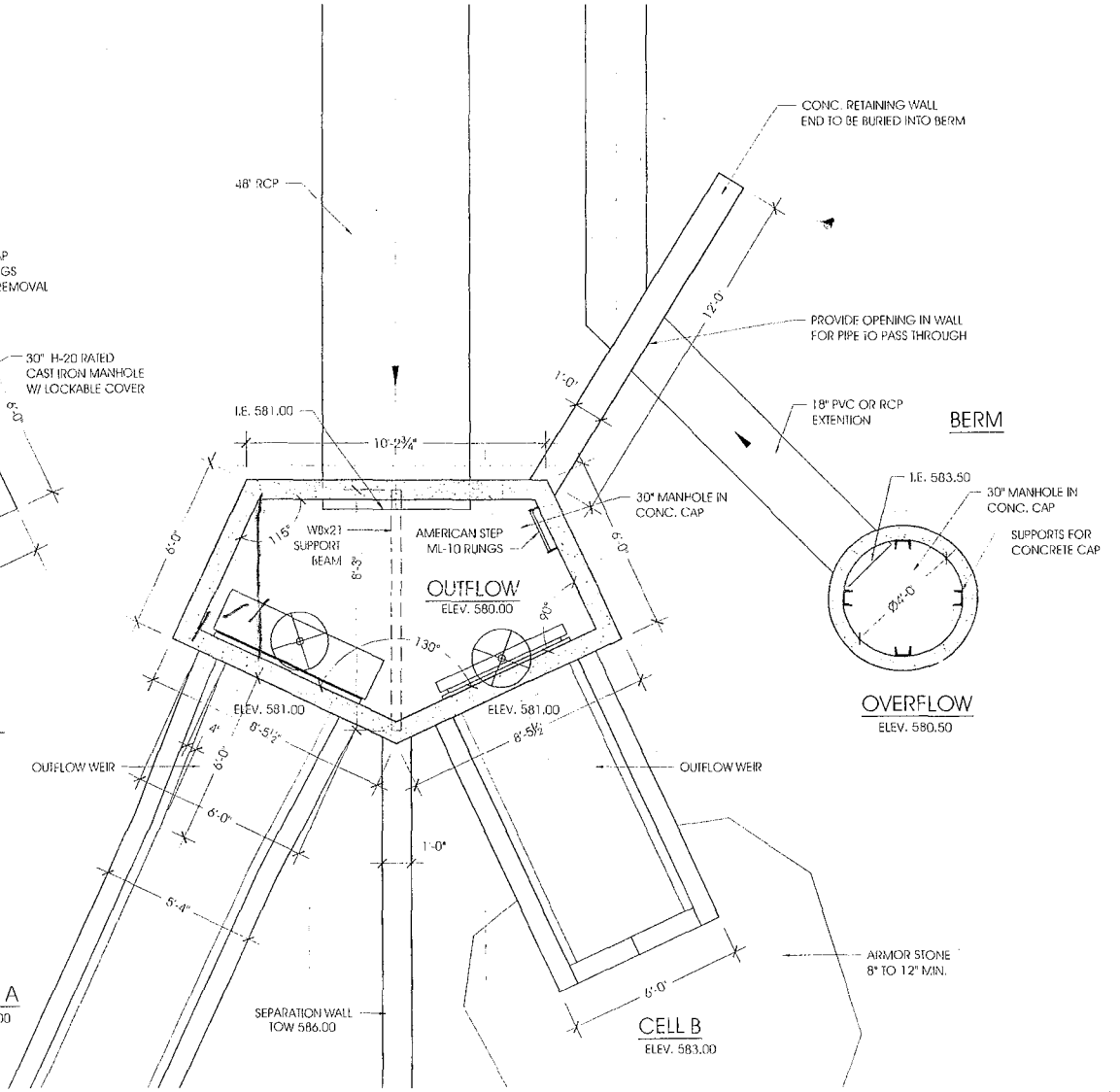
DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB #: M8-0668
SHEET NO.: B-33-1

F:\ADOT Projects_m80668 BH Water Plant- Bulletin Drawings\m80668 Bulletin 33.dwg, 11/29/2010 10:27:39 AM, gfolmo



OUTFLOW STRUCTURE CAP PLAN

SCALE: 1/4" = 1'-0"



OUTFLOW STRUCTURE ENLARGED PLAN

SCALE: 1/4" = 1'-0"

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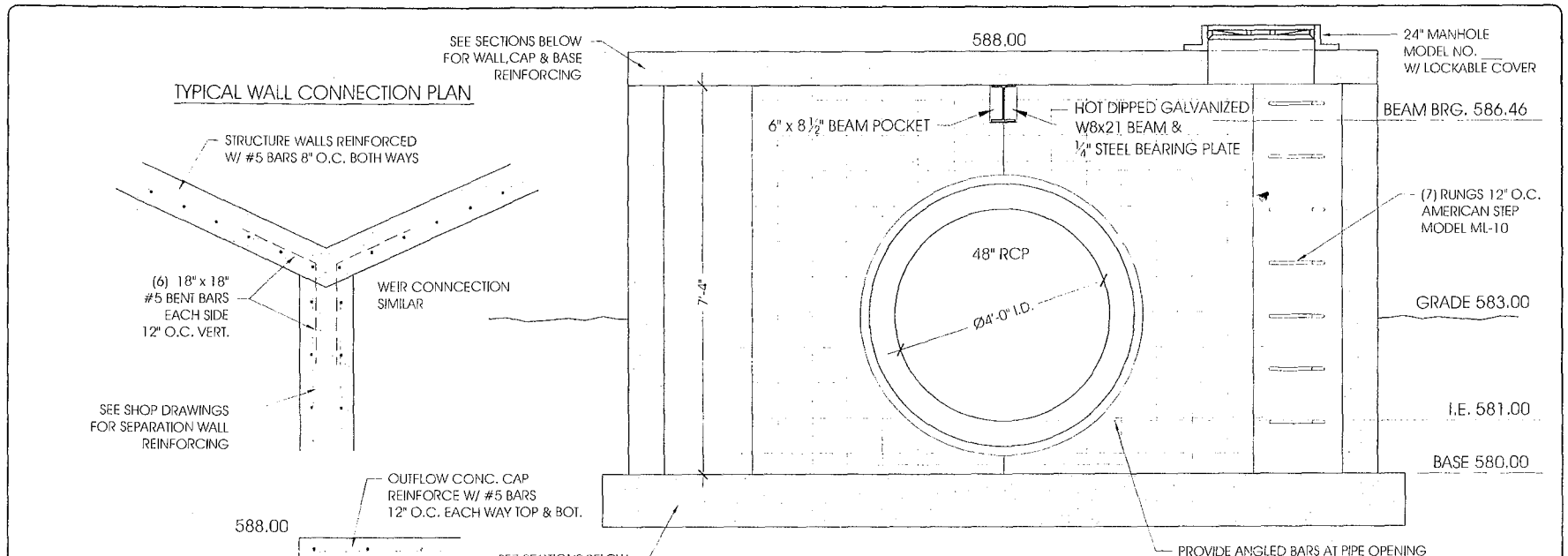
MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB #: M8-0668
SHEET NO.: B-33-2

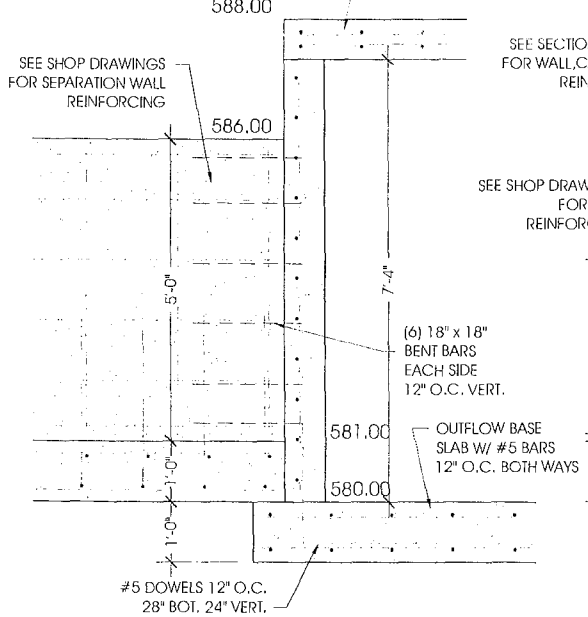
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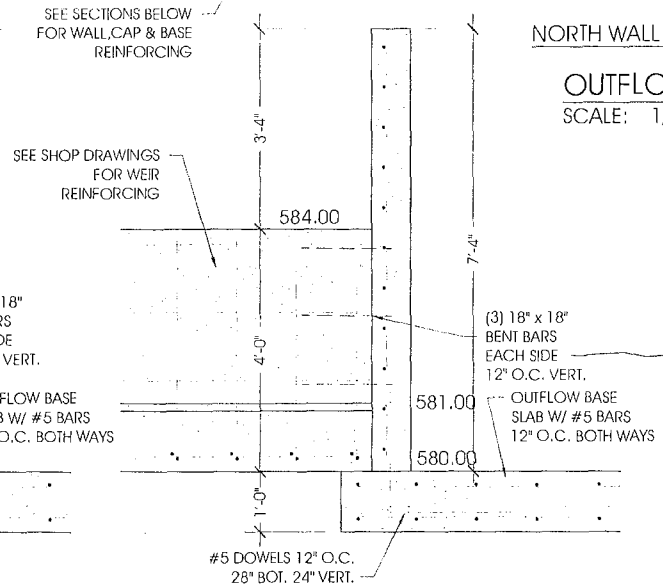
TYPICAL WALL CONNECTION PLAN

OUTFLOW STRUCTURE & WEIR DETAILS

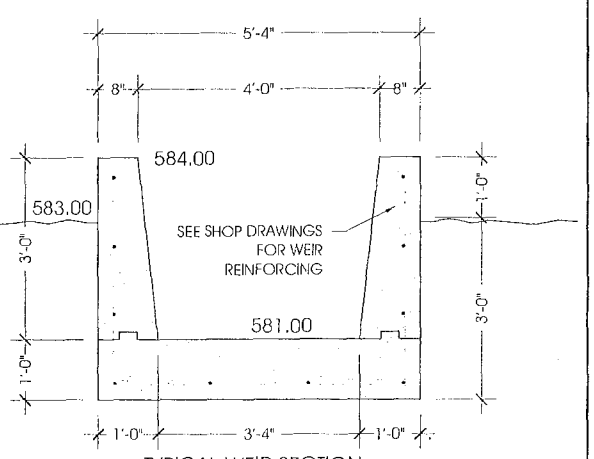
SCALE: 1/2" = 1'-0"



TYPICAL WALL CONNECTION SECTION



TYPICAL WEIR CONNECTION SECTION



TYPICAL WEIR SECTION

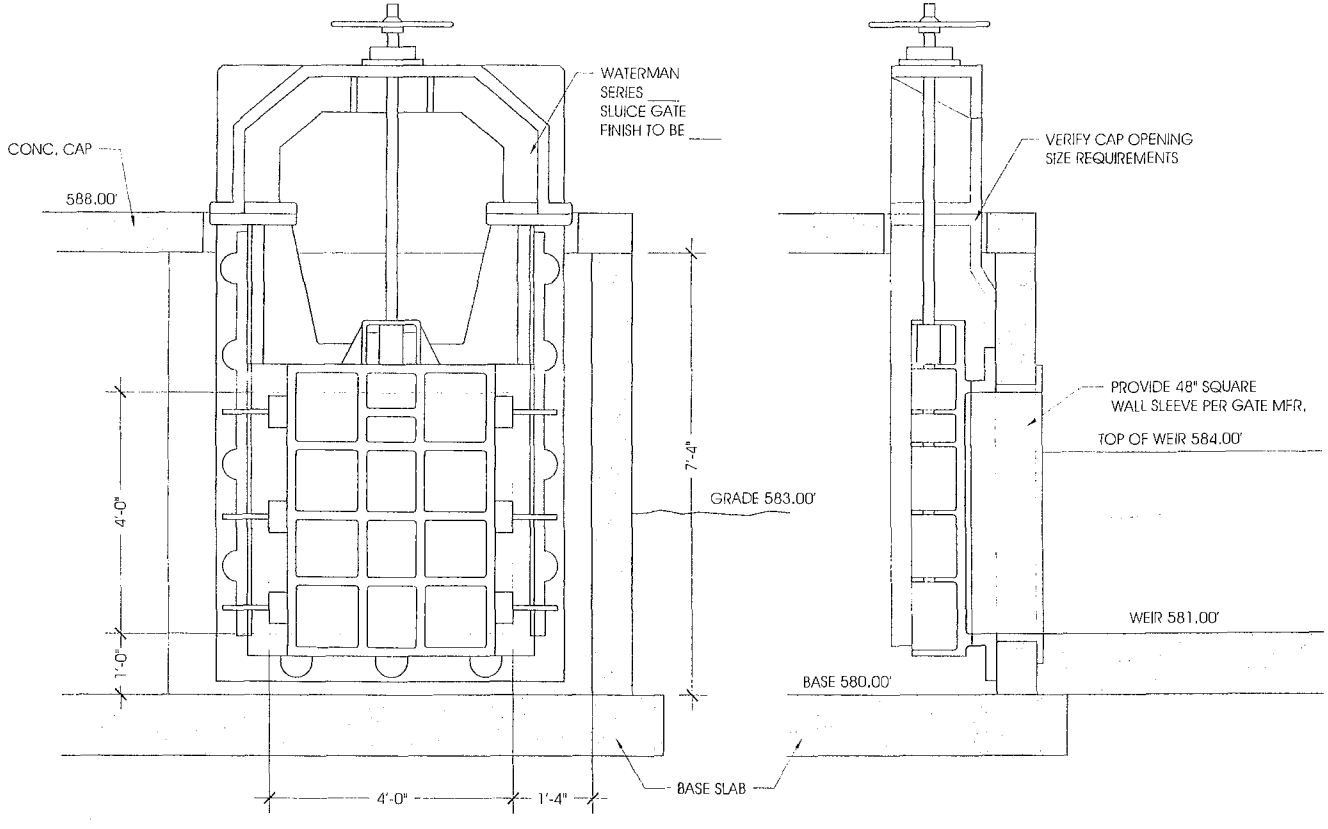
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PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB #: M8-0668
SHEET NO.: B-33-3

F:\ADT Projects_m80668 BH Water Plant\- Bulletin Drawings\m80668 Bulletin 33.dwg, 11/29/2010 10:07:47 AM, gfolino



SLUICE GATE INTERIOR ELEVATION

SLUICE GATE SECTION

CELL A SLUICE GATE DETAILS

SCALE: 1/2" = 1'-0"

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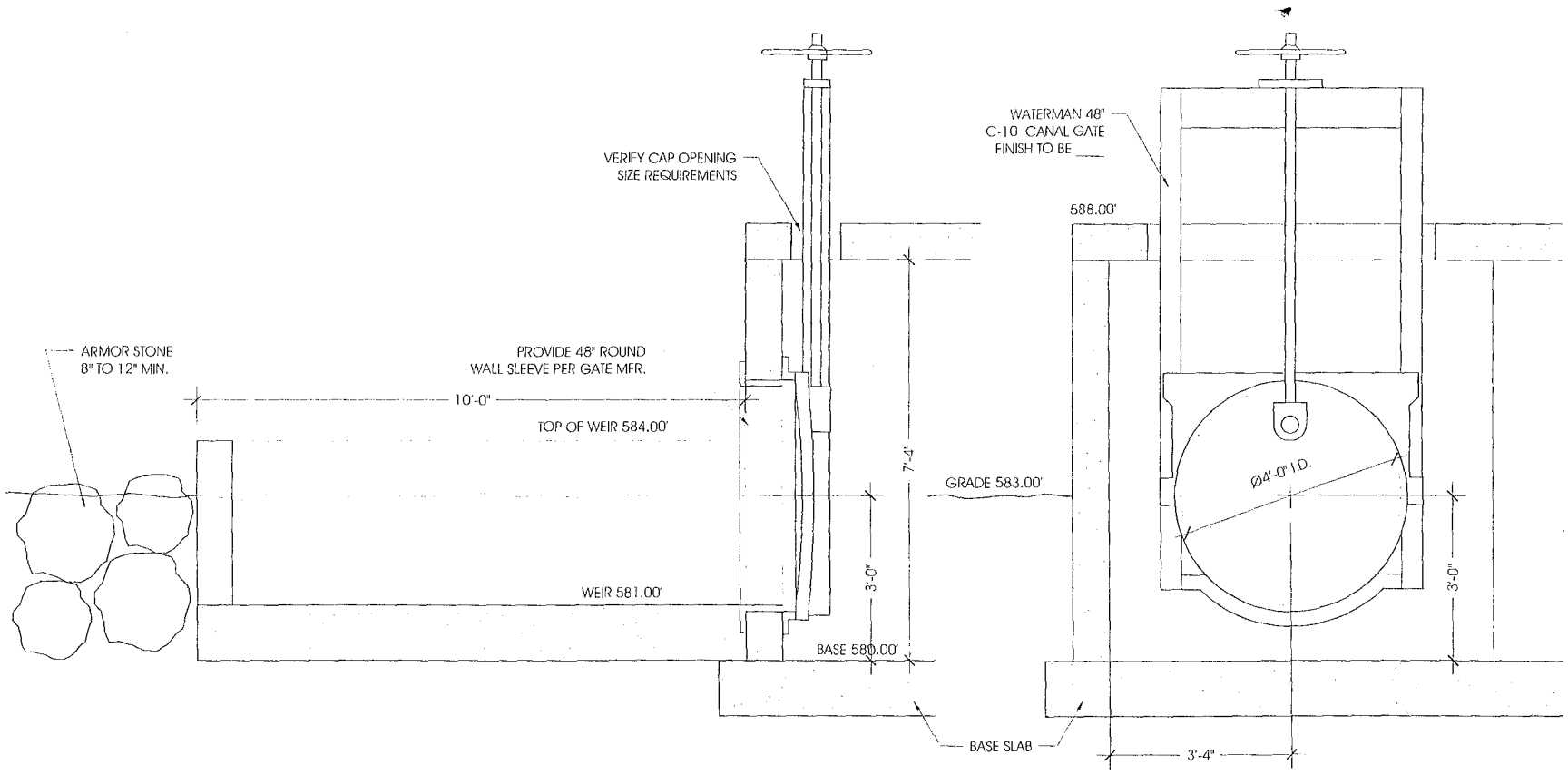
MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB # M8-0668
SHEET NO. B-33-4

F:\ADT Projects_m80668 BH Water Plant\- Bulletin Drawings\m80668 Bulletin 33.dwg, 11/29/2010 10:07:31 AM, gfolino



CANAL GATE SECTION

CANAL GATE INTERIOR ELEVATION

CELL B CANAL GATE & WEIR DETAILS

SCALE: 1/2" = 1'-0"

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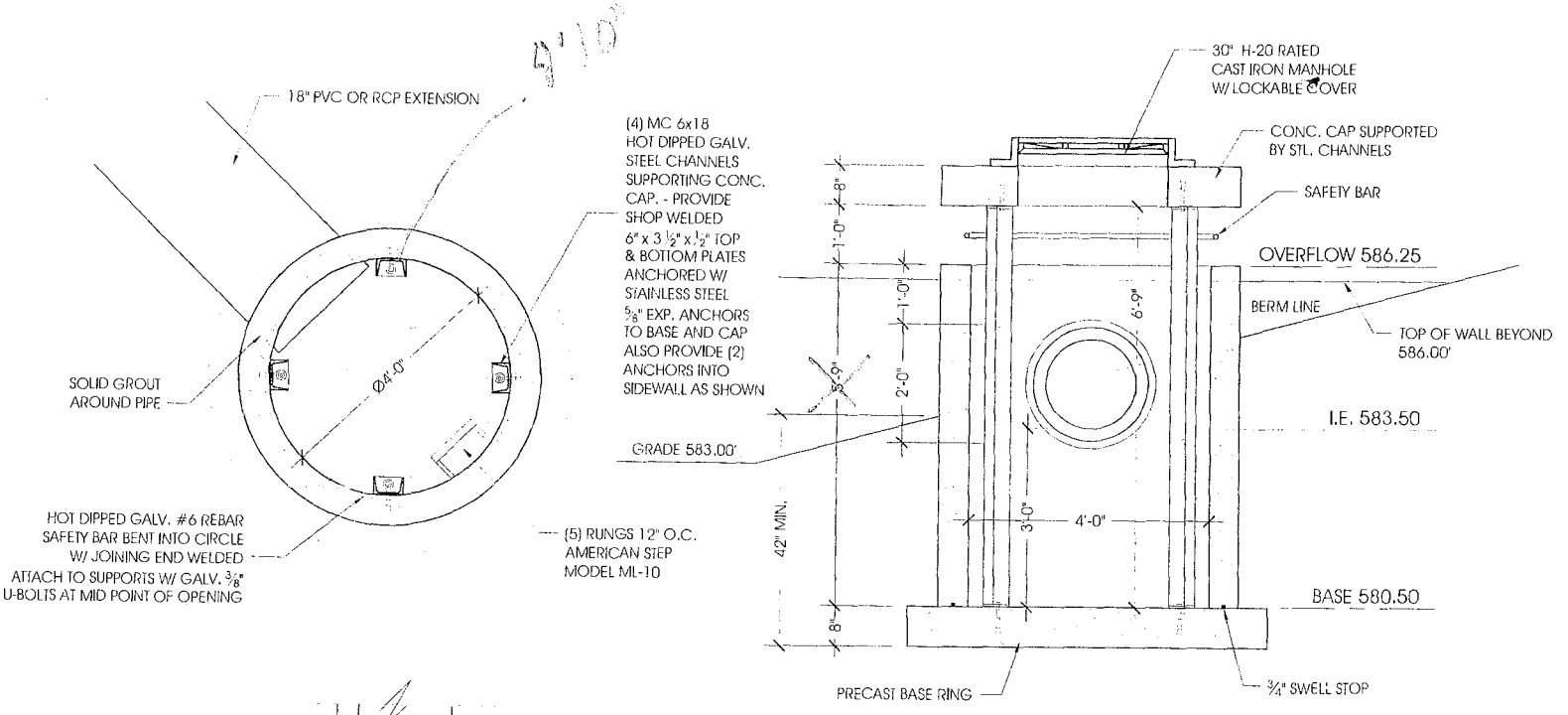
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MANISTEE, MI
SOUTH BEND, IN
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PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

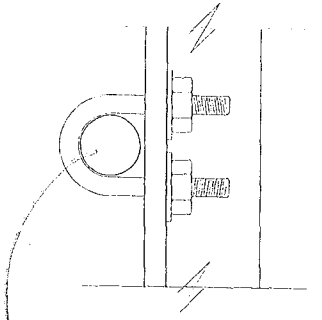
SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB #: M8-0668
SHEET NO.: B-33-5



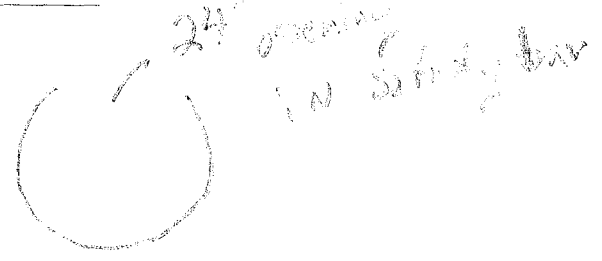
OVERFLOW STRUCTURE DETAILS

SCALE: 1/2" = 1'-0"



SAFETY BAR ATTACHMENT

SCALE: NTS



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PROJECT: WATER FILTRATION PLANT
BENTON HARBOR, MI

SHEET TITLE: OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: GNF
DESIGNED BY: KCM
PM REVIEW: -
QA/QC REVIEW: -
DATE: 11-29-10
ACI JOB #: M8-0668
SHEET NO.: B-33-6

F:\ADT Projects_m80668 BH Water Plant\- Bulletin Drawings\m30668 Bulletin 33.dwg 11/29/2010 10:07:57 AM aplano

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE); Thurston, Brian (EGLE); Oswald, Eric (EGLE); Bolf, Michael (EGLE)
Cc:	Ellis Mitchell; Darold Harlan; Darel Rice; Lesia Osler; Mike O"Malley; Sasy, Ninah (EGLE)
Subject:	Re: MI 0600 Benton Harbor ACO part Improve Collections Requirement
Date:	Thursday, October 1, 2020 8:52:27 AM

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Ernie and the rest of EGLE,

As for the Improved Collections Submittal:
It looks like something you have seen before, because you have seen it 3 times prior and rejected it all 3 times.
Like I said in my original email, you had asked for City empowerment of bill collections. You may have hoped that the City Commission would revisit it.
But, as I said it was already in the ordinance and a procedural account payable practice was written during the Emergency Management state program.
Lesia Osler was very happy with the submission I sent. She had also located the appropriate documents, but was hard pressed to edit the document as I did.

When you read it you will find a copy of the ordinance and required procedures; starting on page 4.

I also made a point of using this at the present time (basically for my staff's information) That we are not allowed to use this procedure until the Covid 19 Governor Decrees are lifted.

AsTMF Submittal:

No one on the Water Team (that I officially know of) has seen it all either.

However, we have a team meeting scheduled for tomorrow, Friday October 2,2020 and it will probably be part of the discussion.
I am not for sure, City Manager Ellis Mitchell called for the meeting.

I hope this helps clear up from mud to real high turbidity.

I could hear you on the last day of training, so you will likely see this email later.

Mike O'Malley
Benton Harbor Community Water Operator IN Charge.

But based upon the phone calls to Ellis yesterday, it sounds like someone else may be trying to take my place.
Could any of you tell me what is going on?

On Thu, Oct 1, 2020 at 7:22 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Mike and all,
>
> Thank you for submitting this. It looks a lot like previous versions, but we will need to take a closer look.
>
> I did not see a TMF study scope come through yesterday. Is that in the works?

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile



www.michigan.gov/drinkingwater

> **From:** Mike O'Malley <momalley@bhcity.us>
> **Sent:** Wednesday, September 30, 2020 8:11 AM
> **To:** Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Thurston, Brian (EGLE) <THURSTONB@michigan.gov>; Oswald, Eric (EGLE) <OswaldE1@michigan.gov>
> **Cc:** Ellis Mitchell <emitchell@bhcity.us>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Lesia Osler <losler@bhcity.us>
> **Subject:** MI 0600 Benton Harbor ACO part Improve Collections Requirement

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All,

Please see attached: *MI 0600 Benton Harbor final ACO Improve Rate Collections Item.pdf*

Earlier this year; I had compiled all of the legal requirements that I believe the lack there of was the reason; EGLE staff refused the 3rd submittal. The search included:

1. A section of the actual City Ordinance pertaining to collections.
2. And during my searches I found a Water Payment Procedure Manual written in 2013 by Wanda Kaye Jenkins, likely under the Direction of then MI State Appointed Emergency Manager Joe Harris

Since the State of MI has issued a Mandate with procedures of Water to Residents strict guidelines, I did not feel it was appropriate to present this ACO Submittal.

Until yesterday when it was demanded in an email for September 30, 2020 Submission.

This is the 4th and hopefully final ACO Agreement for AN EQUITABLE RATE COLLECTIONS PROGRAM

Water Staff, please note. None of this ACO can be used while the Benton Harbor Water Department is under strict Covid 19 Guidelines. We have it now only in anticipation that the Strict Covid 19 guidelines will be eliminated.

Through the Benton Harbor Water Team, via email;

By:

Mike O'Malley

Benton Harbor Water Operator IN Charge

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE); Ellis Mitchell
Cc:	Darold Harlan; Darel Rice; Mike O"Malley
Subject:	Re: MI 0600 Benton Harbor August 2020 DBP and TOC Results
Date:	Wednesday, October 28, 2020 1:30:58 PM
Attachments:	TOC SUVA July 2020 Results 491144_20200722__BENTONHARBOR-MI_20200728.pdf Sep TOCs 498086_20200923__BENTONHARBOR-MI_20200929.pdf

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Geez, my head is spinning.

You know Benton Harbor had dozens of requirements for July and September time frame.

this is easier than going back into the query,I did for August.

Attached: *TOC SUVA July 2020 Results 491144_20200722__BENTONHARBOR-MI_20200728.pdf*

Attached: *Sep TOCs 498086_20200923__BENTONHARBOR-MI_20200929.pdf*

Water Team, just an FYI;
I had 11 correspondences with EGLE in August and September.
Everything from their complaining about our Lead and Copper from June, to extra SOC penalty, to MORs & DMRs, Rads, VOCs, Partial Chem, Metals, etc.
And ALL Eurofins results that come to us, have an Invoice that has to be processed.

Not to mention all the time needed with 3 DWRLF Projects, Empire Bridge, we still need to complete; Wachs Fire Hyd and Valves, phone calls that still bounce over to my cell phone when people at City Hall do not pick up, etc.

I made a mistake.

Mike O'Malley
Water water everywhere and not a drop to drink.

On Wed, Oct 28, 2020 at 1:04 PM Mike O'Malley <momalley@bhcity.us> wrote:

> August is the 2nd month of the 3rd Quarter.
> You were sent both the TOC for August and Stage 2, DBPs.
> Read it further, it came in the same report from Eurofins Eaton Analytical.
> This was one of those rare months on Lake Michigan where Benton Harbor can take either Raw or Tap < 2.0 mg/L exemption that = 100% automatically.
> I do not remember what other month, you say you did not see, I'll check next.
>
> Mike O'Malley
> Benton Harbor Water Superintendent

---------- Forwarded message ---------
From: **Mike O'Malley** <momalley@bhcity.us>
Date: Tue, Sep 29, 2020 at 11:17 AM
Subject: MI 0600 Benton Harbor August 2020 DBP and TOC Results
To: EGLE Grand Rapids Distr <EGLE-DWEH-Grand-Rapids@michigan.gov>, EGLE Kalamazoo auto submit <EGLE-DWEH-Kalamazoo@michigan.gov>
Cc: Mike O'Malley <momalley@bhcity.us>

Please see

Attached: *MI 0600 Benton Harbor DBP and TOC Aug 2020 495377_20200904__BENTONHARBOR-MI_20200903*

Thanks,

Mike O'Malley
Benton Harbor Water Operator IN Charge

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 03/14/2019

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South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: City of Benton Harbor

Attn: Michael O'Malley
200 East Wall Street
Benton Harbor, MI 49002

Report: 491144
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4670767	Raw Lake MI	5310 C	07/14/20 07:30	Client	07/14/20 11:45
4670767	Raw Lake MI	Fed. Reg.	07/14/20 07:30	Client	07/14/20 11:45
4670768	Raw Lake MI	5910 B	07/14/20 07:30	Client	07/14/20 11:45
4670769	Raw Lake MI	5310 C	07/14/20 07:30	Client	07/14/20 11:45
4670770	Finished	5310 C	07/14/20 07:30	Client	07/14/20 11:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Pat Muff at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Pat Muff ASM — 07/22/2020

Authorized Signature — Title — Date

Client Name: City of Benton Harbor
Report #: 491144

Client Name: City of Benton Harbor Report #: 491144

Sampling Point: Raw Lake MI PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Dissolved Organic Carbon $	5310 C	---	0.500	**1.82**	mg/L	07/14/20 16:00	07/21/20 17:38	4670767
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**1.84**	mg/L	---	07/21/20 21:54	4670769
---	UV absorbance at 254nm $	5910 B	---	0.009	**0.022**	cm-1	---	07/15/20 13:07	4670768
---	SUVA $	Federal Register	---	0.1	**1.2**	L/mg*m	---	07/22/20 13:38	4670767

$ The state of origin does not offer certification for this parameter.

Sampling Point: Finished PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**1.47**	mg/L	---	07/21/20 21:35	4670770

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Sp ke Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the cal bration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

397702

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Shaded area for EEA use only

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
Mike Omalley	Derry Edwards	0600	MI	TOC SUVA	SO43/62

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER	Preservative Checks
Benton Harbor		✓		9,670	Lake MI	

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	pH accep-table? √	Residual Chlorine (P/A)	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	4070767	7/14/20	8:30	x		Raw Lake MI	DOC/SUVA				x	3	SW	SW
2	68	7/14/20	7:30	x		Raw Lake MI	~~SUVA~~ UV254				x	1	SW	SW
3	69	7/14/20	7:35	x		Raw Lake MI	TOC				x	3	SW	SW
4														
5														
6	70	7/14/20	7:35	x		~~Raw Lake MI~~ Finished	TOC				x	3	SW	SW
7														
8														
9														
10														
11														
12														
13														
14														

pH Acceptable
pH Acceptable

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Derry Edwards	7/14/20	930 AM PM		7/14/20	9:30 AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
	7/14/20	11:45 AM PM		7/14/20	1145 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS: Fresh draw

CONDITIONS UPON RECEIPT (check one): ____ Iced: Wet/Blue ____ Ambient ____ °C Upon Receipt____ N/A

MATRIX CODES:
DW-DRINKING WATER RW-REAGENT WATER GW-GROUND WATER EW-EXPOSURE WATER SW-SURFACE WATER PW-POOL WATER WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days) **0% RV*** = Rush Verbal: (5 working days)
50% RW* = Rush Written: (5 working days) 75%
* Please call, expedited service not available for all testing

IV* = Immediate Verbal: (3 working days) **IW*** 100%
=Immediate Written: (3 working days) **SP*** = 125%
Weekend, Holiday CALL
STAT* = Less than 48 hours CALL

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.
06-LO-F0435 Issue 8.0 Effective Date: 2020-05-15

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

Eurofins Eaton Analytical
Run Log

Run ID: **277320** Method: **5310 C**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
UQCSM	4678296		RW	FO	07/21/2020 13:22	
CCC	4678297		RW	FO	07/21/2020 13:42	
CCB	4678298		RW	FO	07/21/2020 14:02	
IPC	4678300		RW	FO	07/21/2020 14:41	
LFB	4678301		RW	FO	07/21/2020 15:00	
LRB	4678302		RW	FO	07/21/2020 15:20	
PRB	4678303		RW	FO	07/21/2020 15:40	
PFB	4678304		RW	FO	07/21/2020 16:00	
PRB	4678305		RW	FO	07/21/2020 16:19	
PFB	4678306		RW	FO	07/21/2020 16:39	
FS	4670767	Raw Lake MI	DW	FO	07/21/2020 17:38	
CCC	4678309		RW	FO	07/21/2020 20:56	
CCB	4678310		RW	FO	07/21/2020 21:16	
FS	4670770	Finished	DW	FO	07/21/2020 21:35	
FS	4670769	Raw Lake MI	SW	FO	07/21/2020 21:54	
CCB	4678314		RW	FO	07/22/2020 01:51	
LFB	4678315		RW	FO	07/22/2020 02:10	
LRB	4678316		RW	FO	07/22/2020 02:29	
CCB	4678320		RW	FO	07/22/2020 07:06	
CCB	4678324		RW	FO	07/22/2020 11:41	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
UQCSM	Total Organic Carbon (TOC)	5310 C	0.500	---		9.7554	10 0	mg/L	98	85 - 115	---	---	1 0	---	07/21/2020 13:22	4678296
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		3.8732	4.0	mg/L	97	90 - 110	---	---	1 0	---	07/21/2020 13:42	4678297
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/21/2020 14:02	4678298
IPC	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	07/21/2020 10:00	07/21/2020 14:41	4678300
LFB	Total Organic Carbon (TOC)	5310 C	0.500	---		3.8733	4.0	mg/L	97	90 - 110	---	---	1 0	---	07/21/2020 15:00	4678301
LRB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/21/2020 15:20	4678302
PRB	Dissolved Organic Carbon	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	07/14/2020 16:00	07/21/2020 15:40	4678303
PFB	Dissolved Organic Carbon	5310 C	0.500	---		3.8352	4.0	mg/L	96	89 - 110	---	---	1 0	07/14/2020 16:00	07/21/2020 16:00	4678304
PRB	Dissolved Organic Carbon	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	07/15/2020 18:00	07/21/2020 16:19	4678305
PFB	Dissolved Organic Carbon	5310 C	0.500	---		3.8868	4.0	mg/L	97	89 - 110	---	---	1 0	07/15/2020 18:00	07/21/2020 16:39	4678306
FS	Dissolved Organic Carbon	5310 C	0.500	Raw Lake MI		1.82		mg/L	---	---	---	---	1 0	07/14/2020 16:00	07/21/2020 17:38	4670767
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		9.8769	10 0	mg/L	99	90 - 110	---	---	1 0	---	07/21/2020 20:56	4678309
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/21/2020 21:16	4678310
FS	Total Organic Carbon (TOC)	5310 C	0.500	Finished		1.47		mg/L	---	---	---	---	1 0	---	07/21/2020 21:35	4670770
FS	Total Organic Carbon (TOC)	5310 C	0.500	Raw Lake MI		1.84		mg/L	---	---	---	---	1 0	---	07/21/2020 21:54	4670769
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/22/2020 01:51	4678314
LFB	Total Organic Carbon (TOC)	5310 C	0.500	---		3.7973	4.0	mg/L	95	90 - 110	---	---	1 0	---	07/22/2020 02:10	4678315
LRB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/22/2020 02:29	4678316
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/22/2020 07:06	4678320
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	07/22/2020 11:41	4678324

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Run Log

Run ID: **277005** Method: **5910 B**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCL	4672318		RW	CX	07/15/2020 13:02	
CCB	4672319		RW	CX	07/15/2020 13:03	
LRB	4672320		RW	CX	07/15/2020 13:05	
FS	4670768	Raw Lake MI	DW	CX	07/15/2020 13:07	
LD	4672321	Raw Lake MI	DW	CX	07/15/2020 13:09	
CCH	4672322		RW	CX	07/15/2020 13:20	
CCB	4672323		RW	CX	07/15/2020 13:22	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCL	UV absorbance at 254nm	5910 B	0.009	---		0.0070	0.009	cm-1	78	50 - 150	---	---	1 0	---	07/15/2020 13:02	4672318
CCB	UV absorbance at 254nm	5910 B	0.009	---	<	0 009		cm-1	---	---	---	---	1 0	---	07/15/2020 13:03	4672319
LRB	UV absorbance at 254nm	5910 B	0.009	---	<	0 009		cm-1	---	---	---	---	1 0	---	07/15/2020 13:05	4672320
FS	UV absorbance at 254nm	5910 B	0.009	Raw Lake MI		0 022		cm-1	---	---	---	---	1 0	---	07/15/2020 13:07	4670768
LD	UV absorbance at 254nm	5910 B	0.009	Raw Lake MI		0 022		cm-1	---	---	0.0	20	1 0	---	07/15/2020 13:09	4672321
CCH	UV absorbance at 254nm	5910 B	0.009	---		0.8985	0.866	cm-1	104	90 - 110	---	---	1 0	---	07/15/2020 13:20	4672322
CCB	UV absorbance at 254nm	5910 B	0.009	---	<	0 009		cm-1	---	---	---	---	1 0	---	07/15/2020 13:22	4672323

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Run Log

Run ID: **277322** Method: **Federal Register**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
FS	4670767	Raw Lake MI	DW	CALC	07/22/2020 13:38	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	SUVA	Federal Register	0.1	Raw Lake MI		1.2		L/mg*m	--	--	--	--	1 0	--	07/22/2020 13:38	4670767

Sample Type Key

Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCB	Continuing Calibration Blank		
CCC	Continuing Calibration Check		
CCH	Continuing Calibration High		
CCL	Continuing Calibration Low		
FS	Field Sample		
IPC	Instrument Performance Check		
LD	Laboratory Duplicate		
LFB	Laboratory Fortified Blank		
LRB	Laboratory Reagent Blank		
PFB	Pretreated Fortified Blank		
PRB	Pretreated Reagent Blank		
UQCSM	Unextracted QCS Mid		

END OF REPORT

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 03/14/2019

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South Bend, IN 46617
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1 800 332 4345

Laboratory Report

Client: City of Benton Harbor

Attn: Michael O'Malley
200 East Wall Street
Benton Harbor, MI 49002

Report: 498086
Priority: Standard Written
Status: Final
PWS ID: MI0600

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4724848	Raw Water	5310 C	09/15/20 09:30	Client	09/15/20 12:40
4724849	Finished Water	5310 C	09/15/20 10:30	Client	09/15/20 12:40

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Pat Muff at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Pat Muff ASM — 09/23/2020

Authorized Signature — Title — Date

Client Name: City of Benton Harbor
Report #: 498086

Client Name: City of Benton Harbor Report #: 498086

Sampling Point: Raw Water PWS ID: MI0600

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**1.90**	mg/L	---	09/21/20 15:37	4724848

Sampling Point: Finished Water PWS ID: MI0600

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Total Organic Carbon (TOC)	5310 C	---	0.500	**2.00**	mg/L	---	09/21/20 15:17	4724849

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Sp ke Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the cal bration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

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South Bend, IN 46617
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Order # 397704
Batch # 498086

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CHAIN OF CUSTODY RECORD

Page ___ of ___

Shaded area for EEA use only

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
Mike O'Malley		0600	MI		505207
BILL TO: momalley@bhcity.us	COMPLIANCE MONITORING: Yes X / No	POPULATION SERVED: 9670	SOURCE WATER: Lake MI	Preservative Checks	

LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	pH accep-table? √	Residual Chlorine (P/A)	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1													
2	4724848	9/15/20	9:30	X	Raw Water	TOC	✓			X	3	SW	SW
3													
4													
5	4724849	9/15/20	10:30	X	Finished Water	TOC	✓		X		3	SW	SW
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
	9/15/20	11:30 AM PM		9/15/20	11:30 AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
	9/15/20	12:40 AM PM	9-15-2020		1240 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS: Fresh Draw

CONDITIONS UPON RECEIPT (check one): ___ Iced: Wet/Blue ___ X Ambient ___ °C Upon Receipt___ N/A

MATRIX CODES:

DW-DRINKING WATER RW-REAGENT WATER GW-GROUND WATER EW-EXPOSURE WATER SW-SURFACE WATER PW-POOL WATER WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days) **0% RV*** = Rush Verbal: (5 working days)
50% RW* = Rush Written: (5 working days) **75%**
* Please call, expedited service not available for all testing

IV* = Immediate Verbal: (3 working days) **IW*** **100%**
=Immediate Written: (3 working days) **SP*** = **125%**
Weekend, Holiday **CALL**
STAT* = Less than 48 hours **CALL**

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

Eurofins Eaton Analytical
Run Log

Run ID: **279907** Method: **5310 C**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCC	4729430		RW	FO	09/21/2020 10:41	
CCB	4729431		RW	FO	09/21/2020 11:01	
IPC	4730697		RW	FO	09/21/2020 11:40	
LFB	4729434		RW	FO	09/21/2020 12:00	
LRB	4729435		RW	FO	09/21/2020 12:19	
FS	4724849	Finished Water	DW	FO	09/21/2020 15:17	
FS	4724848	Raw Water	SW	FO	09/21/2020 15:37	
MS	4730698	Raw Water	SW	FO	09/21/2020 15:56	
MSD	4730699	Raw Water	SW	FO	09/21/2020 16:16	
CCC	4729438		RW	FO	09/21/2020 16:36	
CCB	4729439		RW	FO	09/21/2020 16:56	
CCB	4729443		RW	FO	09/21/2020 21:32	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		4.0184	4.0	mg/L	100	90 - 110	---	---	1 0	---	09/21/2020 10:41	4729430
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	09/21/2020 11:01	4729431
IPC	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	09/21/2020 10:00	09/21/2020 11:40	4730697
LFB	Total Organic Carbon (TOC)	5310 C	0.500	---		4.0961	4.0	mg/L	102	90 - 110	---	---	1 0	---	09/21/2020 12:00	4729434
LRB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	09/21/2020 12:19	4729435
FS	Total Organic Carbon (TOC)	5310 C	0.500	Finished Water		2.00		mg/L	---	---	---	---	1 0	---	09/21/2020 15:17	4724849
FS	Total Organic Carbon (TOC)	5310 C	0.500	Raw Water		1.90		mg/L	---	---	---	---	1 0	---	09/21/2020 15:37	4724848
MS	Total Organic Carbon (TOC)	5310 C	0.500	Raw Water		6.3254	5.8984	mg/L	111	78 - 123	---	---	1 0	---	09/21/2020 15:56	4730698
MSD	Total Organic Carbon (TOC)	5310 C	0.500	Raw Water		6.1249	5.8984	mg/L	106	78 - 123	3.2	20	1 0	---	09/21/2020 16:16	4730699
CCC	Total Organic Carbon (TOC)	5310 C	0.500	---		10.4907	10 0	mg/L	105	90 - 110	---	---	1 0	---	09/21/2020 16:36	4729438
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	09/21/2020 16:56	4729439
CCB	Total Organic Carbon (TOC)	5310 C	0.5	---	<	0.5		mg/L	---	---	---	---	1 0	---	09/21/2020 21:32	4729443

Sample Type Key

Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCB	Continuing Calibration Blank		
CCC	Continuing Calibration Check		
FS	Field Sample		
IPC	Instrument Performance Check		
LFB	Laboratory Fortified Blank		
LRB	Laboratory Reagent Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

END OF REPORT

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; drice@bhcity.us
Cc:	Klein, Jeremy (EGLE); Henderson, Shannon (EGLE); Nelson, Maureen (EGLE)
Subject:	TOC monitoring
Date:	Wednesday, October 28, 2020 10:47:00 AM
Attachments:	2020 monitoring schedule.pdf image001.png

Good morning Benton Harbor Water Team,

We are currently unable to find record of sampling for Total Organic Carbon (TOC) for the months of July and September, 2020. Please check your records to submit these results if available, or confirm they were not taken if that is the case. Please continue to ensure samples are collected and submitted to EGLE according to the 2020 monitoring schedule, attached, to comply with the first amended administrative consent order compliance timeline item 2.16.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

2020 Monitoring Schedule

BENTON HARBOR

WSSN: 00600

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/3 months	**Quarterly**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/3 months	**Quarterly**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	**9/30/2020**	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, alkalinity, calcium, conductivity, temperature, sulfate, chloride, orthophosphate	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, calcium, conductivity, temperature, sulfate, chloride, orthophosphate	Representative Sites	10 sites/Quarter	**Quarterly**	DIST	Various	Various	Various

Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	60 sites/6 months	**Between 01/01-06/30/2020 and 07/01-12/31/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BENTON CHARTER TOWNSHIP

WSSN: 00605

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2021	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	7/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BRIDGMAN

WSSN: 00850

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	2/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

LAKE CHARTER TOWNSHIP

WSSN: 03741

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2026	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	5/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During August 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During August 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NEW BUFFALO

WSSN: 04680

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	2/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During June 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During June 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

ST JOSEPH

WSSN: 06310

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2022	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2028	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

CHARLEVOIX, CITY OF

WSSN: 01330

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Lake Michigan Intake

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	3/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During July 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During July 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

TRAVERSE CITY, CITY OF

WSSN: 06640

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Treatment Plant - Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP100	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	15/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

GRATIOT AREA WATER AUTHORITY

WSSN: 02836

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: GAWA WTP

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP001	$102.00	36ME	CMET2
Arsenic	1/3 months	**Quarterly**	TP001	$18.00	36ME	CAS
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CN	CCN
SOC – Pesticides	1/12 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2022	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

2020 Monitoring Schedule

EAST LANSING MERIDIAN WATER AUTHORITY

WSSN: 01995

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/36 months	9/30/2021	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP001	$102.00	36ME	CMET2
Arsenic	1/12 months	**9/30/2020**	TP001	$18.00	36ME	CAS
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CN	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	**9/30/2020**	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Well 25

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Volatile Organic Compounds	1/12 months	**9/30/2020**	WL025	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	WL025	$102.00	36ME	CMET2

2020 Monitoring Schedule

MOUNT PLEASANT, CITY OF

WSSN: 04530

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: PLANT TAP

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	9/30/2021	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2027	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	30/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

JACKSON

WSSN: 03470

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Well #2

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Volatile Organic Compounds	1/3 months	**Quarterly**	WL002	$100.00	36VO	CXVO

Location: Well #4 - Mansion St. Wellfield

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Complete Metals	1/12 months	**9/30/2020**	WL004	$102.00	36ME	CMET2

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	10 sites/Quarter	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

GRAND RAPIDS

WSSN: 02790

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2021	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP100			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual, alkalinity	1/Every Two Weeks	**Every Two Weeks**	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	150/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		6/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		6/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	10 sites/6 months	**Jan-Jun AND Jul-Dec 2020**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	50 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

PLAINFIELD TOWNSHIP

WSSN: 05370

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

WYOMING **WSSN: 07220**

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP100			
Tritium	Not Required	Not Required	TP100			
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	80/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NORTHPORT COTTAGE OWNERS

WSSN: 04820

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/36 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/36 months	9/30/2022	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2028	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2028	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	1/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/12 months	**During August 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/12 months	**During August 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	5 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

ADRIAN

WSSN: 00040

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: WTP-Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2026	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2027	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2027	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	20/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BLISSFIELD

WSSN: 00750

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2027	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	4/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		3/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		3/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	3 sites/Quarter	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

DEERFIELD

WSSN: 01770

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, temperature, conductivity, calcium, alkalinity	1/3 months	**Quarterly**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	1/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, temperature, conductivity, calcium	Representative Sites	2 sites/3 months	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/6 months	**Between 01/01-06/30/2020 and 07/01-12/31/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

LUDINGTON, CITY OF

WSSN: 03960

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP100	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP100	$102.00	36ME	CMET2
Cyanide	1/36 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2027	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2027	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	9/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

MUSKEGON

WSSN: 04570

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2027	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

MUSKEGON HEIGHTS

WSSN: 04580

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

HOLLAND BOARD OF PUBLIC WORKS

WSSN: 03190

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2026	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	9/30/2021	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NORTHWEST OTTAWA CO WATER SYST

WSSN: 04847

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	Not Required	Not Required	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During March 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During March 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	Not Required	Not Required	DIST	$26.00	36CC	CCUB



LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; rrice@bhcity.us; Mike O"Malley; Darold Harlan; Darel Rice; Lesia Osler
Cc:	Bolf, Michael (EGLE); Thurston, Brian (EGLE); Nelson, Maureen (EGLE)
Subject:	Chlorine Analyzer and Turbidity Records
Date:	Monday, October 5, 2020 8:56:00 AM
Attachments:	Benton Harbor - VN.pdf BH IFE turbidity CL2 analyzer PN Sept 2020.docx

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Mr. Mitchell and Benton Harbor water team,

Please find a letter attached identifying two concerns, one of which has now been fixed (the chlorine analyzer). Please coordinate to propose a plan for fixing the SCADA and historian, and respond with such plan within 15 days.

The attached public notice should be used to communicate with residents, as required by EPA and EGLE for transparency with the public.

Contact me at your leisure to discuss,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

www.michigan.gov/drinkingwater

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
D RECTOR

October 5, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: **00600**
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Violation Notice – Failure of Monitoring Equipment

The Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD) has identified the City of Benton Harbor (City) is in violation of the Michigan Safe Drinking Water Act 1976 PA 399, as amended (Act 399); R 325.10720, *Filtration and disinfection; filtration sampling requirements*; R 325.10720a, *Filtration and disinfection; reporting and recordkeeping;* and R 325.11502 *Monthly operation reports of public water supplies employing treatment*, of the 1979 Administrative Code. These violations follow an onsite meeting on September 9, 2020 and subsequent communications with the City, and are detailed below along with public noticing requirements.

Chlorine Analyzer

In accordance with the rules cited above, a Subpart H (surface water) supplier of water serving at least 3301 persons shall continuously monitor the chlorine residual at the Point of Entry (POE) to the distribution system, and report the lowest daily results to this office. The City was cited in the 2018 sanitary survey for a significant deficiency for failure to monitor for residual disinfectant at an entry point to the distribution system (EPTD) on a continual basis. A new chlorine analyzer was installed in the water treatment plant laboratory to resolve this significant deficiency. During the September 9, 2020 site inspection, the chlorine analyzer was found to be reading 0.2 mg/L, and showing an error signal. While the above rule allows five (5) days for repairs, the analyzer was not working for at least 19 days. *The repeated nature of this violation adds to concerns over technical and managerial capacity of the water supply*. **The City has resolved this violation by verifying the chlorine analyzer was fixed and working properly as of September 21, 2020. Please ensure the analyzer is maintained in proper working order and the lowest daily values are being recorded. Finally, notify EGLE if future problems occur.**

Individual Filter Turbidimeters

A supplier of water who employs conventional or direct filtration shall conduct continuous monitoring of turbidity for each individual filter. Further, the rule states, Supplies shall record the results of individual filter monitoring every 15 minutes. Systems must keep records from individual filter turbidity monitoring for at least three (3) years. DWEHD recently requested the City to submit turbidity data when observing higher turbidities on the Monthly Operating Report (MOR) for the month of August 2020. The City indicated a lack of available turbidity data at the individual filter locations, and noted computer equipment failures for the lack of 15-minute data as required by R 325.10720. The City provided hourly IFE data read manually by the shift

operators, which verifies the water quality but also the inaccuracy of the computer recorded turbidities. **To resolve this violation, the City must verify the SCADA and historian have been fixed or upgraded and demonstrate the ability to record each IFE turbidimeter data every 15-minutes.**

The City is directed to respond to this violation notice within 15 days of receipt, and propose a timeline for correction not to exceed thirty (30) days of the date of this letter.

EGLE's investigation is considered complete. The violation began on September 9, 2020 and will continue until the above actions are completed. If you have any factual information you would like us to consider regarding the violation identified in this letter, please provide it in a written response requested above. It is our intention to work with the City on resolving this issue, restoring adequate capacity to operate the water system in compliance with Act 399. We anticipate and appreciate your cooperation in resolving this matter.

Administrative rule R 325.10404 requires that suppliers provide public notice not later than one year after learning of the violation by mail or direct delivery and by any other means reasonably calculated to reach other persons regularly served by the system. Enclosed is a sample public notice. Please notify your consumers by May 31, 2021 and send us a signed and dated copy of the issued notice within 10 days of distribution. This violation must be included in your 2020 Consumer Confidence Report (CCR) due by July 1, 2021. You may want to use your CCR as the vehicle to post the public notice, if the CCR will be delivered to your customers within 12 months of learning of this violation.

If you have any questions regarding this Violation Notice, please contact feel free to call the number below at your earliest convenience.

Sincerely,



Ernie Sarkipato, P.E.,
Surface Water Treatment Specialist
Grand Rapids District Office
Drinking Water and Environmental Health Division
616-307-0261

Enclosure

cc: Ms. Kimberly Thompson, Clerk, City of Benton Harbor
Mr. Mike O'Malley, Water Superintendent, City of Benton Harbor
Mr. Brian Thurston, Field Operations Manager, EGLE
Ms. Maureen Nelson, Enforcement Specialist, EGLE
Mr. Mike Bolf, P.E., Engineering Unit Supervisor, EGLE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for the City of Benton Harbor

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. We routinely monitor your water for turbidity (cloudiness) and chlorine disinfectant residuals at many locations. This tells us whether we are effectively filtering and disinfecting the water supply. We had an equipment failure that did not properly record the 15-minute individual filter turbidity results and maintain the records for three years as required by law. We observe the turbidities every hour and did not observe any water quality issues.

We also had a failure of the chlorine monitoring equipment, which continuously provides the chlorine levels entering the system. Low chlorine levels, if measured, become a concern over lack of disinfection. We also measure chlorine residual manually and did not find any low levels of chlorine to raise concerns over disinfection levels. However, the manual measurements are not collected continuously.

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What should I do? There is nothing you need to do at this time. This is not an emergency. You do not need to boil water or use an alternative source of water at this time. Even though this is not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

What happened? What is being done? Our individual turbidity monitoring equipment has been operating continuously but the 15-minute readings have not been recorded and maintained as required. We are making upgrades to the computer equipment to assure this does not happen again. We will begin recording these results again as soon as the equipment is functional. We also worked to fix the chlorine analyzer and now have two methods for verifying adequate disinfection of your water.

For more information, please contact _____, at _____.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Benton Harbor.

CERTIFICATION: WSSN: 00600

I certify that this water supply has fully complied with the public notification regulations in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature:_____ Title:_____ Date Distributed:_____

From:	Sarkipato, Ernest (EGLE)
To:	Dean, Scott (EGLE)
Cc:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Kimberly Thompson; Bolf, Michael (EGLE); Thurston, Brian (EGLE); Courtney Davis; Sasy, Ninah (EGLE); Crider, Steven (DHHS); Keatley, Aaron (EGLE)
Subject:	City of Benton Harbor under boil water advisory
Date:	Friday, November 6, 2020 9:22:00 AM
Attachments:	Benton Harbor - Boil Water Advisory - 11-5-2020.pdf Benton Harbor Water Public Advisory for Lead ALE C.pdf

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Good morning Scott,

We are asking for your assistance with messaging in Benton Harbor regarding a boil water advisory due to a treatment failure, also in a community with an ongoing lead action level exceedance. The messaging is nuanced and difficult, bearing in mind this community has received four rounds of ALE communications similar to the attached.

The attached communication will be in today's papers. It contains some language regarding lead, as it relates to the boil notice and how best to protect public health from acute pathogen contaminants like bacteria.

We also now have a TV website with coverage that does not include the language regarding lead and boiling water. https://www.abc57.com/news/city-of-benton-harbor-under-boil-water-advisory

1. We need to work with ABC57 to add language regarding lead.
2. Can we get together to coordinate additional messaging and outreach to the public regarding this boil water issue, in the context of lead ALE?

Current PN Language (attached excerpt): *Boil water can concentrate other chemicals in the water such as lead. If you know you have a lead service line or have previously detected lead in home water samples, we recommend you not use the water for drinking and use bottled water instead. If you have a filter on your sink, we recommend you replace the filter when the advisory is lifted because it could become fouled by the questionable water quality.*

Lead Advisory Language: *please see attached recent public advisory*.

Thanks for your help, and if you are able we may want to have a group discussion regarding this messaging.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
616-307-0261

DRINKING WATER WARNING

City of Benton Harbor – Water Treatment Plant Failure
BOIL YOUR WATER BEFORE USING

Due to an interruption in the treatment process, microbial contamination may have occurred in the water system. Bacteria are generally not harmful and are common throughout our environment. However, a failure of treatment can allow disease causing microbes to get into tap water. Corrective measures are currently being undertaken to correct the situation.

What should I do?

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and preparing food. Boiling kills bacteria and other organisms in the water. Continue using boiled or bottled water until further notice.

Special notice on lead:

Boil water can concentrate other chemicals in the water such as lead. If you know you have a lead service line or have previously detected lead in home water samples, we recommend you not use the water for drinking and use bottled water instead. If you have a filter on your sink, we recommend you replace the filter when the advisory is lifted because it could become fouled by the questionable water quality.

What happened? What is being done?

These precautionary actions are being taken due to a problem at the treatment plant. For two hours water was passing through the plant without a critical treatment chemical. Some of this water mixed with properly treated water and made its way into the city distribution system.

Treatment staff has taken other remedial actions such as emptying water out of treatment basins and monitoring water quality. Samples will be collected to determine that the water quality meets the state drinking water standards. We anticipate resolving the problem within two to three days.

This boil water notice shall remain in effect until results from the sampling verify the water is safe to drink and the questionable water has been flushed from the system. **Customers will be advised when the boil water advisory has been lifted.**

For more information, please contact Ellis Mitchell, city manager of Benton Harbor at 269-927-8400 or emitchell@bhcity.us. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing

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CERTIFICATION: WSSN: [enter WSSN]

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

cc: [cc the local health department and the Michigan Department of Agriculture if the boil affects a municipal supply.]

homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

CERTIFICATION: WSSN: [enter WSSN]

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

cc: [cc the local health department and the Michigan Department of Agriculture if the boil affects a municipal supply.]

BENTON HARBOR
Port of Opportunities

July 15, 2020
For Immediate Release

Public Advisory for Drinking Water Customers in the City of Benton Harbor

(Benton Harbor) – The City of Benton Harbor has been conducting ongoing testing of the City's water supply in accordance with the regulations under the Lead and Copper Rule of the Drinking Water Act for the State of Michigan. During this ongoing compliance testing, it was found that water samples gathered in 63 residences from January through June 2020 exceeded the Action Level of 15 parts per billion (ppb) for lead within those household samples. The 90th percentile for these samples was 23 ppb for lead, with nine of the sixty-three samples having lead levels in excess of 15ppb, ranging from 21ppb to 400ppb.

Since October 2018, the City of Benton Harbor, along with many community partners, have been taking several steps to reduce resident's exposure to lead. The City of Benton Harbor has successfully started the replacement the City's lead service lines, introduced new corrosion controls in the water supply at the City's Water Plant, and provided ongoing support and education for residents for water testing and understanding how they can limit lead exposure. The City is committed to continuing to take all corrective actions necessary to educate residents, improve the community water supply, and replace lead service lines with the goal of eliminating lead exposure in drinking water for residents. Find more information regarding the Action Level Exceedance and the City's drinking water at https://bhcity.us or by contacting the City of Benton Harbor Water Plant Director Mike O'Malley at 269-363-0575 or momalley@bhcity.us

Elevated levels of lead can cause health concerns. All Benton Harbor water customers are reminded to take the following precautionary actions to reduce their exposure to lead in drinking water:

- Public health officials recommend that any household with a child or pregnant woman use cold water and a certified lead filter to reduce lead from their drinking water. Look for filters that are tested and certified to NSF/ANSI Standard 53 for lead reduction, especially when preparing baby formula. If you are not able to afford the cost of a lead filter, please contact the Berrien County Health Department. More information about obtaining a certified water filter and replacement cartridges can be found at www.bchdmi.org or by calling 800-815-5485.
- Residents who do not have a filter and have not used their water for six hours or more should flush their pipes to reduce the amount of lead in their drinking water. Pipes can be flushed by running faucets for at least five minutes, or by taking a shower, running a load of laundry or washing dishes. After flushing, run the water from your faucet until cold before drinking or cooking with the water.
- Do not use hot water for drinking, preparing food, or cooking, or preparing baby formula.
- Consider using bottled water for preparing baby formula or use Ready-to-Feed formula.
- Do not boil the water, as boiling will not reduce the amount of lead in the water.
- Clean faucets' aerators or screens at least every six months.

Additional information regarding lead in drinking water and how to reduce risk of lead exposure can be found at Michigan.gov/EGLEleadpublicadvisory, Michigan.gov/MILeadSafe, or by calling 1-800-662-9278.

Benton Harbor Water Quality: **Update for Residents**

In 2018, it was discovered that there was a problem with high lead levels in tap water in Benton Harbor. The City performed routine monitoring for lead and copper by sampling at homes connected to the Benton Harbor Water Supply and found that more than 10% of these samples exceeded the Action Level for lead. The samples collected in previous rounds did not have the same elevated results.

Can I have my tap water tested for lead? If so, how?

To determine if your home qualifies to be included in City testing (homes with lead service lines), call Mike O'Malley at 269 363-0575. If your home isn't eligible for the compliance program; there are other options for testing. The City may be able to connect you to a certified lab, or you can directly contact a certified lab. A list of certified labs is available at *Michigan.gov/EGLE lab.*

What can I do as a resident to ensure my tap water is safe?

- **Get your water moving.** Flushing water pipes can reduce the amount of lead in your water. If you have not used your water for several hours, flush your pipes following your public water supply's recommended amount of time by doing any of the following:



For more information on what to do after plumbing changes inside or outside the home, go to: *bit.lyf391ycD£.*

Use a point-of-use water filter. A certified lead-reducing filter can reduce lead in drinking water. Filters are made to reduce lead, but do not guarantee that all lead will be removed from drinking water. For more information on choosing a POU water filter, go to *bit.lyf2vaHLkO.*

Clean your faucet aerators. Clean the mesh screen, or aerator, on the end of your faucet at least every six months. If construction is being done to the water system or pipes near your home-including water meter replacement in your home-check and clean your drinking water faucet aerator every month until the work is done. Go to *bit.ly../2Jg/QvE* for more information.

Consider replacing older plumbing, pipes, and faucets that may add lead to water. Older faucets, fittings, and valves sold before 2014 may contain up to 8 percent lead, even if marked "lead-free." Look for replacement faucets made in 2014 or later and make sure they are NSF 61 certified or marked to contai 0.25 percent lead or less. Check your plumbing or hire a plumber to know what parts should be replaced to reduce lead in your drinking water.

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

Many efforts are underway to measure and minimize corrosion. **The first action that was taken was to tell the residents of the city of Benton Harbor that there were elevated levels of lead in the drinking water** and how to protect themselves by running their water, and/or, by obtaining a lead reducing water filter.

The Berrien County Health Department (BCHD) began providing filters in 2019. The Michigan Department of Health and Human Services provides the funding for the filter and BCHD provides staffing and locations to distribute the filters. For help with securing a water filter, go to https://www.berriencounty.org/1568/Lead-Drinking-Water.

The City has begun replacing lead service lines. This is an important step because the best way to reduce lead levels is by removing the sources of lead in the system . Because removal of all lead service lines is going to take quite some time, the city has also installed corrosion control treatment to help reduce the amount of corroscivity of the water, which will reduce lead levels.

The City has 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 6 months instead of every 3 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.

What remains to be done in order to reduce lead in tap water below the Action Level?

The Lead and Copper Rule requires collecting samples from a number of homes, reporting the results to the residents of those homes, and reporting the results to the state. Benton Harbor will have resolved the Action Level Exceedance when the corrosion control treatment has reduced lead levels in homes, and two back-to-back six-month rounds of sampling confirm this. Both six-month sets of sampling must have a 90th percentile that is less than 15 parts per billion. The City is also required to conduct a study of the corrosion control treatment to identify if the most effective treatment to reduce lead. Currently, the City has hired a qualified expert to propose a detailed plan and begin the study.

Since there is no lead in the water that comes from Lake Michigan or in the water as it leaves the water treatment plant, how does lead get into the water?

Drinking water is free of lead until it is in contact with lead containing materials, such as lead service lines. Then as it sits in contact with lead containing materials the lead begins to be dissolved into the water. The longer that water sits motionless and in contact with lead containing materials the more lead it can "pick up". Most of the lead containing materials *that can be* in *contact with* drinking water are found in the service line (the water line coming from the water main in the street into your home) or within your home in the form of pipes, solder, or brass.



See page one for more information on reducing the amount of lead in your drinking water.

From:	Sarkipato, Ernest (EGLE)
To:	Sarkipato, Ernest (EGLE)
Bcc:	Josh Crots; deerfieldclerk@intouchmi.com; JIM WONACOTT; WILLIAM SADLER; Mike Osborn; CLYDE DUGAN; Jason DeFeyter; WILLIAM PILMORE; MARK HEYDLAUFF; ARTHUR KRUEGER; Jamie Hockemeyer; RICK SOLLE; JOHN ALLEN; tbell@cityofmuskegonheights.org; Leo Evans; Eric Law; Wayne Jernberg; Bob Veneklasen; JAIME FLEMING; Joel Davenport; BILL HUNTER; Ellis Mitchell; MICHAEL O"MALLEY; Lesia Osler; JOHN HODGSON; Tim Zebell; KYLE TRYAN; MIKE BALDWIN; Jeff Burkhard; Toby Riley; JUAN GANUM; KEN ANDERSON
Subject:	EGLE funding webinar
Date:	Thursday, October 15, 2020 1:53:52 PM
Attachments:	egle-tou-FD-MiCleanWaterPlan-Factsheet.pdf ATT00001.htm 10-14-20 MI Clean Water webinar slides.pdf ATT00002.htm

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I wanted to make sure at least one representative from the District 93 water supplies had access to this information about **available funding.** Please see below and attached info**.**

-Ernie

> **From:** "Ostrowski, James (EGLE)" <OSTROWSKIJ2@michigan.gov>
> **Date:** October 14, 2020 at 3:13:37 PM EDT
> **To:** "Ostrowski, James (EGLE)" <OSTROWSKIJ2@michigan.gov>
> **Subject: 10/14/20 EGLE MI Clean Water webinar - Follow up Info**
>
> Thank you for attending this morning's **MI Clean Water - Water Infrastructure Funding Webinar**. We hope you found the information shared was helpful.
>
> Your feedback is valuable to us. Please take a moment to complete a short, 4-question evaluation for the webinar at https://www.surveymonkey.com/r/infrastructurefunding101420. Note – this email is only going to those who logged into the webinar, if others viewed the webinar with you, please forward this e-mail to them so they can complete the webinar evaluation as well.
>
> Unfortunately we were not able to get to all of your questions. Please know that all questions were shared with our team here at EGLE and they will be used to help us prepare for upcoming webinars on the funding opportunities and develop FAQ documents.
>
> Below are some resources that you may find helpful.
>
> - Grant Info as available will be posted at www.michigan.gov/eglegrantsandloans
> - Questions about MI Clean Water Investment? Send email to EGLE-DWGrants@michigan.gov

- EGLE Office of Clean Water Public Advocate https://www.michigan.gov/cleanwater or email EGLE-CleanWater@Michigan.gov

- **Join EGLE's Grant and Loan Opportunities notifications list**

I've also attached the two handouts that were provided during the webinar in case you were unable to download them.

A recording of the webinar will be posted soon. We'll send an email to everyone who registered with the link as soon as it's available.

Thank you.

- Jim

James Ostrowski
Supervisor, Training and Outreach Unit
Michigan Department of Environment, Great Lakes, and Energy
517-285-2184 | ostrowskij2@Michigan.gov
Follow Us | Michigan.gov/EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

MI CLEAN WATER PLAN

FACT SHEET

COVID-19 has magnified the need to ensure all Michiganders have access to clean, safe, affordable water, which starts with healthy surface and groundwater and clean discharges of wastewater into our rivers and lakes. While helping meet that basic need, major water infrastructure investments can support communities and workers across our state in recovering from the economic crisis and building resilient futures.

The **MI Clean Water** plan will align $500 million in federal dollars, state bonding authority, and existing/prospective state revenues into a comprehensive water infrastructure package that will support communities in every corner of Michigan in creating jobs, protecting public health, and improving environmental quality. The plan addresses urgent infrastructure issues including undersized sewers, failing septic systems, unaffordable water rates, and protection from lead, PFAS and other contaminants that can affect drinking water. With the U.S. Environmental Protection Agency estimating that every $1 million invested in water infrastructure creates 15 jobs, this package will provide a major boost to Michigan's economy as it recovers from the global pandemic.

As described below, the MI Clean Water plan consists of a $207 million in investments directly related to clean, safe drinking water and $293 in investments related to improving the wastewater management. These new investments are in addition to the traditional low interest loans that the Michigan Department of Environment, Great Lakes, and Energy (EGLE) provides to Michigan's communities annually through the State Revolving Loan Fund program. Last year, EGLE authorized $304 million in wastewater loans and $258 million in drinking water loans.

DRINKING WATER QUALITY - $207 MILLION

- **Disadvantaged Community Lead Service Line Replacement Program - $102 million**
  The federal Water Infrastructure Transfer Act of 2019 allows states to transfer funds from the Clean Water State Revolving Fund (CWSRF) to the Drinking Water State Revolving Fund (DWSRF) for lead service line replacements. The MI Clean Water plan proposes using Michigan's allowed allocation of $102 million to provide disadvantaged community 100% loan forgiveness for lead service line replacements. Grants will be capped based on population size.

- **Drinking Water Asset Management Grants - $37.5 million**
  The State Legislature established a $37.5 million grant program for asset management planning in 2019. While other projects will be eligible, these grants will be prioritized to help communities implement Michigan's strengthened Lead and Copper Rule.

- **Drinking Water Infrastructure Grants - $35 million**
  Last year, state lawmakers appropriated $35 million in DWSRF loan forgiveness for projects to facilitate overall drinking water system upgrades. Combining these funds with the two above programs, communities can submit comprehensive proposals involving water main work, service line replacements, plant enhancements, and other upgrades. Grants will be capped at the lesser of 30% of project costs or $2 million.

- **Consolidation and Contamination Risk Reduction Grants - $25 million**
  The State Legislature also created a $25 million grant program in 2019 for projects related to PFAS or other drinking water contaminants. These funds will support communities in addressing PFAS and other emerging contaminants by consolidating local water systems and/or connecting residents on private wells to municipal systems.

- **Affordability and Planning Grants - $7.5 million**
  The State Legislature appropriated $7.5 million in 2019 for affordability and planning grants. These funds will support communities in developing sustainable water rate plans and implementing affordability pilots. Grants will be capped at $500,000 for water supplies applying individually. Multiple supplies partnering to develop a regional plan can receive up to $2 million.

Wastewater Protection - $293 million

The MI Clean Water plan proposes leveraging $290 million of authorization from the Great Lakes Water Quality Bond of 2002. This will occur upon enactment of legislation and an appropriation by the legislature to provide grants to Michigan communities for sewage treatment, stormwater, and non-point-source pollution projects. These dollars will be supplemented by previous bond authorization to round out the $293 million wastewater portion of the MI Clean Water plan.

- **Clean Water Infrastructure Grants - $235 million**
  These funds will be granted to communities for design and construction projects to address sanitary and combined sewer overflows, expand green infrastructure, and correct illicit connections to municipal MS4 drainage systems.

- **Substantial Public Health Risk Reduction Grants - $20 million**
  Expanding on an existing $10 million pilot, this funding will help communities address significant public health and environmental risks related to raw sewage discharges. For example, a project to repair or replace a failing wastewater lagoon treatment system would be eligible.

- **Failing Septic System Elimination Program - $35 million**
  The MI Clean Water plan proposes establishing a Community Development Financial Institution (CDFI) to administer a revolving low-interest loan program to support homeowners and communities in replacing failing septic systems or eliminating septic systems. Septic systems are used by about 30% of Michigan households to manage residential wastewater. Failing systems can lead to public health and environmental risks, including impacts to Michigan's lakes and rivers.

- **Stormwater, Asset Management, and Wastewater (SAW) Grants - $3 million**
  The SAW program was established in 2013 to help municipalities develop, update, and improve asset management plans for their wastewater and stormwater systems. The plans provided communities with an increased understanding of current and future needs and informed rate decisions. An additional $3 million is being made available for the expansion of the program.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Michigan's Environmental Justice Policy promotes the fair, non-discriminatory treatment and meaningful involvement of Michigan's residents regarding the development, implementation, and enforcement of environmental laws, regulations, and policies by this state. Fair, non-discriminatory treatment intends that no group of people, including racial, ethnic, or low-income populations, will bear a disproportionately greater burden resulting from environmental laws, regulations, policies, and decision-making. Meaningful involvement of residents ensures an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.

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MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

MI Clean Water

$500 Million Investment to Rebuild Michigan's Water Infrastructure

MI Clean Water - overview

- Governor's program invests directly into protecting public health, environment and the economy.
- $500 million total commitment towards Michigan's water infrastructure needs
  - $207 million for Drinking Water Investments
  - $293 million for Clean Water Investments
- Grant programs used in conjunction with State Revolving Fund (SRF) financing can help maximize impact in communities

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State Revolving Funds

- SRF - provides low-interest loan financing to qualified municipalities to assist with the construction or improvement of public water systems or water pollution control facilities.
  - Drinking Water State Revolving Fund (DWSRF) FY2021
    - Fundable range $275 million
    - 28 projects for $247.3 million
  - Clean Water State Revolving Fund (CWSRF) FY2021
    - Fundable range $500 million
    - 26 projects using $285.8 million

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Drinking Water Investment Objectives

- Protect citizens, and especially children, by removing lead service lines in communities that can least afford to do this critical work
- Help communities assess their systems and develop plans that help them efficiently ensure they are always delivering high quality drinking water
- Invest in communities that are struggling with PFAS contamination by funding improvements at treatment plants and running lines to neighborhoods with contaminated wells.

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Drinking Water Investment

- $207 million for drinking water quality:
  - $102 million - Disadvantaged Community Lead Service Line Replacement Program
  - $37.5 million – Drinking Water Asset Management Grants
  - $25 million - Consolidation and Contamination Risk Reduction Grants
  - $35 million - Drinking Water Infrastructure Grants
  - $7.5 million - Affordability and Planning Grants

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Drinking Water Investment (cont)

- $102 million - Disadvantaged Community Lead Service Line Replacement (DCLSLR) Program
  - Funding focuses on replacing known lead service lines in disadvantaged communities identified in DWSRF project plans.
  - Commonly referred to as “Booker” funding
  - Funding must follow federal program requirements of the DWSRF
  - Apply via the DWSRF process
    - www.michigan.gov/DWSRF
  - Awards identified as part of the DWSRF Intended Use Plan (IUP)

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Drinking Water Investment (cont)

- $37.5 million – Drinking Water Asset Management (DWAM) Grants
  - Program focuses on helping communities inventory their infrastructure and efficiently plan for the ongoing management of their critical assets.
    - $1 million of funding legislatively directed towards education efforts through water supply advisory councils
  - Program details and application posted on EGLE internet by 10/15/2020 - www.michigan.gov/eglegrantsandloans
  - DWAM question and answer webinar on 11/18/2020
  - Application deadline 1/1/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 3/15/2021

EGLE

Drinking Water Investment (cont)

- $25 million - Consolidation and Contamination Risk Reduction (C2R2) Grants
  - Program will address PFAS or other contaminants affecting drinking water systems and help fund system consolidation efforts.
  - Program details and application posted on EGLE internet by 11/15/2020 - http://www.michigan.gov/eglegrantsandloans
  - C2R2 Question and Answer webinar on 12/14/2020
  - Application deadline 1/31/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 4/15/2021

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Drinking Water Investment (cont)

- $35 million - Drinking Water Infrastructure (DWI) Grants
  - Program used in conjunction with DWSRF to enable comprehensive projects for drinking water systems allowing applicants to receive 30% of total project cost or $2M, whichever is less
  - Apply via the DWSRF process
    - www.michigan.gov/DWSRF
  - Awards issued as part of the DWSRF review process

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Drinking Water Investment (cont)

- $7.5 million - Affordability and Planning (AP) Grants
  - Program will allow communities to develop sustainable water rate plans and implement pilot affordability plans within their community.
  - Program details and application posted on EGLE internet on 12/1/2020
  - Application deadline 1/31/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 4/15/2021

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Clean Water Investment Objectives

- Reduce the number of illicit and inadequately treated discharges that create health risk our neighborhoods, lakes and streams
- Incentivize proper stormwater management to avid rainwater from impacting our ability to properly collect and treat the state's sewage.
- Assist small, rural communities struggling to fund and operate their wastewater systems
- Encourage replacement or maintenance of failing septic systems impacting Michigan's water resources
- Build on the successes of the SAW program by continuing to invest in wastewater asset planning

EGLE

Clean Water Investment

- Items needed before programs available
  - Legislature's assistance
    - Amend legislation
    - Appropriation authority
  - Bond issuance
  - Similar question and answer webinars will be held when preceding bullet points are completed.

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Clean Water Investment (cont)

- $293 million for wastewater protection, including:
  - $235 million – Clean Water Infrastructure Grants
  - $20 million – Substantial Public Health Risk Reduction Grants
  - $35 million - Failing Septic System Elimination Program
  - $3 million - Stormwater, Asset Management, and Wastewater Grants

EGLE

Michigan Department of

Environment, Great Lakes, and Energy

800-662-9278

Michigan.gov/EGLE



MI Clean Water Investment ?s: EGLE-DWGrants@michigan.gov

Grant Info as available: www.michigan.gov/eglegrantsandloans

Follow us at: Michigan.gov/EGLEConnect

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Darel Rice
Cc:	Nelson, Maureen (EGLE); Bolf, Michael (EGLE)
Subject:	FW: ACO Deadline reminder
Date:	Thursday, October 22, 2020 11:21:00 AM
Attachments:	00600 City of Benton Harbor Fully Executed Amended ACO - AACO-399-07-2019.pdf image001.png

Good morning,

We look forward to speaking this afternoon regarding the alum sludge management at the BH water plant.

As a reminder, since there are so many distractions, there is another ACO deadline coming up. Note, this is simply a ***PLAN***.

2.12 **Not later than November 1, 2020,** the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

Thank you,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>
Sent: Wednesday, October 14, 2020 8:47 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Subject: ACO Deadline reminder

Hi Ernie,

I know you already sent a reminder in the recent VN to the City of Benton Harbor, but I'm doing my due diligence in reminding you of the upcoming deadline of November 1, 2020 for paragraph 2.12 of

the amended ACO.

Thanks,
Maureen

--
Maureen Nelson
Enforcement Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
517-242-8328 | NelsonM2@Michigan.gov
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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

FIRST AMENDED ADMINISTRATIVE CONSENT ORDER

In the matter of: DWEHD Order No. AACO-399-07-2019

SECTION I

FACILITY OWNER/OPERATOR

NAME City of Benton Harbor	OWNER☒	OPERATOR☒
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS BUSINESS IDENTIFICATION NUMBER		
ADDRESS 200 East Wall Street		
CITY Benton Harbor	STATE Michigan	ZIP CODE 49022
CONTACT NAME/TITLE Ellis Mitchell, City Manager	PHONE # 269-927-8457	

FACILITY NAME AND LOCATION

FACILITY NAME Benton Harbor Public Water Supply		WATER SUPPLY SERIAL NUMBER 00600
FACILITY OWNER IF NOT IDENTIFIED ABOVE Ellis Mitchell, City Manager		
ADDRESS 200 East Wall Street		
CITY Benton Harbor	STATE Michigan	ZIP CODE 49022
COUNTY Berrien		
CONTACT NAME Ellis Mitchell, City Manager	PHONE # 269-927-8457	

Executive Order 2019-06, signed by Governor Gretchen Whitmer on February 20, 2019, renamed the Michigan Department of Environmental Quality (MDEQ) as the Department of Environment, Great Lakes, and Energy (EGLE). Effective April 22, 2019, a reference to the MDEQ will be deemed a reference to EGLE. After April 22, 2019, a reference to the Director of the MDEQ will be deemed to be a reference to the Director of EGLE. The Drinking Water and Municipal Assistance Division (DWMAD) was renamed the Drinking Water and Environmental Health Division (DWEHD). A reference to the DWMAD will be deemed a reference to the DWEHD and a reference to the Director of the DWMAD will be deemed to be a reference to the Director of the DWEHD.

Administrative Consent Order (ACO) ACO-399-07-2019, entered on March 5, 2019, between the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), and the City of Benton Harbor (City), is hereby amended, as follows. Upon the consent of the parties and by the authority granted to EGLE by the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), and the administrative rules promulgated thereunder, it is hereby agreed and ordered:

COMPLIANCE SCHEDULE

Paragraphs 2.1(a & b), 2.2, 2.3, 2.4, 2.5, 2.6, 2.9 have been completed and removed from ACO-399-07-2019. Reference Exhibit A, attached.

A number of the items below refer to a "Capacity Study." In this Amended Consent Order, under Paragraph 2.14, a Capacity Study refers to an assessment of a water system owner's technical, managerial, and financial capacity to consistently provide safe water to the public.

Paragraphs 2.7, 2.8, 2.10-2.13 of ACO-399-07-2019 shall be amended as specified below:

2.7 **Not later than September 30, 2020**, the City shall formally adopt a consistent and equitable rate collection program to minimize the number of unpaid bills and streamline the collections process.

2.8 **Not later than August 15, 2020,** the City shall submit the current cross connection program to the DWEHD for review. The DWEHD's review and comments on the current program will assist the City in completing the Capacity Study in paragraph 2.14. **No later than three (3) months following the completion of the Capacity Study**, an updated cross connection program must be submitted to the DWEHD for review to address any implementation changes as a result of the study.

2.10 (a) **Not later than six (6) months following the completion of the Capacity Study** in paragraph 2.14, the City shall submit a plan to the DWEHD for inventorying and ongoing maintenance of distribution fire hydrants. The plan must address fixing known broken hydrants, as well as preventative maintenance, such as hydrant inspections and flushing.

(b) **Not later than six (6) months following the completion of the Capacity Study** in paragraph 2.14, the City shall submit a plan to the DWEHD for inventorying and ongoing maintenance of distribution valves. The plan must address fixing known broken valves, as well as preventative maintenance, such as valve turning.

2.11 **Not later than August 1, 2021**, the City shall conduct professional inspections of the City of Benton Harbor water system's elevated tank, or complete the repairs and upgrades recommended during the 2008 Dixon inspection, as included in the City's asset management program dated December 2017.

2.12 **Not later than November 1, 2020**, the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

2.13 **Not later than December 31, 2020**, the City shall repair filter to waste valves at the water plant, and train operators on their use.

The following paragraphs shall be added to Section II – Compliance Schedule:

2.14 **Not later than September 30, 2020**, The City shall submit to the DWEHD, for review and approval, a project scope for completion of a technical, managerial, and financial capacity study to ensure, at a minimum, that the City has adequate staffing and financial mechanisms to carry out the operation and maintenance of the City of Benton Harbor's

water system, in compliance with Act 399. The City shall contract with a qualified consultant to complete the Capacity Study. The Capacity Study scope shall identify the organizational structure, and the required funding, to operate and manage the system, in compliance with Act 399. The Capacity Study shall also identify current staffing levels, including the number of full- and part-time employees currently dedicated to the water system, the number of employees from other departments within the City who currently provide assistance, the nature of that assistance, and the hours of assistance committed from those departments. Last, the Capacity Study shall identify any technical needs, such as development and storage of water system records to facilitate compliance with Act 399.

Not later than six (6) months following approval of the project scope, the City shall submit a completed Capacity Study for DWEHD approval.

To address any gaps identified by the Capacity Study, the Capacity Study shall include an **implementation plan** to gather sufficient resources and qualified personnel to carry out the authorities and procedures for daily operation, maintenance, and management of the City's water system. **Not later than August 1, 2021 and every six (6) months after the DWEHD approves the Capacity Study, the City shall submit a signed statement describing the City's progress** towards completing the implementation plan to achieve adequate capacity.

Capacity Study Phase	Description	Due Date
1: Project Scope and Outcomes	Submit to the DWEHD for input on the study scope and outcomes	September 30, 2020
2: Study Completion	Complete the Capacity Study based on project scope	Six months after approval of scope
3: Implementation	Progress reports to the DWEHD describing city's progress	August 1, 2021 and every six months thereafter

2.15 (a) **Not later than six (6) months following the completion of the Capacity Study** in Paragraph 2.14, as part of the implementation phase, the City shall submit to the DWEHD, a Staffing Plan to address findings from the Capacity Study. The Staffing Plan must indicate the number of staff, managerial oversight, as well as an outline of each position's duties needed to meet the operational and maintenance needs of the water system.

(b) **Not later than twelve (12) months following the DWEHD approval of the Staffing Plan,** the City shall submit to the DWEHD a certification that the staffing plan has been implemented and adequate staffing and managerial oversight is in place.

2.16 **Not later than December 31, 2020**, the City shall come into compliance with all monitoring and reporting requirements of Act 399, specifically Michigan Compiled Law (MCL) §325.1007, which requires every drinking water supply owner to collect water samples, or have them collected, and have those samples analyzed in the state laboratory or a laboratory certified by the DWEHD, or by the United States Environmental Protection Agency, for contaminants listed in the state drinking water standards. The City shall report the results of the analyses to the DWEHD in a timely manner. MCL §325.1007 also

authorizes the DWEHD to impose administrative fines for each failure to collect and analyze a water sample as required under Act 399.

2.17 **Not later than September 30, 2020**, the City shall have a qualified third-party consultant submit to the DWEHD, for review and approval, a corrosion control optimization study scope and completion schedule, in accordance with the February 13, 2020, letter the DWEHD issued to the City.

Not later than sixty (60) days following DWEHD approval of the corrosion control optimization study scope and completion schedule, the City shall secure a signed contract for the corrosion control optimization study.

GENERAL PROVISIONS

All approved work plans required by this First Amended Administrative Consent Order shall be incorporated by reference into ACO-399-07-2019 and shall be enforceable in accordance with its provisions.

All other terms and conditions of ACO-399-07-2019 shall remain in full force and effect and are not altered by this Amended Consent Order, except as specifically prescribed in this document. The effective date of this Amended Consent Order shall be the date upon which the Division Director of EGLE, DWEHD signs this document.

Signatories

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Eric J. Oswald, Director
Drinking Water and Environmental Health Division

7-August-2020
Date

I, the undersigned, CERTIFY that I am fully authorized by the party identified above to enter into this Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it. I further attest that all information provided herein is accurate and true.

CITY OF BENTON HARBOR

Marcus Muhammad, Mayor

8/5/2020
Date

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

FIRST AMENDED ADMINISTRATIVE CONSENT ORDER

DWEHD Order No. AACO-399-07-2019

EXHIBIT A

In the matter of the First Amended Administrative Consent Order between the City of Benton Harbor and the State of Michigan Department of Environment, Great Lakes, and Energy, below are listed compliance activities that have been completed and are shown for record of completion.

2.1 (a) Submit to the DWMAD a completed rate study from a qualified professional consultant. (This requirement was completed with the Asset Management Plan, dated December 2017, however, the second portion of 2.1 in the original ACO, requiring the City to submit an implementation rate increase plan, was not completed).

COMPLETION DATE: December 31, 2017

(b) Not later than December 31, 2020, the City shall begin implementation of a rate adjustment plan for the City of Benton Harbor, in accordance with the findings in the City's asset management program and rate study. The rate adjustment plan shall ensure rates are sufficient to operate and maintain the water system, in compliance with Act 399.

COMPLETION DATE: May 18, 2020

2.2 Upgrade the water plant supervisory and data acquisition (SCADA) system to allow for storage and easy access to required regulatory data, including turbidity and chlorine, alarming for regulatory minimum levels, and potentially automation of some water plant operations, no later than April 1, 2019.

COMPLETION DATE: August 12, 2019

2.3 Install metering capabilities on the finished water (completed as part of corrosion control treatment project).

COMPLETION DATE: August 12, 2019

2.4 Make necessary improvements to the water treatment facility in order to have a functioning and reliable continuous chlorine analyzer on the finished water tap, no later than April 1, 2019.

COMPLETION DATE: August 12, 2019

2.5 Obtain an adequately licensed operator-in-charge, solely dedicated to the water distribution system, no later than April 1, 2019.

COMPLETION DATE: May 7, 2019

2.6 Submit a proposal for optimal corrosion control treatment or a corrosion control study to the DWMAD, no later than April 30, 2019.

COMPLETION DATE: Treatment installed as of March 25, 2019. Corrosion control study insufficient as of June 2020, see First Amended ACO item 2.17.

2.9 Install necessary modifications at the water treatment plant to inject coagulant chemical at a DWMAD-approved rapid mix location, and develop a standard operating procedure for feeding coagulant, no later than June 1, 2019.

COMPLETION DATE: August 9, 2019



LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	Sarkipato, Ernest (DEQ) (SARKIPATOE@michigan.gov)
Cc:	Henderson, Shannon (EGLE); Bolf, Michael (EGLE)
Bcc:	administrator@blissfieldmichigan.gov; akrueger@traversecitymi.gov; bhunter@south-haven.com; bpilmore@ci.alma.mi.us; cdugan@elmwsa.com; chxdpw@sbcglobal.net; dave.baker@shorelinecity.com; dgreen@traversecitymi.gov; dkadzban@cityofmuskegonheights.org; dPLAMONDON@ci.ludington.mi.us; epiontek@bentonchartertownship-mi.gov; Fleming, Jaime; Tim Zebell; galimenti@sjcity.com; jallen@cityofmuskegonheights.org; jhodgson@sjcity.com; jRABEDIOUX@mt-pleasant.org; JTHOMPSO@grcity.us; Johnson, Nathan; Jamie Hoekemeyer; ktryan@bentonchartertownship-mi.gov; ldoody@cityofmuskegonheights.org; Bell, Troy; manager@cityofnewbuffalo.org; markh@cityofcharlevoix.org; mbaldwin@bentonchartertownship-mi.gov; akrueger@traversecitymi.gov; merickson@ci.wyoming.mi.us; Jernberg, Wayne; MICHAEL MULDER (mmulder@elmwsa.com); Mike O"Malley; emitchell@bhcity.us; mosborn@cityofjackson.org; Jeff Burkhard; nbcwaterdept@comcast.net; nwowtp@grandhaven.org; petrovichd@plainfieldmi.org; publicworks@blissfieldmichigan.gov; Josh Crots; rgarcia@south-haven.com; rlybarger@cityofjackson.org; shelleym@cityofcharlevoix.org; soller@plainfieldmi.org; TIMOTHY KADING (tkading@bridgman.org); jgreene@cityofjackson.org; Beyer, Pieter; veneklasenr@wyomingmi.gov; waterplant@blissfieldmichigan.gov; wsadler@adrianmi.gov; mosborn@cityofjackson.org; Moore, Jason; trileyltwater (trileyltwater@lake-township.org); Lesia Osler; dave.baker@shorelinecity.com; jdavenport@hollandbpw.com; Leo Evans
Subject:	Grant funding: Webinar
Date:	Monday, October 5, 2020 4:34:00 PM

District 93 water personnel: Important webinar information is below, regarding the recently announced infrastructure funding.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: MI Dept. of Environment, Great Lakes, and Energy <EGLE@govsubscriptions.michigan.gov>
Sent: Monday, October 5, 2020 2:32 PM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Subject: Register today for Oct. 14 Webinar: Helping communities access water infrastructure funding

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EGLE Training and Outreach banner 2020

WEBINAR
Helping communities access water infrastructure funding

October 14, 2020
9:00 - 10:00 AM

Governor Gretchen Whitmer and Michigan EGLE recently announced the MI Clean Water plan that includes $500 million worth of funding resources to help local communities upgrade drinking water and wastewater infrastructure. This webinar will help managers of community water supplies learn about the different funding categories and how to apply for assistance. It is geared toward drinking water system operators, wastewater managers, consultants, local officials and others who oversee or manage such systems.

Registration button EGLE Blue



MI Clean Water will reduce barriers for communities and allow them to access needed funds for necessary and timely infrastructure upgrades.

A $207 million investment in drinking water quality, including:

- Disadvantaged Community Lead Service Line Replacement Program - $102 million
- Lead and Copper – Drinking Water Asset Management Grants - $37.5 million
- PFAS and Emerging Contaminants - Consolidation and Contamination Risk Reduction Grants - $25 million
- Drinking Water Infrastructure Grants - $35 million
- Affordability and Planning Grants - $7.5 million

A $293 million investment in wastewater protection, including:

- Clean Water Infrastructure Grants (eliminating sanitary sewer overflows; correcting combined sewer overflows; increasing green infrastructure) - $235 million

- Substantial Public Health Risk Reduction Grants (removing direct and continuous discharges of raw sewage from surface or ground water) - $20 million
- Failing Septic System Elimination Program - $35 million
- Stormwater, Asset Management, and Wastewater Grants - $3 million

Michigan.gov/EGLEevents

Registration Questions:
Joel Roseberry / RoseberryJ@Michigan.gov
Alana Berthold / BertholdA@Michigan.gov

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EGLE COVID-19 RESPONSE: For details on EGLE's work during the pandemic, visit our COVID-19 response webpage. Follow state actions and guidelines at Michigan.gov/Coronavirus.

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This email was sent to sarkipatoe@michigan.gov using GovDelivery Communications Cloud on behalf of: Michigan Department of Environment, Great Lakes, and Energy · Constitution Hall · 525 West Allegan Street · PO Box 30473 · Lansing, MI 48909 · 800-662-9278

From:	Sarkipato, Ernest (EGLE)
To:	rrice@bhcity.us
Cc:	emitchell@bhcity.us; Mike O"Malley
Subject:	Meeting to discuss Alum sludge management at BH water plant
Date:	Wednesday, October 14, 2020 11:19:00 AM
Attachments:	image001.png

Ms. Rice,

I'd like to request a (remote) meeting with Mr. Mitchell and the Benton Harbor water team, as available, to discuss the management of alum sludge at the WTP. This meeting was requested by Mr. O'Malley, on behalf of Mr. Mitchell.

Do any of these times work?

Monday October 19 @ 11AM
Monday October 19 @ 3PM
Tuesday October 20 @ 3PM
Wednesday October 21 @ 3PM
Thursday October 22 @ 3PM

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



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LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	James McPhail; Mike Kalin (mike@kalininc.com)
Cc:	Mike O"Malley - City of Benton Harbor (momalley@bhcity.us); Demetris Meeks (dmeeks@cityofbentonharbormi.gov); Bob Marvin (bmarvin@kalininc.com); Mike Kalin (mike@kalininc.com); Eric Kamps; Worthington, David (EGLE); Chris J Cook; Tim Drews; Dan Dombos
Subject:	RE: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13
Date:	Monday, October 26, 2020 1:39:00 PM
Attachments:	Lead Service Line Permit cover letter.docx

Thank you for including me on the construction updates for these projects in Benton Harbor. The importance of property sign-offs cannot be overstated, especially in a community with an Action Level Exceedance. Act 399 does not allow partial service line replacements if there is lead present, due to increased exposure. Attached is a letter to this effect which should have gone out with the permit.

If you have questions about this process please contact me,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

From: James McPhail <jmcphail@abonmarche.com>
Sent: Thursday, October 22, 2020 12:55 PM
To: Mike Kalin (mike@kalininc.com) <mike@kalininc.com>
Cc: Mike O'Malley - City of Benton Harbor (momalley@bhcity.us) <momalley@bhcity.us>; Demetris Meeks (dmeeks@cityofbentonharbormi.gov) <dmeeks@cityofbentonharbormi.gov>; Bob Marvin (bmarvin@kalininc.com) <bmarvin@kalininc.com>; Mike Kalin (mike@kalininc.com) <mike@kalininc.com>; Eric Kamps <ekamps@abonmarche.com>; Worthington, David (EGLE) <WORTHINGTOND@michigan.gov>; Chris J Cook <cjcook@abonmarche.com>; Tim Drews <tdrews@abonmarche.com>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Dan Dombos <ddombos@abonmarche.com>
Subject: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13

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All,

Please find attached a copy of the progress meeting minutes for this weeks meeting.

Regards,

JD McPhail
Construction Manager
Abonmarche
C 574.850.0195

O 574.232.8700
www.abonmarche.com



"Rest at the end, not in the middle"

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GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

LIESL EICHLER CLARK
DIRECTOR

TO: Community Public Water Supply Owner or Operator

FROM: Brian E. Thurston, P.E., Field Operations Section Manager
Drinking Water and Environmental Health Division

DATE: Click or tap to enter a date.

SUBJECT: Presence of Lead Service Lines in the Proposed Project Area

During our permit review process, we became aware that existing lead service lines may be present in the proposed project area.

Installation and replacement of customer service lines is not evaluated as part of the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) permit approval process under 1976 PA 399 (Act 399); therefore, this permit has been issued without consideration to the presence of lead service lines within the project area. However, EGLE wishes to remind you that service line installation and replacement must comply with all applicable laws and plumbing codes. Please note that this includes the 2018 Lead and Copper Rule, which prohibits the partial replacement of lead service lines.

When conducting service line replacements, no portion of the service line consisting of lead, or galvanized piping currently or previously connected to lead, may remain in place, whether publicly or privately owned. Restoring water service to the service line prior to the removal of all lead, or galvanized piping currently or previously connected to lead, constitutes a partial lead service line replacement, and is banned. The expense of the replacement of privately-owned portions of customer service lines shall be covered by the water supply owner, per R 325.10604f(5)(c) and R 325.10604f(6)(e) of Act 399.

It is recommended that full lead service line replacements be conducted per American Water Works Association (AWWA) Standard C810-17, *Replacement and Flushing of Lead Service Lines.*

If you have any questions, please contact Brandon Onan, Lead and Copper Unit Supervisor at 616-307-6736, or by email at OnanB@Michigan.gov. Thank you for your continued effort to ensure the drinking water is safe for your residents. For more information, visit the Web site at: http://www.Michigan.gov/drinkingwater.

From:	Sarkipato, Ernest (EGLE)
To:	Mike O"Malley; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Nelson, Maureen (EGLE); Bolf, Michael (EGLE); Xing, Fangli (EGLE); Sellers, Fred (EGLE)
Cc:	emitchell@bhcity.us; Darold Harlan; Darel Rice; Tim Drews; Chris Cook; Dan Dombos
Subject:	RE: Discharges to ground/groundwater at a WTP
Date:	Wednesday, October 14, 2020 10:32:00 AM
Attachments:	RE Discharges to groundgroundwater at a WTP.msg image005.png image002.png

Mr. O'Malley,

I can take the lead on scheduling that conversation with the City Manager, with his approval. We do acknowledge the many issues the city is dealing with on top of, now, construction! As for lagoon VS drying bed, I think the main question is whether they are lined with clay, concrete or some other impermeable material as they sometimes are (true evaporation beds). They appear to be unlined, and therefore designed for both evaporation and/or infiltration.

What I have access to in the EGLE office is a paper copy of the permit drawings and specifications. I had previously sent the attached email with a couple photos of those permit drawings, but it would be ideal to have **PDF copies of as-builts** (*Abonmarche*?).

We also may have some correspondence from the permit review process, which I can dig for. However it does seem unlikely to me that it will exist.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



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From: Mike O'Malley <momalley@bhcity.us>
Sent: Tuesday, October 13, 2020 4:54 PM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>; Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Xing, Fangli (EGLE) <XingF@michigan.gov>; Sellers, Fred (EGLE) <SELLERSF@michigan.gov>
Cc: emitchell@bhcity.us; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>; Tim Drews <[redacted]@icloud.com>;

Chris Cook <cjcook@abonmarche.com>; Dan Dombos <ddombos@abonmarche.com>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ladies and Gentlemen,
I would propose to City Manager Ellis Mitchell, that the City discuss the management of the sludge lagoon with the appropriate EGLE representatives.
As a few of you know, I have been involved in this process in my on and off again Water Supervisor with Benton Harbor.
I would further like to have Abonmarche Representatives accompany us; as they were the officials in engineering, design, construction, etc.

I am curious, have you the Permit to Construct, or any available correspondence from the former Kalamazoo rep, Mr. Dannafel, or even records from Gary Wozniac
I have not been successful at finding them, maybe Abonmarche can help.

And, sort of an FYI, your description of the lagoons are a bit lacking, particularly absent was the idea that they were to be "Drying Beds"
A point that is essentially mute, during the present day high ground water levels.

We are very busy here at Benton Harbor's Water Department, so please consider patients.

Sincerely,

Mike O'Malley
Benton Harbor Water Operator In Charge

On Fri, Oct 9, 2020 at 7:16 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Benton Harbor water team,
>
> Attached is a multi-division letter that addresses the management of alum sludge on the water plant property. I assume the city will be requesting a meeting to discuss and would be happy to arrange such a meeting.
>
> Ernie Sarkipato, P.E.
> Surface Water Treatment Specialist
> Drinking Water and Environmental Health Division
> MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, August 26, 2020 8:31 AM
To: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Thank you, I will let you know.

Are you serious!
This Lagoon was **demanded by Greg Dannefell the Kalamazoo Director of MIDNRE** or whatever they called themselves then.
If not for that, the original 1950 solution would have remained the same with the discharge going into the lake on the eastern edge of Harbor Shores Hole(s) #7; #8; #9.
A project that was supported by the state; Whirlpool; Corp and the whole Southwest MI & Berrien County Economic Development groups agreements!

It went (late) into the DWRLF Permitting
Funds were borrowed from the State of MI.
The State approved the permit.
40% of those funds were forgiven with the Federal Act the American Resource and Recovery Act
And the rest, the city is paying back with loan payments.

As I have told you, I have a plan to dewater the sludge lagoons into the abandoned Clarifiers, but it will take some doing and cash.
Which will take longer the permit to put it higher up in the property; or the permit to change the means it is cleaned.
If you want to do something worthwhile; approve the Alum Sludge for Land Application similar to the WWTPs

Mike O'Malley
Benton Harbor Water Operator IN Charge

Mike O'Malley

On Tue, Aug 25, 2020 at 5:04 PM Ehinger, Dale (EGLE) <EHINGERD@michigan.gov> wrote:

> Mike,
>
> At this time, we believe a discharge from the sludge dewatering process to the groundwater, as proposed, would have to be permitted to not be a violation of the Part 22 Groundwater Quality Rules. If you are interested in obtaining a permit an application can be submitted through the Benton Harbor WTP site in MiWaters. Water Resources Division is evaluating the issue but needs some additional time to review before providing additional guidance to move forward.
>
> If you have time to hold off on the discharge or can find an alternative solution (e.g. sludge drying beds at a wastewater treatment plant or utilize your surface water discharge authorization if you believe you can meet permit limits) we recommend delaying a discharge, from the proposed sludge dewatering, to the ground until it is permitted or it is determined to be exempt. We understand that an emergency could arise requiring you to act to protect the integrity of the Water Treatment Plant and Public Health. If you determine that an unpermitted discharge is your only option, please let us know.
>
> Thank you,
>
> 
>
> Dale Ehinger, PE
> District Engineer
> Water Resources Division/Kalamazoo District Office
> Michigan Department of Environment, Great Lakes, and Energy (EGLE)
> Ph: 269-716-8305
> ehingerd@michigan.gov
> Michigan.gov/EGLE
>
> ---
>
> **From:** Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
> **Sent:** Tuesday, August 25, 2020 4:11 PM
> **To:** Mike O'Malley <momalley@bhcity.us>
> **Cc:** Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
> **Subject:** RE: Discharges to ground/groundwater at a WTP
>
> Mike and all – per Dale's email and to clarify my own below, there may also be implications for groundwater discharge under EGLE's Water Resources Division. Sounds like WRD is currently discussing the plan and any requirements they may have.

Ernie

From: Sarkipato, Ernest (EGLE)
Sent: Monday, August 24, 2020 1:33 PM
To: 'Mike O'Malley' <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Thank you Mike. I know you are in a tough spot, and appreciate your ability to get stuff done in short order and with few resources. From this discussion, I don't believe moving the alum sludge for further dewatering from one unlined lagoon to another 280 ft away is going to appreciably change any current influence on the groundwater in the area.

I guess my only remaining concern is one of liability – without a well built, maintained, and functioning berm, this proposal could result in seepage/runoff/alum sludge leaving the water plant property. I believe we can verbally approve this temporary arrangement as it pertains to EGLE-DWEH's approval of the city's plan for handling alum sludge and the dewatering process. However, please consult with your internal team whether this is a good idea *legally speaking*.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Monday, August 24, 2020 11:26 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

The drawing you are using does not accurately serve as a site plan.

Attached is an annotated version: : *site grading sludge loc corrected Mike O.jpeg*

The next drawing is from the Berrien County Beacon System :

I annotated it some : mostly the boundary of Jean Klock Park and Klock Road. All of which are in the City Limits

And a way for you to see the waste flows before and after. *Berrien County Beacon map Jean Klock Park and BHWW annotated.jpeg*

Similar but a **whole lot easier** than the rendering I had to do in the Discharge Permit application in 2011.

Mike O'Malley
Benton Harbor Water Operator IN Charge

On Mon, Aug 24, 2020 at 9:02 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> For everyone's benefit, I was able to find the attached permit drawings which seem to indicate the lagoons are indeed unlined and therefore intended for infiltration, and confirm Dale's description.
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> Please confirm the property ownership of the area you are proposing for drying the alum sludge.
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> Ernie
>
> ---
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> **Sent:** Monday, August 24, 2020 8:15 AM
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> **Cc:** emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>
> **Subject:** RE: Discharges to ground/groundwater at a WTP
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I do not recall any seeing anything on plans or procedures for handling sludge but it was a long time ago and I do not have easy access to the files. Due to the age the files may have been sent to records center. The files should be available (if they exist) but would take some time to retrieve. Let me know if you need anything else.

Thank you,

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Ph: 269-716-8305
ehingerd@michigan.gov
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From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, August 21, 2020 3:09 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: RE: Discharges to ground/groundwater at a WTP

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I was a water superintendent in those years; full time for St. Joseph and Part Time for Benton Harbor.

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In those days regulations were written to allow Plants to recirculate the backwash water into the treatment scheme of a SWR Plant.

Benton Harbor's water treatment was considerably more interesting and simple.
The new filter plant was built in the late 1940's early 1950's.
At that very same time MDOT built a clover leaf system for US-31 at Klock Road.
In order to do that, the MDOT had to deadhead a loop of the Pawpaw River.
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- During that time, the City was improving Jean Klock beach and the water plant extended the existing backwash drain to that depression.

Treatment wastes from then on were contained in the depression bounded by Jean Klock Park road to the west; Grand Blvd to the north; Highway -31 ramps to the East; and Klock Road (Upton Dr) to the south.
For decades, this became known as BHWW Pond.

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And to make sure, Filter Alum will accumulate into a heavy sludge under water and it is nearly impossible to dilute that sludge with water.

As per 3-3 in the MDPH regs, let me know what I'll need to do.

Please help

Mike O'Malley
Benton Harbor Water Superintendent

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CC: emitchell@bhcity.us [emitchell@bhcity.us]; Dan Dombos [ddombos@abonmarche.com]
Subject: RE: Discharges to ground/groundwater at a WTP
Sent: Monday, August 24, 2020 08:02:21
Attachment 1: image001.png
Attachment 2: image002.jpg
Attachment 3: Site Details.jpg
Attachment 4: site grading_sludge loc.jpg

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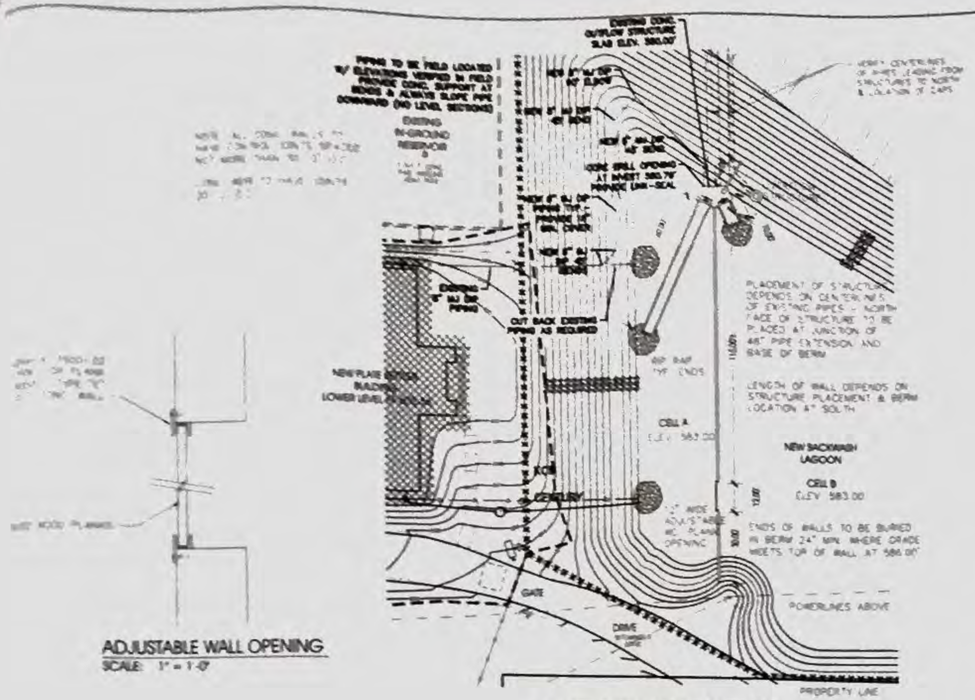
Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

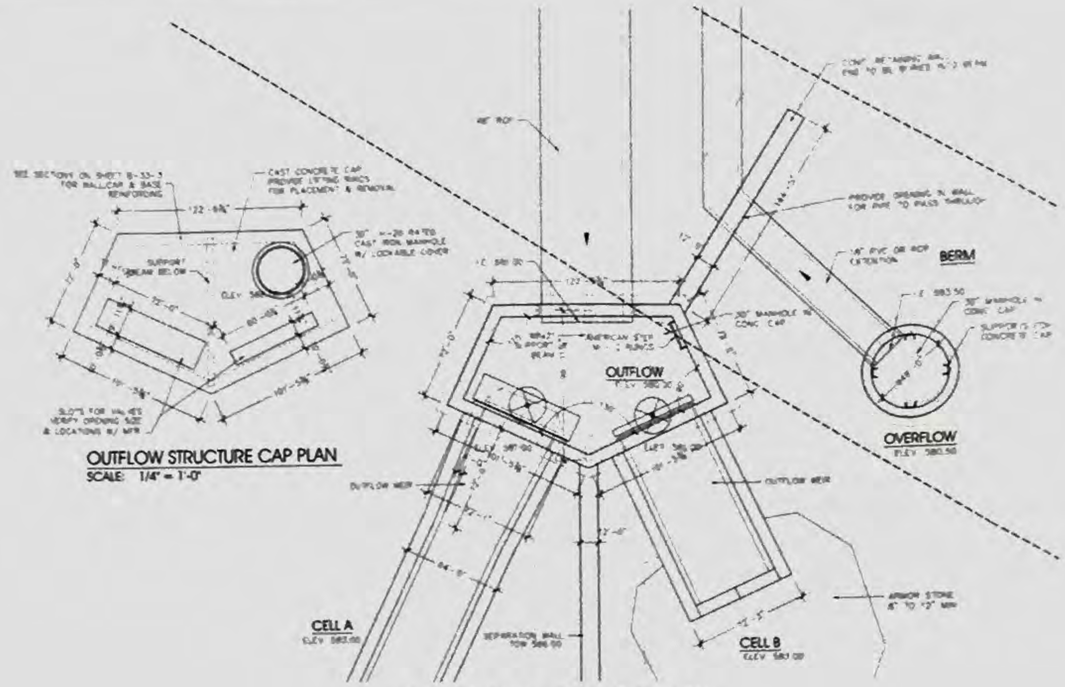
616-307-0261 mobile

<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.michigan.gov%2Fdrinkingwater&data=02%7C01%7CSARKIPATOE%40michigan.gov%7C13225b3e58644bb4850c08d848275e93%7Cd5fb7087377742ad966a892ef47225d1%7C0%7C0%7C637338681210316722&sdata=KxGcyguHiIptH65o3sxC3Dn2Zol72KZwFaHpsRPNZVw%3D&reserved=0>
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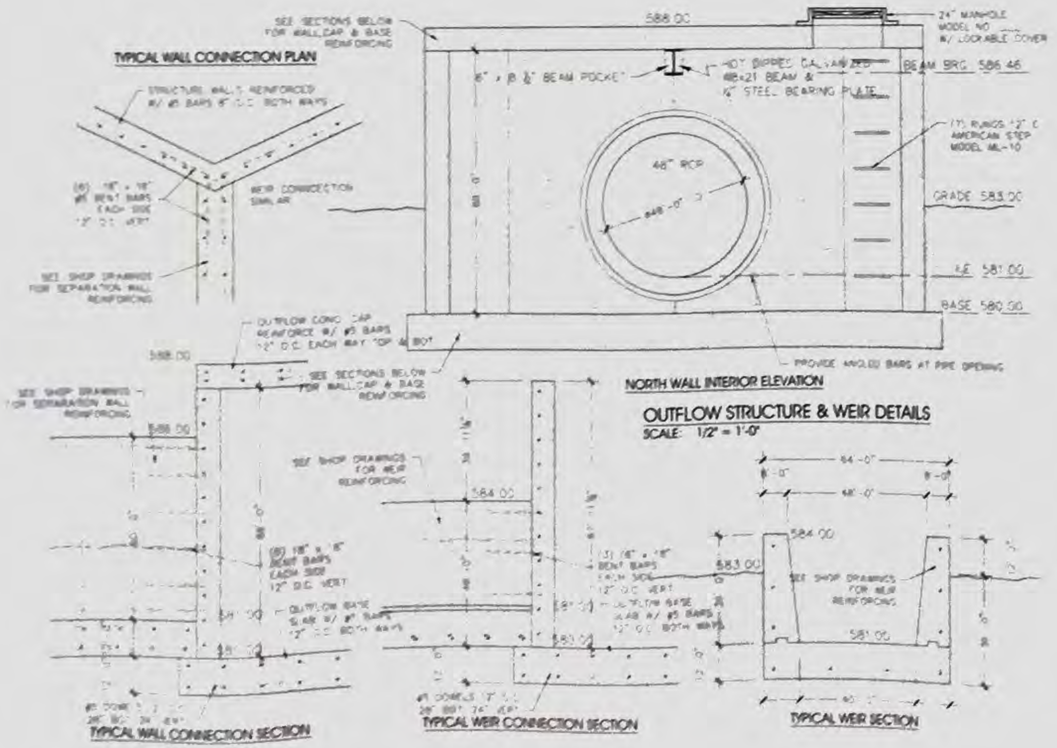
ADJUSTABLE WALL OPENING
SCALE: 1" = 1'-0"

SITE PLAN - PLANT OUTFLOW
SCALE: 1" = 30'-0"

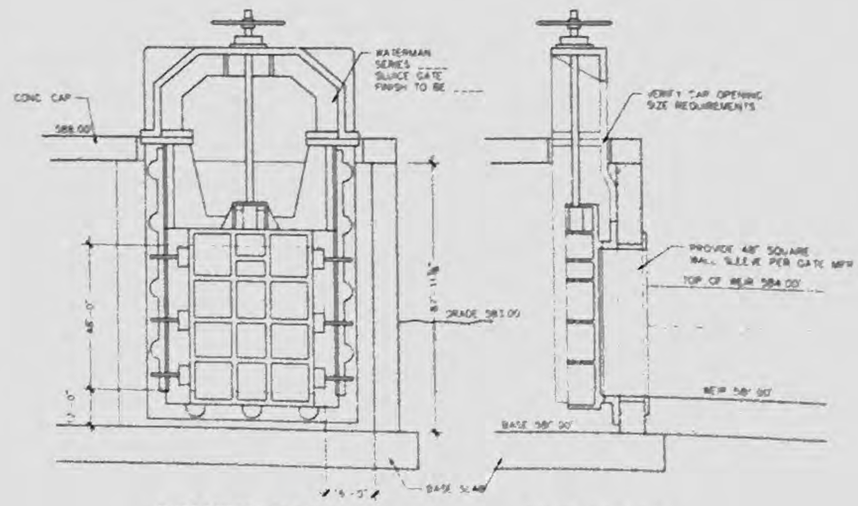


OUTFLOW STRUCTURE CAP PLAN
SCALE: 1/4" = 1'-0"

OUTFLOW STRUCTURE ENLARGED PLAN
SCALE: 1/4" = 1'-0"



OUTFLOW STRUCTURE & WEIR DETAILS
SCALE: 1/2" = 1'-0"



SLUICE GATE INTERIOR ELEVATION

SLUICE GATE SECTION

CELL A SLUICE GATE DETAILS
SCALE 1/2" = 1'-0"

NO	REVISION DESCRIPTION	BY	DATE

ABONMARCHE
Confidence By Design
ENGINEERING
ARCHITECTURE
MARINA/WATERFRONT
SURVEYING
LANDSCAPE ARCHITECTURE
PLANNING
95 West Main Street
P.O. Box 1088
Benton Harbor, MI 49023
T 269.927.3295
F 269.934.7144
www.abonmarche.com
MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

PROJECT
BENTON HARBOR
WATER FILTRATION PLANT
RENOVATIONS
BENTON HARBOR, MICHIGAN

SHEET TITLE
OUTFLOW STRUCTURE & WALL CLARIFICATIONS

DRAWN BY: JDL - GNF
DESIGNED BY: DAD/RMS
PM REVIEW:
QA/QC REVIEW:
DATE: 09-30-09
SEAL:
SIGNATURE:
DATE:

HARD COPY IS PRINTED TO BE 36" X 24" WHEN PLOTTED SCALED/PLOTTED ASIS GRAPHIC QUALITY MAY VARY AS ACCURATE FOR ANY OTHER SIZE

SCALE: AS NOTED
Unless Noted Otherwise

JOB NO: M8-0668

SHEET NO: C3.BL1

JEAN KLOCK PARK

HARBOR SHORES GOLF COURSE

EXISTING UNDERGROUND STORAGE RESERVOIRS

EXISTING CLARIFLOCULATORS

EXISTING WATER TREATMENT FACILITY

PROPOSED PLATE SETTLER BUILDING

BORING LOCATIONS (9 TOTAL)

CONCRETE SIDEWALK WITH STEPS SEE DETAIL THIS SHEET

EXISTING CHEMICAL STORAGE BLDG

JEAN KLOCK MPK PARKING

EXTENT OF EROSION BLANKETS OVER FINAL GRADING AT SLOPES

NEW BACKWASH LAGOON SIDE SLOPES SHALL NOT EXCEED A 3H SLOPE

SEE SHEET C1.2 AND

KLOCK RD

EROSION BLANKETS

SITE PLAN - GRADING
SCALE: 1" = 30'-0"

Property line?

SITE PLAN KEYNOTES

ELEVATIONS SHOWN ARE DATUM NAVD88

Add 6' concrete pad to support MAU-PS-1 remote condenser

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft

PROPOSED HMA DRIVE

COMPACTED CLASS II GRANULAR FILL OR 22A AGGREGATE

(2) No. 4 x 6" STEEL DOWELS, 2" TOP COVER, TYP.

1/2" EXPANSION MATERIAL, TYP.

No. 4 BAR EACH STEP TYP

CONTROL JOINT, TYP

COMPACTED SUBGRADE

CONCRETE SIDEWALK

.54" STEP, TYP.

FIBERMESH REINFORCED CONCRETE W/ MEDIUM BROOM FINISH

CONTROL JOINTS EVENLY SPACED, TYP.

No. 4 BAR EACH SIDE

12" TYP

18" TYP

4"

6"

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PROJECT:
BENTON HARBOR
WATER FILTRATION PLANT
RENOVATIONS
BENTON HARBOR, MICHIGAN

SHEET TITLE:
SITE PLAN
GRADING

DRAWN BY: JDL - GNF
DESIGNED BY: MJ
PM REVIEW: KCM
QA/QC REVIEW: CENTURY
DATE: 09-30-09
SEAL:

SIGNATURE:
DATE:

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SCALE: 1" = 30'-0"
Unless Noted Otherwise

ACI JOB #: M8-0668

SHEET NO: C1.5



LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	Mike O"Malley; emitchell@bhcity.us; Darold Harlan; Darel Rice
Cc:	Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Nelson, Maureen (EGLE); Bolf, Michael (EGLE); Xing, Fangli (EGLE); Sellers, Fred (EGLE)
Subject:	RE: Discharges to ground/groundwater at a WTP
Date:	Friday, October 9, 2020 7:16:00 AM
Attachments:	00600 Benton Harbor Alum Sludge.pdf image003.png

Benton Harbor water team,

Attached is a multi-division letter that addresses the management of alum sludge on the water plant property. I assume the city will be requesting a meeting to discuss and would be happy to arrange such a meeting.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, August 26, 2020 8:31 AM
To: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Thank you, I will let you know.

Are you serious!
This Lagoon was **demanded by Greg Dannefell the Kalamazoo Director of MIDNRE** or whatever they called themselves then.
If not for that, the original 1950 solution would have remained the same with the discharge going into the lake on the eastern edge of Harbor Shores Hole(s) #7; #8; #9.
A project that was supported by the state; Whirlpool; Corp and the whole Southwest MI & Berrien County Economic Development groups agreements!

It went (late) into the DWRLF Permitting
Funds were borrowed from the State of MI.
The State approved the permit.
40% of those funds were forgiven with the Federal Act the American Resource and Recovery Act
And the rest, the city is paying back with loan payments.

As I have told you, I have a plan to dewater the sludge lagoons into the abandoned Clarifiers, but it will take some doing and cash.
Which will take longer the permit to put it higher up in the property; or the permit to change the means it is cleaned.
If you want to do something worthwhile; approve the Alum Sludge for Land Application similar to the WWTPs

Mike O'Malley
Benton Harbor Water Operator IN Charge
Mike O'Malley

On Tue, Aug 25, 2020 at 5:04 PM Ehinger, Dale (EGLE) <EHINGERD@michigan.gov> wrote:

> Mike,
>
> At this time, we believe a discharge from the sludge dewatering process to the groundwater, as proposed, would have to be permitted to not be a violation of the Part 22 Groundwater Quality Rules. If you are interested in obtaining a permit an application can be submitted through the Benton Harbor WTP site in MiWaters. Water Resources Division is evaluating the issue but needs some additional time to review before providing additional guidance to move forward.
>
> If you have time to hold off on the discharge or can find an alternative solution (e.g. sludge drying beds at a wastewater treatment plant or utilize your surface water discharge authorization if you believe you can meet permit limits) we recommend delaying a discharge, from the proposed sludge dewatering, to the ground until it is permitted or it is determined to be exempt. We understand that an emergency could arise requiring you to act to protect the integrity of the Water Treatment Plant and Public Health. If you determine that an unpermitted discharge is your only option, please let us know.
>
> Thank you,
>
> 
>
> Dale Ehinger, PE
> District Engineer
> Water Resources Division/Kalamazoo District Office
> Michigan Department of Environment, Great Lakes, and Energy (EGLE)
> Ph: 269-716-8305

ehingerd@michigan.gov
Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Tuesday, August 25, 2020 4:11 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Mike and all – per Dale's email and to clarify my own below, there may also be implications for groundwater discharge under EGLE's Water Resources Division. Sounds like WRD is currently discussing the plan and any requirements they may have.

Ernie

From: Sarkipato, Ernest (EGLE)
Sent: Monday, August 24, 2020 1:33 PM
To: 'Mike O'Malley' <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Thank you Mike. I know you are in a tough spot, and appreciate your ability to get stuff done in short order and with few resources. From this discussion, I don't believe moving the alum sludge for further dewatering from one unlined lagoon to another 280 ft away is going to appreciably change any current influence on the groundwater in the area.

I guess my only remaining concern is one of liability – without a well built, maintained, and functioning berm, this proposal could result in seepage/runoff/alum sludge leaving the water plant property. I believe we can verbally approve this temporary arrangement as it pertains to EGLE-DWEH's approval of the city's plan for handling alum sludge and the dewatering process. However, please consult with your internal team whether this is a good idea *legally speaking.*

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Monday, August 24, 2020 11:26 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

The drawing you are using does not accurately serve as a site plan.

Attached is an annotated version: : *site grading_sludge loc corrected Mike O.jpeg*

The next drawing is from the Berrien County Beacon System :

I annotated it some : mostly the boundary of Jean Klock Park and Klock Road. All of which are in the City Limits

And a way for you to see the waste flows before and after. *Berrien County Beacon map Jean Klock Park and BHWW annotated.jpeg*

Similar but a **whole lot easier** than the rendering I had to do in the Discharge Permit application in 2011.

Mike O'Malley
Benton Harbor Water Operator IN Charge

On Mon, Aug 24, 2020 at 9:02 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> For everyone's benefit, I was able to find the attached permit drawings which seem to indicate the lagoons are indeed unlined and therefore intended for infiltration, and confirm Dale's description.
>
> I'm also looking at the site grading drawing, and wondering where exactly the wtp property line falls in the area you are looking at south of the driveway? I'm not certain that is on the WTP property.

Please confirm the property ownership of the area you are proposing for drying the alum sludge.

Ernie

From: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Sent: Monday, August 24, 2020 8:15 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>
Subject: RE: Discharges to ground/groundwater at a WTP

Ernie,

My recollection of the WTP Lagoon project is that a two cell lagoon would be constructed with an emergency overflow to a surface water discharge. The first lagoon was to settle out sludge and I believe it was designed to infiltrate. The second lagoon was unlined and intended for infiltration. I believe the overflow was only intended for high use times or emergency operations (i.e. the lagoons would typically infiltrate but occasionally a surface water discharge would occur).

I do not recall any seeing anything on plans or procedures for handling sludge but it was a long time ago and I do not have easy access to the files. Due to the age the files may have been sent to records center. The files should be available (if they exist) but would take some time to retrieve. Let me know if you need anything else.

Thank you,



Dale Ehinger, PE
District Engineer
Water Resources Division/Kalamazoo District Office
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
Ph: 269-716-8305
ehingerd@michigan.gov
Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, August 21, 2020 3:09 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: RE: Discharges to ground/groundwater at a WTP

Dan and Dale – do you know if the constructed sludge lagoons have a clay liner that would impede infiltration to the ground?

From: Mike O'Malley <momalley@bhcity.us>
Sent: Friday, August 21, 2020 9:27 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: emitchell@bhcity.us; Mike O'Malley <momalley@bhcity.us>; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

That is very cool.

I was a water superintendent in those years; full time for St. Joseph and Part Time for Benton Harbor.

St. Joseph had a reclaim basin for filter wastes, including backwash water.
In those days regulations were written to allow Plants to recirculate the backwash water into the treatment scheme of a SWR Plant.

Benton Harbor's water treatment was considerably more interesting and simple.
The new filter plant was built in the late 1940's early 1950's.
At that very same time MDOT built a clover leaf system for US-31 at Klock Road.
In order to do that, the MDOT had to deadhead a loop of the Pawpaw River.
I know this because Counser Towsend documents show that the 20-inch distribution main from the plant were required to follow:

- The North 20-inch was to turn Northeast , follow the ramp, cross the highway; turn southeast to pair up with the South 20-inch.
- The South 20-inch was to turn Southeast, follow the ramp, to a City Interconnect; cross the highway and turn Southeast to pair up and cross the Pawpaw River.
- That created a substantial depression Northeast of the plant, when the river dried out.
- During that time, the City was improving Jean Klock beach and the water plant extended the existing backwash drain to that depression.

Treatment wastes from then on were contained in the depression bounded by Jean Klock Park road to the west; Grand Blvd to the north; Highway -31 ramps to the East; and Klock Road (Upton Dr) to the south.
For decades, this became known as BHWW Pond.

Around the time the water plant got into trouble with the sanitary survey (2004) and began the

process of applying for Revolving Loan money, Greg Dannefel of MDEQ Kalamazoo found an old aerial photograph that showed the bow in the Pawpaw river.
He contacted Greg Alimenti and Pete Mitchell to develop a discharge plant that would right the decades old environmental illicit discharge to the Pawpaw river.
I do not know where that aerial photo is, but I have attached another that indicates the work done and change in the Pawpaw river by the construction of the US31 Cloverleaf.

Attached: *Aerial view US 31 BHWW.pdf*

Mr. Dannefell did not particularly like the pock marked pond discharge scheme that Benton Harbor came up with.
Add to that the Harbor Shores Golf group who wanted that area for it's choice holes of #7; #8; #9, also agreeing to do a great deal of environmental clean up all around the Pawpaw river and North Benton Harbor City.

Now I saw the aerial photograph, and listened sadly to Greg Dannefel's insistance that backwash water can no longer be allowed to be discharged to the Pawpaw river.

Hence the almost too late change order to build the backwash lagoons with additional DWRLF dollars, and of course the debt forgiveness in the Federal Resource and Recovery Act.
And so began the lagoon project right alongside the Harbor Shores hole #9 construction.
It was too late for the City to get additional space for a lagoon that had room to work around, so it was jammed into the obstructions, particularly the high slope of the East end of the Water Plant and the south side of the beach enterence.

When the contractor needed to build the Inlet structure they had to de-water some groundwater in order to pour concrete.
Benton Harbor managed to clean out the sludge solids in 2011; 2012, 2017; & 2018.

In 2017, the groundwater levels around Klock Road and every low lying area were starting to make an impact on homeowners and storm drain infrastructure
After the summer of 2018, it was all but certain that the sludge drying lagoon would seemingly not dry the alum any more.
I watched almost every day after a backwash, that the water would be only 6 inches below the concrete diversion wall but would fall a few inches every time.
Essentially to the accumulating sludge of the smaller 1st lagoon.
Then out of desperation I channeled the water into the 2nd and larger lagoon, to try and dry the primary lagoon enough for cleaning.

We did manage, but a fair portion of the bottom was still mushy.

I would like to put this lagoon back into service before the summer runs out.

My proposal would be to move this mostly dry alum sludge to the space between the water plant's driveway, inside the fence, on Klock road.

1. I had much of that area's brush cleared off.
2. Diked up a rim of topsoil in a curl pattern.
3. And installed a silt fence.

In the hopes that we would be allowed to remove the almost dry sludge 100 yards south west and dump it into the newly designed containment to dry out.
As I said, the sludge will not dry out in the high ground water zone.

I have another plan to begin pumping alum sludge to store in the abandoned clarifiers, but I probably will not have enough time to make that successful, before winter sets in.
Benton Harbor still has to run the plate settlers and filters.
And I would NOT like to fill the larger lagoon with Alum solids and have to figure out how to get rid of them.

And to make sure, Filter Alum will accumulate into a heavy sludge under water and it is nearly impossible to dilute that sludge with water.

As per 3-3 in the MDPH regs, let me know what I'll need to do.

Please help

Mike O'Malley
Benton Harbor Water Superintendent

On Thu, Aug 20, 2020 at 8:46 PM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Hi Mike,
>
> I was curious to try and find the ancient document I could remember seeing that allows a WTP to discharge backwash water to the lagoons without a discharge permit. I did find the attached, and thought it was pertinent to our conversation today.
>
> On page 3, I am seeing number 3 as being somewhat limiting. In essence, the current plan is to use the lagoons as constructed. By moving the location or changing the way the dewatering occurs, I'm not certain there won't be impacts to groundwater.
>
> As a next step to explore that option, I'd be willing to contact the groundwater permit section chief for the Water Resources Division, who actually jumped shop from the Drinking Water program a few years back.
>
> Ernie Sarkipato, P.E.
> Surface Water Treatment Specialist
> Drinking Water and Environmental Health Division
> MI Department of Environment, Great Lakes, and Energy
> 616-307-0261 mobile



www.michigan.gov/drinkingwater

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
D RECTOR

October 8, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: **00600**
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Compliance Communication, Water Treatment Waste Handling Plan

On September 9, 2020, representatives from the Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), met with representatives from the City of Benton Harbor (City) water department to review changes in the handling of sludge waste from the water treatment process (waste). During the on-site meeting, City staff outlined a plan for waste handling that differs from the original construction of onsite lagoons. This letter is intended to address the changes discussed on-site and as outlined in emails from City water department staff in August of 2020.

The existing waste disposal lagoons were designed and constructed during the 2010 Drinking Water Revolving Loan Fund (DWRF) water plant upgrades project. The waste disposal system consists of two cells, A and B, and an overflow discharge to wetlands in Jean Klock Park. The two cells were to function in series: the smaller Cell A would remove solids first, then water would flow over an adjustable weir to Cell B for further settling. The discharge to groundwater from the lagoons has historically been considered exempt from permitting requirements of Part 22, Groundwater Quality (Part 22 Rules), promulgated pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451 by way of the attached document from the Water Resources Commission, approved on April 25, 1991. A discharge to surface water is currently authorized under the National Pollutant Discharge Elimination System (NPDES) General Discharge Permit for Wastewater Discharge from Potable Water Supply, Permit No. MIG640000. It is assumed that when the lagoons become full, sludge waste consisting of aluminum sulfate would be removed and properly disposed of in accordance with the Part 115, Solid Waste Management Rules.

Since construction, there have been only a few attempts to remove solids from the lagoons. City water department staff discussed attempts in 2017 to remove waste solids from the lagoon bottom and spread them along the lagoon banks. This is not an approved practice, as it may reduce the lagoon's ability to dewater by "plugging" the side walls with alum sludge. This practice will also reduce the footprint of the lagoons, further reducing their efficiency.

Recently, City staff contacted representatives from EGLE regarding two new efforts to remove waste from the lagoons. First, City staff intended to remove sludge waste from Cell A to a new location south of the plate settler building and south of the access road (Area A, attached). It was thought this would be a temporary drying area for the waste material, and an inspection

was scheduled to observe this change in the plan. Second, City staff indicated a plan to use the abandoned clarifiers as part of a revised sludge waste handling plan.

During the on-site inspection, these activities were observed to have been either fully or partially completed by City staff. In addition, City staff indicated the intention is to leave the sludge waste in both locations, with no plans to remove from the property. This is not in accordance with the requirements of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (Part 115), as the waste sludge is considered a "solid waste". Sec. 11512 states *(1) A person shall dispose of solid waste at a disposal area licensed under this part unless a person is permitted by state law or rules promulgated by the department to dispose of the solid waste at the site of generation. Waste placement in existing landfill units shall be consistent with past operating practices or modified practices to ensure good management*.

It is the finding of the Department that the changes to the sludge handling practices do not meet requirements of the applicable environmental laws and were not an acceptable change to the sludge waste handling plan. As the City is not following the approved plan, the City would not be covered by the attached exemption. This, in turn, creates a violation of the Part 22 Rules for the discharge to groundwater of the state without an authorization and Part 115 for the handling of Solid Waste. **To return to compliance and continue to be covered under the attached exemption, the City is hereby directed to do the following:**

1. Remove and dispose of the sludge placed on the ground in Area A (attached) and on the berms of the lagoon, in accordance with Part 115.
2. Restore the designed function and capacity of the discharge lagoons.
   a. Remove the road constructed through the lagoon.
   b. Remove the sludge in Cell A and Cell B, if necessary, to restore the function of the lagoon.
3. If the City would prefer an alternative means of sludge disposal in the future, submit a revised sludge handling plan for review and approval.

The proposed disposal of alum sludge waste in the clarifiers is not approved at this time, as the material constitutes solid waste and must meet the requirements of Part 115.

The Department reserves the right to require groundwater monitoring in the future.

You are directed to respond in writing within 15 days of receiving this letter with a proposed resolution, not to exceed 60 days of the receipt of this letter.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding changes to the handling of sludge wastes from the treatment process, please contact Mr. Ernie Sarkipato below. If you have any questions regarding changes to

groundwater discharge permitting requirements, please contact Mr. Dale Ehinger at 269-716-8305 or ehingerd@michigan.gov. If you have any questions regarding compliance with Part 115, please contact Ms. Fangli Xing at 269-615-7779 or xingf@michigan.gov.

Sincerely,

Ernie Sarkipato
Surface Water Treatment Specialist
Community Water Supply Section
Drinking Water and Environmental Health Division
616-307-0261
sarkipatoe@michigan.gov

Dale Ehinger, P.E., District Engineer
Kalamazoo District Office
Water Resources Division
269-716-8305
ehingerd@michigan.gov

Fangli Xing, District Engineer
Kalamazoo District Office
Materials Management Division
269-615-7779
xingf@michigan.gov

cc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Darold Harlan, Fleis & Vandenbrink
Mr. Michael Bolf, EGLE
Ms. Maureen Nelson, EGLE

City of Benton Harbor Water Treatment Plant	Exhibit A	N	10/8/2020	Scale: 50'
	Sludge Waste Handling Plan Diagram			



From: Sarkipato, Ernest (EGLE)
To: Mike O"Malley; emitchell@bhcity.us; Darold Harlan; Darel Rice
Cc: Bolf, Michael (EGLE); Sellers, Fred (EGLE); Xing, Fangli (EGLE); Ehinger, Dale (EGLE)
Subject: RE: Discharges to ground/groundwater at a WTP
Date: Tuesday, October 20, 2020 9:01:00 AM
Attachments: image005.png
2009 plant expansion permit supporting docs.pdf
image002.png

Mike,

So far, the attached is what I could find with respect to the sludge pond design and Gary's review of the permit app.

Looking forward to our discussion Thursday at 3PM.

-Ernie

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, October 14, 2020 5:21 PM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>; Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Xing, Fangli (EGLE) <XingF@michigan.gov>; Sellers, Fred (EGLE) <SELLERSF@michigan.gov>; emitchell@bhcity.us; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Tim Drews [redacted]@icloud.com>; Chris Cook <cjcook@abonmarche.com>; Dan Dombos <ddombos@abonmarche.com>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie and team (City; Abonmarche; and EGLE)

It appears by sending the same items sent before, that you and your team have created a great deal of unknown and very expensive work for the City Water Department without any knowledge or premise of what this Alum Sludge Maintenance project was built for in the 1st place, back in 2011.

I told you this before, the lagoon was NOT lined.

The access road was constructed to facilitate dredging. It was not in the original scope and was added by City Water Funds.
We had it built based upon the advice of 2 contractors that suggested we would have no means to clean it otherwise.
Of particular concern are the AEP High voltage line that runs over the south edge of the lagoon west to east.

And here is something regarding a permit to construct, that took me a long time to find:

Attached email correspondence: *BHWW BW Pond Bulletin 33.pdf*

Sure would have liked to have seen any documentation you have found from Dannefell and an actual Permit to Construct, said Alum Solids Treatment Equipment.
Maybe the contents of the bulletin 33 will provide the link you need.

And, Dale Eheringer,
I apologize that I got you caught up in all this. You have been a godsend for all of the lagoon, sanitary sewer, MS4, the FOIA and MI Waters, I have had to deal with. Both before I was fired and when I returned, Thank you!

Mike O'Malley
Benton Harbor Water Superintendent

On Wed, Oct 14, 2020 at 10:33 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Mr. O'Malley,
>
> I can take the lead on scheduling that conversation with the City Manager, with his approval. We do acknowledge the many issues the city is dealing with on top of, now, construction! As for lagoon VS drying bed, I think the main question is whether they are lined with clay, concrete or some other impermeable material as they sometimes are (true evaporation beds). They appear to be unlined, and therefore designed for both evaporation and/or infiltration.
>
> What I have access to in the EGLE office is a paper copy of the permit drawings and specifications. I had previously sent the attached email with a couple photos of those permit drawings, but it would be ideal to have **PDF copies of as-builts** (*Abonmarche*?).
>
> We also may have some correspondence from the permit review process, which I can dig for. However it does seem unlikely to me that it will exist.
>
> Ernie Sarkipato, P.E.
> Surface Water Treatment Specialist
> Drinking Water and Environmental Health Division
> MI Department of Environment, Great Lakes, and Energy
> 616-307-0261 mobile
>
> 
>
>
> www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Tuesday, October 13, 2020 4:54 PM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>; Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Xing, Fangli (EGLE) <XingF@michigan.gov>; Sellers, Fred (EGLE) <SELLERSF@michigan.gov>
Cc: emitchell@bhcity.us; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>; Tim Drews [redacted]@icloud.com>; Chris Cook <cjcook@abonmarche.com>; Dan Dombos <ddombos@abonmarche.com>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ladies and Gentlemen,
I would propose to City Manager Ellis Mitchell, that the City discuss the management of the sludge lagoon with the appropriate EGLE representatives.
As a few of you know, I have been involved in this process in my on and off again Water Supervisor with Benton Harbor.
I would further like to have Abonmarche Representatives accompany us; as they were the officials in engineering, design, construction, etc.

I am curious, have you the Permit to Construct, or any available correspondence from the former Kalamazoo rep, Mr. Dannafel, or even records from Gary Wozniac
I have not been successful at finding them, maybe Abonmarche can help.

And, sort of an FYI, your description of the lagoons are a bit lacking, particularly absent was the idea that they were to be "Drying Beds"
A point that is essentially mute, during the present day high ground water levels.

We are very busy here at Benton Harbor's Water Department, so please consider patients.

Sincerely,

Mike O'Malley
Benton Harbor Water Operator In Charge

On Fri, Oct 9, 2020 at 7:16 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Benton Harbor water team,

Attached is a multi-division letter that addresses the management of alum sludge on the water plant property. I assume the city will be requesting a meeting to discuss and would be happy to arrange such a meeting.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

EGLE

www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, August 26, 2020 8:31 AM
To: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Klang, Jennifer (EGLE) <KlangJ@michigan.gov>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Mike O'Malley <momalley@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Thank you, I will let you know.

Are you serious!
This Lagoon was **demanded by Greg Dannefell the Kalamazoo Director of MIDNRE** or whatever they called themselves then.
If not for that, the original 1950 solution would have remained the same with the discharge going into the lake on the eastern edge of Harbor Shores Hole(s) #7; #8; #9.
A project that was supported by the state; Whirlpool; Corp and the whole Southwest MI & Berrien County Economic Development groups agreements!

It went (late) into the DWRLF Permitting
Funds were borrowed from the State of MI.
The State approved the permit.
40% of those funds were forgiven with the Federal Act the American Resource and Recovery Act
And the rest, the city is paying back with loan payments.

As I have told you, I have a plan to dewater the sludge lagoons into the abandoned Clarifiers, but it will take some doing and cash.
Which will take longer the permit to put it higher up in the property; or the permit to change the means it is cleaned.
If you want to do something worthwhile; approve the Alum Sludge for Land Application similar to the WWTPs

Mike O'Malley
Benton Harbor Water Operator IN Charge
Mike O'Malley

On Tue, Aug 25, 2020 at 5:04 PM Ehinger, Dale (EGLE) <EHINGERD@michigan.gov> wrote:

> Mike,
>
> At this time, we believe a discharge from the sludge dewatering process to the groundwater, as proposed, would have to be permitted to not be a violation of the Part 22 Groundwater Quality Rules. If you are interested in obtaining a permit an application can be submitted through the Benton Harbor WTP site in MiWaters. Water Resources Division is evaluating the issue but needs some additional time to review before providing additional guidance to move forward.
>
> If you have time to hold off on the discharge or can find an alternative solution (e.g. sludge drying beds at a wastewater treatment plant or utilize your surface water discharge authorization if you believe you can meet permit limits) we recommend delaying a discharge, from the proposed sludge dewatering, to the ground until it is permitted or it is determined to be exempt. We understand that an emergency could arise requiring you to act to protect the integrity of the Water Treatment Plant and Public Health. If you determine that an unpermitted discharge is your only option, please let us know.
>
> Thank you,
>
> 
>
> Dale Ehinger, PE
> District Engineer
> Water Resources Division/Kalamazoo District Office
> Michigan Department of Environment, Great Lakes, and Energy (EGLE)
> Ph: 269-716-8305
> ehingerd@michigan.gov
> Michigan.gov/EGLE
>
> ---
>
> **From:** Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>

Sent: Tuesday, August 25, 2020 4:11 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Mike and all – per Dale's email and to clarify my own below, there may also be implications for groundwater discharge under EGLE's Water Resources Division. Sounds like WRD is currently discussing the plan and any requirements they may have.

Ernie

From: Sarkipato, Ernest (EGLE)
Sent: Monday, August 24, 2020 1:33 PM
To: 'Mike O'Malley' <momalley@bhcity.us>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: RE: Discharges to ground/groundwater at a WTP

Thank you Mike. I know you are in a tough spot, and appreciate your ability to get stuff done in short order and with few resources. From this discussion, I don't believe moving the alum sludge for further dewatering from one unlined lagoon to another 280 ft away is going to appreciably change any current influence on the groundwater in the area.

I guess my only remaining concern is one of liability – without a well built, maintained, and functioning berm, this proposal could result in seepage/runoff/alum sludge leaving the water plant property. I believe we can verbally approve this temporary arrangement as it pertains to EGLE-DWEH's approval of the city's plan for handling alum sludge and the dewatering process. However, please consult with your internal team whether this is a good idea *legally speaking.*

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Monday, August 24, 2020 11:26 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

The drawing you are using does not accurately serve as a site plan.

Attached is an annotated version: : *site grading_sludge loc corrected Mike O.jpeg*

The next drawing is from the Berrien County Beacon System :

I annotated it some : mostly the boundary of Jean Klock Park and Klock Road. All of which are in the City Limits

And a way for you to see the waste flows before and after. *Berrien County Beacon map Jean Klock Park and BHWW annotated.jpeg*

Similar but a **whole lot easier** than the rendering I had to do in the Discharge Permit application in 2011.

Mike O'Malley
Benton Harbor Water Operator IN Charge

On Mon, Aug 24, 2020 at 9:02 AM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> For everyone's benefit, I was able to find the attached permit drawings which seem to indicate the lagoons are indeed unlined and therefore intended for infiltration, and confirm Dale's description.
>
> I'm also looking at the site grading drawing, and wondering where exactly the wtp property line falls in the area you are looking at south of the driveway? I'm not certain that is on the WTP property.
>
> Please confirm the property ownership of the area you are proposing for drying the alum sludge.

Ernie

From: Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Sent: Monday, August 24, 2020 8:15 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>
Subject: RE: Discharges to ground/groundwater at a WTP

Ernie,

My recollection of the WTP Lagoon project is that a two cell lagoon would be constructed with an emergency overflow to a surface water discharge. The first lagoon was to settle out sludge and I believe it was designed to infiltrate. The second lagoon was unlined and intended for infiltration. I believe the overflow was only intended for high use times or emergency operations (i.e. the lagoons would typically infiltrate but occasionally a surface water discharge would occur).

I do not recall any seeing anything on plans or procedures for handling sludge but it was a long time ago and I do not have easy access to the files. Due to the age the files may have been sent to records center. The files should be available (if they exist) but would take some time to retrieve. Let me know if you need anything else.

Thank you,



Dale Ehinger, PE
District Engineer
Water Resources Division/Kalamazoo District Office
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
Ph: 269-716-8305
ehingerd@michigan.gov
Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, August 21, 2020 3:09 PM
To: Mike O'Malley <momalley@bhcity.us>
Cc: emitchell@bhcity.us; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: RE: Discharges to ground/groundwater at a WTP

Dan and Dale – do you know if the constructed sludge lagoons have a clay liner that would impede infiltration to the ground?

From: Mike O'Malley <momalley@bhcity.us>
Sent: Friday, August 21, 2020 9:27 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Cc: emitchell@bhcity.us; Mike O'Malley <momalley@bhcity.us>; Dan Dombos <ddombos@abonmarche.com>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>
Subject: Re: Discharges to ground/groundwater at a WTP

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Ernie,

That is very cool.

I was a water superintendent in those years; full time for St. Joseph and Part Time for Benton Harbor.

St. Joseph had a reclaim basin for filter wastes, including backwash water.
In those days regulations were written to allow Plants to recirculate the backwash water into the treatment scheme of a SWR Plant.

Benton Harbor's water treatment was considerably more interesting and simple.
The new filter plant was built in the late 1940's early 1950's.
At that very same time MDOT built a clover leaf system for US-31 at Klock Road.
In order to do that, the MDOT had to deadhead a loop of the Pawpaw River.
I know this because Counser Towsend documents show that the 20-inch distribution main from the plant were required to follow:

- The North 20-inch was to turn Northeast , follow the ramp, cross the highway; turn southeast to pair up with the South 20-inch.
- The South 20-inch was to turn Southeast, follow the ramp, to a City Interconnect; cross the highway and turn Southeast to pair up and cross the Pawpaw River.
- That created a substantial depression Northeast of the plant, when the river dried out.
- During that time, the City was improving Jean Klock beach and the water plant extended the existing backwash drain to that depression.

Treatment wastes from then on were contained in the depression bounded by Jean Klock Park road to the west; Grand Blvd to the north; Highway -31 ramps to the East; and Klock Road (Upton Dr) to the south.
For decades, this became known as BHWW Pond.

Around the time the water plant got into trouble with the sanitary survey (2004) and began the process of applying for Revolving Loan money, Greg Dannefel of MDEQ Kalamazoo found an old aerial photograph that showed the bow in the Pawpaw river.

He contacted Greg Alimenti and Pete Mitchell to develop a discharge plant that would right the decades old environmental illicit discharge to the Pawpaw river.
I do not know where that aerial photo is, but I have attached another that indicates the work done and change in the Pawpaw river by the construction of the US31 Cloverleaf.

Attached: *Aerial view US 31 BHWW.pdf*

Mr. Dannefell did not particularly like the pock marked pond discharge scheme that Benton Harbor came up with.
Add to that the Harbor Shores Golf group who wanted that area for it's choice holes of #7; #8; #9, also agreeing to do a great deal of environmental clean up all around the Pawpaw river and North Benton Harbor City.

Now I saw the aerial photograph, and listened sadly to Greg Dannefel's insistance that backwash water can no longer be allowed to be discharged to the Pawpaw river.

Hence the almost too late change order to build the backwash lagoons with additional DWRLF dollars, and of course the debt forgiveness in the Federal Resource and Recovery Act.
And so began the lagoon project right alongside the Harbor Shores hole #9 construction.
It was too late for the City to get additional space for a lagoon that had room to work around, so it was jammed into the obstructions, particularly the high slope of the East end of the Water Plant and the south side of the beach enterence.

When the contractor needed to build the Inlet structure they had to de-water some groundwater in order to pour concrete.
Benton Harbor managed to clean out the sludge solids in 2011; 2012, 2017; & 2018.

In 2017, the groundwater levels around Klock Road and every low lying area were starting to make an impact on homeowners and storm drain infrastructure
After the summer of 2018, it was all but certain that the sludge drying lagoon would seemingly not dry the alum any more.
I watched almost every day after a backwash, that the water would be only 6 inches below the concrete diversion wall but would fall a few inches every time.
Essentially to the accumulating sludge of the smaller 1st lagoon.
Then out of desperation I channeled the water into the 2nd and larger lagoon, to try and dry the primary lagoon enough for cleaning.

We did manage, but a fair portion of the bottom was still mushy.

I would like to put this lagoon back into service before the summer runs out.

My proposal would be to move this mostly dry alum sludge to the space between the water plant's driveway, inside the fence, on Klock road.

1. I had much of that area's brush cleared off.
2. Diked up a rim of topsoil in a curl pattern.
3. And installed a silt fence.

In the hopes that we would be allowed to remove the almost dry sludge 100 yards south west and dump it into the newly designed containment to dry out.
As I said, the sludge will not dry out in the high ground water zone.

I have another plan to begin pumping alum sludge to store in the abandoned clarifiers, but I probably will not have enough time to make that successful, before winter sets in.
Benton Harbor still has to run the plate settlers and filters.
And I would NOT like to fill the larger lagoon with Alum solids and have to figure out how to get rid of them.

And to make sure, Filter Alum will accumulate into a heavy sludge under water and it is nearly impossible to dilute that sludge with water.

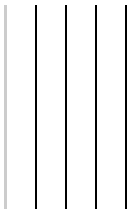
As per 3-3 in the MDPH regs, let me know what I'll need to do.

Please help

Mike O'Malley
Benton Harbor Water Superintendent

On Thu, Aug 20, 2020 at 8:46 PM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Hi Mike,
>
> I was curious to try and find the ancient document I could remember seeing that allows a WTP to discharge backwash water to the lagoons without a discharge permit. I did find the attached, and thought it was pertinent to our conversation today.
>
> On page 3, I am seeing number 3 as being somewhat limiting. In essence, the current plan is to use the lagoons as constructed. By moving the location or changing the way the dewatering occurs, I'm not certain there won't be impacts to groundwater.
>
> As a next step to explore that option, I'd be willing to contact the groundwater permit section chief for the Water Resources Division, who actually jumped shop from the Drinking Water program a few years back.
>
> Ernie Sarkipato, P.E.
> Surface Water Treatment Specialist
> Drinking Water and Environmental Health Division
> MI Department of Environment, Great Lakes, and Energy
> 616-307-0261 mobile



www.michigan.gov/drinkingwater

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Benton Harbor, MI 49023
T 269.927.2295
F 269.927.1017
www.abonmarche.com

LETTER OF TRANSMITTAL

TO: MDEQ
7953 Adobe Road
Kalamazoo, MI 49001

DATE: September 10, 2009 JOB NO.: M8-0668

RE: City of Benton Harbor
Water Treatment Plant Renovations

ATTN: Gary Wozniak

WE ARE SENDING YOU: ☒ Attached ☐ Prints / Plans ☐ Shop Drawings
☐ Change Order ☐ Specifications ☐ _____

COPIES	DATE	DESCRIPTION
1		Permit Application for Water Supply Systems

THESE ARE TRANSMITTED as checked below:

☐ For Review & Comment ☒ For Your Approval ☐ As Requested
☐ Approved as Submitted ☐ Approved as Noted ☐ Returned for Corrections
☐ For Bids Due:

REMARKS: Please find the enclosed items transmitted for your approval. Should you have any questions or comments, please feel free to contact me at our office.

COPY TO: Clarence Jones, MDEQ (w/attachments)
Wendy Jaansma, MDEQ (w/attachments)

SIGNED: Kenton C. McAndrew, P.E.
Group Director, Construction Services

P:_Projects\2008 PROJECTS\M8-0668 Benton Harbor Water Plant\Correspond, LOI, Fax\09-10-09 MDEQ Gary Wozniak LOI.doc
rg

If enclosures are not as noted, kindly notify us at once.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMIT NO. W095080 OCT 26 '09
EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976

RECEIVED
MICH. DEPT. OF ENVIRONMENTAL QUALITY
SEP 14 2009
WATER BUREAU
Kalamazoo District Office

CHEMICAL FEED CALCULATIONS FOR WATER FILTRATION PLANT CITY OF BENTON HARBOR

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMIT NO. W0 9 5 0 8 0 OCT 2 6 '09
EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976

Updated – August 18, 2009
Prepared By – Rick Smigielski, Abonmarche Consultants, Inc

I. Givens

Minimum Daily Flow – 400,000 gpd (2,778 gpm)
Average Design Flow – 12,000,000 gpd (8,333 gpm)
Maximum (Peak) Design Flow – 14,000,000 gpd (9,722 gpm)

II Low Service Pump Capacities

Number 1 – 1388 gpm
Number 2 – 2083 gpm
Number 3 – 3472 gpm
Number 4 – 2777 gpm
Number 5 - 4167 gpm

III. Chlorine Gas

A. Usage
Based on an average of 2.7 mg/l pre-treatment and 0.2 mg/l post-treatment = total say 3.0 mg/l
@ Minimum Daily flow – 10 pounds per day
@ Average Design flow - 300 pounds per day
@ Maximum Design flow - 350 pounds per day

B. Monthly usage
Average is about 400 pounds
One 2000-pound container in operation and one for standby

C. Feed Points
At the Lake Michigan intake
Low Service Pump Discharge pipe
Post Rapid Mix
Pre Filtration
Post Filtration
Plant Clear Well

D. Proposed Equipment
Scales – 2000 pound container with auto switchover
Chlorinators – one for each feed point

Chlorinators –
feed point chlorinators

- Lake Michigan Intake – 0 to 500 ppd
- Lowe service pump discharge pipe – 0 to 250 ppd
- Post rapid mix – 0 to 250 ppd
- Pre-filtration – 0 to 500 ppd
- Post filtration – 0 to 250 ppd
- Pre HSP suction well – 0 to 250 ppd

Ejector – One for each feed point, rated the same in ppd @ 70 psi backpressure
Diffuser / Check valve -

IV. Fluoride

A. Storage:
5,700 gallon bulk storage tank
Transfer pump – one at 56 gpm @ 56 TDH

B. Usage:
Liquid fluorosilicic acid at 23% solution.
Injection varies – 0.6 to 1.3 mg/l
@ Minimum daily flow – 20.0 pounds per day at 0.6 mg/l as F
43.4 pounds per day at 1.3 mg/l as F
@ Average design flow - 90.0 pounds per day at 0.9 mg/l as F
@ Maximum design flow - 105 pounds per day at 0.9 mg/l as F

B. Solution Feed
@ Minimum daily flow – 10.4 gallons solution per day at 0.6 mg/l
22.4 gallons solution per day at 1.3 mg/l
@ Average design flow - 47 gallons solution per day at 0.9 mg/l
@ Maximum design flow – 55 gallons solution per day at 0.9 mg/l

C. Monthly usage
Current average is about 704 gallons of solution per month (6 MGD @ 0.9 mg/l)

Proposed Equipment:
Delivered to site – bulk by tanker truck
Day tank – one at 100 gallons
Scale – one for day tank
Capacity – 2,000 pounds
Readout – digital
Accuracy – must be able to read to 0.1 pound

Fluoride Feed Pumps – Three Peristaltic positive displacement pumps
Control of the feed pump – interlock with the influent raw water flow meters 4-20 mA for a flow proportional feed rate control.

Dosage rates and feed pump sizing:

Fluoride solution feed requirement @ 4 MGD = 0.02 gpm
Fluoride solution feed requirement @ 6 MGD = 0.03 gpm
Fluoride solution feed requirement @ 12 MGD = 0.06 gpm
Fluoride solution feed requirement @ 14 MGD = 0.07 gpm

Recommended metering pump = 0 to 2.3 gph

V. Alum

A. Storage
Liquid aluminum sulfate (alum)
Two existing bulk storage tanks each at 3,800 gallons
One new bulk storage tank at 1,000 gallons
Total Proposed storage – 8,600 gallons
Transfer feed pumps – Two Thompson Mag pumps – 25 gpm @ 20' TDH (3/4 Hp)

B. Feed Rates
Injection varies – 1.7 to 3.0 mg/l solution (average is 2.4 mg/l)

Solution Feed
@ Minimum daily flow – 57 gallons per day at 1.7 mg/l
100 gallons per day at 3.0 mg/l
@ Average design flow – 240 gallons per day at 2.4 mg/l
@ Maximum design flow – 280 gallons per day at 2.4 mg/l

C. Monthly usage
Current average is about 3,600 gallons of solution per month (6 MGD @ 2.4 mg/l)

Proposed Equipment:
Aluminum Sulfate $Al_2(SO_4)_3$ solution delivered to site in 4,000 – 5,000 gallon tanker trucks
Day tank – one at 300 gallons
Scale – one for day tank
Capacity – 3,000 pounds
Readout – digital
Accuracy – must be able to read to 0.1 pound

Alum Feed Pumps – Peristaltic positive displacement metering pumps
Control of the feed pumps –Flow proportional interlock with the influent flow meter 4-20 summarized mA control signal.

Dosage rates and pump sizing:

2.4 mg/l Alum solution feed requirement @ 4 MGD = 3.3 gph
2.4 mg/l Alum solution feed requirement @ 6 MGD = 5.0 gph
2.4 mg/l Alum solution feed requirement @ 12 MGD = 10.0 gph
2.4 mg/l Alum solution feed requirement @ 14 MGD = 11.7 gph

Size pump to go from 0.0 gph to 10.0 gph

END

BENTON HARBOR WATER FILTRATION PLANT
PLANT DRAIN ANALYSIS

Updated – April 3, 2009
Prepared By – Rick Smigielski, Abonmarche Consultants, Inc

I. ***Process Description***

The existing water plant backwash and clarifier waste lines currently discharge to a nearby wet land which feeds into the Paw Paw River. This project considers rerouting the discharges to a percolation pond for subsurface discharge. startup will include accelator discharge waste stream which is greater than plate settlers.

II. ***Givens***

A. Waste Streams

1. Accelators
   Blow offs from both accelators is 90,000 gallons per day
   Chemicals = Aluminum Sulfate at 2.4 mg/l
   Chlorine at 1.2 mg/l
   Blow offs = Once every 4 hours = 12 blow offs per day
   Volume / blow off = 5,000 to 10,000 gallons
   Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 178 mg/l TSS at 90,000 gpd = 134 ppd

2. Filter Backwash Waste
   Chemicals = Chlorine at 1.2 mg/l
   Backwash Volume = 45,000 gallons / backwash
   Backwash Cycles = 70 hours
   Backwash Rates = 5,200 to 5,500 gpm
   Backwash Volume Per Day = 124,000 gallons per day
   Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 124,000 gpd = 186 ppd

3. Filter Surface Wash
   Chemicals = Chlorinated at 1.2 mg/l
   Wash Rate = 2,000 gpm for 2 minutes
   Wash Discharge Volume = 4,000 gallons
   Frequency = 70 hours
   Filter Surface Wash Volume Per Day = 11,000 gallons
   Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 11,000 gpd = 17 ppd

4. Filter to Waste
   Chemicals = Chlorinated at 1.2 mg/l
   Waste Rate = 700 gpm
   Waste Discharge Volume = 700 gpm @ 5 minutes = 3,500 gal/cycle
   Frequency = 70 hours
   Filter to Waste Volume Per Day = 10,000 gallons
   Projected Solids Loadings / Discharges – 0.5 mg/l TSS at 10,000 gpd = 0.04 ppd (Insignificant)

5. Total Waste Flow Discharged Per Day

Blow Offs	90,000 gallons
Backwash	124,000 gallons
Surface Wash	11,000 gallons
Filter to Waste	10,000 gallons
TOTAL	**235,000 gallons = 31,500 CF**

6. Alum Waste Loadings
   Solution – Aluminum Sulfate $Al_2(SO_4)_3$
   Dosage rate for pure aluminum 2.42 mg/l
   Average daily usage in aluminum = 2.42 mg/l x 8.34 x 6 mgd = 52 ppd applied.
   Discharge is 44% of applied = 52 ppd x 44% = 23 ppd discharged

7. Total Waste Solids Discharged Per Day

Blow Offs	134 ppd
Backwash	136 ppd
Surface Wash	17 ppd
Filter to Waste	insignificant
Alum	23 ppd
Total Suspended Solids	**310 ppd**

B. Original Design / Lagoon
   1. Location between the finished water storage tanks and Jean Klock Park Drive

   2. Layout of 1950 Site Plan
      Radius of 100'
      ½ Circle
      Natural sand bottom and sides
      Top of dike 585.00
      Invert elevation of 30" inlet pipe 583.64
      18" CIP overflow pipe out to current discharge location – See #4 below

Bottom of basin at inlet was ±580.00 falling off towards Jean Klock Park Drive to 575.00

3. Surface Area of Original Basin
   Basin bottom + sides = $115^2 \Gamma$ x .5 = 20,774 SF

4. Overflow Structure
   Inlet = 4' square manhole – top of casting 586.00
   Side openings = 4" high x 18" wide (bottom elevation @ 582.0 and 583.0)
   Outlet Pipe = 34 LF of 18" CIP 580.00 IE to 579.00 IE
   Note: there is an existing design flaw, the top of lagoon dike wall is lower than the overflow grate.

5. Flood Elevation ± 585.00

C. Soils
Existing soils per USGS are classified as duneland. Duneland soils do not have a permeability factor but the surrounding soils 80, 10D, 28B have a permeability factor of 6-20 inches per hour. The duneland soils should be higher.

III. ***Proposed Lagoon Sizing***

A. Percolation Rates
The current soils permeability is 6-20 inches per hour.
Based on a 2" per hour rate, the area required for 31,500 CF of waste loadings per day is = 2.0 inches per hour = 48 inches per day = 8,000 square feet per lagoon
Proposed lagoon A and B = 37,000 SF
Proposed percolation rate = 37,000 SF / 31,500 CF = 0.85 feet or 10 inches /day

B. Lagoon Water Levels
Normal WL after backwash = 583.00 pond bottom + 0.85 = 583.85
At 100 year flood Elevation 585.00 + 0.85 = 585.85

C. Existing Piping
Total Maximum Flow Influent

Blow offs 2 @ 1,000 gpm each =	2,000 gpm
Filter Backwash 1 @ 5,500 gpm =	5,500 gpm
TOTAL	**7,500 gpm**

Existing Pipe 30" ϕ concrete

#1 Manhole at accelators to downstream corner 585.71–585.54
55' length

#2 Corner manhole @ 585.54 to corner manhole 585.17
92' length

#3 Corner manhole @ 585.17 to downstream manhole 584.88
100' length

#4 Manhole 584.84 to manhole 584.27
205' length

#5 Manhole 584.27 to outfall 583.64
200' length

#1 Manhole = 0.31% slope
#2 Manhole = 0.40% slope
#3 Manhole = 0.29% slope
#4 Manhole = 0.28% slope * = 9,000 gpm
#5 Manhole = 0.31% slope
* Pipe has sufficient capacity

D. Existing Overflow Pipe
Total flow discharge to lagoon per day is 235,000 gallons. Over a 12 hour period (filters washed during the day) flow would be (235,000/1,440) x 2 = 326 gpm

E. Check Hydraulic Grade Line
Bottom of filter wash water through (in building) 587.75
100 flood elevation 585.00
Available hydraulic grade 2.75 feet

IV. ***Proposed Piping***

A. Energy Dispensation Considerations

At 7,500 gpm we need to slow the discharge of water down so it doesn't wash out the pond bottoms or undermine structures or piping. The energy needs to be dispensated. Start with slowing water down in the influent pipe by going to a 48" diameter pipe.

Velocity in 36" pipe flat = 2.3 fps
Velocity in 48" pipe flat = 1.3 fps
Use – 48" RCP

B. Effluent Discharge Control

To spread out the 7,500 gpm flow over a larger area, use an effluent weir for the water to flow over. If we stay with a 48" pipe cut out top and use both edges as a weir (without end contractions).
Try 20 foot long pipe = 40' weir length = 3" or 188 gpm / lf - TOO HIGH
Try 40 foot long pipe = 80' weir length = 2" or 94 gpm / lf – TOO HIGH
Try 60 foot long pipe = 120' weir length = 1.5" or 63 gpm / lf - OK
Try 80 foot long pipe = 160' weir length = 1.2" or 47 gpm / lf – NOT MUCH TO GAIN

USE: 60 feet of double weir pipe 48" diameter

C. Pond Overflow Control

Daily influent volume into ponds per day = 235,000 gallons
235,000 gallons per day / 1440 = 163 gallons per minute
USE: 18" diameter pipe which could handle 1800 gpm @ 2.3 fps

Set Overflow Weir Elevation
Pond bottom – 583.00
Rise in WL from one backwash cycle = 0.85
HWL after backwash = 583.85
WL after backwash during 100 year flood conditions = 585.85
Add +/- 0.5 foot freeboard so say 586.25 for weir elevation
Water crest height based on 4 foot diameter manhole = 8.5 weir length.
Crest = 0.03 feet

BENTON HARBOR WATER FILTRATION PLANT
PLATE SETTLER PROCESS
HYDRAULIC ANALYSIS

Updated – August 18, 2009
Prepared By – Rick Smigielski, Abonmarche Consultants, Inc

Givens:
Average Design Flow = 12 MGD
Peak Design Flow = 14 MGD

I. Filter Inlet to Plate Settler Effluent Trough

A. Filters
HWL in filter cells 608.00
Settled Water Inlet Conduit
Floor: 605.25
Size: 4.0' wide x 3.5' deep
Flows: 6 mgd overage; 12 mgd design;
Outlet 16" IE @ 605.25

@ 1.2 mgd peak per filter cell (c of 100)	
Outlet Loss	0.01
7 LF of 16" DIP	0.01
1 GV	0.01
Inlet Loss	0.01
	0.04

@ 1.0 mgd ADF per filter cell (c of 100)	
Outlet Loss	0.01
7 LF of 16" DIP	0.01
1 GV	0.01
Inlet Loss	0.00
	0.03

HWL infilter cells 608.00 + 0.04 = 608.04 HWL in channel
+ 0.03 = 608.03 HWL in channel

Top of channel 605.25 + 3.5 = 608.75

B. Filter Influent Channel to Plate Settlers

Figure top of channel HWL 608.75
All 30" pipe

	12 MGD ADF 8333	14 MGD Peak 9722
1. Piping (c=100) Losses		
1 – Outlet 30" Loss	0.22	0.30
10 LF of 30"	0.02	0.03
1 - 90° El 30"	0.19	0.26
1 – 45° El 30"	0.10	0.13
30 LF of 30"	0.07	0.10
1 - 45° El 30"	0.10	0.13
20 LF of 30"	0.05	0.06
1 - 45° El 30"	0.10	0.13
12 LF of 30"	0.02	0.04
1 - 90° El 30"	0.19	0.26
400 LF of 30"	0.96	1.28
2 - 45° El 30"	0.20	0.26
1 - 90° El 30"	0.19	0.26
100 LF of 30"	0.24	0.32
2 - 90° Side outlet tees	0.77	1.02
2 – GV 30"	0.04	0.10
2 - 90° El 30"	0.38	0.52
1- UV unit	1.50	1.50
	5,34	6.70

VOID – TOO HIGH HEAD LOSS
TRY AGAIN WITH 30" AND 36" PIPE

B. Filter Influent Channel to Plate Settlers

Figure top of channel HWL 608.75
Mix of 30" and 36" piping – with future UV

	12 MGD ADF 8333	14 MGD Peak 9722
1. Piping (c=100) Losses		
1 – Outlet 30" Loss	0.22	0.30
10 LF of 30"	0.02	0.03
1 - 90° El 30"	0.19	0.26
30 LF of 30"	0.10	0.13
1 – 45° El 30"	0.07	0.10
20 LF of 30"	0.10	0.13
1 - 45° El 30"	0.05	0.06
10 LF of 30"	0.10	0.13
1 - 90° El 30"	0.02	0.04
30 LF of 30"	0.19	0.26
1 Red 30" x 36"	0.05	0.06
370 LF of 36"	0.36	0.48
2 - 45° El 36"	0.09	0.12
1 - 90° El 36"	0.10	0.13
1 – Side Outlet Tee 36" x 30"	0.36	0.48
2 - 90° El 30"	0.04	0.08
Subtotal A	**2.06**	**2.79**

	6 MGD ADF 4167	7 MGD PDF 4861
1 – Side Outlet Tee 30" x 24"	0.40	0.52
1 – Butterfly Valve 24"	0.08	0.10
2 - 90° El 24"	0.28	0.36
1 – UV Unit 24"	1.00	1.00
1 – Butterfly Valve 24"	0.08	0.10
1 – Side Outlet Tee	0.40	0.52
50 – LF of 30"	0.12	0.16
1 – Side Outlet Tee 30" x 20"	0.13	0.18
10 – LF of 20"	0.01	0.02
1 – Inlet Loss	0.06	0.10
Subtotal B	**2.56**	**3.98**

2. WL In Plate Settler Outlet Boxes

	608.75	608.75
Subtotal – A	2.06	2.79
Subtotal – B	2.56	3.98
	613.37	615.52

3. Set Plate Settler Effluent Weir Inverts

WL in plate settler outlet boxes	613.37	615.52
Freeboard	0.50	0.50
	613.87	616.02

Use 616.00

C. Plate Settlers

Weir IE	616.00
Trough WL depth per MRI 21"	1.75
Trough Peak WL	617.75
Add for freeboard	0.25
WL in Plate Settler Basin	618.00

D. Flocculation Process

WL in plate settler basin	618.00	618.00
Diffusion Inlets		
2 catch basin		
Size 2.33' x 1.00' = 2.33 SF each		
Velocity @ ADF = 9.19 CFS/4.66 SF = 1.9 fps		
@ Peak = 10.83 CFS/4.66 SF = 2.3 fps		
Friction Losses @ ADF = 0.08 + 618.00	618.08	
@ Peak = 0.12 + 618.00	618.12	
WL in Flocculation Basins	618.08	618.12

E. Flash Mixing Basin

	@ ADF	@ Peak
WL in Flocculation Basin	618.08	618.12
Assumption 4.5" Losses (0.38) In flash mixer	618.46	618.50

F. Floor Elevations		
Provide 2' Freeboard	620.50	620.50

II. Flash Mixer to Low Lift Pumps

A. Flash Mixer	618.46	618.50
Losses	0.25	0.25
WL in Flash Mixer Chamber	618.71	618.75

B. Piping Back to Low Lift Pumps

At split flow	6 MGD ADF	7 MGD – Peak
24" Outlet Loss	0.13	0.14
3' of 24"	0.01	0.01
1 - 90° 24"	0.12	0.15
25' of 24"	0.05	0.06
At total flow	12 MGD (8333 gpm)	14 MGD (9722 gpm)
1 – 24" x 30" Red	0.12	0.14
25' of 30"	0.06	0.07
1 - 90° 30"	0.24	0.32
250 of 30"	0.60	0.80
1 – 30" x 24" reducer	0.12	0.14
10 – LF of 24"	0.07	0.10
1 - 90° 24"	0.46	0.67
10 – LF of 24"	0.07	0.10
1 - 45° 24"	0.46	0.67
10 – LF of 24"	0.07	0.10
1 - 45° of 24"	0.21	0.29
5 LF of 24"	0.04	0.05
3 - 90° of 24"	1.38	2.00
1 GV	0.15	0.20
8 LF of 24"	0.06	0.09
2 - 90° of 24"	0.92	1.34
2 LF of 24"	0.01	0.01
To one low service pump	6 MGD (4167 gpm)	6 MGD (4167 gpm)
1 – 12" CV	0.50	0.50
1 – 12" GV	0.07	0.07
1- LF of 12"	0.06	0.06
Inlet Loss	0.35	0.35
Subtotal	**5.35**	**8.43**

Static Losses	At ADF	At Peak
WL in Flash Mixer	618.71	618.75
WL in Wet Well (LWL)	576.00	576.00
Static	42.71	42.75
Friction	5.35	8.43
TDH	**48.06**	**51.18**

Low Lift Pumps should be designed to meet these TDH conditions

Wozniak, Gary (DEQ)

From: Kenton McAndrew [kmcandrew@abonmarche.com]
Sent: Tuesday, October 20, 2009 1:31 PM
To: Wozniak, Gary (DEQ)
Cc: Rick Smigielski; Jeff Buck
Subject: Benton Harbor Final Plans and Specs
Attachments: M8-0668 PS-3 REV.PDF; M8-0668 PRE-4 REV.PDF; M8-0668 P1B REV.PDF; M8-0668 PSP-1 REV.PDF; 3098_001.pdf

Responses below in RED and attached revised drawings and specification.

From: Wozniak, Gary (DEQ) [mailto:WOZNIAKG@michigan.gov]
Sent: Monday, October 19, 2009 3:24 PM
To: Kenton McAndrew; Rick Smigielski
Subject: Benton Harbor Final Plans and Specs

Kenton;

I reviewed the plans and specs received today and compared them to the redlined plans we received on 8/25/09 and noted the following;

Sheets PR-4 and PR-5 were omitted or relocated from the new set. These sheets were deleted from the plan set as they were redundant. The previous comment on page PR-4 was that the lab door should open outward. We have confirmed that the design has the lab door opening outward and the door is equipped with panic hardware.

Sheet PRE-1 – Is a backflow preventer specified for the washwater hose? Even though the water service has an RPZ, all internal hose bibs must have a vacuum breaker. See sheet PR-1L for the vacuum breaker detail.

Sheet PRE-4 – spool pieces are still omitted from the new plans, and are shown as blank spaces. The detail in the lower left hand corner notes the new spool pieces. We have revised the drawing to show the spools in the plan vierw. Attached is the revised drawing. We will deliver the drawing to your office.

Sheet PD-1 – This sheet was omitted from new set, or is in a different order. The sheet included the air/vac relief and chemical tank vent details with 24-mesh screen shown, and the chemical injection pipe detail. It is in a different location but has the same page number. It was moved to the general piping details section. The screens are noted on the drawing.

Sheet PSD-1 – Is the 1" RWI-AS hose NSF Std 61 approved? All hoses used in the treatment process must be NSF approved. We have revised this page and will deliver a copy to your office. It is also attached for your review

Sheet PS-3H – "???????" is still shown on the new plans. PS-3H We have revised this sheet and will forward to your office. It is attached for your review.

Sheet P-1B – We strongly recommend that the wording "Danger – do not drink this water" be changed from the non-potable washwater hose bibs. Keep in mind the press and tour groups will be looking at this plant. Perhaps wording should just say "non-potable washwater only – do not drink". We have revised this plan sheet and the spec page 40 5001-2 has been revised as well and is attached.

Sheet SC-1 – This sheet was omitted or relocated from the new set. The sheet was deleted and replaced with sheets CN-CL and CN-1 through CN-22

Also, several blank pages were attached to the revised design basis. There should only be 5 pages in the design basis. Page 5 of 5 is the last page. The blank pages can be discarded.

We are withholding permit issuance until the above concerns are resolved. **Please call me** prior to resolution,

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MANISTEE, MI
SOUTH HAVEN, MI
SOUTH BEND, IN
FORT WAYNE, IN

July 15, 2009

Mr. Clarence Jones
MDEQ
P.O. Box 30457
Lansing, MI 48909

Re: Drinking Water Revolving Fund
Response to July 1, 2009 letter
DWRF Project No.: 7273-01

Dear Mr. Jones:

We offer the following in response to the above mentioned letter.

Volume 1

1. The DWRF Project Number will be revised on the final documents.
2, 3, 4, 5. The bid and construction dates will be revised upon final completion of the bidding documents.
6. We have completed the asbestos and lead inspections and will add the proper specifications to the contract documents.
7. The geotechnical data will be included.
8. Project start and completion dates will be added as stated above.
9. The successful contractor will submit completed unit prices.
10. We will list the alternates on Page 004323-1.
11. We will complete 4327-1 in our final submittal.
12. Performance and Payment Bonds and Insurance will be added. Please provide any specific performance payment and insurance forms that the MDEQ would like to see us use.
13. We will add a Certificate of Debarment.
14. There will not be any alternates for this project.
15. There will not be any allowances for this project.
16. There will be some Lump Sum bidding.
17. The contract will be performed through a competitive bidding process as stated in the DWRF Guidelines.

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JUL 16 2009
WATER BUREAU
Kalamazoo District Office

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

July 1, 2009

Mr. Richard Marsh, City Manager
City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Dear Mr. Marsh:

SUBJECT: Drinking Water Revolving Fund (DWRF)
City of Benton Harbor
DWRF Project No. 7273-01

Our office has completed a review of the draft plans and specifications. Please review the comments and submit a response by July 12, 2009.

VOLUME I:

1. Please add the correct DWRF project number on the covers of the contract documents, specification books, and plan sheets. Please use the correct DWRF number when needed in the bidding documents and plans.

2. Please add the correct bidding dates, construction dates, completion dates, contract award dates, and final completion dates described on page 100 0120.

3. Please add the correct bid due dates described on page 100 01113-1.

4. Please add the correct pre-bid conference dates described on page 100 02113-2.

5. Please revise the late bid date on page 002113-3

6. Please add existing hazardous waste materials (i.e., asbestos and lead information), including, the proper handling and disposal language (if applicable).

7. Please complete the geotechnical data section on page 003132-1.

8. Please add project start and completion dates (page 004100-2).

9. Please complete the unit prices form on page 004322-1.

10. Please list the alternates on page 004323-1 (if applicable).

11. Please complete section 004327-1.

12. Please add forms for Performance Bond, Payment Bond, and Insurance for each bidder.

13. Please add a Certificate of Debarment form for each bidder (city of Benton Harbor also needs to complete this form).

14. Will there be any alternates for this project (page 01200-1)? If so, please list them.

15. Will there be any "allowances" with this project?

16. Will there be any "lump sum" bidding for this project.

17. Please be sure that all bid contract awards will be done through a "competitive bidding process" with bid award going to the lowest bidder that meets all qualifications for perform the work.

18. In order for the city of Benton Harbor to be considered for stimulus funding for this project, please be sure that all American Recovery and Reinvestment Act (ARRA) stimulus, Davis-Bacon Wage, and Buy American boilerplate language is incorporated into all contract bidding. This information may be found on our website at: http://www.michigan.gov/deq/0,1607,7-135-3307_3515_3517-207202--,00.html

19. Please be sure to insert the correct Davis-Bacon wage rate that is in effect at the time the contract is bid.

VOLUME II

1. There are a large number of manufacturers listed throughout Volume II. Please explain if the manufacturers are "Sole Source" providers for construction items or not. If they are, please explain why these manufacturers must be used as sole source resources. If they are not, please add "or equal" language to describe the items to the bidders. Please be advised that open competitive bidding is to be used in determining project cost.

2. Please provide a bid item list estimated cost.

3. Will there be a new security system installed (page 283000-1)?

4. Will there be removal of dead trees (page 311000-2)?

Please contact me if you have questions.

Sincerely,

Clarence T. Jones, Project Manager
Revolving Loan and Operator Certification Section
Water Bureau
517-335-6043

cc: Mr. Kenton McAndrew, Abonmarche Group-Benton Harbor
Matt Johnson, Abonmarche Group-Benton Harbor
Mr. Gary Wozniak, DEQ-Water Bureau, Kalamazoo District Office

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GA-J 0600
W0095080

LETTER OF TRANSMITTAL

TO: MDEQ
Revolving Loan and Operator
Certification Section
525 W. Allegan Street
Lansing, MI 48909

ATTN: Clarence Jones

DATE: November 11, 2009 JOB NO.: M8-0668

RE: City of Benton Harbor
Water Filtration Plant

WE ARE SENDING YOU: ☒ Attached ☐ Prints / Plans ☐ Shop Drawings
☐ Change Order ☐ Specifications ☐ _____

COPIES	DATE	DESCRIPTION
1		Addendum #2

THESE ARE TRANSMITTED as checked below:

☐ For Review & Comment ☒ For Review & Approval ☐ As Requested
☐ Approved as Submitted ☐ Approved as Noted ☐ Returned for Corrections
☐ For Bids Due:

REMARKS: Please find the enclosed Addendum #2. Please review and approve at your earliest convenience. Should you have any questions or comments, please feel free to contact me at our office.

COPY TO: Gary Wozniak, MDEQ (w/attachments)
Darwin Watson, City of Benton Harbor (w/attachments)
Mike O'Malley, City of Benton Harbor (w/attachments)

SIGNED: Kenton C. McAndrew
Kenton C. McAndrew, P.E.

P:_Projects\2008 PROJECTS\M8-0668 Benton Harbor Water Plant\Correspond. LOT, Fax\11-11-09 MDEQ Clarence Jones LOT.doc
tg

If enclosures are not as noted, kindly notify us at once.

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ADDENDUM NO. 2

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MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

DATE: November 10, 2009

TO: All Planholders

FROM: Kenton C. McAndrew, P.E.
Project Manager

RE: City of Benton Harbor
Water Filtration Plant
Project No.: M8-0668

OWNER: City of Benton Harbor
200 E. Wall Street
Benton Harbor, MI 49022

This Addendum is intended to clarify/revise the following items:

Electrical Drawings:

1. Refer to Sheet E1L-E, Main Building Existing One Line Diagram, Reissue Entire Sheet: Change panels, DPD and LPE panels.
2. Refer to Sheet E1L-N, New One-Line Diagram, Reissue Entire Sheet: Change panels, Main 4160V, New Main 480V, Panels A, B,C, and Panels DPD, LPE, Maintenance LP.
3. Refer to Sheet EP-1, Electrical Light and Equipment Schedules, Reissue Entire Sheet: Changes to Luminaire Schedule, Switch Schedule, Receptacle Schedule, Telephone and Data Schedule.
4. Refer to Sheet EP-2, Electrical Panel Schedules 1, Reissue Entire Sheet: Changes to Distr 5kvMCC panel and Main 480 panel.
5. Refer to Sheet EP-3, Electrical Panel Schedules 2, Reissue Entire Sheet: Changes to LPG panel, RQ1 panel and RR1 panel.
6. Refer to Sheet ED-1, 4160V & 480V Typical Motor Diagrams, Reissue Entire Sheet: Numerous label changes, notes, and added detail titles.
7. Add Sheet E-0A, Existing Lighting Plans: Drawings show existing lighting conditions for the Existing Water Plant Building, all floor levels.
9. Refer to Sheet E-1A, Main Building Subbasement Lighting Plan, Reissue Entire Sheet: Exist Lighting to Stairwell, egress lighting, sheet title.

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10. Refer to Sheet E-2A, Main Building Subbasement Power, Reissue Entire Sheet: Changed loads to unit heaters, add sheet title, and showed location of turbidity meter area fed from panel RP-1.
11. Refer to Sheet E-3A, Main Building Basement Lighting Plan, Reissue Entire Sheet: Changed lighting, added egress lighting, stairwell light changes, added exterior lighting, em lights in pipe tunnels, note changes, and added sheet titles.
12. Refer to Sheet E-4A, Main Building Basement Power Plan, Reissue Entire Sheet: Added unit heaters to Filter Bays, power to flow meters, sheet title, clarification on labeling of new and existing equipment.
13. Refer to Sheet E-5A, Main Building 1st Floor Lighting Plan, Reissue Entire Sheet: Added ceiling grid, showed correct new lighting layout, corrected light circuiting, added spot lights at filter bays, showed perimeter circuiting to perimeter filter bay lighting, room names, added operating gallery lights and exterior lights, sheet title.
14. Refer to Sheet E-6A, Main Building 1st Floor Power Plan, Reissue Entire Sheet: Added GFCI to Unisex Toilet, room names, sheet titles, added footprint of mechanical equipment.
15. Refer to Sheet E-7A, Main Building 2nd Floor Lighting Plan, Reissue Entire Sheet: Added lighting to stairwell, em lighting, room names and sheet title, modified notes.
16. Refer to Sheet E-8A, Main Building, 2nd Floor Power Plan, Reissue Entire Sheet: Added fancoil to stair well, removed power to existing heating equipment, added GFCI and counter in Storage Room, room names, and sheet title.
17. Refer to Sheet E-9A, Main Building, Roof Power Plan, Reissue Entire Sheet: Show outline of mechanical equipment, add lights and em lighting to stairwell, add exterior light fixtures, add switch and light to Elevator Equipment Room, modified notes, add sheet title.
18. Delete Sheet MCC1-A, MCC Details.
19. Refer to Sheet MCC2A, Rename Sheet to MCC-A, Main Building 480V MCC Oneline, Reissue Entire Sheet: Numerous labeling changes throughout drawing.
20. Refer to Sheet E-1B, Plate Settler Building, 1st Floor Lighting Plan, Changed wall switching in Unloading and Pipe Tunnels, modifications to notes, add sheet title.
21. Refer to Sheet E-2B, Plate Settler Building, Lower Level Power Plan, Reissue Entire Sheet: Add fancoil to Unloading, clarification to equipment power circuits, modifications to notes, change title block, add sheet title.
22. Refer to Sheet E-3B, Plate Settler Building, 2nd Floor Lighting Plan, Reissue Entire Sheet: Change switches in Electrical Room, add lights to Unloading, add exterior lighting, sheet title.
23. Refer to Sheet E-4B, Plate Settler Building, 2nd Floor Power Plan, Reissue Entire Sheet: Add water heater circuit to Janitor, clarifications to mechanical equipment circuits, modifications to notes, sheet title.
24. Delete Sheet MCC-1B, MCC Details.

A-2

ELECTRICAL DRAWINGS

E1L-E EXISTING ONE-LINE DIAGRAM
E1L-N NEW ONE-LINE DIAGRAM

EP-1 LIGHTING AND EQIPMENT SCHEDULES
EP-2 ELECTRICAL PANEL SCHEDULES
EP-3 ELECTRICAL PANEL SCHEDULES

ED-1 4160 - 480 MOTOR DIAGRAMS

EXISTING WATER PLANT BUILDING
ELECTRICAL DRAWINGS

E-0A EXISTING LIGHTING FOR ALL LEVELS **(NEW SHEET ISSUED)**
E-1A SUB-BASEMENT LIGHTING ELEV. 579.36 (580.00 -1955)
E-2A SUB-BASEMENT POWER ELEV. 579.36 (580.00 -1955)
E-3A BASEMENT LIGHTING ELEV. 593.36 (594.00 -1955)
E-4A BASEMENT POWER PLAN ELEV. 593.36 (594.00 -1955)
E-5A 1ST FLOOR LIGHTING ELEV. 609.36 (610.00 -1955)
E-6A 1ST FLOOR POWER ELEV. 609.36 (610.00 -1955)
E-7A 2ND FLOOR LIGHTING ELEV. 621.36 (622.00 -1955)
E-8A 2ND FLOOR POWER ELEV. 621.36 (622.00 -1955)
E-9A ROOF PLAN POWER ELEV. 633.36 (634.00 -1955)

MCC1A MCC DETAILS **(DELETED SHEET)**
MCC-A MCC ONE-LINE DIAGRAM **(SHEET MCC-2A RENAMED TO MCC-A)**

NEW PLATE SETTLER BUILDING
ELECTRICAL DRAWINGS

E-1B LOWER LEVEL LIGHTING PLAN
E-2B LOWER LEVEL POWER PLAN
E-3B UPPER LEVEL LIGHTING PLAN
E-4B UPPER LEVEL POWER PLAN

MCC-1B MCC DETAILS **(DELETED SHEET)**
MCC-B MCC ONE-LINE DIAGRAM **(SHEET MCC-1B RENAMED TO MCC-B)**

EXISTING CHEMICAL STORAGE BUILDING
ELECTRICAL DRAWINGS

E-1C ELECTRICAL POWER & LIGHTING PLAN



LET'S STAY SAFE TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	momalley@bhcity.us; Ian Septoski
Cc:	kthompson@bhcity.us; emitchell@bhcity.us; Thurston, Brian (EGLE); Bolf, Michael (EGLE); Carpenter, Koren (EGLE); Schmidt, Scott (EGLE); Oswald, Eric (EGLE); Wener, Gillian (AG); Ruch, Suzann (EGLE)
Subject:	RE: Drinking Water Certification - Michael O"Malley - OID #2634 -- Amendment to Fact and Conduct Briefing Memorandum (FCBM)
Date:	Tuesday, November 24, 2020 11:31:00 AM
Attachments:	image001.png 2020-11-19 OMalley FCBM amendment - FINAL.pdf 2020-11-23 OMalley FCBM amendment ltr FINAL.pdf

Mr. Septoski, we acknowledge that Mr. O'Malley likely does not have access to his city email address at this time. Can you please acknowledge receipt of this correspondence from yesterday, and ensure Mr. O'Malley has the attached documents?

Alternatively, if you have a different email address for Mr. O'Malley, we will use for communications moving forward.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
616-307-0261

From: Ruch, Suzann (EGLE) <RuchS@michigan.gov>
Sent: Monday, November 23, 2020 11:11 AM
To: momalley@bhcity.us
Cc: kthompson@bhcity.us; emitchell@bhcity.us; Thurston, Brian (EGLE) <THURSTONB@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Carpenter, Koren (EGLE) <CarpenterK5@michigan.gov>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Schmidt, Scott (EGLE) <SchmidtS@michigan.gov>; Oswald, Eric (EGLE) <OswaldE1@michigan.gov>; Wener, Gillian (AG) <WenerG@michigan.gov>; Ian Septoski <ISeptoski@krisorlaw.com>
Subject: Drinking Water Certification - Michael O'Malley - OID #2634 -- Amendment to Fact and Conduct Briefing Memorandum (FCBM)

Good Morning:

Attached is correspondence from Mr. Eric J. Oswald, Director, Drinking Water and Environmental Health Division, Michigan Department of Environment, Great Lakes, and Energy, and the noted attachment (FCBM), regarding the Drinking Water Operator Certification for Mr. Michael O'Malley, Operator ID # 2634.

For your reference, the email sent November 5, 2020, which includes the letter and FCBM, is also attached to this email.

This is being send via email; if a copy is required via United State Postal Service, please advise.

Thank you.

Suzann J. Ruch
Senior Executive Management Assistant to Eric J. Oswald
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
P.O. Box 30817
Lansing, Michigan 48909-8311
517-284-6544 | RuchS@Michigan.gov
Follow Us | **Michigan.gov/EGLE**





LET'S STAY SAFE TOGETHER

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)

TO: Eric J. Oswald, Director
Drinking Water and Environmental Health Division

FROM: Ernie Sarkipato, Surface Water Treatment Specialist

DATE: November 19, 2020

SUBJECT: **AMENDMENT TO** Operator Certification Fact and Conduct Briefing Memorandum (FCBM)
Michael O'Malley, Operator Identification # 2634
F-1 Certification for Period of:
January 16, 2018, through January 15, 2021

BACKGROUND

An amendment to the FCBM is necessary to document events and communications with the subject operator, Mr. Michael O'Malley, between the dates of November 4 and November 5, 2020. These events occurred after the Department of Environment, Great Lakes, and Energy (EGLE) issued the first FCBM dated November 4, 2020. This amendment will document facts and conduct pertaining to these events. The basis for this amendment is the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), and the administrative rules promulgated thereunder.

This incident pertains to the addition of a necessary coagulant chemical called aluminum sulfate. The role in treatment of a coagulant is to create settleable or filterable floc, which aids in the reduction of turbidity. Turbidity, in turn, is used as a surrogate measurement of the possible presence of disease-causing pathogens in the drinking water. R 325.11008(2) of the administrative rules states *"A sufficient primary coagulant dose shall be added to create a settleable or filterable floc at all times that a conventional filtration or direct filtration plant is in operation."* The below investigation results indicate this was not the case for a period, and contamination of the water supply could not be ruled out.

In addition, R 325.12304(1) of the administrative rules states *"When an emergency affecting a public water supply is discovered, the public water supply shall immediately notify the department by telephone of that emergency. The public water supply shall indicate in that notification the type of emergency, its discovery, the cause, the corrective actions planned to meet the emergency, and plans for notification to customers or users of the public water supply affected."*

From R 325.10104(m) under the administrative rules, "Emergency" means a situation in a public water supply that results in contamination, loss of pressure, lack of adequate supply of water, or other condition that poses an imminent hazard or danger to the public health.

The below investigation results indicate Mr. O'Malley did not take immediate action during an emergency as required by the administrative rules promulgated under Act 399 and, in fact, approximately 30 hours passed after the incident before a report was made to EGLE.

INVESTIGATION

The investigation consisted of an EGLE staff phone conversation with Mr. O'Malley on November 5, 2020; an emergency report submitted by Mr. O'Malley via email at 3:45 p.m. on November 5, 2020; and turbidimeter data requested by EGLE and provided by city of Benton Harbor officials on November 14, 2020.

INVESTIGATION RESULTS

The investigation revealed the following facts:

1. On November 4, 2020, around 7:00 a.m., upon startup of the water plant by the operators, water was pumped and treated for a number of hours without the addition of aluminum sulfate.
2. Around 9:15 a.m. on November 4, 2020, turbidities began to increase in water coming from the filters. This caused alarm with the operators and they began to take steps to diagnose the cause of the turbidity increase.
3. Around 11:00 a.m. on November 4, 2020, the operators decided to stop treating water altogether as turbidities continued to be high. The water plant was taken offline.
4. Around 6:00 a.m. on November 5, 2020, the operators again started the plant taking care to make sure the aluminum sulfate was also turned on. The plant began to operate within acceptable parameters.
5. Around 3:45 p.m. on November 5, 2020, EGLE received an email from Mr. O'Malley that included an incident report outlining the events starting around 7:00 a.m. on November 4, 2020.
6. Upon receipt of the email, EGLE spoke with Mr. O'Malley on the phone. He had not started any efforts to notify the public and did not support any public notification.
7. EGLE indicated to Mr. O'Malley a threat to public health could not be ruled out and, therefore, immediately began drafting a boil water advisory.
8. Around 5:25 p.m. on November 5, 2020, EGLE issued a boil water advisory to the city of Benton Harbor, coordinating with the Berrien County Health Department and other officials as needed.

RECOMMENDATION

Based upon the findings of the investigation, revocation of Mr. O'Malley's license is further supported and is recommended. Such enforcement actions are justified given how critical the removal of turbidity is to the safety of treated surface water. The lack of timely reporting and failure to notify EGLE immediately of this event places the public health at risk.

These actions further eroded confidence in Mr. O'Malley's duty, as operator in charge, to protect public health. The actions are also contrary to the spirit of the certification requirements for water system operators which is to ensure protection of public health and the environment. To this end, EGLE's obligation in implementing Part 19 of the administrative rules is to classify water systems, train operators, certify operators, renew certification, and, when necessary, revoke certification.

Please reference the FCBM dated November 4, 2020, for additional information regarding this amendment and the recommended action of revocation.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

LIESL EICHLER CLARK
DIRECTOR

November 23, 2020

VIA EMAIL

Mr. Michael O'Malley, Operator ID Number 2634
[redacted]
St. Joseph, Michigan 49085

Dear Mr. O'Malley:

SUBJECT: Amended Fact and Conduct Briefing Memorandum (FCBM)

On November 5, 2020, you received a letter via email from the Department of Environment, Great Lakes, and Energy (EGLE) transmitting an Operator Certification FCBM, issued under the Safe Drinking Water Act (SDWA), 1976 PA 399, as amended, (Act 399) and the administrative rules promulgated thereunder. This letter shall serve to transmit an amendment to the FCBM, responding to events that occurred on November 4 and November 5, 2020.

The amended FCBM addresses two egregious violations of the administrative rules. R 325.11008(2) of the administrative rules states *"A sufficient primary coagulant dose shall be added to create a settleable or filterable floc at all times that a conventional filtration or direct filtration plant is in operation."* The FCBM finds that for a period of approximately three hours on the morning of November 4, 2020, a primary coagulant was not fed and, furthermore, contamination of the water supply could not be ruled out.

In addition, R 325.12304(1) of the administrative rules states *"When an emergency affecting a public water supply is discovered, the public water supply shall immediately notify the department by telephone of that emergency. The public water supply shall indicate in that notification the type of emergency, its discovery, the cause, the corrective actions planned to meet the emergency, and plans for notification to customers or users of the public water supply affected."*

From R 325.10104(m) under the administrative rules, "Emergency" means a situation in a public water supply that results in contamination, loss of pressure, lack of adequate supply of water, or other condition that poses an imminent hazard or danger to the public health.

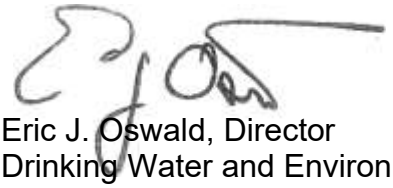
The amended FCBM finds you did not take immediate action during an emergency as required by the administrative rules promulgated under Act 399 and, in fact, approximately 30 hours passed after the incident before a report was made to EGLE.

This amendment to the FCBM is necessary because events of November 4 and November 5, 2020, were not included in the FCBM, as they occurred after the FCBM was sent initially. These events are included to inform regarding EGLE's consideration in this matter.

Please review the attached amendment to the FCBM, and incorporate into your preparations for our remote meeting on Wednesday, November 25, 2020, at 1:00 p.m.

If you have any questions regarding this matter, please contact me.

Sincerely,



Eric J. Oswald, Director
Drinking Water and Environmental Health Division
517-284-6524

Enclosures
eo/mb/sr

cc: Mr. Ellis Mitchell, Manager, City of Benton Harbor
Ms. Kimberly Thompson, Clerk, City of Benton Harbor
Mr. Ian Septoski, Krisor & Associates
Ms. Gillian Wener, Michigan Department of Attorney General
Mr. Brian Thurston, EGLE
Mr. Michael Bolf, EGLE
Ms. Koren Carpenter, EGLE
Mr. Ernest Sarkipato, EGLE
Mr. Scott Schmidt, EGLE

From: Sarkipato, Ernest (EGLE)
To: Mike O"Malley; Bolf, Michael (EGLE); Thurston, Brian (EGLE); Oswald, Eric (EGLE)
Cc: Ellis Mitchell; Darold Harlan; Darel Rice; Lesia Osler
Subject: RE: MI 0600 Benton Harbor ACO part Improve Collections Requirement
Date: Thursday, October 1, 2020 7:22:00 AM

Mike and all,

Thank you for submitting this. It looks a lot like previous versions, but we will need to take a closer look.

I did not see a TMF study scope come through yesterday. Is that in the works?

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Mike O'Malley <momalley@bhcity.us>
Sent: Wednesday, September 30, 2020 8:11 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>; Thurston, Brian (EGLE) <THURSTONB@michigan.gov>; Oswald, Eric (EGLE) <OswaldE1@michigan.gov>
Cc: Ellis Mitchell <emitchell@bhcity.us>; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>; Lesia Osler <losler@bhcity.us>
Subject: MI 0600 Benton Harbor ACO part Improve Collections Requirement

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

All,
Please see attached: *MI 0600 Benton Harbor final ACO Improve Rate Collections Item.pdf*

Earlier this year; I had compiled all of the legal requirements that I believe the lack there of was the reason; EGLE staff refused the 3rd submittal. The search included:

1. A section of the actual City Ordinance pertaining to collections.
2. And during my searches I found a Water Payment Procedure Manual written in 2013 by Wanda Kaye Jenkins, likely under the Direction of then MI State Appointed Emergency Manager Joe Harris

Since the State of MI has issued a Mandate with procedures of Water to Residents strict guidelines, I did not feel it was appropriate to present this ACO Submittal.
Until yesterday when it was demanded in an email for September 30, 2020 Submission.

This is the 4th and hopefully final ACO Agreement for AN EQUITABLE RATE COLLECTIONS PROGRAM

Water Staff, please note. None of this ACO can be used while the Benton Harbor Water Department is under strict Covid 19 Guidelines. We have it now only in anticipation that the Strict Covid 19 guidelines will be eliminated.

Through the Benton Harbor Water Team, via email;

By:
Mike O'Malley
Benton Harbor Water Operator IN Charge

From:	Sarkipato, Ernest (EGLE)
To:	rrice@bhcity.us; drice@bhcity.us; momalley@bhcity.us; dharlan@fv-operations.com; emitchell@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Sellers, Fred (EGLE); Xing, Fangli (EGLE); Bolf, Michael (EGLE)
Cc:	rrice@bhcity.us; EGLE-DWEH-Grand-Rapids
Subject:	RE: Meeting to discuss Alum Sludge Management at BH Water Plant
Date:	Friday, October 23, 2020 8:57:00 AM
Attachments:	EGLE Sludge permit records.pdf image001.png

Thank you for meeting yesterday to discuss the sludge removal practices at the Benton Harbor water plant, and thanks for your patience as our staff figured out the call-in to google meet. During the meeting, EGLE confirmed that WTP alum sludge must be disposed to a licensed Part 115 landfill, including all previously disposed material. EGLE staff agreed to entertain a proposal from the City of Benton Harbor water team for annual removal goal in cubic yards or tons, based on a financial analysis of feasibility, rather than complete removal this year.

For financial piece, I've heard from two other plants now, sludge removal quotes between $25/cyd - $31/cyd, though it all depends on tipping fees and contractor quotes. Please follow the advice of Mr. Sellers and "shop around" landfills and contractors.

In addition to delving into the water system finances, the city agreed to work some calculations to estimate the total volume of sludge. In doing so please reference the attached permit with design calculations for the lagoons. Feel free to run your calcs by me any time so we are on the same page. Please do an estimate of cumulative sludge production since construction, as sludge has never been removed. We are also interested in hearing the water team's thoughts on a plan for the future dewatering practices, as the system as constructed doesn't allow for effective dewatering.

The group agreed to reconvene in 1 month to discuss the city's findings. **Can we plan on Monday morning, 11/23, 10:00AM?** If acceptable, can Roena send another google meet invite?

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
(CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
Required under the Authority of 1976 PA 399, as amended

This application becomes an Act 399 Permit only when signed and issued by authorized DEQ Staff.
See instructions below for completion of this application.

1. Municipality or Organization, Address and WSSN *that will own or control the water facilities to be constructed. This permit is to be issued to:*

City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600

Permit Stamp Area (DEQ use only)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMIT NO. W095025 APR 06 '09

EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976

2. Owner's Contact Person (provide name for questions):

Contact: Mr. Michael O'Malley
Title: Plant Superintendent
Phone: 269-927-8471

3. Project Name (Provide phase number if project is segmented):

Backwash Lagoon

4. Project Location
(City, Village, Township):
City of Benton Harbor

5. County (location of project)

Berrien

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

cc: Mr. Dale Ehinger, DEQ
Mr. Kameron Jordan, DEQ
cc/enc: Mr. Kenton C. McAndrew, P.E., Abonmarche Consultants, Inc.

Issued by: _____
Gary Wozniak, P.E., District Engineer

Reviewed by: _____
Gary Wozniak, P.E., District Engineer

☐ **If this box is marked see attached special conditions.**

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. *Print or type* all information except for signatures. Mail completed application, plans and specifications, and any attachments to the Michigan Department of Environmental Quality District Office having jurisdiction in the area of the proposed construction.

Please Note:

a. This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended. Depending on the specific conditions of the project, other permits from this Department or other governmental agencies may be required.
b. This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
c. Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
d. Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
e. All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
f. All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
g. Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.

RECEIVED
MICH. DEPT. OF ENVIRONMENTAL QUALITY
APR 07 2009
WATER BUREAU
Kalamazoo District Office

CONTINUE APPLICATION ON THE FOLLOWING PAGES

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
(CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
Required under the Authority of 1978 PA 399, as amended

This application becomes an Act 399 Permit only when signed and issued by authorized DEQ Staff.
See instructions below for completion of this application.

1. ***Municipality or Organization, Address and WSSN*** *that will own or control the water facilities to be constructed. This permit is to be issued to:*
City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022
WSSN: 0600

Permit Stamp Area (DEQ use only)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMIT NO. W095080 OCT 26 '09

EXAMINED AND APPROVED FOR COMPLIANCE
WITH ACT 399, P.A. 1976

2. **Owner's Contact Person** (provide name for questions):
Contact: Mr. Mike O'Malley
Title: Water Operator
Phone: 269-927-8471

3. **Project Name** (Provide phase number if project is segmented):
Benton Harbor Water Plant
DWRF #7273-01

4. **Project Location**
(City, Village, Township):
City of Benton Harbor

5. **County** (location of project):
Berrien

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

cc: Mr. Darwin Watson, Interim Manager, City of Benton Harbor
Berrien County Health Department
cc/enc: Mr. Kenton McAndrew, P.E., Abonmarche
Mr. Clarence Jones, DEQ

Issued by: _____
Gary Wozniak, P.E., District Engineer

Reviewed by: _____
Gary Wozniak, P.E., District Engineer

☒ **If this box is marked see attached special conditions.**

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. Print or type all information except for signatures. Mail completed application, plans and specifications, and any attachments to the Michigan Department of Environmental Quality District Office having jurisdiction in the area of the proposed construction.

Please Note:

a. This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended.
b. The issuance of this **PERMIT** does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other DEQ permits, or approvals from other units of government as may be required by law.
c. This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
d. Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
e. Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
f. All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
g. All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
h. Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.

RECEIVED
MICH. DEPT. OF ENVIRONMENTAL QUALITY
SEP 14 2009
WATER BUREAU
Kalamazoo District Office

CONTINUE APPLICATION ON THE FOLLOWING PAGES

BENTON HARBOR WATER FILTRATION PLANT
PLANT FILTER BACKWASH AND CLARIFIER
BLOW OFF DISCHARGE ANALYSIS
Updated April 3, 2009

I. ***Process Discription***

The existing water plant backwash and clarifier waste lines currently discharge to a nearby wet land which feeds into the Paw Paw River. This project considers rerouting the discharges to a perculation pond for subsurface discharge.

II. ***Givens***

A. Waste Streams

1. Accelators

Blow offs from both accelators is 90,000 gallons per day
Chemicals = Aluminum Sulfate at 2.4 mg/l
Chlorine at 1.2 mg/l
Blow offs = Once every 4 hours = 12 blow offs per day
Volume / blow off = 5,000 to 10,000 gallons
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 178 mg/l TSS at 90,000 gpd = 134 ppd

2. Filter Backwash Waste

Chemicals = Chlorine at 1.2 mg/l
Backwash Volume = 45,000 gallons / backwash
Backwash Cycles = 70 hours
Backwash Rates = 5,200 to 5,500 gpm
Backwash Volume Per Day = 124,000 gallons per day
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 124,000 gpd = 186 ppd

3. Filter Surface Wash

Chemicals = Chlorinated at 1.2 mg/l
Wash Rate = 2,000 gpm for 2 minutes
Wash Discharge Volume = 4,000 gallons
Frequency = 70 hours
Filter Surface Wash Volume Per Day = 11,000 gallons
Solids Loadings / Discharges – Based on grab samples taken on January 22, 2008 = 180 mg/l TSS at 11,000 gpd = 17 ppd

4. Filter to Waste

Chemicals = Chlorinated at 1.2 mg/l
Waste Rate = 700 gpm
Waste Discharge Volume = 700 gpm @ 5 minutes = 3,500 gal/cycle
Frequency = 70 hours
Filter to Waste Volume Per Day = 10,000 gallons
Projected Solids Loadings / Discharges – 0.5 mg/l TSS at 10,000 gpd = 0.04 ppd (Insignificant)

5. Total Waste Flow Discharged Per Day

Blow Offs	90,000 gallons
Backwash	124,000 gallons
Surface Wash	11,000 gallons
Filter to Waste	10,000 gallons
TOTAL	**235,000 gallons = 31,500 CF**

6. Alum Waste Loadings

Solution – Aluminum Sulfate $Al_2(SO_4)_3$

Dosage rate for pure aluminum 2.42 mg/l

Average daily usage in aluminum = 2.42 mg/l x 8.34 x 6 mgd = 52 ppd applied.

Discharge is 44% of applied = 52 ppd x 44% = 23 ppd discharged

7. Total Waste Solids Discharged Per Day

Blow Offs	134 ppd
Backwash	136 ppd
Surface Wash	17 ppd
Filter to Waste	insignificant
Alum	23 ppd
Total Suspended Solids	**310 ppd**

B. Original Design / Lagoon

1. Location between the finished water storage tanks and Jean Klock Park Drive

2. Layout of 1950 Site Plan
   Radius of 100'
   ½ Circle
   Natural sand bottom and sides
   Top of dike 585.00
   Invert elevation of 30" inlet pipe 583.64
   18" CIP overflow pipe out to current discharge location – See #4 below
   Bottom of basin at inlet was ±580.00 falling off towards Jean Klock Park Drive to 575.00

3. Surface Area of Original Basin
   Basin bottom + sides = $115^2 \Gamma$ x .5 = 20,774 SF

4. Overflow Structure
   Inlet = 4' square manhole – top of casting 586.00
   Side openings = 4" high x 18" wide (bottom elevation @ 582.0 and 583.0)
   Outlet Pipe = 34 LF of 18" CIP 580.00 IE to 579.00 IE
   Note: there is an existing design flaw, the top of lagoon dike wall is lower than the overflow grate.

5. Flood Elevation ± 585.00

C. Soils
Existing soils per USGS are classified as duneland. Duneland soils do not have a permeability factor but the surrounding soils 80, 10D, 28B have a permeability factor of 6-20 inches per hour. The duneland soils should be higher.

III. ***Proposed Lagoon Sizing***

A. Perculation Rates

The current soils permeability is 6-20 inches per hour.
Based on a 2" per hour rate, the area required for 31,500 CF of waste loadings per day is = 2.0 inches per hour = 48 inches per day = 8,000 square feet per lagoon

Proposed lagoon A and B = 37,000 SF

Proposed perculation rate = 37,000 SF / 31,500 CF = 0.85 feet or 10 inches /day

B. Lagoon Water Levels

Normal WL after backwash = 583.00 pond bottom + 0.85 = 583.85
At 100 year flood Elevation 585.00 + 0.85 = 585.85

C. Existing Piping

Total Maximum Flow Influent

Blow offs 2 @ 1,000 gpm each =	2,000 gpm
Filter Backwash 1 @ 5,500 gpm =	5,500 gpm
TOTAL	**7,500 gpm**

Existing Pipe 30" ϕ concrete

#1 Manhole at accelators to downstream corner 585.71–585.54	55' length
#2 Corner manhole @ 585.54 to corner manhole 585.17	92' length
#3 Corner manhole @ 585.17 to downstream manhole 584.88	100' length
#4 Manhole 584.84 to manhole 584.27	205' length
#5 Manhole 584.27 to outfall 583.64	200' length

#1 Manhole = 0.31% slope
#2 Manhole = 0.40% slope
#3 Manhole = 0.29% slope
#4 Manhole = 0.28% slope * = 9,000 gpm
#5 Manhole = 0.31% slope
* Pipe has sufficient capacity

D. Existing Overflow Pipe

Total flow discharge to lagoon per day is 235,000 gallons. Over a 12 hour period (filters washed during the day) flow would be (235,000/1,440) x 2 = 326 gpm

E. Check Hydraulic Grade Line
Bottom of filter wash water through (in building) 587.75
100 flood elevation 585.00
Available hydraulic grade 2.75 feet

IV. ***Proposed Piping***

A. Energy Dispensation Considerations

At 7,500 gpm we need to slow the discharge of water down so it dosen't wash out the pond bottoms or undermine structures or piping.
The energy needs to be dispensated. Start with slowing water down in the influent pipe by going to a 48" diameter pipe.

Velocity in 36" pipe flat = 2.3 fps
Velocity in 48" pipe flat = 1.3 fps
Use – 48" RCP

B. Effluent Discharge Control

To spread out the 7,500 gpm flow over a larger area, use a effluent weir for the water to flow over. If we stay with a 48" pipe cut out top and use both edges as a weir (without end contractions).
Try 20 foot long pipe = 40' weir length = 3" or 188 gpm / lf - TOO HIGH
Try 40 foot long pipe = 80' weir length = 2" or 94 gpm / lf – TOO HIGH
Try 60 foot long pipe = 120' weir length = 1.5" or 63 gpm / lf - OK
Try 80 foot long pipe = 160' weir length = 1.2" or 47 gpm / lf – NOT MUCH TO GAIN

USE: 60 feet of double weir pipe 48" diameter

C. Pond Overflow Control

Daily influent volume into ponds per day = 235,000 gallons
235,000 gallons per day / 1440 = 163 gallons per minute
USE: 18" diameter pipe which could handle 1800 gpm @ 2.3 fps

Set Overflow Weir Elevation
Pond bottom – 583.00
Rise in WL from one backwash cycle = 0.85
HWL after backwash = 583.85
WL after backwash during 100 year flood conditions = 585.85
Add +/- 0.5 foot freeboard so say 586.25 for weir elevation
Water crest height based on 4 foot diameter manhole = 8.5 weir length.
Crest = 0.03 feet

4-3-2009

VIII. **FILTERS**
Location Existing Process Building
Quantity – 12 beds
Type – Two (2) media sand and
Operation

XI. **HIGH SERVICE (HS) PUMPS**
Location – Main Building
Type – Turbines
Quantity – 5
High Service Pump #1 – 1,410 gpm @ 200' TDH – 100 HP
High Service Pump #2 – 2,980 gpm @ 200' TDH – 200 HP
High Service Pump #3 = 3,000 gpm @ 202' TDH – 200 HP
High Service Pump #4 – 3,000 gpm @ 202' TDH – 200 HP
High Service Pump #5 – 1,410 gpm @ 200' TDH – 100 HP

XII. DISTRIBUTION SERVICE

Plant Discharges – 2 @ 20"
Venturie Flow Meters on each 20" discharge
Design plant discharge – 12 MGD
Discharge Velocities with both discharges on line at 12 MGD = 4.2 feet per second
Discharge Velocities with one discharges on line at 12 MGD = 10.5 feet per second
Discharge Velocities with both discharges on line at 18 MGD = 6.4 feet per second

XIII. PLANT DRAIN AND BACKWASH SOLIDS DISPOSAL

Type – Lagoon system
Number of cells – 2 (one primary and one secondary)
Total liquid solids discharged per day (initial) – 235,000 gallons
Total alum waste solids discharged per day (initial) – 310 ppd

Soils
Type – dune sand
Soils perculation rate – 6 to 20 inches per hour
Peak max design perculation rate – 2 inches per hour

Lagoon
Bottom surface area – 36,800 SF
Perculation rate – 235,000 gpd / 37,000 SF = 6.4 gallons per SF per day
10 inches per day or 0.42 inches per hour

Bottom elevation – 583.00
100 year Flood elevation – 585.00
Normal lagoon HWL after filter backwash – 583.85
Lagoon HWL after filter backwash with 100 year floor – 585.85
Overflow weir elevation – 586.25
Lagoon high water elevation at overflowing conditions – 586.28

Frequency of lagoon cleaning – once per year (summer)



LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	rrice@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Bolf, Michael (EGLE); drice@bhcity.us; momalley@bhcity.us; Sellers, Fred (EGLE); dharlan@fv-operations.com; Xing, Fangli (EGLE); emitchell@bhcity.us
Subject:	RE: Meeting: Continue discussion Alum Sludge Management and BH Water Plant
Date:	Wednesday, December 2, 2020 3:02:00 PM

Please remember to use the telephone to call in, not the computer.

-----Original Appointment-----
From: rrice@bhcity.us <rrice@bhcity.us>
Sent: Monday, November 23, 2020 9:12 AM
To: rrice@bhcity.us; Ehinger, Dale (EGLE); Klang, Jennifer (EGLE); Sarkipato, Ernest (EGLE); Bolf, Michael (EGLE); drice@bhcity.us; momalley@bhcity.us; Sellers, Fred (EGLE); dharlan@fv-operations.com; Xing, Fangli (EGLE); emitchell@bhcity.us
Subject: Meeting: Continue discussion Alum Sludge Management and BH Water Plant
When: Wednesday, December 2, 2020 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where:

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

This event has been changed.

Meeting: Continue discussion Alum Sludge Management and BH Water Plant

When **Changed:** Wed Dec 2, 2020 3pm – 4pm Eastern Time - New York

Joining info Join with Google Meet
meet.google.com/ufn-hhxy-rue

Join by phone
(US) +1 224-880-0665 (PIN [redacted]

More phone numbers

Calendar sarkipatoe@michigan.gov

Who
- rrice@bhcity.us - organizer
- ehingerd@michigan.gov
- klangj@michigan.gov
- sarkipatoe@michigan.gov
- bolfm@michigan.gov
- drice@bhcity.us
- momalley@bhcity.us
- sellersf@michigan.gov
- dharlan@fv-operations.com
- xingf@michigan.gov
- emitchell@bhcity.us

more details »

Meeting requested by Ernie Sarkipato to continue Alum Sludge Management at BH Water Plant discussion

Going (sarkipatoe@michigan.gov)? **Yes** - **Maybe** - **No** more options »

Invitation from Google Calendar

You are receiving this courtesy email at the account sarkipatoe@michigan.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at https://calendar.google.com/calendar/ and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to send a response to the organizer and be added to the guest list, or invite others regardless of their own invitation status, or to modify your RSVP. Learn More.

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; drice@bhcity.us
Cc:	Klein, Jeremy (EGLE); Henderson, Shannon (EGLE); Nelson, Maureen (EGLE)
Subject:	TOC monitoring
Date:	Wednesday, October 28, 2020 10:47:00 AM
Attachments:	2020 monitoring schedule.pdf image001.png

Good morning Benton Harbor Water Team,

We are currently unable to find record of sampling for Total Organic Carbon (TOC) for the months of July and September, 2020. Please check your records to submit these results if available, or confirm they were not taken if that is the case. Please continue to ensure samples are collected and submitted to EGLE according to the 2020 monitoring schedule, attached, to comply with the first amended administrative consent order compliance timeline item 2.16.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

2020 Monitoring Schedule

BENTON HARBOR

WSSN: 00600

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/3 months	**Quarterly**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/3 months	**Quarterly**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	**9/30/2020**	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, alkalinity, calcium, conductivity, temperature, sulfate, chloride, orthophosphate	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, calcium, conductivity, temperature, sulfate, chloride, orthophosphate	Representative Sites	10 sites/Quarter	**Quarterly**	DIST	Various	Various	Various

Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	60 sites/6 months	**Between 01/01-06/30/2020 and 07/01-12/31/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BENTON CHARTER TOWNSHIP

WSSN: 00605

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2021	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	7/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BRIDGMAN

WSSN: 00850

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	2/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

LAKE CHARTER TOWNSHIP

WSSN: 03741

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2026	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	5/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During August 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During August 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NEW BUFFALO

WSSN: 04680

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	2/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During June 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During June 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

ST JOSEPH

WSSN: 06310

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Treatment Plant

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2022	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2028	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

CHARLEVOIX, CITY OF

WSSN: 01330

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Lake Michigan Intake

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	3/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During July 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During July 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	10 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

TRAVERSE CITY, CITY OF

WSSN: 06640

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Treatment Plant - Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP100	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	15/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

GRATIOT AREA WATER AUTHORITY

WSSN: 02836

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: GAWA WTP

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP001	$102.00	36ME	CMET2
Arsenic	1/3 months	**Quarterly**	TP001	$18.00	36ME	CAS
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CN	CCN
SOC – Pesticides	1/12 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2022	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

2020 Monitoring Schedule

EAST LANSING MERIDIAN WATER AUTHORITY

WSSN: 01995

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/36 months	9/30/2021	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP001	$102.00	36ME	CMET2
Arsenic	1/12 months	**9/30/2020**	TP001	$18.00	36ME	CAS
Cyanide	1/12 months	**9/30/2020**	TP001	$25.00	36CN	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	**9/30/2020**	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Well 25

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Volatile Organic Compounds	1/12 months	**9/30/2020**	WL025	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	WL025	$102.00	36ME	CMET2

2020 Monitoring Schedule

MOUNT PLEASANT, CITY OF

WSSN: 04530

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: PLANT TAP

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	9/30/2021	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2027	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	30/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

JACKSON

WSSN: 03470

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Well #2

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Volatile Organic Compounds	1/3 months	**Quarterly**	WL002	$100.00	36VO	CXVO

Location: Well #4 - Mansion St. Wellfield

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Complete Metals	1/12 months	**9/30/2020**	WL004	$102.00	36ME	CMET2

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	10 sites/Quarter	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

GRAND RAPIDS

WSSN: 02790

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2021	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2021	TP100			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual, alkalinity	1/Every Two Weeks	**Every Two Weeks**	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	150/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		6/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		6/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	10 sites/6 months	**Jan-Jun AND Jul-Dec 2020**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	50 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

PLAINFIELD TOWNSHIP

WSSN: 05370

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2021	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

WYOMING **WSSN: 07220**

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/12 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2023	TP100			
Tritium	Not Required	Not Required	TP100			
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	80/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During March, June, September and December 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NORTHPORT COTTAGE OWNERS

WSSN: 04820

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP001	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP001	$100.00	36VO	CXVO
Complete Metals	1/36 months	9/30/2021	TP001	$102.00	36ME	CMET2
Cyanide	1/36 months	9/30/2022	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP001	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2028	TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2028	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	1/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/12 months	**During August 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/12 months	**During August 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	5 sites/36 months	Between 06/01 and 9/30/2021	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

ADRIAN

WSSN: 00040

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: WTP-Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2026	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2027	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2027	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters*	Not Required	Not Required	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	20/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		4/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

BLISSFIELD

WSSN: 00750

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2027	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Water Quality Parameters* pH, sulfate, chloride, orthophosphate dosage, or hophosphate residual	1/Every Two Weeks	**Every Two Weeks**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	4/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		3/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		3/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, orthophosphate	Representative Sites	3 sites/Quarter	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/12 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

DEERFIELD

WSSN: 01770

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/3 months	**Quarterly**	TP001	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP001	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP001	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP001	$25.00	36CNa	CCN
SOC – Pesticides	1/3 months	**Quarterly**	TP001	$125.00	36PT	CXPT
SOC – Herbicides	1/12 months	**9/30/2020**	TP001	$120.00	36HB	CXHB
SOC – Carbamates	1/12 months	**9/30/2020**	TP001	$120.00	36LP	CXLP
Expanded SOC – Dalapon	1/12 months	**Between 4/01/2020 and 9/30/2020**	TP001	$130.00	36HA	CXHA
Expanded SOC – EDB & DBCP	1/12 months		TP001	$70.00	36VO	CXEV
Expanded SOC – Diquat	1/12 months		TP001	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Expanded SOC - Endothal	1/12 months		TP001			
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP001			
Radium 226 & Radium 228	1/108 months	9/30/2023	TP001			
Tritium	Not Required	Not Required	TP001			
Water Quality Parameters* pH, sulfate, chloride, temperature, conductivity, calcium, alkalinity	1/3 months	**Quarterly**	TP001	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP001	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your ...	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	1/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters* pH, alkalinity, sulfate, chloride, temperature, conductivity, calcium	Representative Sites	2 sites/3 months	**Quarterly**	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/6 months	**Between 01/01-06/30/2020 and 07/01-12/31/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

LUDINGTON, CITY OF

WSSN: 03960

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: Water Treatment Plant Tap

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/3 months	**Quarterly**	TP100	$100.00	36VO	CXVO
Complete Metals	1/12 months	**9/30/2020**	TP100	$102.00	36ME	CMET2
Cyanide	1/36 months	**9/30/2020**	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2021	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2021	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2027	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2027	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	9/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	20 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

MUSKEGON

WSSN: 04570

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2026	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2027	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/**Quarterly**	**Quarterly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

MUSKEGON HEIGHTS

WSSN: 04580

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2022	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	9/30/2022	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	9/30/2022	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2023	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/72 months	**9/30/2020**	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	10/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During February, May, August and November 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	**Between 06/01 and 9/30/2020**	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

HOLLAND BOARD OF PUBLIC WORKS

WSSN: 03190

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2024	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2026	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	9/30/2021	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/72 months	9/30/2021	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Pair/Monthly	**Monthly**	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	40/Monthly	**Monthly**	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		2/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		2/3 months	**During January, April, July and October 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	30 sites/36 months	Between 06/01 and 9/30/2022	DIST	$26.00	36CC	CCUB

2020 Monitoring Schedule

NORTHWEST OTTAWA CO WATER SYST

WSSN: 04847

Collect samples early in the monitoring period. This schedule reflects expected routine monitoring and is subject to change. To receive credit for monitoring, include the **WSSN, Site Code**, and **County** on your request for analysis form. Collect all samples close to the shipping time and send overnight delivery. Send all sample results to your Department of Environment, Great Lakes, and Energy (EGLE) district office unless you use the EGLE laboratory. Test codes and sample units are listed to help you complete the EGLE laboratory form. The EGLE laboratory is closed on state holidays.

Location: P.O.E. (Water Treatment Plant Tap)

Collect these samples at the entry point to the distribution system (after treatment, if applicable.)

Sample Type	# Samples/ Frequency	Collect Before	Site Code	Fee	Unit Number	Test Code
Automated Partial Chemistry	This EGLE lab scan includes nitrate, nitrite, fluoride, and sodium whose monitoring frequency requirements differ from one another. Before requesting analyses from a laboratory other than the EGLE laboratory, check with your EGLE district staff for the specific monitoring requirements.					
	1/12 months	**9/30/2020**	TP100	$18.00	32	R
Volatile Organic Compounds	1/12 months	**9/30/2020**	TP100	$100.00	36VO	CXVO
Complete Metals	1/108 months	9/30/2028	TP100	$102.00	36ME	CMET2
Cyanide	1/108 months	9/30/2025	TP100	$25.00	36CNa	CCN
SOC – Pesticides	1/36 months	**9/30/2020**	TP100	$125.00	36PT	CXPT
SOC – Herbicides	1/36 months	**9/30/2020**	TP100	$120.00	36HB	CXHB
SOC – Carbamates	1/36 months	**9/30/2020**	TP100	$120.00	36LP	CXLP
Gross Alpha (Radiological)	1/108 months	9/30/2024	TP100	Not performed at the EGLE Laboratory. A list of certified labs is available at Michigan.gov/CommunityWater, then select Certified Labs under Programs and Activities.		
Radium 226 & Radium 228	1/108 months	9/30/2024	TP100			
Tritium	Not Required	Not Required	TP100			
Water Quality Parameters*	Not Required	Not Required	TP100	Various	Various	Various
Total Organic Carbon (TOC)	Not Required	Not Required	TP100	$35.00	36TO	CTOC
	Monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." Collect the treated water sample not later than the point of combined filter effluent turbidity monitoring and representative of treated water.					

Location: Distribution System

Sample Type	Collect According to your …	# Samples/ Frequency	Collect	Site Code	Fee	Unit Number	Test Code
Bacteriological (coliforms)	RTCR Sample Siting Plan	Not Required	Not Required	DIST	$16.00	30	BPTC
Chlorine Residual	DBP Monitoring Plan	If serving chlorinated water, measure the residual disinfectant level at the same point and at the same time as the bacteriological sample and report the results and average to EGLE.					
Total Trihalomethanes		1/12 months	**During March 2020**	See DBP Monitoring Plan	$65.00	36VO	CXTM
Haloacetic Acids		1/12 months	**During March 2020**	See DBP Monitoring Plan	$130.00	36HA	CXHA
Water Quality Parameters*	Representative Sites	Not Required	Not Required	DIST	Various	Various	Various
Lead and Copper for Corrosion Control	Lead and Copper Sampling Plan	Not Required	Not Required	DIST	$26.00	36CC	CCUB



LET'S **STAY SAFE** TOGETHER

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Darel Rice; Lesia Osler; rrice@bhcity.us
Cc:	Nelson, Maureen (EGLE); Bolf, Michael (EGLE); Bolt, Jennifer (EGLE); Onan, Brandon (EGLE)
Subject:	BH Water Updates
Date:	Wednesday, October 28, 2020 2:29:38 PM
Attachments:	image001.png 00600 COBH LCR compliance communication.pdf 00600 Benton Harbor - VN - turbidimeter and chlorine.pdf Lead Consumer Notice for 1st half 2020 sampling.msg

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Good afternoon Mr. Mitchell and the Benton Harbor Water Team,

Please note the following dates and "irons in the fire" regarding the water system for City of Benton Harbor compliance with Act 399. We are more than willing to discuss these items, in fact I might suggest a weekly or biweekly quick phone call to discuss progress with the city on these items since there are so many. Also, I may be missing something and city staff surely have their own additions to this list.

Ongoing/ASAP: obtain a formal proposal for TMF study and seek commission approval for signed contract (ACO requirement).
11/1/2020: submit plan for addressing intake issues (ACO item).
11/5/2020: redistribute the lead consumer notice with correct form. Submit the draft to EGLE first to verify adequate & accurate information.
11/5/2020: demonstrate SCADA fix to store turbidity data for filter turbidimeters (notice of violation letter).
11/15/2020: submit a lead and copper sampling plan (sampling pool) with site addresses (compliance communication).
11/23/2020: submit a plan for alum sludge management and disposal at landfill before the next meeting.
11/30/2020: disinfection byproduct sampling due for month of November.
12/31/2020: SOC sampling due unless reduction/waiver is granted.
12/31/2020: repair filter to waste valves per ACO.
12/31/2020: 60 samples for lead and copper are due, using the approved Sampling Pool/Plan and address locations.

If you would like to set up a recurring meeting with EGLE to keep on track, I am glad to work with Ms. Rice to set that up.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Sarkipato, Ernest (EGLE)
Sent: Thursday, October 22, 2020 11:21 AM
To: emitchell@bhcity.us; Mike O'Malley <momalley@bhcity.us>; Darold Harlan <dharlan@fv-operations.com>; Darel Rice <drice@bhcity.us>
Cc: Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>; Bolf, Michael (EGLE) <BOLFM@michigan.gov>
Subject: FW: ACO Deadline reminder

Good morning,

We look forward to speaking this afternoon regarding the alum sludge management at the BH water plant.

As a reminder, since there are so many distractions, there is another ACO deadline coming up. Note, this is simply a ***PLAN***.

2.12 **Not later than November 1, 2020,** the City shall submit to the DWEHD a plan for maintaining the raw water intake system, including mussel control, based on inspection findings of the intake and mussel control system during June of 2020.

Thank you,

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater

From: Nelson, Maureen (EGLE) <NelsonM2@michigan.gov>
Sent: Wednesday, October 14, 2020 8:47 AM
To: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Subject: ACO Deadline reminder

Hi Ernie,

I know you already sent a reminder in the recent VN to the City of Benton Harbor, but I'm doing my due diligence in reminding you of the upcoming deadline of November 1, 2020 for paragraph 2.12 of the amended ACO.

Thanks,
Maureen

--
Maureen Nelson
Enforcement Specialist
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
517-242-8328 | NelsonM2@Michigan.gov
Follow Us | **Michigan.gov/EGLE**



LET'S **STAY SAFE** TOGETHER

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE

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D RECTOR

October 8, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: **00600**
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Lead and Copper Sampling Compliance Communication

The City of Benton Harbor (City) must collect lead and copper compliance samples at sixty (60) locations before December 31, 2020. However, in order for the City to successfully complete its compliance monitoring it must complete and submit a Lead and Copper Sampling Pool/Plan (LCSP). This requirement is fundamental for completing compliance monitoring. Rule 325.10710a, *Lead and copper in tap water; monitoring requirements,* states:

- The sampling pool shall, at a minimum, identify sufficient sites to ensure the water supply can collect the number of tap samples required for standard monitoring (Rule 710a(1)(a)(i));
- The sampling pool shall identify the location of the sites and describe how each site meets selection criteria (Rule 710a(1)(a)(ii));
- All sites from which samples are collected shall be selected from the pool of targeted sampling sites (Rule 710a(1)(a));
- A water supply shall collect each tap sample from the same sampling site from which it collected a previous sample (Rule 710a(2)(c).

All water systems were required to submit a LCSP by January 1, 2020. A compliance communication was sent on May 14, 2020, reminding the City of this requirement and requesting that the LCSP be submitted by June 13, 2020. To date, the City has not submitted a LCSP.

Benton Harbor has previously used site codes to identify its compliance sampling locations. These site codes do not provide the **location** of the sites, as required by Rule. Therefore, the City is directed to discontinue the use of site codes and submit a LCSP with information necessary to identify locations to Environment, Great Lakes and Energy (EGLE) by **November 15, 2020**.

In summary, a complete LCSP is key to identify and utilize sampling locations that must be used for compliance monitoring. Please submit a complete LCSP by **November 15, 2020** and collect the required lead and copper compliance samples according to the LCSP no later than **December 31, 2020** to avoid monitoring violations, public notice requirements, and possible administrative fines of at least $200.

If you have any questions, please contact me at sarkipatoe@Michigan.gov; EGLE, Drinking Water and Environmental Health Division, 350 Ottawa Avenue, N.W., Unit 10, Grand Rapids, Michigan 49503; or at 616-307-0261.

Sincerely,



Ernie Sarkipato,
Surface Water Treatment Specialist
Community Water Supply Section
Drinking Water and Environmental Health Division

cc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Darold Harlan, Fleis & Vandenbrink
Mr. Brian Thurston, EGLE
Mr. Brandon Onan, EGLE

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
D RECTOR

October 5, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: **00600**
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Violation Notice – Failure of Monitoring Equipment

The Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD) has identified the City of Benton Harbor (City) is in violation of the Michigan Safe Drinking Water Act 1976 PA 399, as amended (Act 399); R 325.10720, *Filtration and disinfection; filtration sampling requirements*; R 325.10720a, *Filtration and disinfection; reporting and recordkeeping;* and R 325.11502 *Monthly operation reports of public water supplies employing treatment*, of the 1979 Administrative Code. These violations follow an onsite meeting on September 9, 2020 and subsequent communications with the City, and are detailed below along with public noticing requirements.

Chlorine Analyzer

In accordance with the rules cited above, a Subpart H (surface water) supplier of water serving at least 3301 persons shall continuously monitor the chlorine residual at the Point of Entry (POE) to the distribution system, and report the lowest daily results to this office. The City was cited in the 2018 sanitary survey for a significant deficiency for failure to monitor for residual disinfectant at an entry point to the distribution system (EPTD) on a continual basis. A new chlorine analyzer was installed in the water treatment plant laboratory to resolve this significant deficiency. During the September 9, 2020 site inspection, the chlorine analyzer was found to be reading 0.2 mg/L, and showing an error signal. While the above rule allows five (5) days for repairs, the analyzer was not working for at least 19 days. *The repeated nature of this violation adds to concerns over technical and managerial capacity of the water supply*. **The City has resolved this violation by verifying the chlorine analyzer was fixed and working properly as of September 21, 2020. Please ensure the analyzer is maintained in proper working order and the lowest daily values are being recorded. Finally, notify EGLE if future problems occur.**

Individual Filter Turbidimeters

A supplier of water who employs conventional or direct filtration shall conduct continuous monitoring of turbidity for each individual filter. Further, the rule states, Supplies shall record the results of individual filter monitoring every 15 minutes. Systems must keep records from individual filter turbidity monitoring for at least three (3) years. DWEHD recently requested the City to submit turbidity data when observing higher turbidities on the Monthly Operating Report (MOR) for the month of August 2020. The City indicated a lack of available turbidity data at the individual filter locations, and noted computer equipment failures for the lack of 15-minute data as required by R 325.10720. The City provided hourly IFE data read manually by the shift

operators, which verifies the water quality but also the inaccuracy of the computer recorded turbidities. **To resolve this violation, the City must verify the SCADA and historian have been fixed or upgraded and demonstrate the ability to record each IFE turbidimeter data every 15-minutes.**

The City is directed to respond to this violation notice within 15 days of receipt, and propose a timeline for correction not to exceed thirty (30) days of the date of this letter.

EGLE's investigation is considered complete. The violation began on September 9, 2020 and will continue until the above actions are completed. If you have any factual information you would like us to consider regarding the violation identified in this letter, please provide it in a written response requested above. It is our intention to work with the City on resolving this issue, restoring adequate capacity to operate the water system in compliance with Act 399. We anticipate and appreciate your cooperation in resolving this matter.

Administrative rule R 325.10404 requires that suppliers provide public notice not later than one year after learning of the violation by mail or direct delivery and by any other means reasonably calculated to reach other persons regularly served by the system. Enclosed is a sample public notice. Please notify your consumers by May 31, 2021 and send us a signed and dated copy of the issued notice within 10 days of distribution. This violation must be included in your 2020 Consumer Confidence Report (CCR) due by July 1, 2021. You may want to use your CCR as the vehicle to post the public notice, if the CCR will be delivered to your customers within 12 months of learning of this violation.

If you have any questions regarding this Violation Notice, please contact feel free to call the number below at your earliest convenience.

Sincerely,



Ernie Sarkipato, P.E.,
Surface Water Treatment Specialist
Grand Rapids District Office
Drinking Water and Environmental Health Division
616-307-0261

Enclosure

cc: Ms. Kimberly Thompson, Clerk, City of Benton Harbor
Mr. Mike O'Malley, Water Superintendent, City of Benton Harbor
Mr. Brian Thurston, Field Operations Manager, EGLE
Ms. Maureen Nelson, Enforcement Specialist, EGLE
Mr. Mike Bolf, P.E., Engineering Unit Supervisor, EGLE

CONSUMER NOTICE OF LEAD AND COPPER RESULTS REQUIREMENTS AND CERTIFICATION

Each community water supply must deliver a Consumer Notice of Lead and Copper Results (Consumer Notice) to the occupants at each location sampled within 30 days of learning the sample results as required under R 325.10410(5) of the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. Failure to deliver the Consumer Notice to each location on time will result in a reporting violation.

Instructions:

A. Use the Consumer Notice Form A template for sites with lead service lines or Consumer Notice Form B template for sites without lead service lines. See the examples on Page 10 to document results from both sites with a lead service line and without a lead service line.

B. Complete one Consumer Notice for each home or building that was sampled. MAKE SURE UNITS ARE CORRECT BEFORE DISTRIBUTING TO CONSUMERS.

   Note: 1 mg/L = 1 ppm = 1,000 ppb Example: 0.002 mg/L = 0.002 ppm = 2 ppb

C. Mail or hand deliver each Consumer Notice to the corresponding home or building sampled.

D. Water supplies have 90 days after the end of the monitoring period to submit a sample copy of the Consumer Notice along with a signed certification that notices have been distributed as required under R 325.10710d(f)(3) to the appropriate EGLE district office. When possible, EGLE encourages water supplies to send the sample Consumer Notice and certification (page 4 of this document) along with the Lead and Copper Report (pages 1 and 2 of this document), which is due within ten days after the end of the monitoring period. Please COMPLETE all forms accurately to avoid resubmittal.

Certification:

I hereby certify that the Consumer Notice of Lead and Copper Results (Consumer Notice) has been provided to persons served at each of the taps that were tested, including all the following information:

- Delivery was by mail, hand delivery, or another method approved by EGLE.
- Delivery was within 30 days of knowing the result.
- Consumer Notice includes required content:
  - The results of lead and copper tap monitoring for the site that was sampled.
  - An explanation of the health effects of lead and copper.
  - Steps consumers can take to reduce exposure to lead in drinking water.
  - Contact information for the public water supply.
  - The maximum contaminant level goal and the action level for lead and copper with the definitions explaining each.

*Please **initial** each line verifying that each requirement was completed:*

_____A Consumer Notice was sent to persons served at each of the taps that were tested.

_____Delivery was by mail, hand delivery, or another method approved by EGLE.

_____Each Consumer Notice was delivered to the resident within 30 days of knowing the results.

_____Each Consumer Notice included the required content as stated above.

_____A sample copy of a Consumer Notice sent to a resident <u>is attached</u>.

Signature	Title	Date

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name: _____

County: _____ WSSN: _____

Sample Location: _____ Date Sampled: _____

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run your water before drinking**. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
    - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
    - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for drinking, cooking, and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. As part of routine maintenance, the aerator should be removed at least every six months to rinse out any debris that may include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: _____.

From: Sarkipato, Ernest (EGLE) []
To: emitchell@bhcity.us [emitchell@bhcity.us]; Mike O'Malley [momalley@bhcity.us]; Darold Harlan [dharlan@fv-operations.com]; Darel Rice [drice@bhcity.us]
CC: Bolt, Jennifer (EGLE) [BOLTJ@michigan.gov]; Onan, Brandon (EGLE) [OnanB@michigan.gov]; Bolf, Michael (EGLE) [BOLFM@michigan.gov]
Subject: Lead Consumer Notice for 1st half 2020 sampling
Sent: Thursday, October 22, 2020 11:21:02
Attachment 1: image001.png
Attachment 2: Consumer Notice of Lead and Copper Results A.pdf
Attachment 3: Consumer Notice distribution certificate.pdf
Attachment 4: MI 0600 Benton Harbor Lead Results to Customer Certification.pdf

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Dear Mr. Mitchell and the Benton Harbor Water Team,

EGLE has recently received a copy of the Consumer Notice of Lead and Copper Results form (Consumer Notice) that was due to EGLE by 9/30/2020 for the city of Benton Harbor. This submission was timely, and is attached here for reference.

Upon review, the content of the Consumer Notice failed to address all requirements of the Safe Drinking Water Act. Rule 410 (5)(c) states that the Consumer Notice shall include

* The results of lead and copper tap water monitoring for the tap that was tested,
* An explanation of the health effects of lead and copper,
* List steps consumers can take to reduce exposure to lead and copper in drinking water,
* Contact information for the water utility,
* The maximum contaminant level goals and the action levels, including definitions for these 2 terms from R 325.10413(4) and (6).

Benton Harbor's Consumer Notice did include the majority of these requirements. However, it failed to include the definitions for the maximum contaminant level goal and action levels, and failed to provide residents with the proper flushing times for customers served by lead service lines. Homes with lead service lines have an increased risk of having high lead levels in drinking water and require longer flushing times.

To reduce exposure to lead in drinking water, the following flushing recommendations have been developed in coordination with the Michigan Department of Health and Human Services and should be included in all of Benton Harbor's communications to its customers about lead in drinking water:

o If you do not have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.

o If you do have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.

To correct the issues as noted above, Benton Harbor must redistribute a corrected Consumer Notice with all required information and the correct flushing times to each of the 61 homes sampled between January 1, 2020 and June 30, 2020. You shall redistribute the corrected notices and submit documentation to EGLE no later than November 5, 2020, two weeks from the date of this communication. Please provide a copy of the corrected Consumer Notice for review BEFORE distribution as soon as possible. After redistributing the corrected Consumer Notice, please submit an example copy of the corrected Consumer Notice and a new certificate of distribution.

EGLE has developed a template Consumer Notice for water systems to use to notify their residents of their results. The template meets all the content requirements of the Safe Drinking Water Act and is available at www.michigan.gov/lcr <http://www.michigan.gov/lcr> . We highly recommend Benton Harbor use this template in the future to reduce errors.

If you have any questions, please contact me at the number below.

Ernie Sarkipato, P.E.

Surface Water Treatment Specialist

Drinking Water and Environmental Health Division

MI Department of Environment, Great Lakes, and Energy

616-307-0261 mobile

<http://www.michigan.gov/drinkingwater> www.michigan.gov/drinkingwater

Copy of Report letter MI0600 Benton Harbor Water
Sent in Groups Results to Resident that
5/15/20 19 homes 62 total Sampled
6/26/20 20 letters 9/23/20
6/29/20 16 letters
6/30/20 7 letters

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Benton Harbor Water Department Report of Lead and Copper Testing Results.

To: Name; [redacted] At: Address; [redacted] Your home's code; rpb1; Report Date: June 26, 2020

Thank you for participating in our 2nd group of 60 testing sites for Lead and Copper with Rev Pinkney Help. The samples you returned to us have been analyzed for Our new Corrosion Protection system by our laboratory operators. That was sample bottle #4. The first draw, bottle 1st and the 5th draw sample were sent to the EGLE (MDEQ) Laboratory in Lansing, MI. and the reports have returned back to us. The Action Level for Lead is 15 ppb ; the goal level for lead is 0; The Action Level for Copper is 1300 ppb

A 0 (zero) is considered a Non-Detect of either Lead or Copper.

1st Draw Lead Result ppb	1st Draw Copper Result ppb	5th Draw Lead Result ppb	5th Draw Copper Result ppb		Action Level for Lead is	15 ppb
1.1	9.4	0	2.5		Action Level for *Copper is*	1,300 ppb
In House	Testing	For Water	Quality	Parameters		
OPP Residual mg/L Target is *set at 1.5 mg/L*	Chloride results mg/L	Sulfate results mg/L	Chloride to Sulfate Ratio	A ratio < 1.0 is not corrosive and > 1.0 is *Corrosive.*		
2.76	29	40	0.73			

OPP is our corrosion treatment it stands for Orthopolyphosphate. It is specific for Lead material and has a recommended rate of 3.0 mg/L. Michigan Water Quality Experts consider OPP as an excellent Lead corrosion inhibitor.

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

To reduce exposure to lead and copper in drinking water:

- Run the water until it becomes cold, approximately 30 seconds to 2 minutes.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead and copper dissolves more easily in hot water.
- Do not boil water to remove lead and copper. Boiling water will not reduce lead and copper levels.
- Look for alternative sources or treatment of water. If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Faucets, fittings, and valves purchased before 2014 may contain up to 8 percent lead. Faucets, fittings, and valves purchased after 2014 may contain up to 0.25 percent lead, including those advertised or labeled as "lead-free". These items may be contributing to the lead found in your drinking water.

Additional Information is available on the City Web Site at *bhcity.us.* You can also visit the Berrien County Health Department's web site at *www.bchdmi.org › Lead-Drinking-Water*

Any questions you can call or email Mike O'Malley, Water Spt. at (269) 363-0575 and momalley@cityofbentonharbormi.gov Mike is hard to reach, his email is readily available.

Copy of Report letter MI0600 Benton Harbor Water Results to Resident that Sampled

Sent in Groups
5/15/20 19 homes 62 total
6/26/20 20 letters
6/29/20 16 letters
6/30/20 1 letters

9/23/20

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Benton Harbor Water Department Report of Lead and Copper Testing Results.

To: Name; [redacted] At: Address; [redacted] Your home's code; rpb1; Report Date: June 26, 2020

Thank you for participating in our 2nd group of 60 testing sites for Lead and Copper with Rev Pinkney Help. The samples you returned to us have been analyzed for Our new Corrosion Protection system by our laboratory operators. That was sample bottle #4. The first draw, bottle 1st and the 5th draw sample were sent to the EGLE (MDEQ) Laboratory in Lansing, MI. and the reports have returned back to us. The Action Level for Lead is 15 ppb ; the goal level for lead is 0; The Action Level for Copper is 1300 ppb

A 0 (zero) is considered a Non-Detect of either Lead or Copper.

1st Draw Lead Result ppb	1st Draw Copper Result ppb	5th Draw Lead Result ppb	5th Draw Copper Result ppb		Action Level for Lead is	15 ppb
1.1	9.4	0	2.5		Action Level for *Copper is*	1,300 ppb
In House	Testing	For Water	Quality	Parameters		
OPP Residual mg/L Target is *set at 1.5 mg/L*	Chloride results mg/L	Sulfate results mg/L	Chloride to Sulfate Ratio	A ratio < 1.0 is not corrosive and > 1.0 is *Corrosive.*		
2.76	29	40	0.73			

OPP is our corrosion treatment it stands for Orthopolyphosphate. It is specific for Lead material and has a recommended rate of 3.0 mg/L. Michigan Water Quality Experts consider OPP as an excellent Lead corrosion inhibitor.

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

To reduce exposure to lead and copper in drinking water:

- Run the water until it becomes cold, approximately 30 seconds to 2 minutes.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead and copper dissolves more easily in hot water.
- Do not boil water to remove lead and copper. Boiling water will not reduce lead and copper levels.
- Look for alternative sources or treatment of water. If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Faucets, fittings, and valves purchased before 2014 may contain up to 8 percent lead. Faucets, fittings, and valves purchased after 2014 may contain up to 0.25 percent lead, including those advertised or labeled as "lead-free". These items may be contributing to the lead found in your drinking water.

Additional Information is available on the City Web Site at *bhcity.us.* You can also visit the Berrien County Health Department's web site at *www.bchdmi.org › Lead-Drinking-Water*

Any questions you can call or email Mike O'Malley, Water Spt. at (269) 363-0575 and momalley@cityofbentonharbormi.gov Mike is hard to reach, his email is readily available.

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name: Benton Harbor Water

County: Berrien WSSN: 0600

Sample Location: Residential Homes 62 of Date Sampled: 4/28/20 - 6/9/20

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run your water before drinking.** The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
    - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
    - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for drinking, cooking, and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. As part of routine maintenance, the aerator should be removed at least every six months to rinse out any debris that may include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: BC(1)) # 410

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Joelle Regovich; Chris J Cook; Mike O"Malley; Courtney Davis; Darold Harlan; Darel Rice; Lesia Osler; tjennings@bhcity.us; Michael McDaniel; Sasy, Ninah (EGLE)
Cc:	Bolf, Michael (EGLE); Onan, Brandon (EGLE)
Subject:	EPA Grant for BH
Date:	Thursday, October 29, 2020 3:31:19 PM
Attachments:	image001.png 2020-05-29 Complete Submitted Application Package.pdf

Good afternoon all,

Congrats on the successful grant application for EPA-OW-OGWDW-19-01! It seemed like a good time to touch base on various ongoing efforts by different groups that might intersect with this project. Overall, I'll make the observation that the full request amount of $15M was only partially awarded, so many activities will need to drop off. Moving forward, I'm happy to volunteer to participate in meetings to help plan this work and coordinate efforts.

LSL removal – The city is required to begin replacing LSL per Michigan Lead and Copper Rule starting in 2021, and we also have a deadline of a verified DSMI by 1/1/2025.

-Suggest we utilize the efforts underway by Mike McDaniel to help with the inventory process in the application. A proper inventory will be very important, especially with ongoing sampling requirements for the ALE.

-Suggest we coordinate with the water leak pilot and energy conservation study ongoing with Ninah Sasy's office of Clean Water Public Advocate

Corrosion Treatment – The city has selected Todd Luks and Elhorn engineering to conduct the required corrosion optimization study, the cost of which was included in the grant application. EGLE has been in conversations directly with Mr. Luks, which are ongoing.

Private Property Sign-offs – Abonmarche and Kalin Construction appear to be going through this right now for the ongoing WM construction. Their experience will help inform the future LSL removals under this grant, as this can be a significant hurdle especially for rental properties.

Filter Distribution – BCHD/Courtney Davis have been doing an excellent job of accomplishing filter distribution, even during a pandemic!

Outreach and education – A group of folks has organized to meet and discuss aspects of public outreach and information, including BCHD and Ninah's office.

Thanks for reading, I'm sure we are all excited to see this project get going in the planning phase!

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



LET'S STAY SAFE TOGETHER

www.michigan.gov/drinkingwater



LET'S **STAY SAFE** TOGETHER

Joelle Regovich

From: Tracy Jennings <tjennings@cityofbentonharbormi.gov>
Sent: Friday, May 29, 2020 2:04 PM
To: Joelle Regovich
Subject: Fwd: GRANT13119222 Grants.gov Agency Tracking Number Assignment for Application

Here you go

---------- Forwarded message ---------
From: <DoNotReply@grants.gov>
Date: Fri, May 29, 2020 at 1:44 PM
Subject: GRANT13119222 Grants.gov Agency Tracking Number Assignment for Application
To: <mclark@cityofbentonharbormi.gov>
Cc: <tjennings@cityofbentonharbormi.gov>

Grantor agency has assigned the following Agency Tracking Number to your application: fdaaeca1-96fa-4d72-b4c8-8214a6c6d400GRANT13119222.

You will need the Agency Tracking Number when corresponding with the Grantor agency about your application.

Use the Grants.gov Tracking Number at Grants.gov to check your application's status and to review your Agency Tracking Number.
Type: GRANT
Grants.gov Tracking Number: GRANT13119222
UEI: 0589621920000
AOR name: michael r clark
Application Name: City of Benton Harbor Lead Service Lines Replacement Project
Opportunity Number: EPA-OW-OGWDW-19-01
Opportunity Name: Reduction in Lead Exposure Via Drinking Water
https://apply07.grants.gov/apply[redacted]

Thank you.
Grants.gov
If you have questions please contact the Grants.gov Contact Center:
support@grants.gov
1-800-518-4726
24 hours a day, 7 days a week. Closed on federal holidays.

PLEASE NOTE: This email is for notification purposes only. Please do not reply to this email for any purpose.

--
PLEASE NOTE the NEW telephone number

Tracy-Ann Jennings | tjennings@cityofbentonharbormi.gov
Director, Community and Economic Development
City of Benton Harbor | 200 E. Wall St. | Benton Harbor, MI 49022
P:(269) 204-2776 (Direct) or (269) 927-8400 ext. 8472 | F: (269) 927-0480
www.bhcity.us

U.S. Environmental Protection Agency (EPA)
Office of Water, Office of Ground Water and Drinking Water
Funding Opportunity: Reduction in Lead Exposure Via Drinking Water
Funding Opportunity Number: EPA-OW-OGWDW-19-01
Catalog of Federal Domestic Assistance (CFDA) Number: 66.443

Project Title: City of Benton Harbor Lead Service Lines Replacement Project

National Priority Area: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Infrastructure and Treatment Improvements

Name of Applicant: City of Benton Harbor

Key Personnel and Contact Information:

Ellis Mitchell, City Manager, emitchell@cityofbentonharbormi.gov, 269-927-8457

Mike O'Malley, Benton Harbor Water Superintendent, momalley@cityofbentonharbor.gov 269-927-8471, option 2

Tracy-Ann Jennings, Director Community and Economic Development, tjennings@cityofbentonharbormi.gov, 269-927-8421

Project Cost:

Federal Fund Grant Request: $14,842,995.30

Non-Federal Match: $1,649,221.70

Total Project Cost: $16,492,217.00

B. Executive Summary

The project will address EPA National Priority Area One: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Infrastructure and Treatment Improvements.

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. The City of Benton Harbor triggered an action level exceedance (ALE) for lead when the regularly scheduled testing in 2018 discovered lead was in the water and that at least 10% of the samples tested had lead levels that exceeded the action level of 15 parts per billion (ppb) for lead in water. Follow-up sample rounds in 2019 confirmed the presence of lead, and the ALE continues to present. To reduce lead exposure to residents, the city will replace all residential lead service lines within the City of Benton Harbor, estimated to be 2,383 lines. Service lines will be replaced with ¾" to 1" copper piping from the main to the home's service connection (both public and private portions).

Replacing known lead hazards in Benton Harbor drinking water will significantly improve the health and safety of over 9,800 residents in a listed disadvantaged community. It will modernize and update aging water infrastructure, providing safe and reliable water delivery for all ages and future generations.

The city has also installed corrosion control treatment following the 2018 ALE, however an optimization study has not yet been completed. A study to optimize the corrosion treatment will help ensure long term stability and reduction of lead throughout the water system. This project includes funding for an optimization study.

As part of public outreach regarding the project, an increased number of residents will have information about lead in drinking water, its harmful effects and steps to take to mitigate risk. A group of state and local stakeholders was recently formed to develop strategies for public outreach on issues regarding drinking water in the city.

The project will create a trackable, accurate GIS database of city infrastructure materials not previously recorded, which will update and upgrade the existing materials inventory.

Project outcomes include an overall reduction in lead exposure and associated health risks in the community through reduction of sources of lead in drinking water systems via infrastructure improvements.

C. Work Plan

1. National Priority Area

a. Approach. The project will address National Priority Area One: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Infrastructure and Treatment Improvements.

A recent Pilot grant assessment of service line material in the city indicated 87% of residential lines had lead either at the city-owned or privately-owned side. To reduce lead exposure to residents, the proposed project will replace all residential lead service lines within the City of Benton Harbor, estimated to be 2,383 lines. Service lines will be replaced with ¾" to 1" copper piping from the main to the home's service connection (both public and private sides).

The project will also complete an Optimization Study for the existing corrosion control treatment (CCT) to minimize dissolution of lead and copper into drinking water without compromising other health-related water quality goals.

The City of Benton Harbor Water Department provides service to over 9,800 city residents, who are predominately low income. 2018 ACS data for the community indicates a demographic profile of 10.4% White, 85.6% Black, 4.9% Hispanic or Latino, and 0.2% Asian. Neighboring communities of Benton Harbor Township and City of St. Joseph have their own, separate water supplies.

At the beginning of the 20th century, the City of Benton Harbor was a thriving commercial center and popular recreation destination. Over 54 industries provided manufacturing jobs in the region. By the 1950 census, the city population had reached 18,796 residents, nearly double the city's current number. Between 1970 and 1985, thousands of jobs were lost due to closing or downsizing of local manufacturing plants. The city unemployment rate consistently exceeded twenty-five percent during that period and more than twenty percent of families were living below the established poverty level. Absentee landlords and low-income residents combined to result in deteriorating neighborhoods. Retail activity downtown evaporated. Businesses closed or left the city, drastically reducing its tax base. Beginning in 1982, the Michigan Department of Commerce ranked Benton Harbor as the state's most distressed community.

The city continued to struggle financially throughout the 1990s to early 2000s. In February 2010, Michigan Governor Granholm declared a financial emergency in Benton Harbor and in March, a state panel named an emergency financial manager to run the city. State officials reported that Benton Harbor's financial troubles included a deficit that had been growing by double digits, a pension plan underfunded by $10 million, and the city requesting an emergency infusion of cash from the state to make its payroll.

In order to reduce deficits, the city workforce was roughly halved, shrinking from roughly 120 employees in 2010 to 60 in 2014. This was achieved through a mixture of layoffs, service outsourcing and budget cuts. In 2014, the City's finances had improved to a point

where the emergency financial manager could recommend transition to a state-appointed receivership advisory board. The City's accumulated deficit had been eliminated, expenditures were reduced substantially, and the City made 100-percent of its annual pension payments for the first time in a decade.

In July 2016, the state of Michigan fully relinquished oversight of Benton Harbor, following a recommendation from a state-appointed receivership transition advisory board. This now allows the City to manage operations and finances without oversight.

This long financial struggle for the area continues to have impact. 2018 census.gov figures list Benton Harbor MHI at $20,232, with 46.9% of persons in poverty. Rental homes make up 68% of housing in the city, making its rental percentage the highest of all surrounding communities. The 2017 median home value in the city was $49,200. Many neighborhoods have vacant properties and/or blighted homes. With a limited tax base, and many areas to improve, the cost burden of replacing all lead service lines in the city per Michigan Lead and Copper rules is high. The health burden of replacing them only as limited funds allow, under known Action Level Exceedance (ALE) conditions, is even higher.

The state of Michigan has demonstrated that the City of Benton Harbor meets their disadvantaged affordability criteria as determined by its Drinking Water State Revolving Fund program as shown in its 2020 Intended Use Plan. The City has included a letter requesting a reduced cost share/match of 10% in this grant application.

Funding assistance is critical for Benton Harbor to create a reliable, lead free and safe drinking water supply without compromising the progress it has made toward stronger financial health. Water rates, already the highest in the area, do not have the capacity to raise the $16 million necessary to replace lead service lines (LSLs).

See supporting documentation in Project Narrative Attachments.

b. Known Lead Issue. Benton Harbor’s water distribution system is about 100 years old with most 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.

The City of Benton Harbor initiated the development of a GIS database during a 2014 Stormwater, Asset Management, and Wastewater (SAW) Grant process. As part of the SAW project work, 2,612 water meters were replaced. In 2017, the City completed a Water System Asset Management Plan which focused on the water distribution system. The water system was added to the GIS database, however, service line data was limited to recent projects where as-builts were available. Data such as installation date, diameter, material, and location description was largely unavailable.

In May 2018, the Michigan Department of Environmental Quality (DEQ, now Department of Environment, Great Lakes and Energy/EGLE) awarded the City of Benton Harbor a $284,000 Lead Abatement Pilot Program Grant to fund a Lead Water Service Verification

and Replacement Project. The results of the work were used to update the city Distribution System Material Inventory and Asset Management Program. Funding also allowed for the replacement of 17 lead water service lines which were identified during the project. Data collected included location, inspection date, inspection status, pipe material public, pipe size public, pipe material private, pipe size private, depth of pipe and notes.

During the investigation period of the Pilot grant, verifications and replacements were conducted simultaneously due to the known lead contamination issues from water sampling. These homes were scheduled for replacement while other homes had issues discovered during "pot holing" where a 3'x3' hole was dug around the curb stop so that pipe material could be identified on both the privately-owned side and the City-owned side. Several homes were found to have leaking or broken lead service lines. These home were then scheduled for replacement. Locating the service line was difficult at some addresses due to the age and condition of the existing site. Many of the services were nearing 100 years in age and were missing or had buried shut offs.

Almost half of the addresses in the GIS were able to be updated with historical material information. From this dataset, a review of the buildings footprint layer identified non-vacant lots from which residential homes were randomly selected for service pipe material verification. A total of 94 homes were verified by "pot holing." The majority of homes have lead on the City side and galvanized on the private side. The results of the field verification were recorded using GPS equipment and integrated into the GIS.

Results from the Pilot Grant have helped the City to identify the scope of lead service replacement lines that needs to occur to mitigate risk. Approximately 87%, or 2,383, of all homes in the City are likely to have lead services lines that need to be replaced.

ALE. The city triggered an action level exceedance (ALE) for lead when the regularly scheduled testing in 2018 discovered lead was in the water and that at least 10% of the samples tested had lead levels that exceeded the action level of 15 parts per billion (ppb) for lead in water. The higher levels of lead were confirmed in two subsequent sample rounds in 2019.

The September 2018 testing report for lead indicated the 90th percentile result at 22 ppb, with a range of 0-60 ppb. Nine sites were above the Action Level Limit of 15 ppb. The DEQ notified the City of an ALE in October 2018. Follow up (non-regulatory) sampling of an additional 336 samples indicated 54 location ranging from 16-62 ppb, 192 households from 1 -14 ppb and 89 households with no value for lead.

Between January 1, 2019 and June 30, 2019, City testing reported a 90^{th} percentile value of lead at 27 ppb, again exceeding the 15 ppb Action Level limit. The range of results was between 0-59 ppb, with twelve sites above 15 ppb. July 1, 2019 to December 31, 2019 testing indicated a 90^{th} percentile value of 32 parts per billion (ppb) for lead, continuing the ALE. The range of results was 0-72 ppb, with ten sites above 15 ppb.

A previous 2015 sample event indicated that while the 90th percentile was not over the action level in 2015, there were two samples that were above 15 ppb.

In response to the action level exceedance in 2018, the city worked to quickly install corrosion treatment and began feeding a phosphate-based corrosion inhibitor on March 25, 2019, with a modified chemical composition implemented in February 2020. Thus far, a reduction in lead levels has not been noted due to the treatment and a CCT optimization study has been requested by EGLE. This grant proposal includes funding for the optimization study.

See supporting documentation in Project Narrative Attachments – Section I. Supporting Documentation of Lead Issue.

c. Public Education. The City dedicates a page on its website to notices and resources on lead in the water supply https://bhcity.us/water/ with a link from its home page. It issued an advisory to drinking water customers in 2018. In August 2019 and February 2020, the City sent a mailer to residents regarding the ALE for lead in the drinking water. The mailers included information on steps to take to reduce exposure to lead in the drinking water, contact information for lead testing in children, and details on how to get free water filters and replacement filters from the Berrien County Health Department. In January 2020, the City issued a press release notifying drinking water customers of another ALE in the drinking water. Several publications picked up the press release. The City also publishes and delivers to customers an annual Consumers Confidence Report with water quality results. The reports are also available on the City website 24 hours a day.

Berrien County Health Department (BCHD) has been instrumental in being a resource for the City to help inform residents and mitigate health risks. It provides information about lead, its effects and precautionary actions to take on its website http://www.berriencounty.org/1568/Lead-Drinking-Water.

Courtney Davis at the BCHD developed and made publicly available an easy to understand timeline of the Action Level Exceedance. Public outreach groups that consist of various governmental partners and grassroots/non-governmental groups have also been assembled to inform and educate the public on the lead risk. While the city is required to conduct public advisory and public education each time an ALE occurs, these are not necessarily tailored to residents and may not reach most people. The goal of this coalition is to engage local residents at their level and on their terms, with consistent and accurate messaging. Some goals for the group are a plain language Q&A, develop a community engagement plan, collaborate on an environmental health web page in the local newspaper, and host a community forum to give residents a voice.

Remediation follow-up monitoring is planned to ensure corrosion control treatment and LSL replacements are working as anticipated. Water sampling will occur during the project period per EGLE requirements. Results will be used to verify that lead levels are reduced as anticipated.

Additionally, the City is working with EGLE on a Technical Managerial and Financial Capacity Study to ensure the city has adequate staffing and financial mechanisms to carry out operation and maintenance of the City's water system. In May 2020, City Commissioners

approved rate increases for water and sewer service to address a water and sewer budget shortfall. Starting July 1, water rates will increase approximately 10 percent annually for the next five years and annual sewer rates will increase by 7 percent for the next five years. This increase is anticipated to bring the sewer/water fund to a self-supporting level but does not provide additional funding for lead replacement.

See supporting documentation in Project Narrative Attachments – Section I. Supporting Documentation of Lead Issue.

d. **Maintaining Lead Level Reductions.** All residential lead service lines are being replaced with copper, with a new service valve and valve box. This should significantly reduce contamination sources within the system and improve reliability of water service. Testing will continue to occur per EGLE requirements to monitor lead levels in residences. Testing will entail collection of two sets of Water Quality Parameter (WQP) samples, at least 24 hours apart from the entry point to the distribution system, Treatment Plant Tap and from ten locations in the distribution system. Samples will be tested twice a year, repeating every third year until both lead and copper Action Levels (ALs) are met during the entire three year period.

Additionally, to show the ALs can be met, lead and copper samples will need to be tested from 60 sites at least twice a year until both lead and copper ALs are met in two consecutive six month periods. Per EGLE, corrosion control treatment may be discontinued if the action levels are met during future rounds of monitoring. Results of the optimization study would also be discussed with various partners for consideration of implementing changes.

The City and Berrien County Health Department offer and will continue to offer lead blood testing for children and free water filters and replacement cartridges to residents. The City of Benton Harbor provides free water testing to residents as well. These services are planned to continue to maintain lead monitoring efforts.

Finally, targeted sampling of sentinel sites in the water system will be conducted as part of this project in coordination with state and county public health officials. The sampling protocol has been established during the 2018 ALE and consists of sequential bottles filled after a period of stagnation. These sentinel sites offer an opportunity to see trends in the system with a good degree of detail.

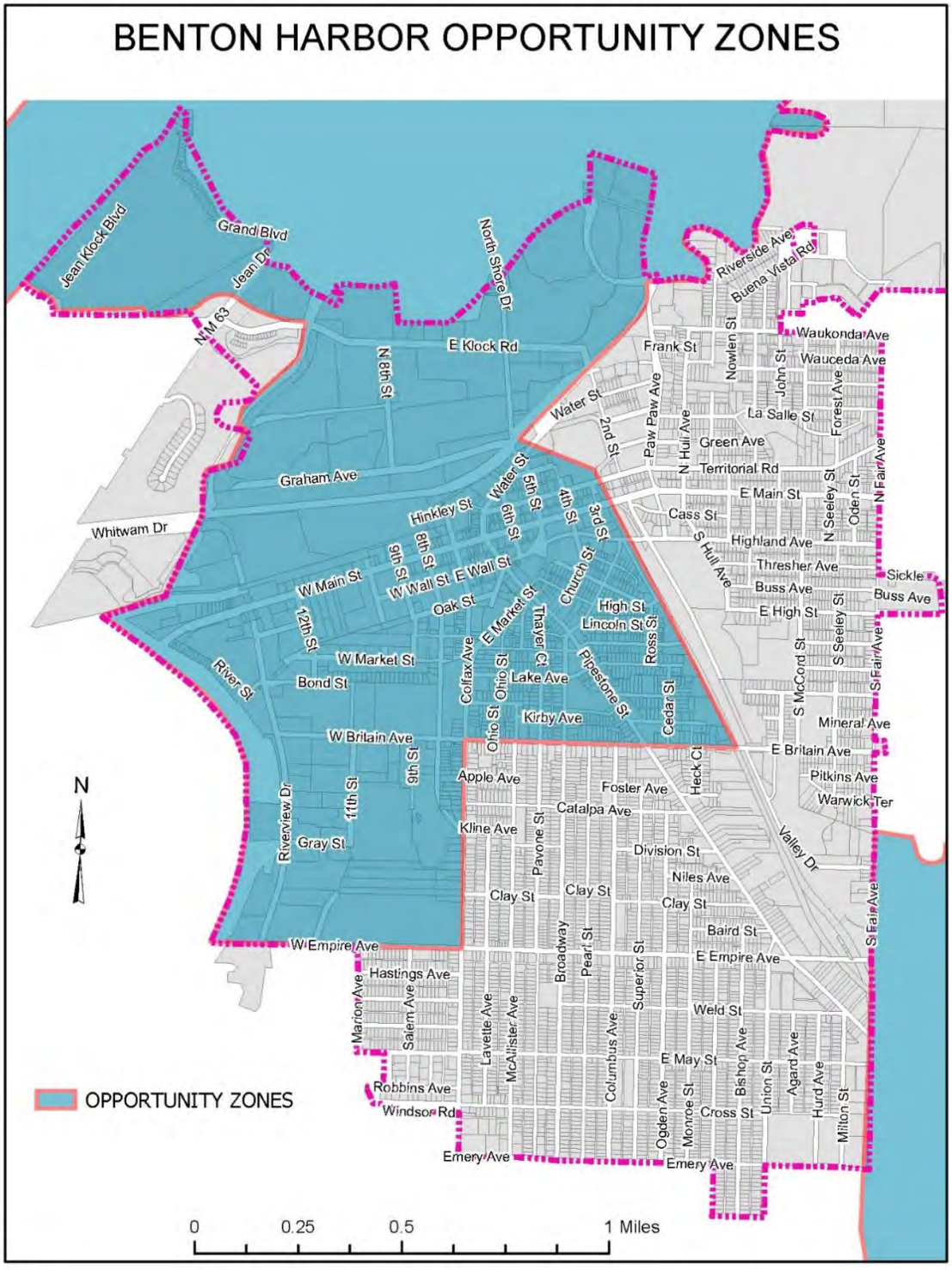
e. **ALE Status/Opportunity Zone.** The regularly scheduled testing for Benton Harbor in 2018 and 2019 discovered lead was in the water and that at least 10% of the samples tested had lead levels that exceeded the action level of 15 parts per billion (ppb) for lead in water.

The September 2018 testing report for lead indicated the 90th percentile result at 22 ppb, with a range of 0-60 ppb. Nine sites were above the Action Level Limit of 15 ppb. Follow up (non-regulatory) sampling of an additional 336 samples indicated 54 location ranging from 16-62 ppb, 192 households from 1 -14 ppb and 89 households with no value for lead.

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indicated a 90th percentile value of 32 parts per billion (ppb) for lead, continuing the ALE. The range of results was 0-72 ppb with ten sites above 15 ppb.

The water distribution system is also within an Opportunity Zone area. See map below.



f. Lead Service Line Replacement Project:

1. Demonstration that the applicant has considered corrosion control as an option for reducing the concentration of lead in its drinking water.

In response to the Action Level Exceedance in 2018, the City worked to quickly install corrosion treatment and began feeding a phosphate-based corrosion inhibitor on March 25 of 2019. Monitoring of the corrosion treatment by the city operators has consisted of phosphate readings at the water plant and in distribution system. After two rounds of lead and copper samples that did not show improvement, the City was asked to modify the chemical composition and increase the target residual by EGLE staff. The City changed chemicals and started increasing dosing levels in February of 2020. Monitoring of the phosphate levels continues on a daily and weekly basis. Furthermore, the City is now required to monitor for water quality parameters at the plant tap and in distribution.

The grant proposal includes funding for an optimization study of the corrosion treatment to best ensure public health protection moving forward. The study will occur during the first year of the project. The study will assess various types and levels of corrosion inhibitors to best match the treatment to the city's source water. Results of the study would be discussed with various partners for consideration of implementing changes.

See supporting documentation in Project Narrative Attachments – Section I. Supporting Documentation of Lead Issue.

2. Plan to ensure that both the publicly-owned and privately-owned portions of a lead service line will be replaced.

The full length of LSL's on public and private property will be replaced at the same time for each residence. A full LSL replacement means that the entire service line is replaced between the water main in the public right-of-way and the customer's meter, rather than being partially replaced only between the public water main and the private property boundary.

Partial replacements of lead service lines (only up to the private property boundary) are not feasible because partial replacement is prohibited under the Michigan Lead and Copper Rule.

When completed, the project will accomplish four major benefits: (1) improving protection of public health by helping ensure a reliable, safe drinking water supply to all customers; (2) reducing public health risks associated with water main breaks; (3) reducing wasteful and expensive water losses from leaking or broken pipes; and (4) eliminating lead and galvanized service lines.

3. Plan for notifying customers of the replacement of any publicly-owned portion of the lead service line.

Prior to project start, the City will advertise and host a public meeting to review the lead service lines replacement project, the phased approach, and timelines to expect for service replacement. Multiple agencies and authorities will be present at the meeting to

answer questions and provide educational materials. Information will also be available on the City website and Facebook page.

Residents will also be notified via door-hangers and letters when work is to begin along their street. Each resident will be provided a way to identify a date and time for the contractor to enter the property. Customers will be given the name and phone number of a contact person for any construction-related problems. Multiple contractors will be solicited and engaged to complete each project phase, with a goal of completing work in the same neighborhood in a systematic process, minimizing disturbance time throughout neighborhoods.

4. Plan for notifying each customer that a replacement of any publicly-owned portion of a lead service line that is funded by this grant program will not be carried out unless the customer agrees to the simultaneous replacement of the privately-owned portion of the lead service line.

Mailings and public information meetings will highlight the requirement for replacement of the privately owned portion of the line. Additionally, information will be clear that LSL replacements will be at no cost to the owner and will require contractors to enter the home to connect the new service line to the water meter located inside the building. Contractors doing the work will have to provide adequate insurance to protect the owner against any loss that may result from damage caused by negligent construction operations on the owner's property, and require the contractor to provide the City with proof of such coverage; and guarantee to the owner that any work done shall be free from defects in material and workmanship for a period of one year from its completion.

During the Pilot grant process, legal agreements were created to establish homeowner/tenant permissions and obligations for the lead service replacement work. These agreements will be utilized for this project. An agreement to decline service line replacement will also be available to residents.

See supporting documentation in Project Narrative Attachments – Section H – Readiness to Proceed.

5. Plan for ensuring customers are provided filters certified to remove lead, in accordance with applicable standards established by the American National Standards Institute, along with no less than three months of replacement cartridges, and notifying each customer of premise plumbing flushing instructions within 24 hours of the conclusion of each lead service line replacement.

Berrien County Health Department will continue to provide free water filters and replacements to anyone who requests them. This information has been provided to residents in all mailings, and placed on the City and Berrien County Health Department websites. Instructions for installing the filters and recommendations to flush water lines for 30 days after the service replacement is completed will also be given to residents as each home connection is completed.

2. Expeditious Project Readiness to Proceed

Previous lead service line replacements occurred during the MDEQ Pilot grant project in 2018, which has provided the City with a clear process to follow for future replacements. The City is poised to proceed immediately upon approval of grant funding. The City has additionally reached out to EGLE about the proposed project, and has received their enthusiastic support.

Upon award of grant funding, the city will initiate public outreach and educational meetings about the project. It will provide a proposed project schedule on its website, map of planned phases for neighborhoods, work to be done, and details on the importance of lead service line (LSL) replacement. It will issue press releases, set up a contact person for questions, and post details and updates on its website and Facebook pages. A public meeting will be scheduled to provide residents with an opportunity to ask questions and receive details about the project. The City will invite representatives of EGLE, the Berrien County Health Department and its Engineer of Record to assist with questions. Example homeowner/resident agreements granting permission to access private property will be available for review on the city website and at the public meeting. These agreements were previously utilized for the Pilot grant project.

The City expects to utilize a four year project period to replace all residential lead service lines. Additionally, the City will seek a qualified consultant to initiate the CCT Optimization Study in Year 1, to be completed within 12 months.

There is a high probability that many of the water service lines located within the project area are composed of lead or galvanized steel. Benton Harbor's municipal infrastructure was initially installed in the late 19th through mid-20th century and complete records were not kept describing water supply line materials, although it is known that lead was widely used before 1960. Analysis of data assembled during the Pilot grant indicate it is likely 2,383 replacement connections will need to be made. During the project/bid document development stage, the City will utilize all available resources to identify known lead service lines including seeking assistance from a water infrastructure analytics consulting company such as BlueConduit, who had a successful track record of locating probable lead service lines in Flint. With the previous data of how long contractors needed for each LSL replacement during the Pilot grant, completing all replacements is anticipated to take four years. This assumes a schedule of approximately 596 replacements per year. In order to hit this milestone, up to four contractors will be engaged each project year. The City will utilize a public bidding process to select each contractor. When service replacement work is put out to bid, the contractors will be required to submit a "per each" all included price per replacement, to establish a firm total project cost without variables. This will enable the city to evaluate proposed bids on an equal basis. EGLE does not require permits for this process, and contractors would need only to acquire city plumbing permits and county soil erosion and sedimentation control permits.

Previous work from the Pilot grant indicated that a contractor could complete 1 to 2 replacements per day. Each contractor will have to perform "pot hole" investigation at the curb stop to identify lead lines. Previously identified connections in the Pilot grant will be

incorporated into contractor assignments to aid their identification efforts and potentially reduce completion time for the entire project, resulting in more immediate health benefits to residents.

A map has already been created showing four (4) zones of the entire city limits (see map in attachments). The zones are broken into four (4) subzones to identify manageable contractor scopes of residential water services to investigate and potentially replace. A corresponding table shows the number of residential water service connections in each subzone and the sum for each zone recorded in the GIS database. Replacements that were done during the Pilot grant, and work that will be done as part of the fall 2020 DWRF project are excluded in the water service lines counts.

The replacement process involves verifying the service is lead at the curb stop and then proceeding to excavate the curb stop on the main. Once exposed, the existing lead service is turned off, disconnected and removed with new 3/4" to 1" copper piping being pulled at the same time. New copper water service is reconnected to the existing curb stop, a new curb stop and the meter inside the house. A new valve box will be set, all excavations will be backfilled and lawn areas will be restored. Residential water is out of service for approximately 4 hours during the process. Bituminous paving will be replaced at the completion of each LSL replacement.

Contractors will record their progress in the ArcGIS for Collector app to integrate records into the City's GIS infrastructure database. This will allow the city to see real time, up to date progress throughout neighborhoods. An Asset Program Manager will oversee the database throughout the project. Progress reports will be regularly submitted to the City.

Utilizing multiple contractors has many advantages. It allows the City to offer contracts to a wide range of contractors (local, small, women and minority owned), it keeps pricing competitive, it provides timelines that can absorb unexpected delays, it allows the contractor bonding obligation to be lower and not bidding prohibitive, and it allows for each year's contracts to incorporate previous successful strategies and eliminate unsuccessful ones.

As the City does not employ a staff engineer, the City's Engineer of Record, Abonmarche Consultants, will coordinate public notice flyers, bidding, contract award, contractor oversight, and provide progress reports to the city, following EPA solicitation clauses as required. As EPA funded work will be able to utilize Pilot grant processes, public notice flyers, and homeowner access permission forms, the city is ready to expeditiously proceed to the next phase of lead service line replacements.

Also occurring during the LSL replacement period will be upgrades to the city water distribution system and wastewater collection system financed through EGLE's DWRF loan program. This work is planned to occur between September 2020 and October 2021. These improvements will further strengthen protection of public health by ensuring a reliable, safe drinking water supply to all customers in the project area, and preventing failures of sanitary sewers where the probabilities and consequences of structural pipe failure are high. Sanitary sewer replacement will occur in the same street segments as the concurrent replacement of the antiquated water

mains since it would be fiscally irresponsible to replace water mains while leaving in place aged, structurally deficient sewers that are likely to fail in the next few years. This combined infrastructure improvement approach is consistent with the integrated asset management idea of "dig once" that saves both valuable time and resources. The DWRF project will also replace 150 LSLs and includes repairs to the city water tower.

In evaluating the proposed action alternatives for the DWRF funded projects addressing water distribution system, three options were considered. These action alternatives were also part of the evaluation criteria of the need to replace all the existing lead service lines proposed by this project.

a. No action - Taking no action would result in aged water mains remaining in service, with frequent breaks, broken or leaking valves, inadequate water pressures, and threats to public health from contamination. For the water tower, no action could result in ultimate failure of the vitally important asset. No action is unacceptable.

b. Optimum Performance of Existing Facilities - Problems inherent to a pipe itself cannot be solved through improved operational efficiency. Moreover, flushing a 100-year old water main will not remove tuberculation that has built up over decades. With the exception of the water tower, this alternative is infeasible. For the water tower, optimum performance can be achieved by making the necessary repairs, as described in the previous section, to allow maximum efficiency to be achieved.

c. Replacement - Full water main replacement, with full-length replacement of lead/galvanized service lines (LSLR) where encountered, is the only technically feasible solution that simultaneously accomplishes the following: (1) reverses the poor condition of the existing water pipe; (2) addresses technical and constructability considerations such as the comparative depths of the existing sanitary sewer and water main; and (3) resolves the pressure concern. Moreover, it is the only solution that guarantees no replacement of this antiquated water main will be required in a few years due specifically to its age and age-related condition. For the water tower, constructing a new tower is cost-prohibitive, approximately $5 million compared to roughly half million dollars to repair.

With replacement selected as the path forward on the DWRF project, the City is leveraging additional financial commitment to the health needs of its community.

The City will continue to monitor corrosion treatment that began in 2019 during the project period. While successful corrosion control protects users from lead levels, the sheer age and poor condition of city water infrastructure poses a high risk of failure and leaks to users. In addition, sources of lead also exist within customer plumbing systems such as high leaded brass or lead/tin solder copper piping. Replacement of all lines as soon as possible produces the highest and most comprehensive health benefit to the disadvantaged community, particularly when coupled with an optimized corrosion control treatment.

With EPA funding, the City of Benton Harbor will have addressed significant conditions that

are contributing to increased concentrations of lead in drinking water. The City will continue to sample drinking water twice a year, per EGLE requirements, until it has demonstrated Action Level Exceedance is no longer occurring.

See supporting documentation in Project Narrative Attachments – Section H – Readiness to Proceed.

3. Environmental Results and Measuring Progress

a. Stated Objective. This project will support will support EPA Strategic Plan Goal 1: "A Cleaner, Healthier Environment: Deliver a cleaner, safer, and healthier environment for all Americans and future generations by carrying out the Agency's core mission, Objective 1.2: Provide for Clean and Safe Water: Ensure waters are clean through improved water infrastructure and, in partnership with states and tribes, sustainably manage programs to support drinking water, aquatic ecosystems, and recreational, economic, and subsistence activities, of the EPA Strategic Plan."

Replacing known lead hazards in Benton Harbor drinking water will significantly improve the health and safety of residents and reduce the number of communities in the nation that are out of compliance with health-based standards.

It will modernize and update aging water infrastructure in the city, providing safe and reliable water delivery for all ages and future generations. The project will leverage and multiply the benefits of the DWRF funded projects to replace portions of the city water distribution system and wastewater collection system. Modern, reliable, safe drinking water serves to advance economic development within the community by attracting and retaining businesses and residents that can increase the city tax base and contribute to its sustainability.

b. Results/Outputs. Outputs of this project include:

- A reduction in lead in drinking water provided by the Benton Harbor drinking water system due to infrastructure improvements that will replace all residential lead service lines in the city.
- A decrease in the number of lead service lines, and galvanized pipes downstream of lead service lines, in the drinking water system, resulting in a decrease in exposure to lead via drinking water. The goal is to remove all existing residential lead service lines so none remain, dramatically reducing exposure potential.
- An optimized corrosion control treatment to protect public health during and after the lead service line removal activities.
- An increased number of customers will have information about lead in drinking water, achieved through outreach and public education throughout the project. All residents receiving lead service line replacement will receive information on the effects of lead, steps they can take to protect themselves, and city remediation efforts. Public outreach will occur to the entire community.

- The project will create a trackable, accurate GIS database of city infrastructure materials not previously recorded. During the project, an asset management plan coordinator will ensure the information is accurate and complete, ensure all elements have been addressed and confirm there is a process to identify any limitations on the use of the data.

c. Projected Environmental Improvements/Outcomes. Outcomes will include an overall reduction in lead exposure and associated harms through reduction of sources of lead in drinking water systems. Recent testing has shown that residents, especially children, are currently at risk from lead in drinking water. Removing lead at a young age prevents damage to developing bodies and nervous systems that affect learning, behavior, speech, hearing, and growth rates. Pediatric blood testing results can be used to track blood lead levels to understand if reduced childhood lead exposure goals are being met.

The local public school system has also been affected by declining enrollment and reduced budgets. Students are faced with fewer resources for learning each year. Removing the lead exposure in water lines can help eradicate the harm lead is doing to developing bodies and nervous systems and lead to higher testing and learning results, which can be tracked annually.

Benton Harbor can also experience an overall improvement in health outcomes in its community through this removal of source lead. Fewer residents will have their limited household budgets overwhelmed by health care costs, leading to more financially stable households. Outcomes can be measured by tracking the number of households seeking financial assistance through welfare, Medicaid, and the Children's Health Insurance Program.

Multiple years of public outreach during the projects will also lead to an overall increase in public understanding of the health effects of lead and efforts towards the reduction of sources of lead in the drinking water system. This can be measured by analyzing the number of requests for lead blood level testing, requested water kit tests, and requested water filters in the community per year.

4. Milestone Schedule

The Michigan Lead and Copper Rule promulgated in 2018 requires municipal water suppliers to begin removing all lead service lines at a rate averaging 5 percent per year, not to exceed 20 years for completion, starting in 2021. Completion of this project will ensure that Benton Harbor has met these requirements. Additionally, funding support from this EPA opportunity will allow the City to meet these requirements without imposing additional financial hardship on residents and will dramatically shorten the exposure of a known health risk to the public from 20 years to four.

Below is the proposed Milestone Schedule for the Lead Service Line Replacement project:

Year	Task	Timeline
1	Public Outreach Meetings/ Notification Mailings	January 2021

1	Develop bid plans/specs	February 2021
1	Contract with qualified consultant to perform Optimization Study for Corrosion Control Treatment (CCT)	March 2021
1	Bidding Phase 1 & Contractor Agreements	March 2021
1	Prepare and Submit Quarterly EPA Performance and Financial Reports	March, June, September, December 2021
1	Phase 1 Project start	April 2021
1	Collect and report lead and copper sampling results to EGLE per monitoring requirements	June 2021
1	Phase 1 Project end	November 2021
1	Collect and report lead and copper sampling results to EGLE per monitoring requirements	December 2021
1	Year One Milestone Completion – 596 Total LSL Replacements by end of Year 1. $4,160,554.25 in project costs expended. GIS database updated with field data Optimization Study for CCT initiated	December 2021
2	Homeowner/resident notification mailings Public Outreach	January 2022
2	Bidding Phase 2 & Contractor Agreements	February 2022
2	Completion of Optimization Study for Corrosion Control Treatment (CCT)	March 2022
2	Phase 2 Project start	March 2022
2	Prepare and Submit Quarterly EPA Performance and Financial Reports	March, June, September, December 2022
2	Collect and report lead and copper sampling results to EGLE per monitoring requirements	June 2022
2	Phase 2 Project end	November 2022
2	Collect and report lead and copper sampling results to EGLE per monitoring requirements	December 2022
2	Year Two Milestone Completion –	December 2022

	596 New LSL Replacements. 1,192 Total by end of Year 2. $8,271,108.50 in project costs expended by end of Year 2. GIS database updated with field data Completion of Optimization Study for CCT.	
3	Homeowner/resident notification mailings Public Outreach	January 2023
3	Bidding Phase 3 & Contractor Agreements	February 2023
3	Phase 3 Project start	March 2023
3	Prepare and Submit Quarterly EPA Performance and Financial Reports	March, June, September, December 2023
3	Collect and report lead and copper sampling results to EGLE per monitoring requirements	June 2023
3	Phase 3 Project end	November 2023
3	Collect and report lead and copper sampling results to EGLE per monitoring requirements	December 2023
3	Year Three Milestone Completion – 596 New LSL Replacements. 1,788 Total by end of Year 3. $12,381,662.75 in project costs expended by end of Year 3. GIS database updated with field data	December 2023
4	Homeowner/resident notification mailings Public Outreach	January 2024
4	Bidding Phase 4 & Contractor Agreements	February 2024
4	Phase 4 Project start	March 2024
4	Prepare and Submit Quarterly EPA Performance and Financial Reports	March, June, September, December 2024
4	Collect and report lead and copper sampling results to EGLE per monitoring requirements	June 2024
4	Phase 4 Project end	November 2024

4	Collect and report lead and copper sampling results to EGLE per monitoring requirements	December 2024
4	Year Four Milestone Completion – 595 New LSL Replacements. 2,383 Total by end of Year 4. $16,492,217.00 in project costs expended by end of Year 4. GIS database updated with field data	December 2024
4	Submit Final EPA Grant Reports	March 2025

5. Detailed Budget Narrative

The City GIS infrastructure database identifies 2,739 metered residential water service lines within city limits that have not been replaced. Previous service line replacements completed during the Pilot Grant project period in 2019 ranged from $4,800 - $7,200 per home depending on the distance from the main to the home, averaging $6,000 per home. This included all restoration, curb and pavement restoration. When service replacement work is put out to bid, the contractors will be required to submit a "per each" all included price per replacement, to establish a firm total project cost without variables. This will enable the city to evaluate proposed bids on an equal basis.

Additionally, during the Pilot Grant service line verification process, 87% of lines verified identified lead or galvanized piping on either the City-owned or privately-owned side of the service. To establish a project budget, the City is calculating its replacement costs per the following:

2,739 service lines x 87% = 2,382.93 lines to replace

2,382.93 lines x $6,000/line = $14,297,580.00 to replace LSLs

Engineering Administration fees at 15% of total project cost: $2,144,637.00

An optimization study for corrosion control treatment would also be initiated in Year 1 to be completed within 12 months. A qualified consultant would be hired to perform the study.

Optimization Study Corrosion Control Treatment - $50,000

Total Project Cost: $16,492,217.00

Of the total cost, the City is requesting $14,842,995.30 (90%) from this EPA funding opportunity and is committing to $1,649,221.70 (10%) for a cost share match. See reduced cost share/match letter requesting a 10% match due to the City's disadvantaged status in Project Narrative Attachments.

The City will complete the LSL replacement project over a four year period, or less, depending on contractor capacity. Each year will see the replacement of approximately 596 service lines, at a cost of $4,110,554.25. The Optimization Study's $50,000 cost will be incurred during the

first year of the project.

The City will utilize city income tax revenue each project year to provide its non-federal cost-share. The income tax generated $1,684,794 during the 2018-19 fiscal year. City income tax fund projections out to 2025 show that it can incur up to $500,000 per year ($2 million over four years) in additional expenses, providing for the City's $1,649,221.70 cost-share during this project. Please see funding projection spreadsheet in Project Narrative Attachments.

Contractual expenses will include contractor labor costs for excavation of the curb stop on the main, disconnection and removal of old line, pulling of new copper piping, reconnection of piping to the existing curb stop, and restoration of pavement and lawn areas as needed. Contractor materials cost include 3/4" to 1" copper piping, new curb stops, new meters inside the house and new valve boxes.

Engineering administration tasks will include preparation of bid documents, overseeing bid process, executing contractor agreements, providing public education and outreach about the project, notifying residents of project timeline, acquiring property access agreements from residents, overseeing contractor work, reviewing and approving contractor requests for payment, tracking and recording LSL replacement data in GIS database, final inspections and closeout of project.

Expenses for the Optimization Study for Corrosion Control Treatment will be consultant cost for professional evaluation of the various types and levels of corrosion inhibitors to best match the treatment to the city's source water, thus minimizing dissolution of lead and copper into drinking water without compromising other health-related water quality goals.

6. Programmatic Capability/Experience

a. Organizational Experience

The City of Benton Harbor is a local unit of government. The city charter became effective on April 14, 1945. Under that charter, the city is governed by a council-manager system that combines the political leadership of nine elected commissioners with the professional expertise of a city manager appointed by the commissioners.

The City Manager is the chief administrator of Benton Harbor and is responsible for the day-to-day administration of the city. The manager implements the council's policies and programs while coordinating the delivery of services throughout the city through the various departments in city government. The City Manager will oversee the LSL replacement project, providing regular updates to the City Commission. Current City Manager, Ellis Mitchell, has served as city manager for three other cities – Berkeley, Mo., East St. Louis, Ill., and East Point, Ga, bringing a wide understanding of city management to the project. The City Manager also oversees compliance with multiple federal, state and local funding sources involved in city projects and is well prepared to follow EPA compliance requirements.

The city water distribution system is managed by the Benton Harbor Water Department, under the direction of Mike O'Malley. Recently, City staff successfully oversaw and

completed the modernization and upgrades of the city water filtration plant over a two year period, ending in 2011. The Water Plant now has an anticipated life span in excess of 50 years and can properly treat up to 12 million gallons per day. Funding for the project was acquired through the State of Michigan's Drinking Water Revolving Loan Funds (DWRF), supplemented by American Recovery and Reinvestment Act (ARRA) funds.

The Community and Economic Development strives to foster a better quality of life for Benton Harbor residents by developing viable neighborhoods with safe, suitable housing and by eliminating slums and blight. It oversees the City Home Rehabilitation Loan Program, CDBG program, Vacant Lot Revitalization Purchase Program and other grant funded programs benefitting residents. This department will oversee EPA grant compliance throughout the duration of the project.

The City of Benton Harbor utilizes its engineer of record firm, Abonmarche Consultants, to provide civil engineering expertise and guidance on municipal infrastructure projects, as the city does not employ a staff engineer. Abonmarche has assisted the city for over 25 years and has a strong working relationship with staff and comprehensive understanding of city infrastructure needs. The firm has assisted with multiple projects funded through a variety of sources including federal and state grants and state loans. The City will utilize results from previous Abonmarche water studies and upgrades to identify and complete the citywide lead service line replacement project.

The City has also had initial discussions with Cornwell Engineering Group, a qualified engineering consultant, for the purposes of conducting an Optimization Study for Corrosion Control Treatment. Cornwell Engineering Group was founded in 1985 by Dr. David A. Cornwell, after his successful career as a Professor at Michigan State University. Cornwell Engineering Group utilizes the latest innovations and sound scientific fundamentals in the pursuit of optimizing and designing water facilities.

b. Staff Expertise/Qualifications

Key City staff on the project, representing three FTE workers, include:

Ellis Mitchell, City Manager – Mr. Mitchell has been City Manager since January 2020, after acting as Interim City Manager since July 2019. Mr. Mitchell had previously served as City Manager for Benton Harbor from 1983 to 1987. He brings more than 40 years of comprehensive achievements in public, private and educational sectors to the City of Benton Harbor. He has managed four cities (Benton Harbor, MI, Berkeley, MO, East St. Louis, IL, and East Point, GA) saving two from State Receivership. He has provided management consulting services for cities and private sector companies. He has led planning and implementation of balanced Operating Budgets and 5 Year Capital Improvement Programs in several cities, stabilizing and improving financial management. He has served as Project Manager over major bond issues, developments, and several capital funding projects from planning, negotiating and throughout the construction process. His comprehensive experience will provide strong support throughout the LSL replacement project.

Michael O'Malley, Water Department Superintendent – Mike has over 30 years of experience working in water treatment plants. He has been Benton Harbor Water Department Superintendent since July 2016, additionally holding the position between 2008-2012. He is an F-1 and S-1 licensed Operator in Charge. Mike oversees Water Plant operations and maintenance, water distribution, sewer collections and storm water management for the City of Benton Harbor.

Tracy-Ann Jennings, Community and Economic Development Director – Tracy has over 15 years of experience and understanding as it relates to: Grant Application and Reporting, Employee Management and Supervision, Human Behavior Analysis, Leadership Coaching, Volunteer Management, Youth Development, and Nonprofit Leadership. Her strengths lie in community outreach and engagement, creating and executing major events, developing and sustaining strategic relationships, working with local media, communications and community relations, forecasting and strategic planning. She will act as a key member of the public outreach team and track grant compliance.

Abonmarche Consultants, Inc - Abonmarche Consultants, Inc., is a professional consulting firm specializing in civil engineering, surveying, architecture, marina development, landscape and planning services. The company was established in 1979 and became the Engineer of Record for the City of Benton Harbor in 1994. The City does not employ its own engineering staff and instead utilizes the professional expertise provided by Abonmarche as their Engineer of Record. Abonmarche has assisted the city with multiple projects involving grant or loan funding and is well versed in compliance, procedures and reporting documents. Abonmarche led the FDCVT and Pilot grant projects and will be able to guide the lead service replacement project with a thorough understanding of the City's infrastructure, community and municipal needs.

The project will utilize the following key Abonmarche staff:

Jason Marquardt, PE - Jason is a licensed Professional Engineer with more than 16 years of experience. He is responsible for managing, designing, and providing construction engineering and administration on municipal, local agency and state projects. He currently serves as Group Director of the Construction Division at Abonmarche. He has worked on a variety of civil projects that include infrastructure design, sanitary sewer, storm sewer, and water distribution system construction. He was project manager for the City of Benton Harbor's 2017 and 2018 FDCVT grant projects and the Pilot Grant project. His knowledge of the City of Benton Harbor's water infrastructure will contribute important guidance to the project team.

Corey Kandow, PE - Corey has over 20 years of experience in design and construction administration of municipal and site development infrastructure, street reconstruction, drainage, engineering studies, permitting, waterfront development and recreational facility projects. His responsibilities also include plan preparation, project design, and cost estimating. Corey's projects have utilized multiple federal, state and local grant and loan funding sources including MDOT, MEDC CDBG, USDA Rural Development, SRF/DWRF

loan and DNR Recreation grants and Corey understands the wide range of compliance necessary for each funding source.

In each of his roles, Corey is committed to ensuring that quality projects are built to exceed the client's expectation and remain within budget. Corey has acted as project manager for multiple City of Benton Harbor projects.

Bret Witkowski - Asset Management Program Coordinator - Bret will lead efforts to further develop and complete the infrastructure asset management programs for the City of Benton Harbor. Prior to his position at Abonmarche, Bret served Berrien County as the County Treasurer for 20 years. In addition to his to his position of County Treasurer, Bret served on multiple financial review committees for villages and communities throughout Berrien County. He is Chairman of the Berrien County Land Bank, which received $10 million in grant funding to remove blight in distressed Berrien County communities during his tenure. His experience with funding and conducting public relations and awareness campaigns will greatly assist project efforts.

Joelle Regovich – Grant Administrator – Joelle has over 7 years of experience overseeing grant related efforts for a variety of Abonmarche clients. She seeks out relevant funding sources to support projects, writes grant applications, and performs grant administration on awarded funds. Her experience includes a wide range of federal, state and local grants and funding sources including USDA Rural Development grants and loans, Michigan Economic Development Corporation CDBG and Infrastructure Capacity Enhancement (ICE) grants, Michigan Department of Natural Resources Recreation Grants, Michigan Council for Arts and Cultural Affairs grants, and Michigan State Historic Preservation Office (SHPO) Lighthouse Assistance Program grants. She will work closely with City staff to ensure grant compliance is met throughout the project.

Please see resumes in Project Narrative Attachments – Section F. Biographical Sketches

7. Past Performance. Recent relevant grants received by the City of Benton Harbor in the past three years include two Financially Distressed Cities, Villages and Townships (FDCVT) grants and one Pilot Grant from the Michigan Department of Environmental Quality (DEQ). The City has a long history of completing a variety of grant projects.

2017 FDCVT Grant – Cities, villages and townships experiencing financial struggles were offered grant funds by the Michigan Department of Treasury to help fund special projects, services or strategies that move a city, village or township toward financial stability. In 2017, the City of Benton Harbor received $396,085 for water system enhancements that included water main replacements on Territorial and Sherman Streets and water valve replacements. The City had previously received FDCVT grants in 2015 and 2016, which assisted in the replacement of additional water mains and fire hydrant repairs. As a result of careful oversight and financial management practices, the City was able to request a reallocation of unused 2015 and 2016 funds toward its 2017 project, reducing its cost share of the water main work.

Throughout the grant period, the City complied with grant requirements such as approving resolutions, returning signed agreements, using funds only as authorized by grant scope,

following purchasing and bid requirements set forth by funding agency, providing adequate supporting documentation for expenses i.e. cancelled checks and invoices, following accounting practices to keep grant funds separate from other accounts, communicating with Treasury Department to update any status change or amendment request, and following all local, state, and federal laws. The grant requires completion of the project within five years of the award. The City completed all work in 18 months. Semi-annual progress and financial reports as required by the grant were completed each period on time. Progress reports indicated percentages complete toward stated goals for scope.

2018 FDCVT Grant – In 2018, the City received a grant award of $309,500 to replace 238 water meters that were outdated and obsolete. Project work began in September 2019 and will be completed by May 2021, after experiencing delays due to the COVID-19 pandemic.

During the grant period, the City has complied with grant requirements such as approving resolutions, returning signed agreements, using funds only as authorized by grant scope, following purchasing and bid requirements set forth by funding agency, providing adequate supporting documentation for expenses i.e. cancelled checks and invoices, following accounting practices to keep grant funds separate from other accounts, communicating with Treasury Department to update any status change or amendment request, and following all local, state, and federal laws. Semi-annual progress and financial reports as required by the grant have been completed each period. Progress reports track percentages complete toward stated goals for scope.

2018 MDEQ Pilot Grant – The Michigan Department of Environmental Quality (MDEQ) Drinking Water and Municipal Assistance Division provided a grant award of $284,000 to the City of Benton Harbor as part of a pilot program to improve water supply system infrastructure to help protect water quality and public health. The grant award was used to fund an inventory of the material of service lines, update the city asset management plan, and replace lead water service lines. Ninety-four (94) verifications and 17 replacements were completed between December 2018 and May 2019. Information was recorded in a GIS database.

Grant deliverables included an Asset Management Plan Certificate of Project Completeness which includes the AMP Executive Summary, and a Lead Service Line Replacement Certificate of Project Completeness which verifies that a Notice to Proceed was issued for the project. Both of these requirements were completed and delivered to the DEQ/EGLE within the project period.

8. Reduced Cost Share/Match Waiver Request Letter and QA/QC

a. Please see reduced cost share/match request letter in Project Narrative Attachments.

b. QA/QC – Not Applicable. Environmental Data will not be collected or used in this project.

E. Project Narrative Attachments

1. **Reduced Cost Share/Match Request Letter**
    a. **DWRF Supporting Data Regarding Disadvantaged Status**
    b. **DWRF 2020 Intended Use Plan**
    c. **Match – City Funding Projection Spreadsheet**
2. **Opportunity Zone Map**
3. **Section F – Biographical Sketches**
4. **Section G – Negotiated Indirect Cost Rate Agreement – NOT USED**
5. **Section H – Readiness to Proceed**
6. **Section I – Supporting Documentation of Lead Issue**

BENTON HARBOR
Port of Opportunities

May 29, 2020

Brianna Knoppow
U.S. Environmental Protection Agency (EPA), Office of
Water, Office of Ground Water and Drinking Water

RE: Funding Opportunity EPA-OW-OGWDW-19-01: Reduction in Lead Exposure Via Drinking Water - City of Benton Harbor Reduced Cost Share/Match Waiver Request

Dear Ms. Knoppow,

The City of Benton Harbor is submitting an application in response to the EPA funding opportunity "Reduction in Lead Exposure Via Drinking Water." Applicants are to provide a minimum non-federal 20% cost-share/match of the total project costs unless they request a waiver to reduce the cost-share/match requirement for reasons of affordability. The City of Benton Harbor is seeking funding to assist in National Priority Area One: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Infrastructure and Treatment Improvements, and respectfully requests a waiver to reduce the non-federal cost-share/match to 10%.

In Michigan, Disadvantaged community status is determined by the Department of Environment, Great Lakes, and Energy (EGLE) as defined in Part 53 of Act 451. The City of Benton Harbor currently meets the state of Michigan's DWSRF disadvantaged community criteria as evaluated by EGLE. Please see attached supporting documentation. If you have any questions or need additional information, please do not hesitate to contact me at 269-927-8457 or via email at emitchell@cityofbentonharbormi.gov.

Sincerely,

Ellis E. Mitchell

Ellis Mitchell
City Manager
City of Benton Harbor

Enclosures:
EGLE May 18, 2020 Email Regarding Qualifying Disadvantaged Status
EGLE DWRF Disadvantaged Status Calculation
DWSRF Intended Use Plan Fiscal Year 2020

From: Schneider, Robert (EGLE) <SCHNEIDERR@michigan.gov>
Sent: Monday, May 18, 2020 9:06 AM
To: Sarkipato, Ernest (EGLE); Green, Kelly (EGLE)
Subject: RE: BH grant
Attachments: benton harbor dwrf.xlsx; Application of the Afordability Criteria.docx

Ernie,

Attached is our disadvantaged worksheet for Benton Harbor. The Red Yes indicates they are disadvantaged. I have also attached our criteria. This is a document that explains our procedures and was something Detroit wanted for their EPA grant so this might be useful for Benton Harbor as well.

Bob

Bob Schneider
Financial Analyst
Michigan Department of Environment, Great Lakes, and Energy
517-388-6466 / schneiderr@michigan.gov
Follow Us | Michigan.gov/EGLE

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, May 15, 2020 1:59 PM
To: Green, Kelly (EGLE) <GreenK1@michigan.gov>; Schneider, Robert (EGLE) <SCHNEIDERR@michigan.gov>
Subject: RE: BH grant

Awesome! The wording below is "provide affordability criteria information for Benton Harbor as a Disadvantaged Community"

From: Green, Kelly (EGLE) <GreenK1@michigan.gov>
Sent: Friday, May 15, 2020 1:54 PM
To: Schneider, Robert (EGLE) <SCHNEIDERR@michigan.gov>
Cc: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Subject: Fwd: BH grant

Bob, can you send Ernie a copy of Benton Harbor's disadvantaged worksheet?

Ernie, I think all EPA might need is a memo from the state saying they qualify under the State's criteria. If that's the case Bob can draft a simple email to that effect.

From: Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>
Sent: Friday, May 15, 2020 1:44 PM
To: Green, Kelly (EGLE)
Subject: BH grant

Happy Friday Kelly! We have a window of opportunity to support BH in making an application to EPA for grant funding related to lead service line removal. I need your help!
Do we have a document that outlines affordability criteria for Benton Harbor (#3 below)?

Ernie

Application of the Affordability Criteria for the State of Michigan

Household income is an economic measure that can be applied to one household, or aggregated across a large group such as a city or county. It is used by the State of Michigan to describe a household's economic status or to track economic trends.

A household's income can be calculated various ways but the US Census as of 2009 measured it in the following manner: the income of every resident over the age of 15, including wages and salaries, unemployment insurance, disability payments, child support payments received, regular rental receipts, as well as any personal business, investment, or other kinds of income received routinely.

Changes in median income reflect several trends: the aging of the population, changing patterns in work and schooling, and the evolving makeup of the American family, as well as long- and short-term trends in the economy itself. For instance, the retirement of the Baby Boom generation should push down overall median income, as more persons enter lower-income retirement.

Median inflation-adjusted ("real") household income generally increases and decreases with the business cycle. Household income in the United States varies substantially with the age of the person who heads the household. Overall, the median household income increased with the age of householder until retirement age when household income started to decline

The American FactFinder provides data gathered from the American Community Survey which the State of Michigan uses to determine affordability. Since 1996 the State of Michigan has used 4 criteria to determine affordability:

1) More than 50 percent of the geographic area to be served by a proposed project is identified as a poverty area by the U.S. Bureau of the Census. Current poverty areas within Michigan are identified in Appendix B on the Census website. (In order to perform a more systematic review, the state demographer has recommended that using the FactFinder poverty table and a family of 3 or 4, in the Poverty Status in the 12 Months for Families column with a percentage above poverty level of more than 20% +-0% will approximate the 50% of a geographic area)

2) The MAHI for the area to be served by a proposed project is less than the most recently published Federal Poverty Guidelines for a family of four in the 48 contiguous United States. These guidelines are published annually by the Department of Health and Human Services.

3) The MAHI for the area to be served by a proposed project is less than the most recently published statewide MAHI for Michigan, and annual user costs [as defined in 1994 PA 451, Section 5401(B)] for service will exceed 1.0 percent of the MAHI of the area to be served by the proposed project.

4) The MAHI for the area to be served by a proposed project is greater than the statewide MAHI for Michigan, (up to 120 percent) and annual user costs will exceed 3 percent of the MAHI of the area to be served by the proposed project.

For criteria 3 and 4 a detailed spreadsheet has been developed to determine affordability. The spreadsheet has 2 sections where a series of calculations are made and compared. The first set of calculations determine the annual threshold cost for water or wastewater services. The MAHI for a community is identified in the American Community Survey and the Detroit Consumers Price index applied to determine the updated MAHI. This updated MAHI is then multiplied by 1% to arrive at an annual threshold dollar amount. The second set of calculations factor in such variables as number of users, annual debt payments, and annual operating costs to determine the actual annual user costs. If the actual

annual user costs exceed the threshold then the affordability threshold has been exceeded and the community is eligible for subsidized assistance.

Step 1: Enter amount of total debt for project
Step 2: Enter term up to 20 years
Step 3: Enter present target rate of interest (call DEQ)

Step 4: Enter projected annual OM & R after completion
Step 5: Annual debt payment is computed
Step 6: Total annual cost of system is computed

Step 7: Enter total number of system users in service area
Step 8: Annual user cost is computed

Step 9: Updated State Wide MAHI is:
Step 9: Enter 1990 census median annual household income
Step 10: Updated MAHI is calculated on Detroit CPI-U to 1997
Step 11: The percentage of MAHI is computed

Step 12: If the annual user cost exceeds the percentage of MAHI, the community may qualify as a disadvantaged community

Amount of Debt	$5,076,698
Terms	20
Rate	2.00%
OM & R	$1,064,000
New annual debt	$310,474
existing debt	$ 282,000
Total Annual Cost	**$1,656,474**
# of Users	9063
Annual User Cost	$183
Updated MI MAHI	**$51,597**
MAHI - 2010 census	$20,157
Updated MAHI:	$22,475
MAHI Threshold $	$225
Disdavantaged??	**NO**

Benton Harbor
DWRF

$20,157

51.80%

9.50%

YES

State of Michigan

Gretchen Whitmer, Governor

Department of Environment, Great Lakes, and Energy



Liesl Eichler Clark, Director

INTERNET: http://www.michigan.gov/drinkingwaterrevolvingfund

Drinking Water State Revolving Fund Intended Use Plan Fiscal Year 2020

Prepared by:
Water Infrastructure Financing Section
Finance Division

September 2019

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability or political beliefs, height, weight, genetic information or sexual orientation. Questions or concerns should be directed to the Quality of Life Human Resources, P.O. Box 30473, Lansing, Michigan 48909-7973.

Table of Contents

I. Introduction 3

II. Structure of the Drinking Water State Revolving Fund 4

III. Advantages of the Drinking Water State Revolving Fund 5

IV. Goals 5

V. Allocation of Funds 7

VI. Criteria and Method for Distribution of Funds - Set Asides 8

VII. Criteria and Method for Distribution of Funds - Project Loans. 14

VIII. Disadvantaged Business Enterprise 14

IX. Disadvantaged Community Status 15

X. EPA Automated Clearinghouse Activities 15

XI. Assurances 15

XII. Output/Outcome Measures 16

XIII. Public Review and Comment. 16

XIV. Origination of Documents 17

DWSRF Draft Project Priority List (PPL) for Fiscal Year (FY) 2020
DWSRF Draft PPL Scoring for FY 2020
Estimated Category Costs for FY 2020 Draft PPL
Draft Project Re-evaluation Request

I. INTRODUCTION

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) through the Finance Division administers the Drinking Water State Revolving Fund (DWSRF). The DWSRF program details are set forth in Part 54, Safe Drinking Water Assistance, MCL 324.5401-324.5421, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). In addition, the Michigan Finance Authority (Authority) is charged with administering DWSRF funds through the Shared Credit Rating Act, 1985 PA 227, as amended (Act 227).

The DWSRF provides reduced interest rate loan financing to qualified water suppliers to finance construction of public water systems. Projects may include new wells, new water treatment plants, storage facilities, upgrades or expansions to existing facilities, transmission lines, pumping facilities, and other related waterworks system improvements. Suppliers must meet federal and state program requirements, as well as demonstrate their ability to publicly finance their project and retire project debt. In addition to the loan provided by EGLE, suppliers also have the option to pay for part of their project with cash and other resources. Since 1998, Michigan has awarded over $1 billion in financial assistance to over 295 borrowers. In fiscal year (FY) 2020, the DWSRF Project Priority List (PPL) contains $258 million worth of projects.

This Intended Use Plan (IUP) describes how EGLE and the Authority will jointly administer all available DWSRF funds during FY 2020. An IUP is a required part of the process to request the federal 2019 capitalization grant, which will be matched with 20 percent in state match funds. The 2019 capitalization grant allotment for Michigan is $27,011,000. The Water Infrastructure Financing Section (WIFS) of the Finance Division is charged with carrying out the program administration responsibilities. The Community Water Supply Section (CWSS) of the Drinking Water and Environmental Health Division (DWEHD) will assess project priority, issue the necessary construction permits, and offer technical review and assistance throughout project planning, design, and construction. Financial administration of the program will be handled by the staff of the Authority.

The U.S. Environmental Protection Agency (EPA) Region 5 staff will offer guidance and conduct annual program oversight reviews of the DWSRF. The EPA serves as a helpful partner in creating and maintaining this program.

The relationship between EGLE, the Authority, and the EPA is established in an Operating Agreement signed by authorized signatories from each agency. The Operating Agreement is incorporated into this IUP by reference and is available from EGLE upon request.

The IUP includes details on specific project funding and identifies amounts to be set aside from federal capitalization grants for other uses authorized under the federal Safe Drinking Water Act (SDWA) and Part 54 of Act 451. A public hearing was held on August 21, 2019, at Constitution Hall, located at 525 West Allegan Street, Lansing, Michigan.

EGLE certifies that it is recognized by the EPA as the primary agency for management of the drinking water program. The priority system was developed by EGLE and will be used each fiscal year to determine which projects will have access to DWSRF assistance. The priority system is designed to provide low-interest financing to those projects that will have the greatest impact in facilitating safe drinking water supplies.

FY 2020 Project Funding

The 2019 federal capitalization grant allotment for Michigan is $27,011,000. Congress mandated that 20 percent of this amount be provided as additional subsidy to borrowers. EGLE plans to provide this 20 percent as principal forgiveness. An additional six percent to 35 percent must be provided to disadvantaged communities as principal forgiveness. All DWSRF projects funded in FY

2020 must pay their workers the federal Davis-Bacon wage rates for their job classification and comply with American Iron and Steel requirements.

II. STRUCTURE OF THE DWSRF

Due to a large increase in demand in FY 2020, EGLE will operate the DWSRF as a leveraged program, similar to the Clean Water State Revolving Fund (CWSRF). The state will sell State Revolving Fund revenue bonds that are secured by federal and state assets (i.e., federal capitalization grant, required state match, loan repayments, and interest earnings). State funds can include general fund or state revenue bonds. Bond issuance costs are covered by the bonds sold and, thus, are not identified as direct administrative expenses of the DWSRF. Historically, bond issuance costs are appropriately one percent of the total bond issue. Project costs of the local units of government are reimbursed from the bond issues.

For borrowers who are non-municipal entities, limitations on private activity from tax-exempt issues would require EGLE and the Authority to fund private water suppliers from funds other than tax-exempt revenue bonds. These loans would be made as direct loans with a letter of credit supplied by the private borrower or through a partnership with a private lending institution with the state providing an insurance annuity. There are no private, non-municipal water suppliers on the FY 2020 PPL.

There is a provision for subordinate investment of funds between the DWSRF and the CWSRF. This concept permits the administrators of the two funds to make temporary investments from one fund or the other in the event that monies are needed to service debt on the state's tax-exempt bond issues, cover deficiencies in a fund's reserve accounts, or satisfy other reserve account requirements. Only those funds periodically released from debt service reserve accounts, supplemental reserve accounts, revenue accounts, or any other account of the fund, wherein released monies may be generated, may be used for the purposes of subordinate investment.

At each point that monies are released, EGLE and the Authority will undertake a "snapshot" look at both the SRF and the DWSRF. For each fund, we will first examine whether we need to service debt or satisfy reserve account requirements within the fund from which the released monies originated. Next, we will examine the other fund for the same conditions. Then, if sufficient monies are available to satisfy requirements for each fund, the released money will pass completely through and become available for future commitments to new projects consistent with its source. This provision will not be exercised in FY 2020.

Set-asides in the DWSRF are derived from the capitalization grant awarded to the state by the EPA. Set-asides are designated for specified uses within the DWSRF to address areas of concern included in the reauthorization of the SDWA. Legal provisions included in Act 227 permit the Authority and EGLE to establish accounts and sub-accounts to track revenues and expenditures for the set-asides. The set-asides for program and other activities will be directly administered by the Environmental Health Section (EHS) of the DWEHD, with support from the CWSS. EHS and CWSS staff will also be responsible for the technical assistance activities, except for those funds made available to subsidize loans to disadvantaged communities. The disadvantaged community loans will be managed by WIFS.

The following is a list of potential set-asides identified in Section 1452 of the federal SDWA. The percentages noted affect the federal capitalization grant amount available to fund projects.

DWSRF Administration - 4 percent

Technical Assistance - 2 percent

Program Set-asides - 10 percent
•Public Water System Supervision

Other Activities - 15 percent, not to exceed 10 percent for any one activity
•Local Assistance for Capacity Development
•Wellhead Protection

III. ADVANTAGES OF THE DWSRF

The primary advantage for Michigan water suppliers is their ability to borrow funds at interest rates below market. The DWSRF interest rate is established prior to each new fiscal year. As identified in Part 54 of Act 451, determination of the interest rates is based on loan demand, market conditions, program costs, and future needs.

In setting the interest rates for FY 2020, EGLE examines a widely used market index for general obligation municipal bonds to identify current market conditions existing at the time the draft IUP is prepared. Then, to establish a rate of interest for municipal borrowers, EGLE considers present and future demand for DWSRF assistance and the costs to comply with program requirements.

Once the interest rate is determined for municipal borrowers, the resulting interest subsidy to municipalities will be used for private borrowers. If a private borrower chose to obtain a letter of credit and receives a direct DWSRF loan from the Authority, the interest rate would be determined by using the U.S. T-bill rate as the base and applying an identical percentage reduction of interest as municipalities receive. For those private borrowers who chose to obtain financing through a financial institution, the interest rate would be the lending institution's rate, reduced by an identical percentage as a municipality would receive.

The interest rate for municipal borrowers in FY 2020 is 2.0 percent for both 20-year and 30-year loans.

Apart from the low-interest rate, suppliers also benefit from the DWSRF in that they can finance all eligible waterworks system costs. The major benefit results from the fact that water supply financing in the past has always been left to the local units of government or private entities. Historically, there has been no significant state financial assistance available to local officials in meeting water supply needs. Recently, EGLE provided $9.5 million to 18 communities for the Pilot Drinking Water Community Water Supply Grant program. The grant program is funded by a state appropriation. The pilot will provide lessons learned for full lead service line replacement and asset management.

IV. GOALS

Michigan's DWSRF establishes a funding source designed to protect and preserve public health within the state's boundaries. Michigan's geographical identity as a "Great Lakes" state affords its residents with an abundant and high-quality water resource from which to draw its drinking water. Unlike many states, Michigan has plentiful supplies of fresh water with few periods of restricted use. The great challenge for water suppliers lies in protecting the high quality of the resource, as well as ensuring that adequate volume and pressure exist to deliver potable water to the customer.

To this end, Michigan's DWSRF has the following long-term goals:

Goal: *Provide low-cost financing for waterworks system improvements or upgrades while maintaining the perpetuity of the DWSRF.*
The Authority uses a financial advisor to guide decisions on funding levels, interest rates, and other financing terms. Michigan looks to balance the goals of meeting the capitalization grant requirements (i.e., additional subsidies, Davis-Bacon, signage, American Iron and Steel) while maintaining the DWSRF in perpetuity.

Goal: *Continue effective partnerships with other federal and state financing sources to promote efficiency in environmental review procedures and coordination of funding.*
Given the limitations on pooled capital, EGLE continues to work together with various federal and state agencies, such as the U.S. Department of Agriculture - Rural Development, Rural Community Assistance Program, the Michigan Department of Health and Human Services, Michigan Economic Development Corporation and the Michigan Department of Transportation, so that we may collectively fund qualifying projects and maximize use of our capital pool to achieve stated goals. Such partnerships ultimately benefit everyone. Industry, tourism, and day-to-day quality of life are strengthened when our most valuable natural asset is preserved and made available for use and enjoyment.

Goal: *Maintain statewide compliance with all applicable state and federal drinking water laws, rules, and standards while protecting the public health and environmental quality of our state.*
EGLE will use DWSRF set-aside funding to: maintain source water assessment, wellhead protection, and source water protection programs; assist economically disadvantaged communities in meeting drinking water standards; and apply a capacity assessment program for all new and existing community and nontransient, noncommunity water supplies.

Goal: *Continue use of the DWSRF program.*
EGLE will continue to use effective outreach methods such as: direct mail, electronic media, newsletter publication, and informational meetings and conferences to publicize and encourage the use of the DWSRF to meet the infrastructure needs of communities.

In order to accomplish the long-term goals, we must also focus on more immediate objectives. Therefore, our short-term goals in FY 2020 are:

Goal: *Secure Michigan's full share of federal funding and to expeditiously obligate these monies, along with the state contribution.*
EGLE has prepared and identified on the FY 2020 PPL all projects that are willing and able to progress to loan closing consistent with a project milestone schedule for the construction of eligible facilities. All projects receiving DWSRF funds in FY 2020 will issue a Notice to Proceed within 60 days of the loan closing.

Goal: *Ensure that the additional requirements of the 2019 capitalization grant is met, including those that are imposed on local borrowers.*
Congress mandated that 20 percent of the 2019 capitalization grant be provided as additional subsidy to borrowers and an additional six to 35 percent be provided as principal forgiveness for disadvantaged communities. As EGLE recognizes the challenges imposed by the new Michigan Lead and Copper Rule, the 20 percent mandated subsidy will be divided between disadvantaged communities and communities undertaking lead service line replacement.

EGLE will also provide 15 percent of the required disadvantaged community subsidy resulting in just over 30 percent of the capitalization grant awarded as principal forgiveness to disadvantaged communities. Congress requires all DWSRF projects funded in FY 2020 to pay their workers the federal Davis-Bacon wage rates for their job classification and comply with the American Iron and Steel and EPA signage requirements.

Goal: *Fund more projects, assist communities in completing full-length lead service line replacement projects.*
The WIFS provides financial assistance to communities addressing the private property portion of lead service line replacement projects. The signing of the Michigan Lead and Copper Rule will likely result in communities undertaking more lead service line replacement projects.

V. ALLOCATION OF FUNDS

The establishment of a fundable range for any given fiscal year entails a series of steps that culminate in a determination of how much fund resources could support. Using a series of assumptions (DWSRF loan rate, return on investment rates, and level of capitalization) the process for FY 2020 is outlined below:

1. EGLE reviewed the total amount of loans committed through September 30, 2019.

Total loan commitments through 9/30/2019	$1,074,135,000

2. EGLE assumes that the new federal capitalization grant and the appropriated state match will remain constant until 2020. However, it should be noted that EGLE has **no assurance** of state general fund monies to match federal funds beyond the 2019 capitalization grant. Five million dollars of general funds is available for use in FY 2020 to match the 2019 capitalization grants. Remaining state match needed will come from carry over funds from past years. Michigan was appropriated $27,011,000 in DWSRF federal capitalization grant funds for use in FY 2020.

2019 capitalization grant for loans (total grant is $27,011,000)	$18,637,590
General fund match	$5,000,000
Carry forward match	$402,200

3. EGLE then looked at how much the DWSRF could support using a five-year financial forecast at varying capitalization levels and interest rates.

   The PPL has 40 projects, totaling $530 million. Twenty-three projects, totaling $258 million, would like to proceed with construction in FY 2020. Sixteen projects, totaling $272 million, will be considered for funding future years.

   The provision of additional subsidy is a requirement of the capitalization grant and Safe Drinking Water Act. The FY 2019 capitalization grant requires 20 percent of the capitalization grant be provided as additional subsidization. An additional six to 35 percent of subsidization is required to be provided to disadvantaged communities per the Safe Drinking Water Act. The total additional subsidy will not exceed $9,710,000 in FY 2020 and will be awarded as principal forgiveness. The additional subsidy will be provided to projects with disadvantaged community status and to applicants undertaking lead service line replacement work. When principal forgiveness is provided from available loan proceeds to projects, it reduces the amount of the assets returning to the DWSRF as loan repayments, which could be used to make future loans. Total principal forgiveness awarded in FY2020 is approximately 50 percent greater than total principal forgiveness awarded in FY2019.

   Fifteen percent of the required 20 percent additional subsidy plus, approximately fifteen percent of required subsidy for disadvantaged communities, for a total of $8,321,400 in principal forgiveness, will be provided to disadvantaged communities. The amount

allocated to each disadvantaged community will be approximately nine percent of estimated project costs as follows:

Table 1

Disadvantaged Communities		
Community	Estimated Loan Amount	Principal Forgiveness
Detroit (DWSD)	$57,500,000*	$5,175,000
Highland Park	$18,460,000	$1,661,400
Benton Harbor	$4,465,000	$401,850
Muskegon	$6,095,000	$548,550
South Haven	$780,000	$70,200
Owosso	$5,160,000	$464,400
Total	**$92,460,000**	**$8,321,400**

***** Total of project numbers of 7460-01 and 7483-01

Approximately five percent of the required 20 percent subsidy, for a total of $1,387,952 will be provided to communities undertaking full length lead service line replacement as follows:

Table 2

Lead Service Line Replacement (LSLR)		
Community	Estimated LSLR Construction Cost	Principal Forgiveness
Kalamazoo	$12,652,350	$1,265,235
Lake Orion	$443,000	$44,300
Marquette	$389,173	$38,917
St. Joseph	$75,000	$7,500
White Pigeon	$185,000	$18,500
Rochester	$135,000	$13,500
Total	**$13,879,523**	**$1,387,952**

Each state may transfer 33 percent of available funds between the CWSRF and the DWSRF programs. Michigan does not propose to transfer funds between the CWSRF and DWSRF programs in FY 2020.

VI. CRITERIA AND METHOD FOR DISTRIBUTION OF FUNDS - SET-ASIDES

EGLE has established the set-asides and requests funding for each set-aside based on what is needed to effectively administer the public drinking water programs, to enhance public health protection, and the protection of surface and ground waters through additional non-regulatory programs, projects, and activities. In recent years, EGLE has become more dependent on the funding provided by the set-asides to fund the staff needed to effectively administer the programs because the federal Public Water Supply Supervision grant awards have not increased to cover the costs of additional work required to implement several new federal drinking water regulations nor for inflation.

In FY 2019, the DWEHD workload continued to increase. This is due to activities such as our response to the statewide Per- and Polyfluoroalkyl Substances (PFAS) sampling effort, and preparation and education to implement the new Michigan Lead and Copper Rule. The

DWEHD continues to need additional staff resources to adequately oversee water system compliance and be involved with the development of information technology projects, with the mission of protecting public health.

Each year Michigan is required to submit detailed work plans to the EPA for approval describing how each set-aside fund will be expended or the amount to be reserved. Work plans for the FY 2020 set-asides will be submitted to the EPA in late summer-early fall 2019.

Administration

Up to 4 percent of the federal capitalization grant can be used to administer the fund. Michigan intends to utilize the full 4 percent from the 2019 grant which is $1,080,440. Any funds not utilized in FY 2020 will be retained on account for administration costs in future years.

Small Systems Technical Assistance

EGLE is requesting two percent of the 2019 grant, or approximately $540,220 for small system technical assistance. These funds will support staff that provide technical assistance to small public water systems. This work includes, but is not limited to:

- Provide technical assistance to local health department (LHD) staff responsible for implementation of the Noncommunity Water Supply (NCWS) program in Michigan.
- Assist LHD staff in providing direct technical assistance to NCWS owners and operators, registered well drillers, and pump installers.
- Oversee the work conducted by the LHDs to implement the NCWS program throughout Michigan.
- Assist small nontransient, noncommunity public water supplies, formerly on an arsenic bottled water agreement, gain compliance with the arsenic maximum contaminant level by installing water treatment systems or using some other compliance option.
- Review engineering plans and issue permits for treatment systems at NCWSs. Provide direct assistance to small public water supplies that are exploring treatment options for PFAS.
- Provide direct assistance to small public water systems that employ treatment to comply with drinking water standards, primarily those that treat for arsenic and for nitrates.
- Provide direct assistance to facilities that are exploring or have installed secondary treatment for public health purposes therefore becoming a small public water supply.
- Conduct one-on-one or group technical training for LHD staff, NCWS owners and operators, and other stakeholders involved in the operation and maintenance of small systems. This technical training typically focuses on:

    - Sampling and monitoring practices;
    - Completing the preliminary Distribution System Materials Inventory (DSMI) under the Michigan Lead and Copper Rule.
    - Performing Revised Total Coliform Rule Level 1 assessments and Seasonal Start Up Procedures;
    - Compliance with NCWS regulations or Michigan's well construction code;
    - Investigatory techniques used to identify a problem with a NCWS or well and remedies to correct a given problem;
    - Cross connection control, including proper use and maintenance of control devices; and
    - Properly completing and submitting all required documentation or certifications, such as monthly operation reports.

- Assist LHD, NCWS, and consultants involved with the development and operation of small systems with understanding rule and code requirements to improve compliance rates.
- Draft technical guidance documents, fact sheets, brochures, or forms that can be used by the LHDs or distributed to NCWSs, well drillers, and pump installers to help improve or maintain compliance with applicable regulations.
- Administer Michigan's NCWS database, WaterTrack.
- Provide clerical, managerial, and administrative support to the scientific and engineering staff performing the activities listed above.

In addition, the funds in this set-aside will be used in FY 2020 for the following program activities:

- Training for the LHD staff responsible for implementation of the NCWS program in Michigan.
- Ongoing maintenance of the database system, WaterTrack, which houses all the NCWS program data.

Program Set-Asides

EGLE is requesting funds for one state program management set-aside in the 2019 grant, the Public Water System Supervision Program. The following is a breakdown of the projected amount:

Public Water System Supervision

EGLE requests $2,701,100, or 10 percent of the 2019 grant, to support staff and the existing scope of the CWSS Public Water System Supervision Program. This work includes, but is not limited to:

- Maintain an inventory of public water supplies in Michigan.
- Provide compliance assistance to public water supplies.
- Implement a centralized approach to the oversight of surface water treatment of public water supplies.
- Conduct sanitary surveys and surveillance visits at public water supplies.
- Issue permits for new construction or for modifications.
- Assess public water supply compliance with the federal SDWA, the National Primary Drinking Water Standards, Michigan's Safe Drinking Water Act, 1976 Public Act 399, as amended (Act 399), and the Administrative Rules.
- Initiate escalated enforcement actions, when indicated, to compel a public water supply to comply with applicable federal and state drinking water regulations.
- Maintain program data and submit reports to the EPA as required.
- Maintain a drinking water operator training and certification program.
- Draft Michigan's Annual Capacity Development Report and the Triennial Capacity Development Report to the Governor.
- Provide clerical, managerial, and administrative support to the scientific and engineering staff performing the activities listed above.

The funds in this set aside will be used to support local health departments with noncommunity water supply compliance assistance program work.

Wellhead Protection (Section 1452(k))

EGLE is requesting $1,350,550 for the Wellhead Protection set-aside from the 2019 grant, approximately 5 percent of the 2019 grant. The amount requested will be used to support staff responsible for the following work:

- Prioritize efforts relative to emerging issues such as PFAS in groundwater to ensure a more robust dataset for decision making and public health protection.
- Update and distribute technical guidance related to PFAS contamination in drinking water from groundwater supplies, including fact sheets, information for distribution to stakeholders and the public, including communication routes like the MI Environment Web site.
- Provide training and oversight to Michigan Geological Survey in their work (contracted using state funds) to enter well construction records into Wellogic. Begin developing a durable and ongoing process for quality control and quality assurance of information entered into Wellogic.
- Manage and maintain Wellogic, Michigan's on-line water well data system.
- Update the Source Water Assessments (SWA) for Community Water Supplies and Noncommunity Water Supplies. Provide education and outreach on wellhead protection, including providing delineations of wellhead protection areas to community water supplies and nontransient noncommunity water supplies. This will utilize management and other tools as they become available.
- Review and process SWAs submitted by the LHDs. DWEHD technical staff will track the updates and determine if the nontransient NCWSs qualify for substantial implementation of source water protection activities.
- Attend ongoing training, tools and trends in areas of groundwater protection and source evaluations, including new GIS technologies.
- Review and approve traditional wellhead delineations submitted by community water supplies.
- Administer the wellhead protection matching grant program to local communities.
- Register well drillers and pump installers to ensure they are qualified to construct wells or install well equipment, according to Michigan's well construction code requirements.
- Ensure wells are constructed to code, initiate enforcement for compliance, or revoke registrations from a well driller or pump installer when necessary.
- Administer the Abandoned Well Management Program.
- Collaborate on issues, training, and projects identified by members of the Director's WaterWell Advisory Committee formed in 2015.
- Provide technical training and assistance to public water supplies, LHD’s, well drillers, pump installers, and septage waste haulers.
- Provide clerical, managerial, and administrative support to the scientific and engineering staff performing the activities listed above.
- Administer the On-site Wastewater Program, including evaluating each LHD’s on-site wastewater program for consistency and assurance that minimum program requirements are met.
- Promote the need for a statewide sanitary code and assist with efforts to promulgate one.
- Review construction plans and issuance of permits for on-site wastewater installations or modifications at campgrounds to ensure site suitability, installation and operation.
- Evaluate and approve the use of new technologies for treatment of on-site wastewater.
- Administer the Septage Waste Program, including the licensing of septage waste haulers and permitting land application sites.

In addition, the funds in this set-aside will be used for the following program activities:

- Implementation of wellhead protection activities.
- Maintenance of the Wellogic database software.
- Subscription to EQuIS, an electronic data management system and decision support system. EQuIS is currently the solution for EGLE to gather, handle, and store PFAS drinking water data collected from public water supplies.
- Grants to local communities to increase source water protection efforts and initiatives. EGLE plans to utilize approximately $400,000 from the 2019 Wellhead Protection Set-Aside to provide the state funding for these 50/50 match grants.
- Water well construction technical training for LHD staff.
- Onsite wastewater technical training for LHD staff.
- DWEHD is partnering with American Water Works Association, Michigan State University Institute of Water Research, and Michigan Rural Water Association to host a Source Water Protection Conference on October 29-30, 2019. This conference will provide opportunities to learn about management options for source water protection and steps public water supplies can take to develop or enhance an existing program. Designed for communities and public water supplies, attendees will learn about a variety of important topics that include ground and surface water protection issues, wellhead protection, risk communication, funding initiatives, emerging contaminants and state program updates. Participants will have the opportunity to identify the challenges and opportunities that communities are facing as they work to update existing source water protection programs and implement new and innovative concepts, strategies and technologies. This conference is intended for community water supply personnel, local officials, community representatives, local, state and federal partners, consultants, service providers, and those with an interest in source water protection.

Local Assistance for Capacity Development (Section 1452(k))

EGLE is requesting approximately $2,701,100 or 10 percent of the 2019 grant, for the Local Assistance for Capacity Development Set-Aside for staff and other source water protection activities. The staff funded by this set-aside are responsible for providing direct technical assistance to public water supplies to enhance and maintain their technical, managerial and financial capabilities. Specific duties include:

- Assist public water supplies in acquiring and maintaining capacity as outlined in Michigan's Capacity Development Strategy for Existing Water Systems, dated August 1, 2000.
- Educate public water supplies about the Surface Water Intake Grant Program and provide assistance to surface water systems in the development and implementation of a Surface Water Intake Protection Program Plan.
- Continue and expand the implementation of source water select cyanotoxin screening and source water assessment methodology for surface water sources. Surface water sources utilized will be sampled at least once per month from July through October 2019. State of Michigan Renew Michigan Funding will be utilized for sample collection and analysis. Raw and finished water samples will be collected. The samples will be analyzed for microcystins and nodularins, cylindrospermopsin, and anatoxin-a. The set-aside funds will be utilized to provide technical assistance to supplies, including prompt assistance if any cyanotoxins are detected in the raw or finished tap. Water data will be reviewed as it becomes available with public health protection as the primary objective. In FY 2020, when the sampling effort concludes, the complete data set of this voluntary sampling effort will be reviewed for successes, improvements, and lessons learned in an effort to continue to receive support for this sampling.

- Provide technical guidance related to PFAS detections in surface water systems. The State of Michigan is funding sampling of all that utilize surface water for PFAS at least once per month from May through October 2019. Raw and finished water samples will be collected. Data will be reviewed as it becomes available with public health protection as the primary objective. In FY 2020, when the sampling effort concludes, the complete data set from this voluntary sampling effort will be reviewed for successes, improvements, and lessons learned to help public water systems determine next steps.
- Assist public water supplies vulnerable to PFAS, including providing information on treatment technologies, alternate sources, additional sampling, education, and communication.
- Coordinate with other departmental programs and state and federal agencies in the development and integration of drinking water protection strategies. In particular this includes EGLE Water Resources Division, EGLE Remediation and Redevelopment Division, and Department of Health and Human Services on lead, PFAS and HABs. This coordinated approach benefits both the public water supplies and the public.
- Provide extensive training for new and existing staff, including continuation of the successful "Rule School" series to provide an in-depth review of the Act 399 Rules; a rolling six-week series of new analyst training; and an extensive training series on engineering topics in both classroom and hands-on settings. These trainings, in addition to outside training for staff, are positively impacting the consistency and technical expertise available to the regulated community.
- Educate water supplies and operators on the new Michigan Lead and Copper Rule requirements, including inventory, sampling, corrosion control optimization and lead service line removal.
- Receive and review monitoring data and make associated compliance determinations in a consistent and coordinated manner. Educate water supplies about proper sampling methodologies and the timely and complete submittal of data to ensure that any exceedances are addressed.
- Provide guidance to assist supplies in preparing required reports to ensure that they meet regulations.
- Conduct sanitary surveys within the required timeframes.
- Conduct plan reviews for source changes and water supply improvements.
- Perform source water assessments at CWSs.
- Provide one-on-one technical assistance and consultation with water supply personnel to assist in the understanding of, and compliance with, state and federal requirements.
- Review asset management plans, general plans, reliability studies, and engineering studies to assure regulatory compliance and optimum performance.
- Provide cross connection control guidance and training and continue to assist CWS with the development of residential cross connection programs.
- Continue staff involvement in operator training classes to enhance the Operator Certification and Training Program.
- Explore innovative methods to reach water supply owners and operators to promote greater long-term compliance, including the use of one-minute videos on YouTube.
- Provide reminder letters for compliance activities.
- Provide emergency response training to internal staff, with subsequent follow-up to water supplies.

In addition, the funds in this set-aside will be used for the following program activities:

- Continue the surface water intake protection program.
- Determine if new community water supplies meet the financial adequacy requirements of the capacity development program.
- Reimburse LHDs for updating source water assessments at nontransient NCWSs.

- Reimburse LHDs for performing capacity assessments at new or existing nontransient NCWSs.
- Reimburse LHDs for performing annual site visits in situations where the noncommunity public water supply provides treatment for public health purposes.
- Purchase Field Analysis Equipment and Technical Assistance Reference Materials. These will be available to district staff for technical assistance and training to public water supplies.

VII. CRITERIA AND METHOD FOR DISTRIBUTION OF FUNDS - PROJECT LOANS

Michigan's DWSRF will commit loans for qualified projects based on project plans that were submitted to WIFS by May 1, 2019. Plans were reviewed by EGLE staff to ensure compliance with Section 5405 of Act 451, before being placed on the PPL for FY 2020. The DWSRF, to the maximum extent practicable, must give priority to projects that:

- address the most serious risks to human health;
- are necessary to ensure compliance with the requirements of the federal SDWA; and
- assist systems most in need according to the state's affordability requirements.

Michigan's priority system takes these factors into account in the assignment of priority points. Acute violations receive a larger number of points than any other category. In fact, standard compliance offers over 41 percent of a project's total possible points. All factors point to the need for the project to comply with federal drinking water requirements. Affordability is addressed by the award of additional points for disadvantaged community status and is the ultimate tiebreaker. Michigan's priority point system is detailed in Section 5406 of Act 451.

The FY 2020 draft DWSRF PPL is included as part of the IUP and was presented as part of the public hearing on August 21, 2019.

Section 1452(a)(2) of the federal SDWA requires the state to first make available 15 percent of all funds annually credited to the DWSRF for financial assistance to water suppliers serving fewer than 10,000 persons. For the 2019 capitalization grant, Michigan must reach or exceed $4,051,650 to satisfy this requirement.

All projects are reviewed and scored based upon the priority point system outlined in Part 54 of Act 451. Funds are made available for commitment based on the priority ranking and projects will only be funded out of order to satisfy requirements for small community assistance.

Employing the criteria found in Section 5415 of Act 451, the EGLE Director has set the interest rate at 2.0 percent for FY 2020. The term of the loans will run up to 20 years for most projects. Those suppliers meeting disadvantaged community criteria will, however, be able to extend their terms up to 30 years, if desired.

Part 54 of Act 451 also permits suppliers serving less than 10,000 persons to receive reimbursement of project planning costs upon delivery of an approvable project plan to EGLE. Legislation has been passed to provide a funding mechanism for this reimbursement. Interim planning loans first became an option for DWSRF applicants in FY 2001.

VIII. DISADVANTAGED BUSINESS ENTERPRISE

Beginning October 1, 2009, EGLE implemented the EPA's Disadvantaged Business Enterprise (DBE) Rule (40 CRF Part 33). The DBE rule applies specifically to ANY procurement made utilizing EPA financial assistance. The EPA financial assistance includes DWSRF funding. The DBE rule changed substantially from the prior Minority Business Enterprise (MBE) and Women's Business Enterprises (WBE) rule. The DBE rule requires that MBE and WBE firms be certified. Certification

applies to enterprises that are at least 51 percent owned and/or controlled by socially and economically disadvantaged individuals who are of good character, are citizens of the United States, and have an initial and continued personal net worth of less than $750,000.

DBE requirements apply to EGLE, DWSRF loan recipients, and the loan recipient's prime contractors. Additional information regarding the DBE requirements is available on EGLE's DWSRF website (http://www.michigan.gov/drinkingwaterrevolvingfund).

IX. DISADVANTAGED COMMUNITY STATUS

Disadvantaged community status is determined by EGLE based on information submitted with a water supplier's project plan. To qualify, an applicant must first meet the definition of "municipality" found in Part 54 of Act 451. Next, the updated median annual household income (MAHI) of the area to be served must be less than 120 percent of the state's updated MAHI. Finally, the costs of the project must be borne by the customers in the service area. If costs are spread over a larger area, then that area must demonstrate that it meets the poverty or affordability criteria.

Once these conditions are met, a community will be awarded the disadvantaged community status if one of the following is true:

- More than 50 percent of the area to be served by the proposed project is identified as a poverty area by the U.S. Census Bureau.
- The updated MAHI of the area to be served is less than the most recently published federal poverty guidelines for a family of four in the contiguous United States.
- The updated MAHI is less than the updated statewide MAHI and the annual user costs for water supply exceed 1 percent of the service area's MAHI.
- The updated MAHI is more than the updated statewide MAHI and the annual user costs for water supply exceed 3 percent of the service area's MAHI.

The major benefits for qualified communities include 50 additional priority points, extension of loan terms to 30 years principal forgiveness and assistance to help defray the costs of preparing project plans if the population is less than 10,000.

A complete discussion of the disadvantaged community status may be found in a guidance document prepared by EGLE to explain how a supplier can achieve the status and benefit from it. WIFS staff encourages all applicants to supply the pertinent data to allow EGLE to perform a disadvantaged community status analysis.

X. EPA AUTOMATED CLEARINGHOUSE ACTIVITIES

The EPA employs an Automated Standard Application for Payments (ASAP) system to make disbursements of federal funds. Michigan will comply with this system's requirements and deposit funds drawn from it into appropriate accounts set up for the DWSRF.

Beginning in the 1st quarter of FY 2020, Michigan anticipates drawing capitalization grant funds from the ASAP system. Michigan will draw 100 percent state funds first followed by the federal funds.

XI. ASSURANCES

The final guidelines from the EPA set forth provisions that the state must provide certain assurances in order to qualify for capitalization grant funding. Such assurances are incorporated into the Operating Agreement and are included here by reference. EGLE has a Quality Management Plan that guides our selection of qualified staff, and that the relevant staff is in place to work on DWSRF projects. DWSRF project information will continue to be provided to the EPA via the Drinking Water Project & Benefits Reporting (PBR) and the National Information Management

System (NIMS). All projects funded in FY 2020 will meet the equivalency requirements for crosscutter review and Federal Funding Accountability & Transparency Act (FFATA).

XII. OUTPUT/OUTCOME MEASURES

To comply with the EPA requirements on Environmental Benefits of the DWSRF, Michigan estimates that the following outputs could result from project loans in FY 2020 (including any projects noted as future on the PPL):

A. Output: Michigan could fund approximately 34 drinking water transmission/ distribution loans to construct/rehabilitate/upgrade drinking water transmission and distribution systems across the state. The dollar amounts of these applications total approximately $479 million.

   Outcome: The funding of these projects could result in more people receiving improved drinking water from existing treatment systems in Michigan.

B. Output: Michigan could fund approximately ten drinking water treatment projects to construct and/or rehabilitate drinking water treatment facilities across the state. The dollar amount of these application total approximately $22 million.

   Outcome: The funding of these projects could result in improved drinking water for thousands of people in Michigan and upon completion of the project, facilities that meet all applicable permits and SDWA requirements.

C. Output: Michigan could fund approximately two drinking water storage projects to construct and/or rehabilitate drinking water storage facilities across the state. The dollar amount of the application totals approximately $1.6 million.

   Outcome: The funding of this project could result in the improved drinking water and storage facilities that meet all applicable permits and SDWA requirements.

D. Output: Michigan could fund one drinking water source project to construct and/or rehabilitate drinking water source facilities across the state. The dollar amount of the application totals approximately $745,285.

   Outcome: The funding of this project could result in more people receiving improved drinking water from a new or rehabilitated water source that meets all applicable permits and SDWA requirements.

Please note that the number of applications will not agree with the number of loans on the PPL, as many of the project loans include work in more than one category (i.e., transmission/distribution, treatment, storage, and source).

XIII. PUBLIC REVIEW AND COMMENT

In order to satisfy public participation requirements, EGLE held a public hearing to discuss the DWSRF draft IUP on August 21, 2019. The hearing was publicly noticed in the *Detroit Legal News,* the *Lansing State Journal,* and the *Marquette Mining Journal;* posted on the EGLE calendar of events; mailed to all persons and engineering firms on our mailing list; and individually noticed to each water supplier on the FY 2020 draft PPL. These sources promote the hearing to ensure maximum public input from those interested in the DWSRF. The hearing affords stakeholders and other interested parties an opportunity to hear and comment on how EGLE plans to disburse the DWSRF loan funds.

Questions about the DWSRF IUP may be directed to:

Ms. Kelly Green, Administrator
Water Infrastructure Financing
Finance Division
Department of Environment, Great Lakes, and Energy
P.O. Box 30457
Lansing, Michigan 48909-7957
Voice: 517-284-5433
E-mail: GreenK1@Michigan.gov

Other contacts for the DWSRF are:

Ms. Dana DeBruyn, Section Manager
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Drinking Water and Environmental Health Division Department
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P.O. Box 30817
Lansing, Michigan 48909-8311
Voice: 517-930-6463
E-mail: DebruynD@Michigan.gov

Ms. Deborah M. Roberts, Executive Director Michigan
Finance Authority
Michigan Department of Treasury
P.O. Box 15128
Lansing, Michigan 48922
Voice: 517-241-2432
E-mail: TreasMFA@Michigan.gov

XIV. ORIGINATION OF DOCUMENTS

EGLE is responsible for issuing the DWSRF IUP and its accompanying information.

Department of Environment, Great Lakes and Energy

Current PPL

DWRF

Rank	Project #	Project Name, Location and Description			Population	Total Points	Binding Com Date	Binding Com Amount
PROJECTS WITH PRIOR YEAR SEGMENTS								
1	7473-99	City of Highland Park	Wayne County	Future wm repl phases, lslr	11,398	465	Future	$81,525,000
2	7461-02	GLWA	Oakland County	14 Mile Rd Trans Main Loop, Ph 2	3,600,000	400	Future	$46,000,000
3	7445-02	GLWA	Wayne County	Northeast Trans Main, Phase 2	3,600,000	375	08/07/2020	$92,030,000
3	7445-03	GLWA	Wayne County	Northeast Trans Main, Phase 3	3,600,000	375	Future	$50,320,000
PROJECTS WITHOUT PRIOR YEAR SEGMENTS								
4	7464-01	City of Benton Harbor	Berrien County	wm repl,lslr, elev strg imp	10,020	615	05/19/2020	$4,465,000
5	7482-01	City of Kalamazoo	Kalamazoo County	wm repl & ext, lead sl repl	144,500	525	02/28/2020	$22,700,000
6	7458-01	City of Owosso	Shiawassee County	wm replac, lslr	14,539	515	Future	$12,975,000
7	7457-01	City of Owosso	Shiawassee County	elev strg imp, WTP imp, wm repl	14,539	490	02/28/2020	$3,500,000
8	7473-01	City of Highland Park	Wayne County	wm replac, lslr phase 1	11,398	465	05/19/2020	$14,020,000
9	7418-01	City of Muskegon Heights	Muskegon County	Watermain & meter replacement	10,800	465	Future	$5,735,000
10	7436-01	City of St. Joseph	Berrien County	Wm replac, lslr	33,000	465	02/28/2020	$1,750,000
11	7470-01	City of Howell	Livingston County	W. Grand River watermain repl	9,203	430	Future	$2,675,000
12	7469-01	City of Howell	Livingston County	Clinton St. watermain repl	9,203	430	Future	$1,400,000
13	7462-01	City of Howell	Livingston County	WTP & well improv, wm repl	9,203	430	05/19/2020	$975,000
14	7480-01	Spring Arbor Township	Jackson County	New wellfield, wm ext	2,100	420	02/28/2020	$3,370,000
15	7426-01	City of Rochester	Oakland County	Watermain replacement & transm	13,660	415	02/28/2020	$5,950,000
16	7466-01	City of Muskegon	Muskegon County	WFP impr, PS impr, wm & lsl repl	38,500	415	08/07/2020	$6,095,000
17	7468-01	City of Muskegon	Muskegon County	WFP chem feed, wm & lsl repl	38,500	415	Future	$4,130,000
18	7467-01	City of Muskegon	Muskegon County	WFP impr, wm & lsl repl	38,500	415	Future	$3,035,000
19	7442-01	East Lansing	Ingham County	WTP filt add & controls	79,585	400	Future	$2,900,000
20	7441-01	East Lansing	Ingham County	HVAC upgrd	79,585	400	05/19/2020	$1,135,000
21	7461-01	GLWA	Oakland County	14 Mile Rd Trans Main Loop, Ph 1	3,600,000	400	05/19/2020	$8,400,000
22	7430-01	Village of Lake Orion	Oakland County	Watermain replacement Ph 3 & 4	3,032	395	05/19/2020	$4,390,000
23	7460-01	DWSD/GLWA	City of Detroit, Wayne County	Wm replac, lslr	650,000	375	05/19/2020	$32,635,000
24	7483-01	DWSD/GLWA	City of Detroit, Wayne County	wm replac, lslr	650,000	375	05/19/2020	$24,865,000
25	7463-01	City of South Haven	Van Buren County	Wm replac, lslr	11,650	340	11/15/2019	$1,210,000
26	7452-01	Livonia	Wayne County	WM repl (Project Area #1-3)	96,942	325	05/19/2020	$10,525,000

Project Type: DWRF Loan Fiscal Year: 2020 Include 4th Quarter From Previous FY: No

Department of Environment, Great Lakes and Energy

Current PPL

DWRF

27	7434-01	City of Dearborn	Wayne County	Watermain replacement Area 1 20	100,000	325	Future	$8,000,000
28	7453-01	Livonia	Wayne County	WM repl (Project Area #4-6)	94,060	325	Future	$5,300,000
29	7454-01	Livonia	Wayne County	WM repl (Project Area #7-9)	94,060	325	Future	$4,815,000
30	7433-01	City of Dearborn	Wayne County	Watermain replacement area 1	100,000	325	Future	$4,500,000
31	7435-01	City of Dearborn	Wayne County	Watermain replacement area 2	100,000	325	Future	$3,500,000
32	7472-01	City of Ann Arbor	Washtenaw County	UV disinf	125,000	325	11/15/2019	$3,100,000
33	7437-01	City of St. Joseph	Berrien County	WTP improvement, watermain repla	33,000	315	Future	$35,565,000
34	7459-01	Charter Township of Port Huron	St. Clair County	wm replac	10,654	315	08/07/2020	$6,215,000
35	7425-01	City of Fraser	Macomb County	Watermain repl, PRVs	14,084	315	02/28/2020	$3,800,000
36	7479-01	Charter Township of White Lake	Oakland County	Iron filtration	6,000	305	08/07/2020	$3,615,000
37	7465-01	Village of White Pigeon	St Joseph County	Wm replac, lsl replac	1,530	295	05/19/2020	$1,665,000
38	7481-01	City of Marquette	Marquette County	wm replac	24,500	240	05/19/2020	$1,995,000
Total 39 Projects								**$530,780,000**

Department of Environment, Great Lakes and Energy

Drinking Water Revolving Loan Fund PPL Scoring

Category Description	Points	7418-01	7425-01	7426-01	7430-01	7433-01	7434-01	7435-01	7436-01	7437-01	7439-01	7441-01	7442-01	7445-02	7445-03	7452-01
Drinking Water System Compliance Total	**450 (max)**	150	150	150	150	150	150	150	150	150	0	150	150	150	150	150
Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**250**															
Non-Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**200**															
Facility Upgrade to Maintain Compliance	**150**	■	■	■	■	■	■	■	■	■		■	■	■	■	■
Aesthetic Upgrades to Maintain Compliance	**25**															
Infrastructure Improvements/Upgrades - Total	**350 (max)**	125	25	125	125	25	25	25	175	25	0	100	100	75	75	25
Source/Treatment with Connecting Mains	**125 (max)**	125	0	0	0	0	0	0	125	0	0	100	100	0	0	0
Meet Minimum Capacity	**100**	■							■							
Relliability	**75**	■							■			■	■			
Other Upgrades	**25**	■							■			■	■			
Enforcement Action	**25**															
Source Water Protection	**50**															
Transmission/Distribution Mains	**125 (max)**	0	25	125	125	25	25	25	25	25	0	0	0	75	75	25
Meet Minimum Capacity	**100**			■	■											
Relliability	**75**													■	■	
Other Upgrades	**25**		■	■	■	■	■	■	■	■						■
Enforcement Action	**25**															
Storage Facilities/Pumping Stations	**125 (max)**	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0
Meet Minimum Capacity	**100**															
Relliability	**75**															
Other Upgrades	**25**								■							
Enforcement Action	**25**															
Population - Total	**50 (max)**	40	40	40	20	50	50	50	40	40	0	50	50	50	50	50
0 - 500	**10**										■					
501 - 3,300	**20**				■											
3,301 - 10,000	**30**															
10,001 - 50,000	**40**	■	■	■					■	■						
> 50,000	**50**					■	■	■				■	■	■	■	■
Disadvantaged Community - Total	**50 (max)**	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Granted	**50**	■														
Consolidation - Total	**100 (max)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Achieve Compliance	**100**															
Correct Deficiencies	**60**															
Other	**40**															
Comp. Wellhead/Source Water Protect Plans - Total	**100 (max)**	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100
Granted	**100**	■	■	■	■	■	■	■	■	■		■	■	■	■	■
Total Priority Points Assigned	**1000 (max)**	465	315	415	395	325	325	325	465	315	0	400	400	375	375	325

Fiscal Year: 2020

Friday, September 20, 2019 4:04 PM

Department of Environment, Great Lakes and Energy

Drinking Water Revolving Loan Fund PPL Scoring

Category Description	Points	7453-01	7454-01	7457-01	7458-01	7459-01	7460-01	7461-01	7461-02	7462-01	7463-01	7464-01	7465-01	7466-01	7467-01	7468-01
Drinking Water System Compliance Total	**450 (max)**	150	150	150	150	150	150	150	150	150	150	350	150	150	150	150
Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**250**															
Non-Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**200**											■				
Facility Upgrade to Maintain Compliance	**150**	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Aesthetic Upgrades to Maintain Compliance	**25**															
Infrastructure Improvements/Upgrades - Total	**350 (max)**	25	25	200	225	125	25	100	100	150	100	175	125	75	75	75
Source/Treatment with Connecting Mains	**125 (max)**	0	0	75	75	0	0	0	0	25	0	0	0	25	25	25
Meet Minimum Capacity	**100**															
Relliability	**75**			■												
Other Upgrades	**25**				■					■				■	■	■
Enforcement Action	**25**															
Source Water Protection	**50**				■											
Transmission/Distribution Mains	**125 (max)**	25	25	125	125	125	25	100	100	125	100	125	125	25	25	25
Meet Minimum Capacity	**100**			■	■	■				■		■	■			
Relliability	**75**			■	■			■	■		■					
Other Upgrades	**25**	■	■	■		■	■	■	■	■	■		■	■	■	■
Enforcement Action	**25**											■				
Storage Facilities/Pumping Stations	**125 (max)**	0	0	0	25	0	0	0	0	0	0	50	0	25	25	25
Meet Minimum Capacity	**100**															
Relliability	**75**															
Other Upgrades	**25**				■							■		■	■	■
Enforcement Action	**25**											■				
Population - Total	**50 (max)**	50	50	40	40	40	50	50	50	30	40	40	20	40	40	40
0 - 500	**10**															
501 - 3,300	**20**												■			
3,301 - 10,000	**30**									■						
10,001 - 50,000	**40**			■	■	■					■	■		■	■	■
> 50,000	**50**	■	■				■	■	■							
Disadvantaged Community - Total	**50 (max)**	0	0	0	0	0	50	0	0	0	50	50	0	50	50	50
Granted	**50**						■				■	■		■	■	■
Consolidation - Total	**100 (max)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Achieve Compliance	**100**															
Correct Deficiencies	**60**															
Other	**40**															
Comp. Wellhead/Source Water Protect Plans - Total	**100 (max)**	100	100	100	100	0	100	100	100	100	0	0	0	100	100	100
Granted	**100**	■	■	■	■		■	■	■	■				■	■	■
Total Priority Points Assigned	**1000 (max)**	325	325	490	515	315	375	400	400	430	340	615	295	415	415	415

Department of Environment, Great Lakes and Energy

Drinking Water Revolving Loan Fund PPL Scoring

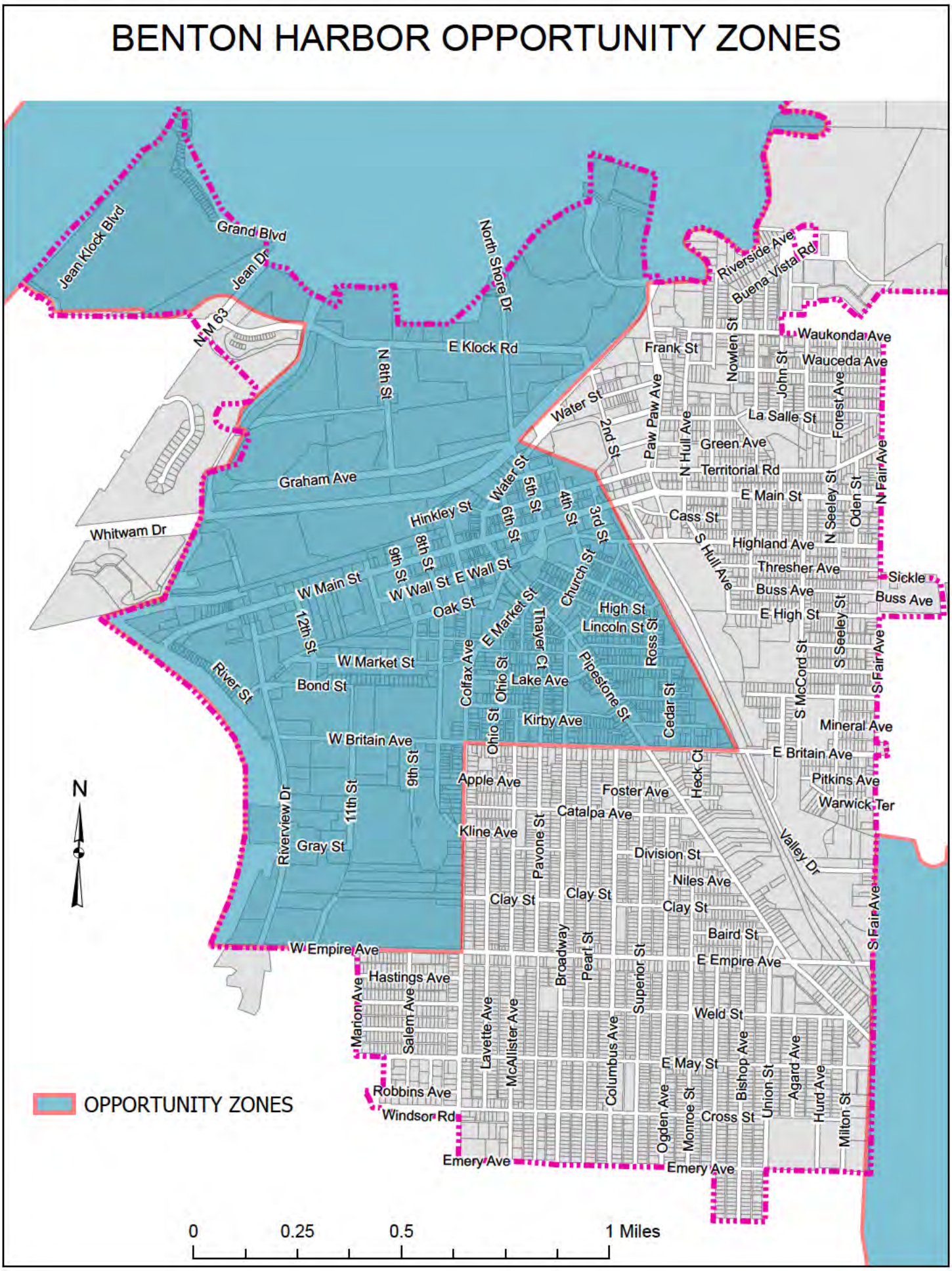
Category Description	Points	7469-01	7470-01	7472-01	7473-01	7473-99	7479-01	7480-01	7481-01	7482-01	7483-01
Drinking Water System Compliance Total	**450 (max)**	150	150	150	150	150	175	150	150	350	150
Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**250**										
Non-Acute Viol. of DW Standards, Health Advisory Levels, SWTT, Disease	**200**									■	
Facility Upgrade to Maintain Compliance	**150**	■	■	■	■	■	■	■	■	■	■
Aesthetic Upgrades to Maintain Compliance	**25**						■				
Infrastructure Improvements/Upgrades - Total	**350 (max)**	150	150	25	125	125	0	250	50	125	25
Source/Treatment with Connecting Mains	**125 (max)**	25	25	25	0	0	0	125	0	0	0
Meet Minimum Capacity	**100**							■			
Relliability	**75**										
Other Upgrades	**25**	■	■	■				■			
Enforcement Action	**25**										
Source Water Protection	**50**										
Transmission/Distribution Mains	**125 (max)**	125	125	0	125	125	0	125	25	125	25
Meet Minimum Capacity	**100**	■	■					■		■	
Relliability	**75**				■	■				■	
Other Upgrades	**25**	■	■		■	■		■	■		■
Enforcement Action	**25**				■	■					
Storage Facilities/Pumping Stations	**125 (max)**	0	0	0	0	0	0	0	25	0	0
Meet Minimum Capacity	**100**										
Relliability	**75**										
Other Upgrades	**25**								■		
Enforcement Action	**25**										
Population - Total	**50 (max)**	30	30	50	40	40	30	20	40	50	50
0 - 500	**10**										
501 - 3,300	**20**							■			
3,301 - 10,000	**30**	■	■				■				
10,001 - 50,000	**40**				■	■			■		
> 50,000	**50**			■						■	■
Disadvantaged Community - Total	**50 (max)**	0	0	0	50	50	0	0	0	0	50
Granted	**50**				■	■					■
Consolidation - Total	**100 (max)**	0	0	0	0	0	0	0	0	0	0
Achieve Compliance	**100**										
Correct Deficiencies	**60**										
Other	**40**										
Comp. Wellhead/Source Water Protect Plans - Total	**100 (max)**	100	100	100	100	100	100	0	0	0	100
Granted	**100**	■	■	■	■	■	■				■
Total Priority Points Assigned	**1000 (max)**	430	430	325	465	465	305	420	240	525	375

CITY OF BENTON HARBOR

Summary of Funding Needed for Sewer/Water Projects to be completed from 2020-2022

	2020	2021	2022	2023	2024	2025	Notes
FUNDING SUMMARY							
Utility Budget Shortfall	$ (900,000)	$ (932,613)	$ (937,934)	$ (250,472)	$ 35,558	$ 345,133	Gets Sewer/Water Fund self supportive
New Debt	$ -	$ (108,474)	$ (213,006)	$ (212,343)	$ (211,681)	$ (211,018)	
Transfer In from General Fund & Road Fund	$ 300,000	$ -	$ -	$ -	$ -	$ -	To-Date
Refund Transfer from General & Road Funds	$ (300,000)	$ -	$ -	$ -	$ -	$ -	
Transfer In from Income Tax	$ 900,000	$ 645,000	$ 740,000	$ 32,000	$ -	$ -	To Refund Transfers and Balance Budget/Expenses
Transfer In from PPI	$ -	$ 200,000	$ 200,000	$ 200,000	$ 25,000	$ -	For Water Tower
Rate Adjustments	$ -	$ 237,000	$ 259,000	$ 280,000	$ 308,000	$ 335,000	
NET FUNDS	**$ -**	**$ 40,913**	**$ 48,060**	**$ 49,185**	**$ 156,877**	**$ 469,115**	
PPI Fund							
PPI Fund Balance	$ 238,500	$ 188,500	$ 138,500	$ 88,500	$ 38,500	$ 163,500	
Receipts	$ -	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	No Increase (budgeted $168k in 2020)
Expenses Committed	$ (50,000)	$ -	$ -	$ -	$ -	$ -	DPW Work
Transfers Out to Utility Fund	**$ -**	**$ (200,000)**	**$ (200,000)**	**$ (200,000)**	**$ (25,000)**	**$ -**	For Water Tower Construction
New Balance	$ 188,500	$ 138,500	$ 88,500	$ 38,500	$ 163,500	$ 313,500	Good for other expenditures By 2024
Income Tax Fund							
Income Tax Fund Balance	$ 2,400,000	$ 1,100,000	$ 855,000	$ 965,000	$ 2,033,000	$ 3,133,000	
Less Reserves	$ (400,000)	$ (600,000)	$ (400,000)	$ (400,000)	$ (400,000)	$ (400,000)	Higher Reserves in 2021 due to COVID
Receipts	$ -	$ 1,000,000	$ 1,250,000	$ 1,500,000	$ 1,500,000	$ 1,500,000	Lower Receipts in 2021/22 due to COVID
Transfers Out to Utility Fund	**$ (900,000)**	**$ (645,000)**	**$ (740,000)**	**$ (32,000)**	**$ -**	**$ -**	
New Balance	$ 1,100,000	$ 855,000	$ 965,000	$ 2,033,000	$ 3,133,000	$ 4,233,000	Good for other road work by 2023
Rate Adjustments							
Water Rate Increase		9.95%	9.95%	9.95%	9.95%	9.95%	
Cost per Service/month		$ 5.00	$ 5.50	$ 6.00	$ 6.67	$ 7.33	
Funds Raised		$ 150,000	$ 165,000	$ 180,000	$ 200,000	$ 220,000	
Sewer Rate Increase		7%	7%	7%	7%	7%	
Cost per Service/month		$ 2.90	$ 3.13	$ 3.33	$ 3.60	$ 3.83	
Funds Raised		$ 87,000	$ 94,000	$ 100,000	$ 108,000	$ 115,000	
Street Fund							
Street Fund Balance	$ 1,493,000	$ 1,493,000	$ 491,000	$ 575,000	$ 515,000	$ 410,000	
Less Normal Expenditures for Maintenance	$ -	$ (875,000)	$ (875,000)	$ (875,000)	$ (875,000)	$ (875,000)	
Empire Avenue		$ (622,000)	$ 339,000	$ 45,000			Advance Construct - Reimbursement
Receipts	$ -	$ 875,000	$ 1,000,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	Plan for a reduction the first couple years (50% in year 1)
Transfers Out for Debt on Loan Ineligible Costs - Storm/Roads	**$ -**	**$ (380,000)**	**$ (380,000)**	**$ (380,000)**	**$ (380,000)**	**$ (380,000)**	
New Balance	$ 1,493,000	$ 491,000	$ 575,000	$ 515,000	$ 410,000	$ 305,000	Will remain relatively healthy

E. 2. Opportunity Zone Map



F. Biographical Sketches

1. **City of Benton Harbor**
    a. **Ellis Mitchell – City Manager**
    b. **Mike O'Malley – Benton Harbor Water Superintendent**
    c. **Tracy-Ann Jennings – Community and Economic Development Department Director**
2. **Abonmarche Consultants, Inc**
    a. **Jason Marquardt, PE – Project Manager**
    b. **Corey Kandow, PE – Project Manager**
    c. **Bret Witkowski – Asset Management Program Director**
    d. **Joelle Regovich – Grant Administrator**

Ellis E. Mitchell
[redacted] Benton Harbor, Michigan 49022
Phone: [redacted] E-mail: [redacted]@gmail.com

September 26, 2019

Honorable Mayor Muhammad and
Honorable Members of the City Commission
200 East Wall Street
Benton Harbor, MI 49022

RE: City Manager Recruitment – Benton Harbor, Michigan

Dear Mayor Muhammad and City Commission Members:

Please accept this comprehensive employment package as my application for the position of City Manager for the City of Benton Harbor, Michigan. I have served as your Interim City Manager for the past two months, and the credentials presented in this package along with my body of work over this period serve as proof that I am the best candidate for the position of City Manager for the City of Benton Harbor.

Experience Matters!
As many of you already know, I have served as City Manager of Benton Harbors in years past, and some of you might know my history as the City Manager who saved this City from State receivership during that tour of duty.

Under my leadership, we were **ACTION-DRIVEN …** creating opportunities and strengthening the status of our residents, businesses, staff team, and overall growth of the City.

I left the City of Benton Harbor, through my own will, to accept another challenging position closer to my family, whom I had been apart from during my four year tour here. I left the City with trained staff members, a balanced budget, and a stronger sense of unity in the community, where citizens, city businesses, partners, and the staff having a respect for this governing body.

I bring to the City of Benton Harbor a mature, seasoned, energetic, and visionary leader, with experienced executive management skills, including managing five cities; directing major departments in several others; as a business owner, providing management consulting services for several other organizations and businesses;

I know that was years ago, and some of you might have wondered, "What can he do for us now???" My body of work over the past two months should have answered that question, and hopefully we are ready to move forward. But know this; what you have seen is just the tip of the iceberg … the beginning of the process of full recovery that began with stabilization. I submit that we are close enough to stable and planning for the future has already begun and almost ready for its unveiling.

I propose that the education, skills, background, and history I bring combined with the innovative and technologically sound, futuristic operational and financial management, leadership, strategic planning, team-building, and the execution and implementation of approved plans will keep Benton Harbor an alive

and fully functional and respected member in the Twin Cities business of Government operations community ... a fully functional and participatory city meeting the needs of its residents, fulfilling its leadership role in Southwest Michigan and within the State of Michigan.

In summary, I bring extensive experience in local, State, and Federal Government operations; relevant experience in non-profit, private, educational sectors; and military experience as a Vietnam War Veteran to the organization. This experience is supported by a Bachelor's Degree in Business Administration, a Master's Degree in Public Administration, a Certificate in Senior Executive Management, and many hours of formal continuing education, personal development, and training. Further, my education and experience, my management style, and personal traits are congruent with those required of your next City Manager.

My 40 year-plus employment history is highlighted by the following:

- Building and maintaining close working relationships with elected and appointed Councils/Commissions and Boards, staff and operating team leaderships, residential and business stakeholders, and with my fellow City/County Managers.
- Daily management, oversight, leadership, and accountability for all assigned areas within the organization, its financial, human, and physical resources.
- Strong, strategic planning and managing the annual operating and capital budget processes.
- Experienced team builder, leader, negotiator, mediator, communicator, and listener.
- Experienced in the core competencies of education, business, housing, economic and organizational development, public safety and services, and all other departmental functions and using technology as "the thread that binds".
- Strong advocate and practitioner of internal and external partnerships and intergovernmental relations.

These duties have required building intergovernmental and legislative relationships with County, State, and Federal legislative bodies and staff officials, neighboring jurisdictions, and all internal operations over the years. They have been performed while managing complex organizations in dynamic and fast-paced environments and jurisdictions:

- Ranging in size from 5,000 to over a 1,000,000 people;
- Budgets ranging from $10M to in excess of $1B;
- Number of employees ranging from 80 to over 12,000 ... in racially, ethnically, socially, and economically diverse communities, and in several sections of the Country.

My quality management and my highly developed interpersonal and communication skills have been honed by my many years of diversified experiences. These skills helped me:

- Save two cities from state receivership (Benton Harbor, Michigan and East St. Louis, IL).
- Improve planning, intra and intergovernmental relations, debt stabilization, income generation and service delivery in several others (Most recently, City of East Point Georgia).
- Serve as the first City Manager ever in one city and the first in four years in another.

The key to my success has been my dedication to working with and building strong internal teams with elected Councils, staffs, community residents, business owners, and religious and educational leaders.

I believe this extensive and diversified, professional background makes me an ideal candidate for this position. Therefore, I enthusiastically welcome the opportunity to personally discuss the attributes I bring to the organization, to you, the Mayor and Commission, to the Management Team and staff, and the contributions I can make to help further the organizations goals for its major stakeholders and the City as a whole.

Thank you in advance for this opportunity to present myself and my qualifications on paper for your considerations. My salary preferences are negotiable. If you have any questions or require further information, I can be reached at (314) 413-6776.

Sincerely,

[Please accept as signed]

Ellis E. Mitchell

Enclosures

Ellis E. Mitchell
[redacted] Benton Harbor, MI 49022
Primary Phone: [redacted] • E-mail: [redacted]@gmail.com

POSITION SOUGHT: CITY MANAGER - BENTON HARBOR, MICHIGAN

Performance-driven Senior Executive offering more than 40+ years of comprehensive achievements in public, private, and educational sectors; managed five cities, saving two from State Receivership; directed major departments in several others; provided management consulting services for cities and private sector companies; recognized for organizational and economic development skills that demand strong team building and focused and strategic planning, benefiting employees and community; MPA/BS in Management, Finance, Organizational Development, Marketing.

EXECUTIVE LEADERSHIP & OPERATION COMPETENCIES

• Executive Level Public Sector Management	• Building/embracing Intergovernmental Relations
• Budgeting, Finance, and Cost Controls	• Planning / Community/ Economic Development
• Long-Term Strategic Planning & Growth	• Staff Training / Development / Management
• Negotiation / Mediation, Labor / other Contracts	• Dynamic Team Building and Team Membership
• Building Partnerships with Supervisors / those Supervised • All facets of the Administrative / Management Process	• Capital Planning and Improvement • Thinking / Listening / Strategic Planning / Problem Solving • Required education and Experience
• Embracing Community Diversity • Facilities Planning and Management	• Excellent Oral / Written Presentations • Transportation Planning and Management

TRACK RECORD OF SUCCESS

Proven, consistent, and improved application of the above skills led to these accomplishments, to name a few:

- Managed five cities using planning techniques that saved two from state receivership; provided $9.1M funding for a major capital development for one; and provided contracted leadership and turnaround planning to stabilize and improve financial management, daily operations, team building, intergovernmental relations, and overall good government to the others.
- Led planning and implementation of balanced Operating Budgets and 5 Year Capital Improvement Programs in several cities stabilizing and improving financial management.
- Managed major departments, including Parks and Recreation, Public Works, Economic Development, Facilities & Grounds, and leading each back to prominence in the organization.
- Served as Project Manager over major bond issues, developments, and several capital funding projects from planning, negotiating, and throughout the construction process.
- Planned / implemented a utility improvement plan that increased collections from 51% to 92% and more than $1M.
- Led the Task Force that planned, created, and implemented legislation that brought law and order to a multi-million dollar Street Vending Program that went from paying no taxes to contributing its fair share to revenue collections.

EXPERIENCE – PUBLIC SECTOR

07/2019 – Present **Interim City Manager, City of Benton Harbor, MI**
Hired by the City Commission to oversee and manage the daily affairs of the City.

11/2017 – 07/2019 **Mobility Manager, Twins City Area Transportation Authority (TCATA), Benton Harbor, MI.**
Hired by Executive Director to oversee and manage the Mobility Management approach to optimizing all public transportation in Southwest Michigan toward improving specialized transportation for older adults, people with disabilities, people with lower incomes, and, thereby, those with limited to no personal means of mobility … where public transportation is the only option.

11/2013 - 12/2014 **Interim City Manager, City of East Point, GA**
The Robert Bobb Group was awarded the Management Contract to provide turn-around management services for the City; Mitchell was selected and appointed by the Mayor and City Council to direct the administrative and operational services of around 549 employees, leading all City Departments in developing a $127M Budget, population of 35,000, managing the daily affairs, strategic planning, team building, economic and community development, and building strong intergovernmental relations within the county, state and federal governments. Performance highlights including:

- Developing an Operating Budget within the first 15 days on the job
- Assuring the development of the Comprehensive Annual Financial Report (CAFR)
- Bringing stability to the management and administrative staff teams
- Improving Intergovernmental relations by making sure the City was back at the table at cross- jurisdictional meetings
- Building more effective and efficient Council/Manager relationships

10/2009 - 09/2010 **City Manager, Berkeley, MO**
Appointed by Mayor and City Council to direct the administrative and operational services of around 160 employees, all City Departments in developing a $21M budget, population of 11,000, management of daily affairs, strategic planning, team building, economic and community development, and building strong intergovernmental relations within the county, state and federal governments. Performance highlight including:

- Planning and implementing a 5-Year Plan that streamline operations, improving internal and Intergovernmental relations, service delivery, budget planning and development, strategic team building, staff training, and overall better government.
- Responsible for City Bond rating increasing to A and overall City rating increasing to A+ as prerequisite to receiving $9.1M Bond award to build new Municipal Complex ... catalyst for Downtown improvement / development / and redevelopment.

01/1992 – 10/1993 **City Manager, East St. Louis, IL**
Brought in to direct the administrative and operational services of 300 employees,, Departments in developing a $25M budget, population of 44,000, strategic planning, management of daily affairs, and working with the State appointed financial oversight Board. Performance highlights including:

- Planning and implementing a 5-Year Plan that streamlined operations, preparing the first balanced Operating budget, improving internal and intergovernmental relations, service delivery, revenue to debt ratios,

strategic team building, staff training, overall better government.
- Orchestrating turnaround that actually saved the City from State receivership.

01/1983 – 02/1987 **City Manager, Benton Harbor, MI**

Recruited to direct the administrative and operational services of 200 employees, all City Departments in developing a $12M budget, population of 16,000 strategic planning, working with the State appointed financial agent, serving on various boards and commissions including Airport, Wastewater Treatment, Solid Waste, and Economic Development boards, and the Planning Commission; worked closely with the Library Board, Transit Commission, Housing Commission, the Chamber of Commerce. Performance highlights including:

- Planning, implementing, and managing a 5-Year Comprehensive Plan that streamlined operations, preparing the first balanced operating budget, improving internal and intergovernmental relations, service delivery, and revenue to debt ratios, strategic team building, staff training and overall better government.
- Updating much needed water meter reading program, staff services, and revenue collection program that led to increased collections for 51% to 92% and more than $1M.
- Orchestrating improvements that led City from receivership.

01/1977 – 10/1977 **Assistant City Manager, Emeryville, CA**

Brought in as first Assistant City Manager to assist the first City Manager in performing administrative and managerial oversight of the City's daily affairs in this full service city of over in 4,500 night population and 15,000 day population; $7M total operating budget; 163 employees; worked closely in budget development and administration, personnel administration, economic and community development, finance and projects management and operations. Performance highlights including:

- Building viable working departmental teams under a new government structure.
- Recruiting and hiring first Senior Center Program Director who built a model program.

10/1998 – 02/2002 **Special Assistant to City Manager & Manager & Municipal Buildings Services Division, Public Works Agency - Oakland, CA.**

Brought in to oversee and coordinate City Manager's special and most challenging projects and managing City's most difficult operating Division of 120 employees, $18M budget, over 350 buildings/facilities, population of 400,000. Performance highlights including:

- Planning and coordinating development of 3 major Initiatives: Banishing Bureaucracy, Community Oriented Government, and Public Safety Strategy and rolling-out legislative initiatives for City Council approval to implement.
- Planning and implementing major city projects including: 1) Fleet Week which lead to the city's participation in a major, Bay Area-wide week of military simulated warfare activities, a major tourism attraction; 2) Golf course development which included negotiations for the proper closing of a landfill and the selection, approvals, and coordination of the building of a first class golf course; the planning and construction of a police substation in the toughest part of town.
- Developing, implementing, and overseeing the first comprehensive planning, design, construction, maintenance, repair, and custodial services programs for the City's over 350 buildings / facilities (more than 3,000,000 square feet) and their related equipment; initiating

aggressive team building concepts, leading to and sustaining effective and productive staff improvements.

- Coordinating team efforts toward selection of vendor to provide an integrated public safety computer system within the police department and between police and fire departments.
- Heading City's Golf Course Development Team from planning, to contract negotiation, to construction and project management.

12/1995 – 03/1997 **Director, Parks, Recreation, & Neighborhood Services Department, San Jose, CA**

Hired to manage the daily affairs of this Department; $65M Department Operating and Capital Budgets, 850 employees, population of almost 1M A Neighborhood Parks System of over 135 developed parks, 3000 acres of undeveloped land, and 50 civic grounds and regional areas, and one municipal golf course; A Recreation and Community Services Program of over 20 community, senior, and therapeutic centers; an aquatics program, and youth and adult sports leagues; A Youth Services Program that included youth employment services, child care, after school and homework activities, teen centers, and gang prevention and intervention programs; A Human Services Program funded by the HUD CDBG Program to address community development needs; and A Neighborhood Services Program which teamed with community-based organizations, neighborhood associations, and individual residents to improve neighborhoods. Performance highlights including:

- Initiating aggressive team building concepts that improved staff morale goals each year.
- Clearly establishing department as the reliable social services Center within the City and as a major player in the local government decision-making process.
- Leading and participating in inter-departmental teams to meet department and City goals.

04/1981 - 01/1983 **Assistant Director, Office of Business and Economic Development District of Columbia, Washington, DC**

Recruited to serve as principal liaison between the Office and the DC business community and to assist in planning, development, implementation, maintenance, performance and impact monitoring of the District's massive multi-million dollar economic development plan including responsibility for business planning, retention, attraction, development, and expansion and job creation. Performance highlights including:

- Playing integral role in the planning, economic recovery, revitalization, of our Nation's Capital.
- Leading the Street Vending Task Force that planned, created, and implemented legislation that brought law and order to a very viable Vending business that went from paying no taxes to contributing its fair share to revenue collections.

08/1978 - 08/1980 **Special Assistant, Intergovernmental Affair, U.S. Department of Commerce, Office of Science and Technology, Washington, DC**

Recruited from CA to DC to serve as a non-political liaison to assure the application of science, technology and innovation to the needs of state and local governments, while simultaneously working to promote a public / private partnership in these technical areas. Performance highlights including:

- Planning and implementing partnership projects in 10 targeted cities, one in each region.

- Serving as member on a Presidential panel on Science and Technology

09/1970 - 01/1977

10/1977 - 07/1978 **Assistant to City Manager/Administrative Assistant/Administrative Trainee**
Model Cities Program, Richmond, CA

Hired and promoted to provide administrative and managerial services aiding professional staff, Board, and Council assistance; assist the Assistant City Manager for Housing and Community Development and City Manager in performing administrative and managerial oversight of the City's daily affairs of its 80,000population; 900 employees; and $123M operating budget. Performance highlights including:

- Completing City's Overall Economic Development Plan 4 years in a row that become the standard in years since.
- Hiring and training the Student Intern who later went on to become and retire as City Manager.
- Hiring the City's first and only Washington, DC Representative in 1973, who still represents the City in DC.
- Being part of two-man team that planned, prepared, competed, and won award of one of, only, six major housing development grants awarded nationally.

EXPERIENCE – EDUCATION SECTOR

10/2010 - 09/2012 **Director of Facilities, Riverview Gardens School District - St. Louis, MO.**

Appointed by Superintendent of Schools to oversee the daily operations of over 80 employees; $21M department budget, in a "lapsed" district of over 6,000 students, building an effective and involved staff team to plan and implement improvements, maintenance, preventative maintenance, and custodial services for a compliment of 29 buildings and grounds. Performance highlights including:

- Managing all approved projects under a $15M Bond Issue.
- Leading team planning and participation in the development of a 5 Year Capital Improvement Plan.
- Addressing daily physical plan emergencies caused by years of neglect.
- Improving the culture of and actual service delivery throughout the School District.
- Creating and implementing continuous staff improvement plans.
- Working as member of the Executive Cabinet in planning and implementing district-wide Accountability Plan as the roadmap to re-accreditation.
- Oversaw bus planning, operations, and services for the school district

EXPERIENCE – PRIVATE/NON-PROFIT SECTORS

02/1987 - 01/192 **Business Owner/Independent Contractor/Consultant, Washington, DC / San Jose, CA / Winston Salem, NC / Richmond, VA**

02/2002 - Present Contracted to perform independent consulting services, to recruit, train, and supervise teams of inside operations managers and outside sales executives. Performance highlights including:

- Providing Notary Public and loan signing services, life insurance, real estate, and mortgage loan services, as CA Licensed Notary Public, Life Agent, and Real Estate Agent, respectively.

- Providing business start-up, management, marketing, loans, financial, procurement, organizational development, community/economic development, and community organizing consulting services
  training, and supervising team representatives to execute customer service models in the insurance, commercial & residential mortgage loans, real estate areas, and transportation services.

EDUCATION

07/1984 **Harvard University** **Boston, MA** Graduate – Kennedy School of Government, Senior Executives in State and Local; Government Management

12/1975 **California State University Hayward, CA** Graduate - Master of Public Administration, Urban Management, Organizational Development

08/1973 **University of California** **Berkeley, CA** Graduate - Bachelor of Science - Business Administration, Finance, and Marketing

PROFESSIONAL ORGANIZATIONS

Missouri School Plant Managers Association
International City Management Association (ICMA)
- Served as Co-Chair, Strategic Planning Committee;
- Member, Diversity Committee

American Management Association (AMA)
The National Honor Society for Public Affairs and Administration (Pi Alpha Alpha)
National Forum for Black Public Administrators (NFBPA)
Real Estate Associations: National Association of Realtors (NAR); California Association of Realtors (CAR)
Recreation and Parks Associations: National and California Recreation and Parks Association (NRPA) and (CARPA)

HONORS AND RECOGNITIONS

Honorary Member National Honor Society
Key to the City, Benton Harbor, Michigan
Certificate of Appreciation for Service, District of Columbia Government
Certificate of Appreciation for Service, City of Emeryville, CA
Certificate of Appreciation for Service, City of Richmond, CA
Air Force Accommodation Medal, While Serving in Vietnam
Salutatorian of High School Graduating Class

REFERENCES

Cooke, Wilce	Former Mayor	Benton Harbor, MI	[redacted]m
Gardiner, Fredrick	City Manager	East Point, GA	[redacted]m fgardiner@eastpointcity.org
Moore, Charlotte	City Treasurer/- Retired	East St. Louis, IL	[redacted]m Charlotte.moore@cesl.us

Watson, Kyra.	Former Mayor	Berkeley, MO	[redacted]m [redacted]@hotmail.com
Woolridge, Charlette	County Manager	Brunswick County, VA	804-646-5456-o

Cwoolridge@brunswickco.com

CONSULTING CLIENT LIST

Ellis Mitchell, President/CEO Mitchell Diversified Business Solutions (MDBS)

First Merchants Financial Services, Winston Salem, NC; Served double duty as St. Louis Area Manager and Director of Operations for First Merchants, providing loans and other financial assistance and consultation to small businesses throughout the U.S.

HC Investments, San Jose, CA; **H&J Properties, Inc.** Huntsville, AL; **Greater Richmond Interfaith Program,** Richmond, CA; **Rivkin Group, Inc., AtHome Consulting Group, Inc., Primerica Financial Services, Inc.,** respectively, San Jose, CA – **Mortgage Loan and Real Estate Agent** and **Financial Services Representative** and **Property Management Services**– Providing management consulting, outreach, and assisting customers in planning their financial futures and providing financial resources and products to help reach these goals.

Economic & Social Opportunities, Inc. (ESO), San Jose, CA – **Vice President for Program Operations** - Responsible for planning, budgets, daily operations, staff, and future development for this Non-Profit, Community Action Agency's programs including Family Health, Education & Training, Housing & Energy departments and a satellite South County Operation.

Community Services Association of California and Nevada, San Jose, CA - **Interim Director** - planned and oversaw daily affairs of this Non-profit Association of Community Action Agencies designed to provide improved service delivery to poor and low income of both California and Nevada housed at Economic & Social Opportunities, Inc.; was a major player in Welfare Reform planning.

Commonwealth of Virginia Government, Department of Housing & Community Development, State-wide Lead-Based Paint Abatement Program – Interim Director - Planned, implemented, and managed $5.4 M. State-wide program.

Commonwealth of Virginia Government, Department of Labor & Industry - Interim Planning and Policy Director – Planned/restructured Department's State-wide service delivery process for businesses and employees.

City of Richmond, Virginia Government, City Manager's Office – Project Consultant - Planned, trained staff and Board, lead community organizing and coordination, and implemented Model Neighborhood Revitalization Strategy, **"The East District Initiative."**

Lawrence Township, NJ Neighborhood Service Center - Interim Executive Director- managed Center's daily affairs, oversaw recruitment process to hire Executive Director, and completed a Management Study to improve operations and neighborhood program service delivery.

Lawrence Township, Public Works Department – Interim Public Works Director - managed department's daily affairs, oversaw recruitment process to hire permanent Director.

Lawrence Township, City Manager's Office – Project Consultant -Developed a Management Study improving internal operations and service delivery.

Private Sector Company, Washington, DC- Assisted a local minority-owned firm through business merger, completed initial organizational development, and managed the company's affairs as **Interim General Manager**.

Houston, TX City Government – Project Consultant - Subcontracted with another firm to develop City's 5 Year Financial Management Plan.

Private Sector Company, Benton Harbor, MI – Project Manager - Represented company, and consulted on staffing, facility, and operations planning and new product development.

Michael O'Malley 5/26/2020
Resume

Education:
High School: Lake Michigan Catholic HS, St. Joseph, MI. Graduate 1975
College: Ferris State College, Big Rapids, MI. Graduate May 1980
A.A.S Ornamental Horticulture
A.A.A. General Education, Major in Business
Lake Michigan community college & Southwest Michigan Community College: Several years of course work toward an Engineering Degree; I did not receive a diploma.

Employment:

City of Bento Harbor Water Superintendent's position July 1, 2016 to present. Became the Benton Harbor Water Department's F-1 and S-1 licensed Operator in Charge. The tasks included: Water Plant Operations and Maintenance; Water Distribution leader, of Maintenance, planning, trouble shooting and customer service; Sewer Collections leader for maintenance, care, problem solutions, and planning; & Storm Water Management maintenance and care, planning and reporting. All tasks also involved a massive re-construction of equipment documentation and record keeping.

Severn Trent North America Water Contract Operations
December 2012 to June 2016.
Assigned to the Technical Solutions Group, in South Bend IN.
Initially, Drinking Water Treatment Surface Water Specialist, trouble shoot and assist Water Plants across a wide range of Treatment Plants. Near the end, assigned to a 3 man team for New Severn Trent project development and bidding, and officially as Projects start up team and problem solver.

City of Benton Harbor, MI
December 15, 2008 to June 25, 2012: - Water Superintendent.
Supervision over the activities of the Water Plant, Water Distribution System, Sanitary Sewer Collection and Lift Station pumping, and the Storm Water collection system.

City of St. Joseph, MI.
March 9, 1981 to December 15, 1984 – Parks Department Laborer
December 15, 1984 to May 1, 1993 – Water Treatment Plant Operator
May 1, 1993 to December 5, 2008 – Water Plant Superintendent

City of Benton Harbor, MI.
December 1, 1993 to June 1, 1995 – Acting Water Plant Superintendent, Part-time, to assist the Water Plant in meeting the MDEQ F-1 certification requirement.
June 9, 2008 to December 5, 2008 Operator in Charge Water Plant/Utility Services.
Again to assist the City's Utility Services department meets its MDEQ F-1 requirement.

Owner and Operator: Irish Green Landscaping, Self Employed; Part-time

Michael O'Malley, Employment Cover Letter and Resume

December 1980 to September 1993

Licenses Held:
Michigan F-1 received June 1990; the F-1 license is a MI. complete water treatment plant Certification at the top level.
Michigan S-1 received December 2008; the S-1 license is the MI Water Distribution Certification at the top level.
Michigan Industrial Storm Water Treatment Operator, received July, 2010

Organizations:
Michigan Section AWWA member since 1985
Member of Education Committee and the Source Water Protection Committee
Chairman, Treasurer and Trustee West Michigan Water Works Association
Elected Employee Representative to the Board of Directors: St. Joseph Employees Retirement System 1994 to 2007

Additional Skills: Somewhat computer proficient; very capable on Microsoft Excel and Word; very capable on most any Windows based programs and programs that run under Windows, particularly Windows explorer. I enjoy digital photography.

References:
Mr. Gary Wozniak, District Engineer Water Div. MDEQ, Kalamazoo (269) 567-3613
Mrs. Lianne Shekter Smith, Chief Resource Management Division, MDEQ, Lansing, MI. (517) 373-9523
Mr. Timothy Lynch, Director of the BH-SJ Joint Wastewater Treatment Plant (269) 983-7719
Mr. William Sinclair, Retired St. Joseph City Manager, (269) 983-2817
Mr. Ray Mak, BH-SJ Joint Wastewater Treatment Plant Board Chairman, (269) 429-7730

Personal:
Born: [redacted]Chicago IL. Age: [redacted] I have lived in St. Joseph area 51 years.
Married: [redacted]
Children [redacted]

Outside Interests: Coached Jr. HS. Football for Lake Michigan Catholic and several summer youth baseball teams in St. Joseph.
Active in the Lake Michigan Catholic Blue Tide Athletic Support program, I am the announcer at home football games.
I also like to help friends with landscaping projects, things like patios, retaining walls, planting around the home and such.
Member of the St. John & Bernard Catholic Church in Benton Harbor, MI.

Tracy-Ann N. Jennings

[redacted]@gmail.com • [redacted]

PROFILE

A results driven, goal oriented, passionate and analytical professional that is well organized and innovative with over 15 years experience and understanding as it relates to: Grant Application and Reporting, Employee Management and Supervision, Human Behavior Analysis, Leadership Coaching, Volunteer Management, Youth Development, and Nonprofit Leadership. My strengths lie in community outreach and engagement, creating and executing major events, developing and sustaining strategic relationships, working with local media, communications and community relations, forecasting and strategic planning.

Relevant knowledge, skills and abilities include:

Strategic Alignment
Program Prioritization
Strategic Project Execution
Communication & Change Management
Stakeholder Management
Budget Forecasting and Building
Team Development
Group Facilitation
Special Event Organizing & Executing
Staff Training, Evaluation & Development
Grant Writing, Evaluating & Reporting
Strategic Relationship Development & Sustaining
Community Relationship Building
Public Speaking & Presentation

SELECTED ACCOMPLISHMENTS

Non-Profit Leadership/Management

- Recruited, Hired, Supervised and Evaluated Leadership and Case Management Staff
- Partnered with Service Corps of Retired Executives (SCORE) to assess and implement Board of Directors Development
- Partnered with Listen to Your Mother Southwest MI, to bring Monologue-based Performance to Benton Harbor/St. Joseph, MI, which increased Agency visibility in Southwest Michigan and produced a $800 charitable donation to Emergency Shelter Services

Project Based Work – Project/Program Development and Management

- Reinstated Planned Parenthood Peer Educator Program in Benton Harbor after a four-year hiatus. Interviewed, Hired, and Trained 20 Peer Educators during 2011/2012 and 2012/2013 School Year.
- Exceeded Projected Department Goals for Youth Programming by 20% FY 2012 & FY 2013
- Berrien Community Foundation Grantee FY 2013
- Secured Cooperative Agreement to Benefit Homeless Individuals (CABHI Grant) through MI Department of Health & Human Services, a 3-year capacity grant adding $435,000 in operating funds to Emergency Shelter Services
- Conducted Key Informant Interviews and Compiled Community Resource Inventory for Pregnant and Parenting Teens Program
- Exceeded Projected Program Goals for MI-APPP Program Enrollees FY 2014 & FY 2015
- U.S. Department of Health & Human Services Office of Adolescent Health June 2015 Feature
- Michigan Department of Community Health MI-APPP Learning Collaborative Group Facilitator (2014)
- Increased HUD CDBG Timeliness from 3.75 to 1.5 during FY 20118/2019

Leadership/Community Engagement

- Berrien Community Foundation Golden Acorn Grantee Award for Lifelong Learning Recipient (2013)
- Michigan Department of Community Health PREP Institute PREP Talk Presenter (2013)
- Cornerstone Chamber of Commerce Young Business Leader Award Nominee 2017
- Michigan's Great Southwest Strategic Leadership Council Leadership Accelerator Program Participant 2017
- Michigan's Great Southwest Strategic Leadership Council Leadership Accelerator Program Coach 2018
- Michigan's Great Southwest Strategic Leadership Council Leadership Accelerator Program Coach 2019
- Redevelopment Ready Community Certified 2019

WORK EXPERIENCE

May 2016	-	*Current*	**5D Leadership Coach, Human Behavior Analyst, and Consultant**	
Nov 2017	-	*Current*	**Strategy and Capacity Building Consultant**	D3 Cerebral Palsy Foundation
Nov 2018	-	*Current*	**Director, Community and Economic Development**	City of Benton Harbor, MI
Sept 2016	-	*May 2017*	**Master of Social Work Intern**	City of Benton Harbor, MI
			My Brothers Keeper	
Oct 2015	-	*Aug 2017*	**Executive Director**	Emergency Shelter Services, Inc
Feb 2014	-	*Oct 2015*	**MI-APPP Program Coordinator**	Berrien County Health Department
Jan 2013	-	*June 2013*	**Development and Marketing Contractor**	Brookview Montessori School
Jan 2011	-	*Feb 2014*	**Community Outreach Educator**	Planned Parenthood Mid and South Michigan

EDUCATION

2020 *Western Michigan University*, Master of Social Work
2009 *University of Michigan Ann Arbor*, Bachelors of Arts

PROFESSIONAL DEVELOPMENT:

Grant Writing for Non-Profit Professionals | Volunteer Management and Recruitment | Technology of Participation (TOP) Facilitation Methods | Great Lakes Institute for Community Health Educators (GLICHE) | Authentic Institute 5D Coaching
Michigan's Great Southwest Strategic Leadership Council Leadership Accelerator Class of 2017 | Redevelopment Ready Communities Certification 2019

ABONMARCHE



JASON W. MARQUARDT, PE, LEED AP

SENIOR PROJECT ENGINEER

Jason is a licensed Professional Engineer with more than 16 years of experience. He has worked on a variety of civil projects that include infrastructure design, sanitary sewer, storm sewer, and water distribution system construction. He is also responsible for the design and administration of street and roadway construction projects.

Jason's specialties include infrastructure design on MDOT local agency projects and municipal projects that include water mains, storm sewer, sanitary sewer, and roadway design. He is also experienced in environmental permitting and is an Accredited Professional in Leadership in Energy and Environmental Design (LEED AP).

EDUCATION
Michigan State University
Bachelor of Science,
Civil Engineering

REGISTRATION
Professional Engineer
Licensed:
Michigan

LEED Accredited Professional

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers (ASCE)

CERTIFICATIONS
Certified Storm Water Operator (MDEQ)

Part 91, SESC Certification

AREAS OF EXPERTISE:

MUNICIPAL ENGINEERING

Jason's experience in municipal engineering includes design and construction administration in roadways, water main, sanitary and storm sewer construction projects. He has worked on numerous combined sewer overflow (CSO) construction projects to eliminate combined sewers across the state. Jason successfully administered the construction process and mediated between contractor, municipality, residents and business owners during construction on many of the projects listed below.

- Botham Avenue Reconstruction, St. Joseph, MI
- Williams Street Reconstruction, South Haven, MI
- 2016 Local Streets Resurfacing, Portage, MI

PROJECT MANAGEMENT

As project manager, Jason's priority is understanding the client's goals and managing the project's schedule, budget, and Abonmarche staff in such a way that the client's goals are achieved efficiently, on time, and on budget. Communication between the client and members of the team is key as is understanding what it takes to accomplish a successful project.

- Silver Beach, St. Joseph, MI
- Elkenburg Park, South Haven, MI
- Rizzo Drain, Berrien County Drain Commission, Berrien County, MI

SITE DEVELOPMENT

Jason has planned, designed, and permitted for various types of residential site developments and commercial projects throughout his career. These projects include water distribution system design, storm sewer design, sanitary sewer design, site grading, and roadway design. Jason has designed rain gardens and other sustainable features for incorporation into site design.

- The Fairways at Harbor Shores, Residential Development, St. Joseph, MI
- Trailside at Harbor Shores, Residential Development, Benton Harbor, MI
- Whirlpool, Inc., Whirlpool Downtown Campus, Benton Harbor, MI

CONSTRUCTION ENGINEERING

Jason has performed administrative inspection and testing services on a number of projects with the Michigan Department of Technology. He has served as engineer-in-charge on construction phase services for many bridge and roadway projects, and he manages Abonmarche's construction and inspection staff.

- MDOT Coloma TSC as-needed
- Park Street Rehabilitation, St. Joseph, MI
- I-94 Bridge Rehabilitation Project, Van Buren and Berrien Counties, MI

ABONMARCHE



COREY A. KANDOW, PE

SENIOR PROJECT ENGINEER

Corey has over 20 years of experience in design and construction administration of municipal and site development infrastructure, street reconstruction, drainage, engineering studies, permitting, waterfront development and recreational facility projects.

Corey is responsible for designing and administering construction of municipal and private development projects including roadway reconstruction, widening and rehabilitation, drainage, sanitary sewer, water system, and traffic signal projects. His responsibilities also include plan preparation, project design, and cost estimating. He served as Office Director at Abonmarche's Manistee Division as well as the Engineer of Record for the City of Manistee from 2013 to 2014. In each of his roles, Corey is committed to ensuring that quality projects are built to exceed the client's expectation and remain within budget.

AREAS OF EXPERTISE:

MUNICIPAL

Corey's municipal design experience includes roadways, water main, sanitary and storm sewer, alignment and pavement design, and grading, as well as water system modeling. He successfully mediates between the demands of an efficient schedule and the needs of residents and business owners. MDOT Local Agency Funds were used for several of these projects.

- City of Benton Harbor, MI
  - E. Klock Road Construction
  - Ravine Interceptor Replacement
  - Arts District Reconstruction
  - Pipestone Street Resurfacing
- City of St. Joseph, MI
  - Lake Street Reconstruction
  - Napier Avenue Resurfacing
  - 2012/2013 CSO Projects
  - SRF/SWQIF Project Plan Update
  - Sanitary Sewer Evaluation Study (SSES)
  - South State Area CSO Separation
  - Michigan Area CSO Separation
  - Napier Avenue/Lakeland Hospital Entrance Safety Project
  - SRF Project Plan
  - Ship and State Street Reconstruction
  - Morton and Highland Avenue Reconstruction
  - Lake Boulevard Reconstruction
  - Midway Avenue Reconstruction
  - Old Lakeshore Road Reconstruction
  - Cleveland and Lakeshore Drive Intersection Realignment
  - Broad and Main Street Intersection Improvements
  - Lions Park Drive CSO Separation
  - Pearl Street CSO Separation
  - Niles Avenue CSO Separation
  - Ravine Interceptor Replacement
  - Michigan and Harrison CSO Replacement
  - Lakeview Avenue Reconstruction
  - Ship Street Resurfacing
  - Wayne Street CSO Separation

EDUCATION

Michigan Technological University
Bachelor of Science,
Civil Engineering (Transportation Engineering)

REGISTRATION

Professional Engineer
Licensed:
Michigan, Indiana

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)

Michigan Society of Professional Engineers (MSPE)

President, Blossomland Chapter of MSPE (2006-2012)

American Society of Civil Engineers (ASCE)

Transportation and Development Institute (T&DI)
Order Of the Engineer (OOE)

CERTIFICATIONS

Certified Storm Water Operator (MDEQ)

    - Church Street CSO Separation
    - Court Street CSO Separation
- Other Selected Municipal Projects
    - Woodmere Avenue Reconstruction, Traverse City, MI
    - Valves Replacement, Buchanan, MI
    - SEBCLA Watermain, Buchanan Township, MI
    - Oakland Drive Reconstruction, Portage, MI
    - Front Street Improvements, Buchanan, MI
    - Water Reliability Study, Village of Paw Paw, MI
    - Downtown Fennville Streetscape Improvements, Fennville, MI
    - East Milham Boulevard Reconstruction, Portage, MI

SITE DEVELOPMENT

Corey has designed infrastructure improvements for several significant commercial and residential site development projects, including those listed below, totaling just over 50,000 feet of sewer, storm, water piping and other services. He has experience with sedimentation pools, bank protection, supporting walkout basements, minimizing environmental impact to critical dunes, and system pressure calibration.

- Northshore Drain Enclosure Project, Harbor Shores Community Redevelopment
- Edgewater Dunes Phase IV, Edgewater Development Company
- Palisades Park Water System Improvements, Palisades Park Country Club
- Caretel Village, Lakeline Associates/Caretel Inns of America
- Berrien Hills Estates, St. Joseph Township, MI
- Harbortown Development, Benton Harbor, MI
- Boulder Creek, Phase 3 and 4, East China Township, MI
- Island Pointe Marina Development, St. Joseph, MI

MARINA/WATERFRONT

Corey's designs for floating docks and fixed docks for new waterfront developments and marina renovation projects have serviced boats ranging in size from 25 feet to 240 feet in length. Design elements have featured ADA accessibility, utility design, composite decking, and layouts to maximize overall slip mix and count.

- N. Stevens Street Kayak Launch, Benton Harbor, MI
- Gateway Harbor, Chicago, IL
- 31st Street Harbor, Chicago, IL
- The River Club at Harbor Shores Marina, St. Joseph, MI
- West Basin Marina, St. Joseph, MI
- Island Pointe Marina, St. Joseph, MI
- Michigan City Port Authority, Municipal Boat Launch
- South Haven Maintenance Dredging, South Haven, MI
- Berrien Hills Estate Maintenance Dredging, St. Joseph, MI
- Belle Maer Harbor Maintenance Dredging, Harrison Township, MI

RECREATIONAL

Corey has played a key role in the design and development of several recreational trail projects around the state. Being an avid outdoorsman, he takes great care to help ensure facilities are available to encourage the public to get out and enjoy the great outdoors.

- N. Stevens Street Kayak Launch, Benton Harbor, MI
- Historic Trailside Park, Metz Township, MI
- Kiwanis Park Improvements, St. Joseph, MI
- Howard Family Trail, St. Joseph, MI
- TART Trail Connection, Traverse City, MI
- Portage Creek Restoration, Portage, MI

ABONMARCHE



BRET WITKOWSKI

ASSET PROGRAM MANAGER

Bret leads efforts to develop and complete asset management programs for Abonmarche clients. Bret understands the importance of data collection, planning and implementation procedures as a path to strong financial health and sustainability for any organization.

Prior to his position at Abonmarche, Bret served Berrien County as the County Treasurer for 20 years. He applies this vast knowledge of funding, public relations and awareness campaigns to clients and projects.

Bret also served as Manager for the community of Stevensville and is able to apply his governing experience, working with business owners and the public to the big picture needs of a project.

EDUCATION

Ball State University
Bachelor of Business, Finance and Insurance

PROFESSIONAL AFFILIATIONS

Michigan Association of County Treasurers

Michigan Association of Counties

St. Joseph Lions Club

AREAS OF EXPERTISE:

BERRIEN COUNTY TREASURER—COUNTY COMMISSIONER CHAIRPERSON

Bret served as Berrien County as Elected County Treasurer and Elected County Commissioner for 20 years, including as Chairman of the Board. Highlights of his experience include:

- Elected to Treasurer position from Chairman of the Board in January 2005 to manage $55 million in investments, lead entire Treasurers Department comprised of 8+ employees, collaborate with The State of Michigan on City of Benton Harbor delinquent property tax program, partner with County Commissioners on $110 million annual budget, and conduct public relations campaigns utilizing various media outlets to enhance public awareness.
- Responsible for foreclosure process, developed automated monthly payment program that has saved over 1,000 properties from foreclosure process the last few years
- Developed homestead audit program that has generated extra $35,000,000 for public education in Berrien County
- Responsible for all public relations for the Treasurer's office.
- Worked with Parks Department to assist them with selling of annual passes, thus increasing cash flow during slow months.
- Chairman of the Berrien County Land Bank. As Chairman of the Board, served as commission lead in effort to assist with county responsibilities related to economic development, personnel, facilities, juvenile justice, and jail overcrowding. Spearhead local and state states of emergencies when necessary. Assist with setting policies and procedures. Key county representative responsible for public relations and negotiations.

STEVENSVILLE VILLAGE MANAGER

As Village Manager for Stevensville, Bret increased grant development efforts, Village promotion endeavors, and contract negotiation activities related to fire, police, and real estate construction and renovation. He collaborated with local, state, and federal officials regarding grant availability and revenue-sharing programs. His partnership with other government agencies and contacts led to the improvement of Stevensville's overall economy.

ABONMARCHE



EDUCATION
University of Notre Dame
Bachelor of Arts, English

COMMUNITY INVOLVEMENT
Southshore Concert Band,
Board Vice President

Southwest Michigan Symphony Orchestra—Education Programs Coordinator

JOELLE REGOVICH

GRANT ADMINISTRATOR

Joelle performs work related to grant seeking, grant writing, and grant administration. She helps to identify the grant funding needs of our clients and then actively researches and identifies funding opportunities. Joelle coordinates with the client to gather the required information to write a compelling grant. Once the grant has been received, Joelle assists with the administration of the grant. Joelle understands the impact that grants can have on a project and works diligently and tirelessly to find funding opportunities for our clients.

AREAS OF EXPERTISE:

USDA RURAL BUSINESS DEVELOPMENT GRANT

Joelle has worked with various communities to prepare, submit, and help administer rural business development grants.

- Fennville, MI
- Allegan, MI
- South Haven, MI
- Three Oaks, MI

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Joelle has assisted various municipalities in seeking funds from MDNR. Many of her grant applications have been subsequently funded. Additionally, she has provided grant administrative support once the grant has been received.

- Waterways Grant Programs
- Land and Water Conservation Fund
- Michigan Natural Resources Trust Fund
- Recreation Passport

MICHIGAN COUNCIL FOR ARTS AND CULTURAL AFFAIRS

Joelle has prepared a variety of awarded grants for different MCACA programs. She also served as a grant reviewer for the Capital Improvement Program.

- Calhoun County - Project Support Program
- City of Allegan - Capital Improvement Program
- Liberty Hyde Bailey Museum - Capital Improvement Program

MICHIGAN ECONOMIC DEVELOPMENT CORPORATION

Joelle has worked with various MEDC grant funding programs for several communities.

- City of Allegan - Core Community Fund
- City of Allegan - PlacePlan Implementation Mini-grant
- City of South Haven - Community Development Block Grant (CDBG)
- City of Grand Haven - Infrastructure Capacity Enhancement (ICE) Grant

MICHIGAN STATE HISTORICE PRESERVATION OFFICE

Joelle has prepared and received grant funding to restore lighthouses through the Michigan Lighthouse Assistance Program.

- South Haven Lighthouse—Exterior paint project
- Grand Haven Lighthouse—Window replacement project

G. Negotiated Indirect Cost Rate Agreement

NOT USED

H. Supporting Documentation – Readiness to Proceed

1. **Example Owner/Tenant Agreements to Access Private Property**
2. **Example Door Notice to Residents – Previously Used for Pilot Grant**
3. **Map of Zone Areas for Water Service Line Replacement**

BENTON HARBOR
Port of Opportunities

WATER SERVICE LINE REPLACEMENT AGREEMENT

PURPOSE. The purpose of this Agreement is to set forth the terms and conditions pursuant to which the City of Benton Harbor (the "City") will provide a new water service line to the undersigned owner's property located at _____, tax parcel number _____. The existing lead private water service line will be disconnected and replaced with a new water service line to accomplish a non-lead service line replacement from the water meter to the water main.

This Agreement anticipates that a contract will be awarded by the City for the work to be performed under this Agreement.

CONSIDERATION. Each party agrees that the promises made by the other party and the benefits to be derived from their execution are full and sufficient consideration for entering into this Agreement.

THE CITY'S OBLIGATIONS.

1. Do a pre-inspection of the water service line as it enters inside the building and connects to the meter to determine if the meter setting is correct, if the meter should be replaced, and if the service line needs to be replaced. If necessary, either or both of these items will be corrected/replaced at no cost to the undersigned owner of the property (the "Owner");

2. Have a new non-lead private water service line constructed at City expense, from the curb box in the public right-of-way to the water meter on the Owner's property including the meter setting and any necessary connections to reset the water meter. The existing service line will be disconnected and capped off;

3. Restore the Owner's property disturbed by construction, including seeding of grass areas on the property and restore the interior portions of the building on the property disturbed by such work;

4. Require the contractor doing the work to provide adequate insurance to protect the Owner against any loss that may result from damage caused by negligent construction operations on the Owner's property, and require the contractor to provide the City with proof of such coverage; and

5. Guarantee to the Owner that any work done shall be free from defects in material and workmanship for a period of one year from its completion.

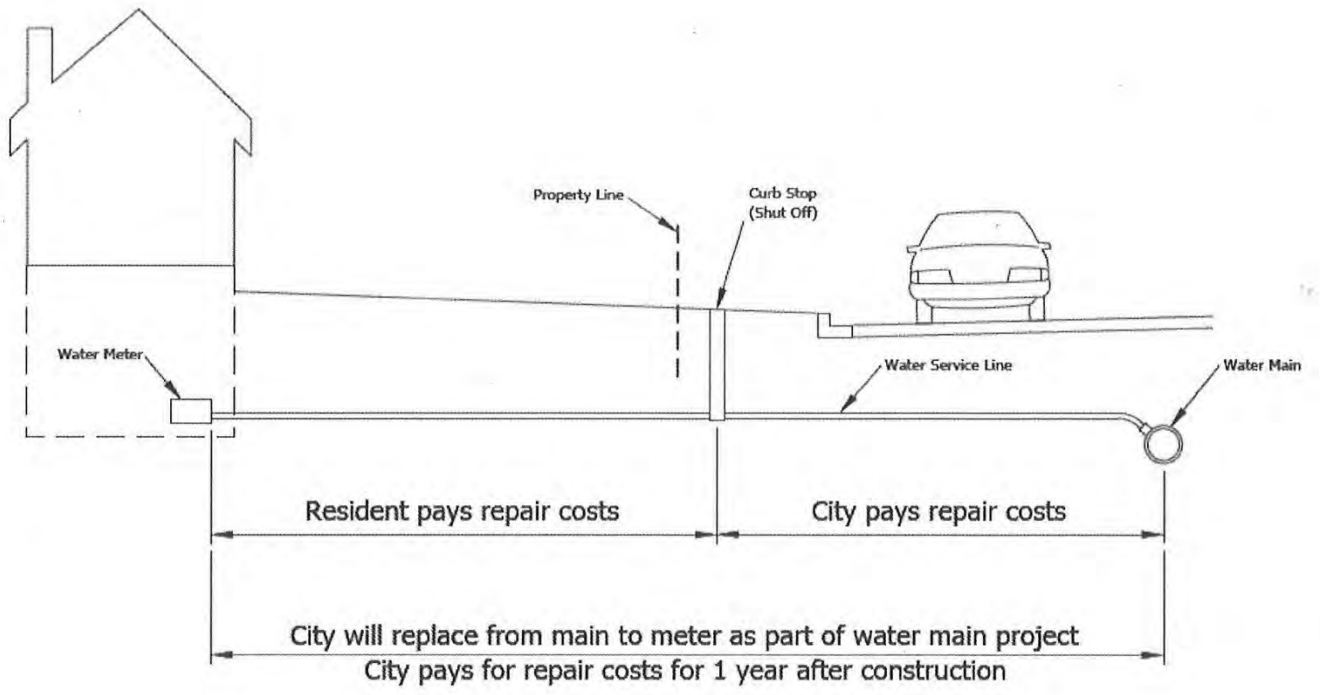
THE PROPERTY OWNER'S/OWNERS' OBLIGATIONS.

1. Confirm that the Owner(s) is/are the only owner/owners of the above referenced property and provide adequate proof thereof;

2. Permit temporary access and right of entry to and upon the above-referenced property to the City and the City's designated contractor(s) to perform a pre-inspection as described above, to enable construction and testing of the new private water service line and to enable any needed adjustments, maintenance, or repairs during the guarantee period;

3. Assume full responsibility for the maintenance, repair, and replacement of the private part of the water service line, located on the above-referenced property, after expiration of the guarantee period. After the end of the guarantee period of one year, the responsibility of each party (City and the Owner) shall be as shown on the diagram below; and

4. Hold the City harmless and free from any claim or liability from any lawsuits, claims, injuries or damage done in performance of the water service line replacement work.



MISCELLANEOUS TERMS.

1. The responsibility of the maintenance, repair and the replacement of the water service located in the public right-of-way will be pursuant to City of Benton Harbor Water System Rules and Regulations.

2. This Agreement is a legally binding document and your signature will commit you to its terms. You acknowledge that you have been advised to discuss all aspects of this Agreement with an attorney, that you have carefully read and fully understand all of the provisions of this Agreement, and that you are voluntarily entering into this Agreement.

☐ Adequate proof of ownership provided and on file.

Signed by Owner(s) the _____day of _____, 20_____.

_____ _____
Owner – Signature Owner - Signature

_____ _____
Owner – Print Name Owner – Print Name

_____
Land Contract Holder(s)

Signed by City this _____day of _____, 20_____.

_____
City Manager or Designee - Signature

_____
Print Name / Title



TENANT WATER SERVICE LINE REPLACEMENT ACKNOWLEDGEMENT

In consideration of the City of Benton Harbor Water Sewerage Department's ("BHWSD") efforts to remove lead water services, the owner has given permission per the attached signed agreement to BHWSD and/or its officials, employees, or contractors to excavate, investigate, and replace non-copper water services on the property described below:

> This property is described as Tax Parcel No. _____,
> and the street address is _____
> _____.

The Tenant will permit temporary access and right of entry to and upon the above-referenced property to BHWSD and BHWSD's designated contractor(s) to perform a pre-inspection, to enable construction and testing of the new private water service line and to enable any needed adjustments, maintenance, or repairs during the guarantee period.

This Agreement is subject to the following provisions:

1. Where investigation indicates that lead water service materials are present, they will be replaced with non-lead water service materials.

2. All property disturbed by construction will be restored, including seeding of grass areas on the property and interior portions of the building on the property disturbed by such work.

3. Piping inside buildings beyond the water meter will not be replaced.

4. BHWSD guarantees that any work done shall be free from defects in material and workmanship for a period of one year from its completion.

5. The cost of replacing lead water service materials will be the City's responsibility.

6. The Tenant agrees to hold BHWSD and its contractors harmless for any damage in performance of the water service line replacement work described in the attached Water Service Line Replacement Agreement.

_____ _____

Printed Name of Tenant 1 Signature of Tenant 1

Date: _____ Phone: _____

_____ _____

Printed Name of Tenant 2 (if joint) Signature of Tenant 2

Date: _____ Phone: _____

_____

Land Contract Holder(s)

_____ _____

Owner Address (if different from property) Owner phone number

Signed by City this _____day of _____, 20_____.

_____

City Manager or Designee - Signature

_____

Print Name / Title

DECLINATION OF PARTICIPATION IN THE WATER AND SEWERAGE DEPARTMENT'S PHASE I LEAD WATER SERVICE LINE REPLACEMENT PROGRAM

The City of Benton Harbor's Water and Sewerage Department (the "BHWSD) is in the process of making repairs to the water service in my area and has recommended that I participate in its Phase I Lead Water Service Line Replacement Program that allows for the potential replacement of my lead water service line. I understand that the BHWSD will replace my lead service line from the water main to my property line and the BHWSD is offering to replace my lead service line on private property at no charge.

I acknowledge that I am aware of the following facts:

- Partial lead service line is associated with elevated drinking water lead levels for some period of time after replacement. Elevated lead-in water can continue for months following a partial lead service line replacement.
- If present, elevated levels of lead can cause serious health and development problems, especially for pregnant women and young children. In adults, long-term lead exposure can result in increased blood pressure and hypertension and coronary heart disease.
- That the state of Michigan is in the process of revising its Lead and Copper Rule and it is possible that the final version of the Lead and Copper Rule will require all lead service lines in the City of Benton Harbor to be replaced within the next 20 years. Therefore, if I

decline to participate at this time, it may be up to 20 years before the BHWSD will be able to replace my lead water service line and cost assistance may not be available at that time.

- That at some future date I may be required to replace my lead water service at my own cost.

Despite these facts, I am choosing to decline participation in the Phase I program for the following reasons: _____

_____

I have read and fully understand the information on this declination form.

Signature: _____ Date: _____

Name (print): _____

Signature: _____ Date: _____

Name (print): _____

Property Address: _____

Property Tax I.D. Number: _____

ABONMARCHE
Confidence By Design

CONSTRUCTION NOTICE

Lead Water Service Replacement - City of Benton Harbor

Contractors will be verifying/reviewing your existing water service materials.

The City has been awarded a Pilot Grant by the State of Michigan to update their water service inventory and to replace existing lead services. Your address has been selected to recieve a new water service from the existing water main to your water meter.

Contractors will be looking at your water service to provide pricing for replacement. Please contact John Nelson at the contact number below to set up a time to review the replacement work and agreements needed.

The project is expected to commence in December 2018 and be completed by May 2019.

If you have an issue or any questions, please call the Project Engineer at:

Abonmarche
John Nelson
(269) 487-9652

ABONMARCHE
Confidence By Design

CONSTRUCTION NOTICE

Lead Water Service Replacement - City of Benton Harbor

Contractors will be verifying/reviewing your existing water service materials.

The City has been awarded a Pilot Grant by the State of Michigan to update their water service inventory and to replace existing lead services. Your address has been selected to recieve a new water service from the existing water main to your water meter.

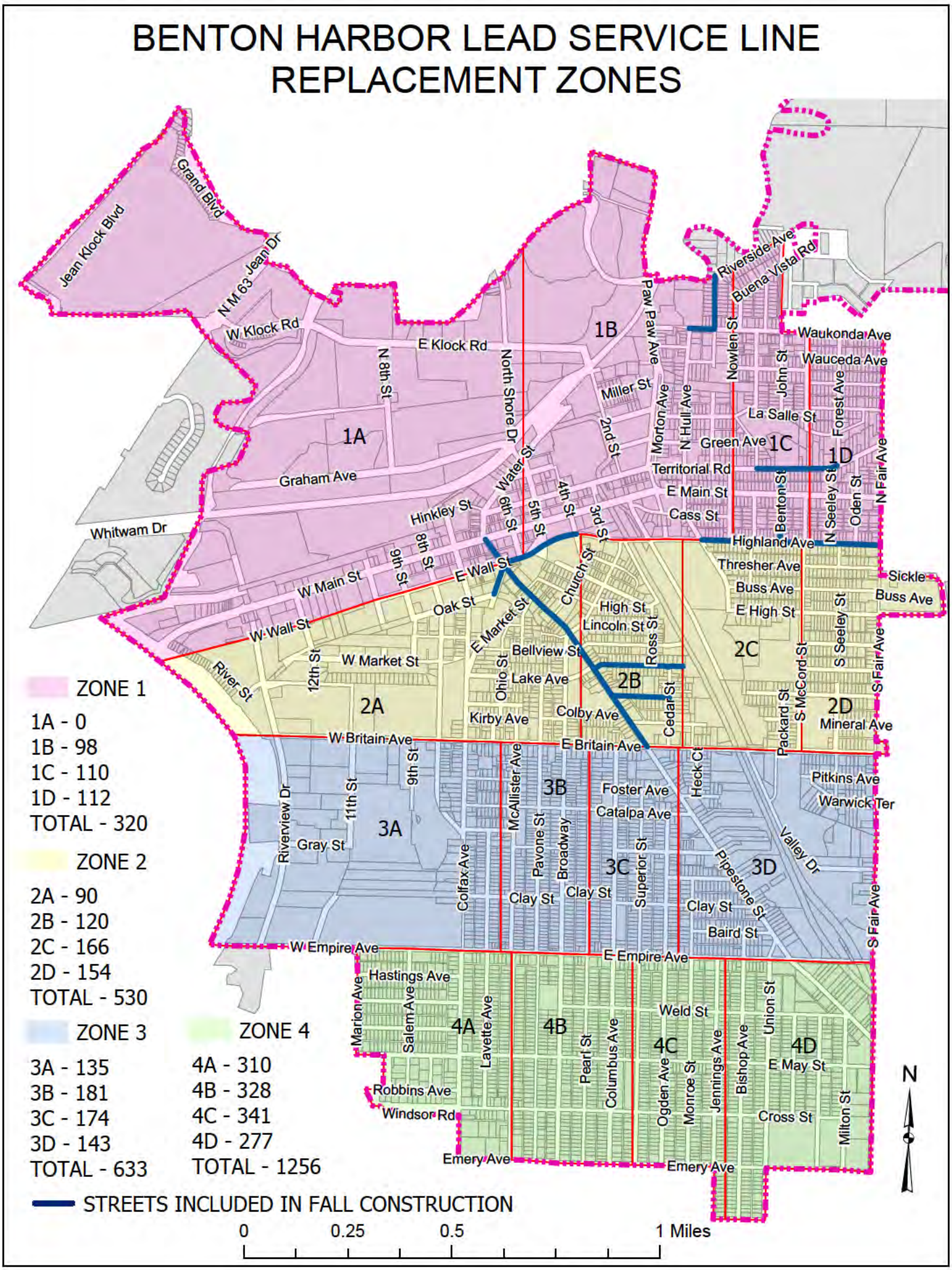
Contractors will be looking at your water service to provide pricing for replacement. Please contact John Nelson at the contact number below to set up a time to review the replacement work and agreements needed.

The project is expected to commence in December 2018 and be completed by May 2019.

If you have an issue or any questions, please call the Project Engineer at:

Abonmarche
John Nelson
(269) 487-9652

H. 3. Map of Zone Area

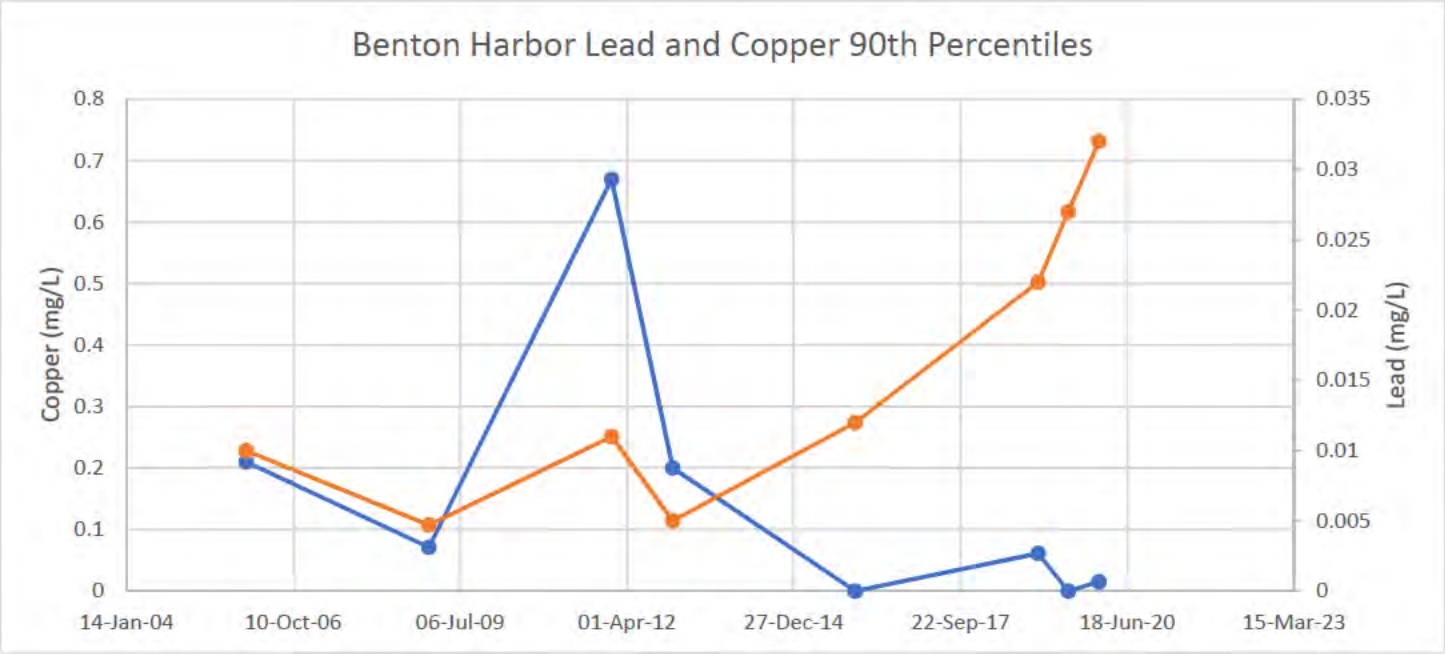


I. Supporting Documentation of Lead Issue

1. **Benton Harbor Lead/Copper Data Report**
2. **Lead Results 2015 - January 26, 2016 DEQ Lead Monitoring Notice Letter**
3. **Lead Results 2018**
    a. **October 22, 2018 DEQ Action Level Exceedance Letter**
4. **Lead Results 2019**
    a. **July 24, 2019 EGLE Action Level Exceedance Letter**
    b. **January 16, 2020 EGLE Action Level Exceedance Letter**
5. **Notifications to Public of Lead Issue**
    a. **City of Benton Harbor Website Page**
    b. **Benton Harbor August 2019 Public Notice Mailer**
    c. **Benton Harbor February 2020 Public Notice Mailer**
    d. **Michigan Radio Notice**
    e. **Berrien County Health Department Timeline Flyer**
    f. **Berrien County Health Department Lead ALE Notice**
    g. **October 24, 2018 Herald Palladium Newspaper Article**
6. **February 13, 2020 EGLE Water Corrosion Treatment Letter**

I. 1. Benton Harbor Lead/Copper Data Report

WSSN	Begin	End	Analyte	Collected	90th Percentile (mg/L)
00600	01-Jan-03	31-Dec-05	CU90	40	0.21
00600	01-Jan-06	31-Dec-08	CU90	33	0.071
00600	01-Jan-09	31-Dec-11	CU90	23	0.67
00600	01-Jan-12	31-Dec-12	CU90	30	0.2
00600	01-Jan-13	31-Dec-15	CU90	30	0
00600	01-Jan-16	31-Dec-18	CU90	30	0.061
00600	01-Jan-19	30-Jun-19	CU90	46	0
00600	01-Jul-19	31-Dec-19	CU90	39	0.015
00600	01-Jan-03	31-Dec-05	PB90	40	0.01
00600	01-Jan-06	31-Dec-08	PB90	33	0.0047
00600	01-Jan-09	31-Dec-11	PB90	23	0.011
00600	01-Jan-12	31-Dec-12	PB90	30	0.005
00600	01-Jan-13	31-Dec-15	PB90	30	0.012
00600	01-Jan-16	31-Dec-18	PB90	30	0.022
00600	01-Jan-19	30-Jun-19	PB90	46	0.027
00600	01-Jul-19	31-Dec-19	PB90	39	0.032



I. 2. Lead Results 2015

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
KALAMAZOO DISTRICT OFFICE

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

January 26, 2016

Mr. Darwin Watson
City of Benton Harbor
200 Wall St.
Benton Harbor, MI 49022

WSSN: 0600
City of Benton Harbor

Dear Mr. Watson:

Subject: City of Benton Harbor WSSN 0600, Lead and Copper Monitoring of Drinking Water Taps

We received your report for the monitoring period June 1, 2015, through September 30, 2015. This letter has been revised from the one sent December 17, 2015, as we discovered a typographical error that referenced a different water supply. We apologize for any confusion this may cause.

Action Levels	Results this monitoring period		Next monitoring period	
	90th Percentile	# of Samples Above Action Level	# of Samples Required	Take Samples Within These Dates
Lead 15 parts per billion (ppb)	12 ppb	2	30	06/01/2018, and 09/30/2018 Submit results to this office by October 10, 2018
Copper 1300 parts per billion (ppb)	0 ppb	0		

Ninety percent of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. These results must be reported on your 2015 Consumer Confidence Report (CCR), which is due to our office, your customers, and the local health department by July 1, 2016. Also, include the following statement in the CCR, regardless of the lead and copper levels:

> *If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Benton Harbor is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://water.epa.gov/drink/info/lead.*

The Lead and Copper Rule requires you to provide individual lead tap results, within 30 days of learning of results, to people who receive water from sites that were sampled, even if lead was not detected. You must also send us a certification that you met all the delivery requirements, along with a sample copy of your customer notice. We are in receipt of the required sample results and accompanying forms regarding 2015 sampling requirements.

Samples due during the next period will be a continuation of your triennial monitoring. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria. This office strongly encourages you to sample early in the monitoring period.

Bottles will NOT be mailed automatically. If you use the DEQ laboratory, order your bottles by calling 517-335-8184, or download the form EQP 2301 *Requisition for Water Sample Units* from http://michigan.gov/deq. Click on Key Topics, Laboratory Services, Drinking Water, Obtaining the Necessary Sampling Units, and test list.

If you have any questions, please contact me at the telephone number below, or by e-mail at bishoph@michigan.gov.

Sincerely,

Heather Bishop
Environmental Quality Analyst
Kalamazoo District Office
269-330-9153

HB:NE

cc: James Ouzts, F&V Operations

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

October 22, 2018

VIA E-MAIL and U.S. MAIL

Mr. Darwin Watson
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 0600
Supply: Benton Harbor
County: Berrien

Dear Mr. Watson:

SUBJECT: Lead and Copper Monitoring - Action Level (AL) Exceedance

The city of Benton Harbor community water supply's ninetieth percentile exceeded the AL for lead during the most recent round of lead and copper monitoring of drinking water taps from June 1, 2018, through September 30, 2018, as summarized below.

Contaminant	AL	MCLG*	90th Percentile Value	Number of Samples Above AL	Range of Sample Results	Typical Source of Contaminant
Lead	15 parts per billion (ppb)	0	22	8	0 ppb - 60 ppb	Corrosion of household plumbing systems; Service lines that may contain lead; Erosion of natural deposits
Copper	1.3 parts per million (ppm)	1.3	0.1	0	0 ppm - 0.1 ppm	Corrosion of household plumbing systems; Erosion of natural deposits

*MCLG: Maximum contaminant level goal means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

An AL exceedance is not a violation, but it triggers other requirements under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). Requirements include water quality parameter (WQP) monitoring, source water monitoring, corrosion control treatment, and public education (PE). Please refer to the "Timetable of Upcoming Requirements" for your specific deadline for each of the following requirements.

Issue a Public Advisory

An amendment to Act 399 on March 29, 2017, requires a public water supply to issue a Public Advisory (PA) within three business days to inform all persons served about the lead AL exceedance. It is the intent of the Department of Environmental Quality (DEQ) to work with you to develop the PA materials to ensure it complies with the requirements set forth in Act 399. Enclosed with this letter is a checklist to document the PA

distribution activities. Please contact the DEQ if you plan to use broadcast media as your delivery method.

Deliver Consumer Notice of Lead and Copper Results
Within 30 days of learning the results, you must provide individual lead and copper tap results to the people who receive water from sites that were sampled, even if lead and copper were not detected. You must also send us certification that you met all delivery requirements along with a sample copy of your consumer notice 90 days after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Microsoft Word or PDF format, visit http://michigan.gov/deq. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms.

Distribute PE
Sixty days after the end of the monitoring period that exceeded the AL, deliver PE materials to all consumers. Repeat each year until the lead AL is no longer exceeded. This material is intended to educate consumers about lead health effects, sources, and steps to minimize exposure. Enclosed is a template you may use to meet the requirement. Note that the PE material must include information about the exceedance in your water supply, information about what you are doing to reduce lead levels, information about lead service lines in your distribution system, and information about the history of lead levels in your water supply.

Also attached is a checklist of PE activity requirements with a certification form to return to us, no later than ten days after the PE is due, along with a sample copy of the PE material.

Conduct WQP Monitoring
Six months after the start of the monitoring period that exceeded the AL, collect two sets of Water Quality Parameter (WQP) samples, at least 24 hours apart, from your entry point to the distribution system, TP001 (Treatment Plant Tap), and from ten locations in the distribution system. Essentially, WQP sampling must be done twice from each location (entry point and distribution system locations) within a six-month period but cannot be at the same site on the same day. The WQP samples shall be analyzed for pH, alkalinity, calcium, conductivity, chloride, sulfate and temperature. Temperature and pH are field tests and should be completed at the time of sample collection.

If you use the DEQ laboratory, order bottles by calling 517-335-8184 or by downloading the form EQP 2301 *Bottle Order Form* from http://michigan.gov/deqlab. Click on Drinking Water. The tests are analyzed from one sample bottle per location. Request the analyses using the following test codes:

Test Code	Cost	Bottle Number	Test Description
CORR	$51.00	33	Conductivity, Alkalinity, Phosphate, and Calcium
CPH	$13.00	33	pH Determination
R	$18.00	32,33	Chloride, Sulfate

Conduct Source Water Monitoring
By November 30, 2018, collect one set of WQP samples from a source water tap that is representative of raw water before treatment. If you need assistance determining the appropriate sampling point, please contact your District Engineer. The samples should be analyzed for all of the parameters above.

Six months after the end of the monitoring period that exceeded the AL, collect one sample for lead and copper at your entry point to the distribution system. Repeat every third year until both lead and copper ALs are met during the entire three-year period.

Correct the Problem
Minimize lead and copper in drinking water by reducing corrosion of water pipes and household plumbing that contain lead and copper. To accomplish this, you must propose a corrosion control treatment plan or propose to perform a corrosion control study by six months after the end of the monitoring period that exceeded the AL. If treatment is found to be necessary, it must be installed and samples collected to ensure the lead and copper ALs are consistently met. Contact us for guidance on corrosion control options.

Lead and Copper Monitoring
To show the ALs can be met, collect lead and copper samples from 60 sites between January 1 and June 30, 2019, and again between July 1 and December 31, 2019.

You may discontinue the corrosion control study and installation of corrosion control treatment if the action levels are met during future rounds of monitoring.

When selecting new sites, choose the highest Tier criteria available within the distribution system, giving Tier 1 sites first priority. Please see the enclosed tiering criteria to help inform your site selection process. Within 30 days of learning of results, provide individual lead tap results to people who receive water from sites that were sampled. If you have Tier 1, or Tier 2 sites, i.e., sites with a lead service line, compliance sampling will require that you collect a 1st liter and 5th liter sample from each sampling location. Specific instructions regarding the 1st and 5th liter sample collection procedures are currently being developed and will be provided before January 1, 2019. Within 30 days of learning of results from the 1st and 5th liter samples, provide individual lead tap results to people who receive water from sites that were sampled. Even if lead

was not detected, all monitoring, reporting, consumer notification, and DEQ certification requirements remain in effect.

Consumer Confidence Report (CCR)
Include this AL exceedance in your CCR, which is due to our office, your customers, and the local health department by July 1, 2019. You may use the table format from the first page of this letter.

Also, because the lead AL was exceeded, include the following health effects language:

> *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

What Happens Next?
If you can show that both lead and copper ALs are met in two consecutive six-month periods, then many of the requirements outlined in this letter will no longer apply.

However, in the meantime, you must propose a corrosion control treatment plan or propose to perform a corrosion control study. If treatment is found to be necessary, it must be installed. We will work with you to complete these corrosion control steps to optimize your corrosion control treatment.

Timetable of Upcoming Requirements

Complete By	Requirement	Comments
Within three business days	Distribute a Public Advisory	Distribute a Public Advisory to inform all persons served by the water supply of the lead AL exceedance. Distribution of the notice must be in a form and manner designed to fit the specific situation and must be reasonably calculated to reach all persons served by the public water supply.
Right away	Deliver *Consumer Notice of Lead and Copper Results* to persons served at each site tested within 30 days of knowing the result.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Microsoft Word or PDF format from http://michigan.gov/deqleadcopper.
November 29, 2018	Perform PE activities including delivering PE materials to all consumers.	PE required activities are listed in enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.
November 30, 2018	Collect WQP raw water samples.	Collect one set of WQP samples that are representative of raw water before treatment.
November 30, 2018	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.

Complete By	Requirement	Comments
December 9, 2018	Send us certification of PE compliance along with a sample copy of the materials delivered.	Sample certification enclosed. Required within ten days of PE distribution.
December 29, 2018	For the Jun-Sep 2018 monitoring, send us certification of consumer notice of lead and copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Microsoft Word or PDF format from http://michigan.gov/deqleadcopper.
Between January 1 and June 30, 2019	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to the DEQ and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate*. **Report due July 10, 2019.**
Between January 1 and June 30, 2019	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.
March 31, 2019	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.
March 31, 2019	Submit a proposal for optimal corrosion control treatment or a corrosion control study.	Contact us for guidance on corrosion control options. Corrosion control study and treatment installation may cease if both ALs are met during two consecutive six-month monitoring periods.
July 1, 2019	Report the 2018 AL exceedance in the Consumer Confidence Report.	Specific lead health effects language must be included.
Between July 1 and December 31, 2019	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to the DEQ and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate*. **Report due January 10, 2020.**
Between July 1 and December 31, 2019	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.
September 28, 2019	For the Jan-June 2019 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Word or PDF format from http://michigan.gov/deqleadcopper.
March 31, 2020	For the July-Dec 2019 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Word or PDF format from http://michigan.gov/deqleadcopper.
March 31, 2022	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.

We recognize that the Lead and Copper Rule is complex and may be confusing. We will continue to offer assistance in implementing these regulations. If you have any questions, please contact us at boltj@michigan.gov; onanb@michigan.gov; or at the phone numbers provided below.

Sincerely,

Jeni Bolt
Environmental Quality Specialist
Technical Support Unit
Drinking Water and Municipal
Assistance Division
517-331-5161

Brandon Onan
Corrosion Control Engineer
Engineering Unit
Drinking Water and Municipal
Assistance Division
616-307-6736

Enclosures (Public Advisory Checklist, Public Education Material Template and Sample Certificate, WQP report form, Tier Criteria)
cc/enc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Ernie Sarkipato, Surface Water Specialist, DEQ
Mr. Jeremy Klein, District Analyst, DEQ

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

July 24, 2019

VIA E-MAIL AND U.S. MAIL

Mr. Darwin Watson
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600
County: Berrien
Supply: Benton Harbor

Dear Mr. Watson:

SUBJECT: Lead and Copper Monitoring - Action Level (AL) Exceedance

During the most recent round of lead and copper monitoring of drinking water taps, from January 1, 2019, through June 30, 2019, Benton Harbor community water supply's ninetieth percentile value exceeded the AL for lead as summarized below.

Contaminant	AL	MCLG*	90th Percentile Value	Number of Sites Above AL	Range of Sample Results	Typical Source of Contaminant
Lead	15 parts per billion (ppb)	0	27 ppb	12	0 ppb – 59 ppb	Corrosion of household plumbing systems; Service lines that may contain lead; Erosion of natural deposits
Copper	1.3 parts per million (ppm)	1.3	0 ppm	0	0 ppm – 0.1 ppm	Corrosion of household plumbing systems; Erosion of natural deposits

*MCLG: Maximum contaminant level goal means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

An AL exceedance is not a violation, but it triggers other requirements under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). Requirements include water quality parameter (WQP) monitoring, source water monitoring, corrosion control treatment, and public education (PE). Please refer to the "Timetable of Upcoming Requirements" for your specific deadline for each of the following requirements.

Issue a Public Advisory (PA)
An amendment to Act 399 on March 29, 2017, requires a public water supply to issue a PA within three business days from the date of this letter to inform all persons served by the water system about the lead AL exceedance. It is the intent of the Department of Environment, Great Lakes, and Energy (EGLE) to work with you to develop the PE materials to distribute to your customers to fulfill both the PA and PE requirements simultaneously. A template has already been provided to you. If you plan to use broadcast media as your delivery method, please contact EGLE.

Deliver Consumer Notice of Lead and Copper Results
Within 30 days of learning the results, you must provide individual lead and copper tap results to the people who receive water from sites that were sampled, even if lead and copper were not detected. You must also send us certification that you met all delivery requirements, along with a sample copy of your consumer notice, 90 days after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Microsoft Word or PDF format, visit Michigan.gov/LCR. Select the appropriate report form based on whether you are or are not collecting samples from sites with lead services lines.

Distribute PE
Sixty days from the date of this letter or sixty days after the end of the monitoring period that exceeded the AL, whichever is sooner, deliver PE materials to all consumers. Repeat each year until the lead AL is no longer exceeded. This material is intended to educate consumers about lead health effects, sources of lead, and steps to minimize exposure. Note that the PE material must include information about the following: the exceedance in your water supply, what you are doing to reduce lead levels, lead service lines in your distribution system, and information about the history of lead levels in your water supply. A template has already been provided to you.

A sample copy of the final PE material, along with a PE distribution certification form, must be submitted to EGLE no later than ten days after the PE is due.

Conduct WQP Monitoring
As part of installing corrosion control treatment, you have been requested to collect one set of WQP samples every two weeks from the entry point to the distribution system, TP001 (Treatment Plant Tap), and quarterly from ten locations in the distribution system. The WQP samples shall be analyzed for pH, alkalinity, calcium, conductivity, orthophosphate, chloride, sulfate, and temperature. Temperature and pH are field tests and should be completed at the time of sample collection.

If you use EGLE's laboratory, order bottles by calling 517-335-8184 or by downloading the form EQP 2301 *Bottle Order Form* from Michigan.gov/EGLELab. Click on Drinking Water. The tests are analyzed from one sample bottle per location. Request the analyses using the following test codes:

Test Code	Cost	Bottle Number	Test Description
CORR	$51.00	33	Conductivity, Alkalinity, Phosphate, and Calcium
R	$18.00	32,33	Chloride, Sulfate

Conduct Source Water Monitoring
Six months after the end of the monitoring period that exceeded the AL, collect one sample for lead and copper at your entry point to the distribution system. You completed this requirement on March 16, 2019. You must repeat this sampling every third year until both lead and copper ALs are met during the entire three-year period.

Correct the Problem
Minimize lead and copper in drinking water by reducing corrosion of water pipes and household plumbing that contain lead and copper. This is your second AL exceedance. You recently installed corrosion control treatment using a phosphate product to reduce corrosion. As part of this installation, a coupon study was to be performed. Results from this study should be used to help identify the dosage necessary to sufficiently reduce corrosion rates in the distribution system. EGLE looks forward to receiving the study results and the recommendations based off those results.

Lead and Copper Monitoring
To show the ALs can be met, collect a lead and copper sample from 60 sites between July 1 and December 31, 2019, and again between January 1 and June 30, 2020.

When selecting new sites, choose the highest Tier criteria available within the distribution system, giving Tier 1 sites first priority. Please see the enclosed tiering criteria to help inform your site selection process. If you have Tier 1, or Tier 2 sites, i.e. sites with a lead service line, compliance sampling will require that you collect a first liter and fifth liter sample from each sampling location.

Within 30 days of learning of results from the samples, provide individual lead and copper tap results to people who receive water from sites that were sampled. Even if lead or copper was not detected, all monitoring, reporting, consumer notification, and EGLE certification requirements remain in effect.

Consumer Confidence Report (CCR)
Include this AL exceedance in your CCR, which is due to our office, your customers, and the local health department by July 1, 2020. You may use the table format from the first page of this letter.

Also, because the lead AL was exceeded, include the following health effects language:

> *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

What Happens Next?
If you can show that both lead and copper ALs are met in two consecutive six-month periods, then many of the requirements outlined in this letter will no longer apply.

Timetable of Upcoming Requirements

Complete By	Requirement	Comments
Within three business days	Distribute a PA.	Distribute a PA to inform all persons served by the water supply of the lead AL exceedance. Distribution of the notice must be in a form and manner designed to fit the specific situation and must be reasonably calculated to reach all persons served by the public water supply.
Right away	Deliver *Consumer Notice of Lead and Copper Results* to persons served at each site tested within 30 days of knowing the result.	Download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Microsoft Word or PDF format from Michigan.gov/LCR.
Every two weeks (Starting July 1st)	Collect WQP samples. (Entry Point)	Collect one set of WQP samples every two weeks from the entry point to the distribution system, TP001 (Treatment Plant Tap).
August 29, 2019	Perform PE activities including delivering PE materials to all consumers.	PE required activities are listed in enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.
September 8, 2019	Send us certification of PE compliance along with a sample copy of the materials delivered.	Sample certification enclosed. Required within ten days of PE distribution.
Between July 1 and December 31, 2019	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to EGLE and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice for Community Water Supply* (download form at Michigan.gov/LCR). **Report due January 10, 2020.**
Between July 1 and December 31, 2019	Collect WQP samples. (Distribution system)	Collect one set of WQP samples from ten locations in the distribution system quarterly.
September 28, 2019	For the January through June 2019 monitoring, send us certification of consumer notice of lead and copper results compliance along with a sample copy of the notice delivered.	Download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Microsoft Word or PDF format from Michigan.gov/LCR.
Between January 1 and June 30, 2020	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to EGLE and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice for Community Water Supply* (download form at Michigan.gov/LCR). **Report due July 10, 2020.**
Between January 1 and June 30, 2020	Collect WQP samples. (Distribution system)	Collect one set of WQP samples from ten locations in the distribution system quarterly.
July 1, 2020	Report the 2019 AL exceedance in the CCR.	Specific lead health effects language must be included.
March 31, 2020	For the July through December 2019 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Word or PDF format from Michigan.gov/LCR.
September 29, 2020	For the January through June 2020 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Word or PDF format from Michigan.gov/LCR.
March 31, 2022	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.

We recognize that the Lead and Copper Rule is complex and may be confusing. We will continue to offer assistance in implementing these regulations. If you have any questions, please contact us at BoltJ@Michigan.gov; OnanB@Michigan.gov; or at the phone numbers provided below.

Sincerely,

Jeni Bolt
Environmental Quality Specialist
Technical Support Unit
Drinking Water and Environmental
Health Division
517-331-5161

Brandon Onan
Corrosion Control Engineer
Engineering Unit
Drinking Water and Environmental
Health Division
616-307-6736

Enclosures (PA Checklist, PE Checklist, WQP Report Form, Tier Criteria)
cc: Ms. Nicki Britten, Berrien County Health Department
Mr. Nick Margaritis, Berrien County Health Department
Mr. Steve Crider, Michigan Department of Health and Human Services
Mr. Mike Bolf, Engineering Unit Supervisor, EGLE
Mr. Ernie Sarkipato, Surface Water Specialist, EGLE
Mr. Jeremy Klein, District Analyst, EGLE
cc/enc: Mr. Mike O'Malley, City of Benton Harbor

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

January 16, 2020

VIA E-MAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Lead and Copper Monitoring - Action Level (AL) Exceedance

During the most recent round of lead and copper monitoring of drinking water taps, from July 1, 2019, through December 31, 2019, Benton Harbor community water supply's 90th percentile value exceeded the AL for lead as summarized below.

Contaminant	AL	MCLG*	90th Percentile Value	Number of Sites Above AL	Range of Sample Results	Typical Source of Contaminant
Lead	15 parts per billion (ppb)	0	32 ppb	10	0 ppb – 72 ppb	Corrosion of household plumbing systems; Service lines that may contain lead; Erosion of natural deposits
Copper	1.3 parts per million (ppm)	1.3	0 ppm	0	0 ppm – 0.1 ppm	Corrosion of household plumbing systems; Erosion of natural deposits

*MCLG: Maximum contaminant level goal means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

An AL exceedance is not a violation, but it triggers other requirements under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). Requirements include water quality parameter (WQP) monitoring, source water monitoring, corrosion control treatment, and public education (PE). Please refer to the "Timetable of Upcoming Requirements" for your specific deadline for each of the following requirements.

Issue a Public Advisory (PA)
An amendment to Act 399 on March 29, 2017, requires a public water supply to issue a PA within three business days from the date of this letter to inform all persons served by the water system about the lead AL exceedance. It is the intent of the Department of Environment, Great Lakes, and Energy (EGLE) to work with you to develop the PE materials to distribute to your customers to fulfill both the PA and PE requirements simultaneously. A template has already been provided to you. If you plan to use broadcast media as your delivery method, please contact EGLE.

Deliver Consumer Notice of Lead and Copper Results
Thank you for completing this requirement timely.

Distribute PE
Sixty days from the date of this letter or sixty days after the end of the monitoring period that exceeded the AL, whichever is sooner, deliver PE materials to all consumers. As previously mentioned, it is your intent to develop and distribute the PE materials within three business days to fulfill both the PA and PE requirements simultaneously.

This material is intended to educate consumers about lead health effects, sources of lead, and steps to minimize exposure. Note that the PE material must include information about the following: the exceedance in your water supply, what you are doing to reduce lead levels, lead service lines in your distribution system, and the history of lead levels in your water supply. A template has already been provided to you.

A sample copy of the final PE material along with a PE distribution certification form must be submitted to EGLE no later than ten days after the PE is due. Repeat each year until the lead AL is no longer exceeded.

Conduct WQP Monitoring
Continue collecting one set of WQP samples every two weeks from the entry point to the distribution system, TP001 (Treatment Plant Tap), and quarterly from ten locations in the distribution system. The WQP samples shall be analyzed for pH, alkalinity, calcium, conductivity, orthophosphate, chloride, sulfate, and temperature. Temperature and pH are field tests and should be completed at the time of sample collection.

If you use EGLE's laboratory, order bottles by calling 517-335-8184, or by downloading the form EQP 2301 *Bottle Order Form* from Michigan.gov/EGLELab. Click on Drinking Water. The tests are analyzed from one sample bottle per location. Request the analyses using the following test codes:

Test Code	Cost	Bottle Number	Test Description
CORR	$51.00	33	Conductivity, Alkalinity, Phosphate, and Calcium
R	$18.00	32,33	Chloride, Sulfate

Conduct Source Water Monitoring
Thank you for completing this requirement timely. You completed this requirement on March 16, 2019. You must repeat this sampling every third year until both lead and copper ALs are met during the entire three-year period.

Correct the Problem
Minimize lead and copper in drinking water by reducing corrosion of water pipes and household plumbing that contain lead and copper. This is your third AL exceedance. A letter regarding changes to your current corrosion control treatment will be sent under separate cover from Mr. Ernie Sarkipato, Surface Water Engineer, Engineering Unit, Environmental Health Section, Drinking Water and Environmental Health

Division (DWEHD); and Mr. Brandon Onan, Supervisor, Lead and Copper Unit, Community Water Supply Section, DWEHD.

Lead and Copper Monitoring
You have already increased your lead and copper monitoring. Please continue to collect samples from 60 sites between January 1 and June 30, 2020, and again between July 1 and December 31, 2020.

When selecting new sites, choose the highest Tier criteria available within the distribution system, giving Tier 1 sites first priority. Please see the enclosed tiering criteria to help inform your site selection process. If you have Tier 1 or Tier 2 sites, i.e. sites with a lead service line, compliance sampling will require that you collect a first-liter and fifth-liter sample from each sampling location.

Within 30 days of learning of the results from the samples, provide individual lead and copper tap results to people who receive water from sites that were sampled. Even if lead or copper was not detected, all monitoring, reporting, consumer notification, and EGLE certification requirements remain in effect.

Consumer Confidence Report (CCR)
Include this AL exceedance in your CCR, which is due to our office, your customers, and the local health department by July 1, 2020. You may use the table format from the first page of this letter.

Also, because the lead AL was exceeded, include the following health effects language:

> *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

What Happens Next?
If you can show that both lead and copper ALs are met in two consecutive six-month periods, then many of the requirements outlined in this letter will no longer apply.

Timetable of Upcoming Requirements

Complete By	Requirement	Comments
Within three business days	Distribute a PA.	Distribute a PA to inform all persons served by the water supply of the lead AL exceedance. Distribution of the notice must be in a form and manner designed to fit the specific situation and must be reasonably calculated to reach all persons served by the public water supply.
Every two weeks	Collect WQP samples. (Entry Point)	Continue collecting one set of WQP samples every two weeks from the entry point to the distribution system, TP001 (Treatment Plant Tap). Analyze the samples for pH, alkalinity, calcium, conductivity, orthophosphate, chloride, sulfate, and temperature.
February 29, 2020	Perform PE activities including delivering PE materials to all consumers.	PE required activities are listed in enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.
March 10, 2020	Send EGLE certification of PE compliance along with a sample copy of the materials delivered.	Sample certification enclosed. Required within ten days of PE distribution.
Between January 1 and June 30, 2020	Collect samples from 60 sites in the distribution system and have them analyzed for lead and copper.	Report the results to EGLE and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice for Community Water Supply* (download form at Michigan.gov/LCR). **Report due July 10, 2020.**
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September 29, 2020	For the January through June 2020 monitoring, send EGLE certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download the *Lead and Copper Report and Consumer Notice for Community Water Supply* in Word or PDF format from Michigan.gov/LCR.
March 31, 2021	For the July through December 2020 monitoring, send EGLE certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Word or PDF format from Michigan.gov/LCR.
March 31, 2022	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.

We recognize that the Lead and Copper Rule is complex and may be confusing. We will continue to offer assistance in implementing these regulations. If you have any questions, please contact us at BoltJ@Michigan.gov; OnanB@Michigan.gov; or at the phone numbers provided below.

Sincerely,

Jeni Bolt, Environmental Quality Specialist
Lead and Copper Unit
Drinking Water and Environmental
Health Division
517-331-5161

Brandon Onan, Supervisor
Lead and Copper Unit
Drinking Water and Environmental
Health Division
616-307-6736

Enclosures (PA Checklist, PE Checklist, WQP Report Form, Tier Criteria)
cc/enc: Mr. Mike O'Malley, City of Benton Harbor
Ms. Nicki Britten, Berrien County Health Department
Mr. Nick Margaritis, Berrien County Health Department
Mr. Steve Crider, Michigan Department of Health and Human Services
Mr. Mike Bolf, EGLE
Mr. Ernie Sarkipato, EGLE
Mr. Jeremy Klein, EGLE

1. 5 a. Benton Harbor Website Page

BENTON HARBOR PUBLIC WORKS

Benton Harbor Public Works, Water Plant and Distribution, Sanitary Sewer, and Storm Water

Mike O'Malley, Director
(269) 927-8471, then press 2.
If no answer and for immediate assistance, dial (269) 927-8400, press 2.
Hours: 6:30 a.m. to 3 p.m.

City of Benton Harbor Water Department and Public Works Important Notices:

February 26, 2020 – Benton Harbor Public Education for Web and Mailer

Make Convenient Payments



(https://www.accessmygov.com/OnlinePayment/OnlinePaymentSearch?PaymentApplicationType=10&uid=971).

Save gas and stamps by using our convenient online services to pay your taxes or utility bills (water and trash

(https://bhcity.us/wp-content/uploads/2020/03/Benton-Harbor-Public-Education-for-Web-and-Mailer.pdf) Download (https://bhcity.us/wp-content/uploads/2020/03/Benton-Harbor-Public-Education-for-Web-and-Mailer.pdf)

- January 29, 2020 – Preliminary Distribution System Materials Inventory Notification Memo (https://bhcity.us/wp-content/uploads/2018/03/BH-Water-System-potential-Lead-Tap-Inventory-for-Web-site.pdf)
- January 21, 2020 – Public Advisory for Drinking Water Customers (https://bhcity.us/wp-content/uploads/2018/03/Press-Release-Public-Advisory-ALE-07-26-2019-MO-dist.pdf)
- *Important Information to the (https://bhcity.us/wp-content/uploads/2019/07/PDF-version-for-BH-Water-CCR-Announcement.pdf)*

Landlord Packet (https://bhcity.us/wp-content/uploads/2019/12/Landlord-Packet.pdf) Download (https://bhcity.us/wp-content/uploads/2019/12/Landlord-Packet.pdf)

City of Benton Harbor Leak Policy (https://bhcity.us/wp-content/uploads/2019/10/City-of-Benton-Harbor-Leak-Policy-10.11.19.pdf) Download (https://bhcity.us/wp-content/uploads/2019/10/City-of-Benton-Harbor-Leak-Policy-10.11.19.pdf)

Benton Harbor Lead Public Education – August 2019 (https://bhcity.us/wp-content/uploads/2019/08/Benton-Harbor-Lead-Public-Education-August-2019.pdf) Download (https://bhcity.us/wp-content/uploads/2019/08/Benton-Harbor-Lead-Public-Education-August-2019.pdf)

Public Education Document for Lead and Copper (https://bhcity.us/wp-content/uploads/2018/03/Public-Education-Document-for-Lead-and-Copper-for-web.pdf) Download (https://bhcity.us/wp-content/uploads/2018/03/Public-Education-Document-for-Lead-and-Copper-for-web.pdf)

services). (https://www.accessmygov.com/OnlinePayment/OnlinePaymentSearch?PaymentApplicationType=10&uid=971) If you have questions about your trash services, or to arrange for the pickup of large items, call We-Cycle Industrial Sanitation direct at (269) 926-6360.

Helpful Tips to Protect Our Systems

Hundreds of us perform tasks in our daily routines that may negatively impact the water and sewer systems that we rely on. Just by following a few simple strategies, we can greatly reduce harmful effects. Take a few minutes to read about how you can contribute to safe water in Benton Harbor.

If you fertilize, please follow directions and use sparingly.



Benton Harbor Lead Results June 2019 (https://bhcity.us/wp-content/uploads/2019/07/Benton-Harbor-Lead-Results-Sorted-for-web.pdf) Download (https://bhcity.us/wp-content/uploads/2019/07/Benton-Harbor-Lead-Results-Sorted-for-web.pdf)

Consumers Confidence Report Announcement (https://bhcity.us/wp-content/uploads/2019/07/PDF-version-for-BH-Water-CCR-Announcement.pdf) Download (https://bhcity.us/wp-content/uploads/2019/07/PDF-version-for-BH-Water-CCR-Announcement.pdf)

Consumers Confidence Report for 2018 (CCR 2018) (/forms/water-ccr-2018.pdf)

For more information please view these documents:
Lead Poisoning Prevention BCHD (https://bhcity.us/wp-content/uploads/2018/03/Lead-Poisoning-Prevention-BCHD-updated.pdf)
Lead In Drinking Water (EPA) (https://bhcity.us/wp-content/uploads/2018/03/Lead-In-Drinking-Water-EPA.pdf)
Cleaning Your Aerators (https://bhcity.us/wp-content/uploads/2018/03/Cleaning-Your-Aerators.pdf)

- *Drinking Water Customers of the City of Benton Harbor* (https://bhcity.us/wp-content/uploads/2019/07/PDF-version-for-BH-Water-CCR-Announcement.pdf)
- COBH Public Advisory 2018 (https://bhcity.us/wp-content/uploads/2018/03/COBH-Public-Advisory-102318-Final.pdf)

- BH Lead results for 2018 (https://bhcity.us/wp-content/uploads/2019/01/BH-Lead-and-Copper-Results-for-2018.pdf)
- Consumers Confidence Report for 2018 (CCR 2018) (https://bhcity.us/forms/water-ccr-2018.pdf)



(https://bhcity.us/wp-content/uploads/2018/03/Lawn-Care-1.pdf)

Do you know what your fertilizer may be doing to our water? Read more about the effects of lawn care (https://bhcity.us/wp-content/uploads/2018/03/Lawn-Care-1.pdf) and visit the Southwest Michigan Water Coalition (http://www.swmpc.org/water.asp) website for even more information.

Grease, fat and oil can clog sewer lines, causing sewage back-ups and flooding.

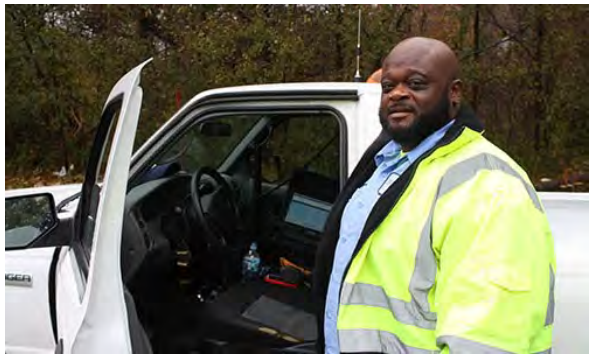


- REVISED: Consumers Confidence Report for 2017 (CCR 2017) (https://bhcity.us/wp-content/uploads/2018/03/Revised-Benton-Harbor-Water-CCR2017-Ready-for-Web-Site.pdf)
- Consumers Confidence Report for 2017 (CCR 2017) (https://bhcity.us/wp-content/uploads/pdf-large/consumers-confidence-report-2017.pdf)
- City of Benton Harbor Water Filtration Plant Annual Report for 2017 (https://bhcity.us/wp-content/uploads/2018/06/scan-of-2017-MOR-Report-for-2017-CCR.pdf)

Mike O'Malley, Director of the Water Plant, is often called "The Benton Harbor Water Guy." He and his team are responsible for the water distribution system, the sanitary sewer collection system, and storm water collection and discharge.



Benton Harbor Public Works and Water Sewer Supervisors



Benton Harbor Meter Reader



(https://bhcity.us/wp-content/uploads/2018/03/Sewer-Grease-pdf.pdf)

Did you know that grease from cooking is one of the major causes of residential sewer main clogs resulting in sewer backups? Too often, grease is washed into the plumbing system, usually through the kitchen sink. Grease sticks to the inside of sewer pipes (both on your property and in the streets). Over time, the grease can build and block the entire pipe. Read more here: Sewer Grease (https://bhcity.us/wp-content/uploads/2018/03/Sewer-Grease-pdf.pdf)





Do not pour anything down the drain – it may flow directly to inland lakes, streams or Lake



Benton Harbor Water Dist and Sanitary Sewer Crew



Benton Harbor Water Plant Operators

Your Renovated Water Plant



Benton Harbor Water Plant

The Benton Harbor Water Plant is located in the southwest corner of Benton Harbor's beautiful Jean Klock Park. The Water Plant was constructed in the 1950's as a complete treatment plant that includes chemical addition for disinfection and particulate removal; mixing and settling chambers; filters; a storage reservoir;

lakes, streams or Lake Michigan!



(https://bhcity.us/wp-content/uploads/2018/03/Storm-Drains.pdf)

Polluted stormwater runoff can harm plants, fish, animals, people, and it can even pollute our drinking water sources. Be sure to do your part to protect water quality. Read more about Storm Drains (https://bhcity.us/wp-content/uploads/2018/03/Storm-Drains.pdf) and visit the Southwest Michigan Water Coalition (http://www.swmpc.org/water.asp) website for even more information.

and high lift pumps to distribute the water to the City of Benton Harbor.

The water plant was aging and had experienced some failures, so a renovation project at a cost of slightly over $12 million was developed. Funding was acquired through the State of Michigan's Drinking Water Revolving Loan Funds, which feature low interest loans to Michigan Water projects. Additional funding was obtained from the federal government through the American Resources and Recovery Act, which will reduce the loan amount by 40%.

The project took two years to complete. The principal contractor, Davis Construction, along with several sub-contractors remodeled the existing plant and equipment and built the new treatment addition shown in the photograph. The Water Plant now has an anticipated life span in excess of 50 years and can properly treat up to 12 million gallons per day.

Consumer Confidence Reports

The Environmental Protection Agency (EPA) requires community water systems to deliver a Consumer Confidence Report (CCR), also known as an annual drinking water quality report, to their customers each year by July 1.

- Consumers Confidence Report for 2018 (CCR 2018) (https://bhcity.us/forms/water-ccr-2018.pdf)
- REVISED: City of Benton Harbor Utility Services Department's 2017 (https://bhcity.us/wp-content/uploads/2018/03/Revised-Benton-Harbor-Water-CCR2017-Ready-for-Web-Site.pdf)

- Consumers Confidence Report (https://bhcity.us/wp-content/uploads/2018/03/Revised-Benton-Harbor-Water-CCR2017-Ready-for-Web-Site.pdf)
- Benton Harbor 2017 CCR (https://bhcity.us/wp-content/uploads/pdf-

large/consumers-confidence-report-2017.pdf)

- Benton Harbor 2016 CCR (https://bhcity.us/wp-content/uploads/2018/03/Benton-Harbor-2016-CCR.pdf)
- Benton Harbor 2015 CCR (https://bhcity.us/wp-content/uploads/2018/03/Consumer-Confidence-Report-water-2015.pdf)
- Benton Harbor 2014 CCR (https://bhcity.us/wp-content/uploads/2018/03/Benton-Harbor-2014-CCR.pdf)

This report provides customers with information about their water quality, including the water source, a risk contamination summary, the regulated contaminates found and any potential health effects, an accounting of efforts to restore safe water, and other educational information. For more information about your CCR, read the Centers for Disease Control and Prevention's Guide to Understanding Your CCR (https://www.cdc.gov/healthywater/drinking/public/understanding_ccr.html).

I. 5. b. August 2019 Public Notice

Benton Harbor Water Plant
200 E. Wall Street
Benton Harbor, MI. 49022

PRSRT STD
ECRWSS
U.S.POSTAGE PAID
EDDM Retail

PLEASE READ
Important Lead
Information inside

**********ECRWSS**********

Local
Postal Customer
Benton Harbor, MI. 49022

This picture of a water connection to homes in Benton Harbor is where all the lead comes in the City System. Public Education Flyer for City Residents "**Protect yourselves from this**!"

This is what we have all over the City. This is a dig up of a Water Service Line going into a Residential Home. These are all over in Benton Harbor.
Most of All of our records (like this one) tell us where the tap and service is located. Some times it will say something about the materials; but usually not.
That is why we do not know until we dig a hole about 4-feet deep.
This line was installed to this home in September 1948.
This kind of water service is the majior reason for lead in you tap water, there could be other sources of Lead, but this leads to the BIG #'s



This is the City Side and it is made of lead piping.

This is the water shut off valve. It is made of brass mostly.

This is the Home Owner's side. The pipe is usually Galvanized. Like this one.

I. 5. c. February 2020 Public Notice

Benton Harbor Water Plant
200 E. Wall Street
Benton Harbor, MI. 49022

PRSRT STD
ECRWSS
U.S.POSTAGE PAID
EDDM Retail

**********ECRWSS**********

Important Information from the Benton Harbor Water Department
Please open and read, consider sharing it with your Neighbors & Friends

Local
Postal Customer
Benton Harbor, MI. 49022

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

THE BENTON HARBOR WATER DEPARTMENT HAS EXCEEDED THE ACTION LEVEL FOR LEAD. Lead can cause serious health and development problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

This notice is brought to you by the Benton Harbor Water Department.
Water Supply Serial Number: 00600 Distribution Date: [February 26, 2020]

Health Effects of Lead
Lead can cause serious health and development problems. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, the Benton Harbor Water Department is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact the Berrien County Health Department at 800-815-5485.

The Water System in Benton Harbor has many water service lines that contain some portion of Lead piping. The City just completed a Preliminary Distribution System Materials Inventory that contain up to 750 homes that may have lead. When we complete the final Distribution Systems Materials Inventory, we believe that number will rise to about 2,000.

BENTON HARBOR
PORT OF OPPORTUNITIES

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Sources of Lead

Lead is a common metal found in the environment. Drinking water is one possible source of lead exposure due to the widespread use of lead in plumbing materials. EPA estimates that drinking water can make up 20 percent or more of a person's potential exposure to lead. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

The action level is 15 parts per billion (ppb) for lead and 1.3 parts per million (ppm) for copper. The action level is a measure of corrosion control effectiveness. It is not a health-based standard. To meet the requirements of the Lead and Copper Rule, 90 percent of the samples collected must be below the action level. The following table summarizes the lead and copper data collected during the most recent monitoring period:

Most Recent Sampling Information. We only managed 39 locations of the 60 mandated by the State. If your house was sampled in the October to December sampling and want to continue participation that is Great! Let us know. If you have not been involved in our Lead & Copper Sampling program and you want to participate, that would be good, and we are asking you to contact us.

Most Recent Sampling Information: October to December 2019:

Action Levels	90th Percentile Value	Range of results (minimum-maximum)	# of samples used for 90th Percentile The 1st and 5th each house.
Lead 15 parts per billion (ppb)	**32 ppb**	0 ppb – 72 ppb	78
Copper 1.3 parts per million (ppm)	**0 ppm**	0 ppm – 0.1 ppm	78

Lead can enter drinking water when pipes, solder, home/building interior plumbing, fittings and fixtures that contain lead corrode. Corrosion is the dissolving, or wearing away, of metal caused by a chemical reaction between water and your plumbing. Several factors affect the amount of lead that enters the water, including the water quality characteristics (acidity and alkalinity), the amount of lead in the pipes, plumbing and/or fixtures, and the frequency of water use in the home.

Some plumbing products such as service lines, pipes and fixtures may contain lead. The infographic below demonstrates where sources of lead in drinking water could be in your home. Older homes may have more lead unless the service line and/or plumbing has been replaced. Homes built…

- **Before the 1960s** are more likely to have lead service lines, lead pipes, fixtures, and/or solder that contain lead.
- **Before 1988** are likely to have fixtures and/or solder that contains lead.
- **Between 1996 and 2014** are likely to have fixtures that contain up to eight percent lead but were labelled "lead-free."
- **In 2014 or later** still have potential lead exposure. "Lead free" was redefined to reduce lead content to a maximum of 0.25 percent lead in fixtures and fittings. Fixtures that are certified to meet NSF Standard 61 meet this more restrictive definition of "lead free."

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Leaded solder and leaded fittings and fixtures are still available in stores to use for non-drinking water applications. Be careful to select the appropriate products for repairing or replacing drinking water plumbing in your home.

Galvanized plumbing can be a potential source of lead. Galvanized plumbing can absorb lead from upstream sources like a lead service line. Even after the lead service line has been removed, galvanized plumbing can continue to release lead into drinking water over time. Homes that are served by a lead service line should consider replacing galvanized plumbing inside the home.

Drinking water is only one source of lead exposure. Other common sources of lead exposure are lead-based paint, and lead-contaminated dust or soil. Because lead can be carried on hands, clothing, and/or shoes, sources of exposure to lead can include the workplace and certain hobbies. Wash your children's hands and toys often as they can come in contact with dirt and dust containing lead. In addition, lead can be found in certain types of pottery, pewter, food, and cosmetics. If you have questions about other sources of lead exposure, please contact the Berrien County Health Department at 800-815-5485.

Particulate Lead
Lead results can vary between tests. A single test result is not a reliable indicator of drinking water safety. Two different types of lead can be present in drinking water, soluble lead and particulate lead. Soluble lead is lead that dissolves because of a chemical reaction between water and plumbing that contains lead. Particulate lead is dislodged scale and sediment released into the water from the sides of the plumbing and can vary greatly between samples. Disturbances, such as replacing a water meter, construction and excavation activities, or home plumbing repairs can cause particulates to shake free from inside pipes and plumbing. Particulate lead is a concern because the lead content can be very high. Lead particulate could be present in a single glass of water, but not present in water sampled just before or after. During construction, monthly aerator cleaning and using a filter certified to reduce lead are recommended to reduce particulate lead exposure.

Check whether your home has a lead service line.
Homes with lead service lines have an increased risk of having high lead levels in drinking water. Please contact the Benton Harbor Water Department for more information about your home's service line.

Steps You Can Take to Reduce Your Exposure to Lead in Your Water

1. ***Run your water to flush out lead.*** The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes.
   - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
   - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Additional flushing may be required for homes that have been vacant or have a longer service line. Your water utility can help you determine if longer flushing times are needed.

2. ***Use cold water for drinking and cooking.*** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water.

3. ***Use cold water for preparing baby formula.*** Do not use water from the hot water tap to make baby formula. If you have a lead service line, consider using bottled water or a filter certified to reduce lead to prepare baby formula.

4. ***Do not boil water to remove lead.*** Boiling water will not reduce lead levels.

5. **Consider *using a filter to reduce lead in drinking water.*** Public health recommends that any household with a child or pregnant woman use a certified lead filter to remove lead from their drinking water. Look for filters that are tested and certified to NSF/ANSI Standard 53 for lead reduction.



Some filter options include a pour-through pitcher or faucet-mount systems. If the label does not specifically mention lead reduction, check the Performance Data Sheet included with the device. Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions to protect water quality.

If you are not able to afford the cost of a lead filter, please contact the Berrien County Health Department at 800-815-5485.

6. Consider purchasing bottled water. The Food and Drug Administration (FDA) regulates bottled water. The bottled water standard for lead is 5 ppb.

7. ***Get your child tested.*** Contact your local health department, the Berrien County Health Department at 800-815-5485, or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

8. ***Identify older plumbing fixtures that likely contain lead.*** Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead. When purchasing new plumbing materials, it is important to look for materials that are certified to meet NSF standard 61. The EPA prepared a brochure that explains the various markings that can indicate that materials meet the new "lead free" definition: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100LVYK.txt.

9. ***Clean your aerator.*** The aerator on the end of your faucet is a screen that will catch debris. This debris could include particulate lead. The aerator should be removed at least every six months to rinse out any debris.

10. ***Test your water for lead.***

BENTON · HARBOR
PORT · OF · OPPORTUNITIES

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Since we have not been successful collecting the State Mandated required number, we encourage you to join in our Lead and Copper testing program that is required between the months of January to July and again during the months of July to December 2020.

11. **What Happened? What is Being Done?**The Benton Harbor Water Department had elevated lead levels in their 2018 and 2019 lead and copper sampling. We have sent educational materials to residents and offered free testing in 2018,
The Berrien County Health Department has provided free filters and replacement filters to anyone who wanted to participate.

Between July and December 2019, we made every effort to collected samples from 60 homes. We are still looking for more homes with lead service lines to volunteer to have their water tested. During this round of sampling, there were 10 homes out of 39 that had lead results higher than the 15ppb Action Level (AL). When the sample results were reported to the MDEQ, the action level was exceeded for Lead at 32 ppb.

The Benton Harbor Water Department does not have lead in its water mains. However, lead can enter drinking water when it is in contact with service lines, pipes, solder, home/building interior plumbing, fittings and fixtures that contain lead. Based on recent excavation and verification of service line materials, approximately 30% of the lines in the City are made of lead.
The graphics on the last page are a good way to understand where the Lead comes from:

In March 2018, the Benton Harbor Water Department has installed corrosion control treatment to reduce lead leaching. However, it can take up to 12 to 18 months to develop the protective coating on the pipes to reduce the amount of lead leaching into the drinking water.

If you are a Benton Harbor Water Department customer and would like your service line inspected or would like to have your drinking water tested for lead, contact the Benton Harbor Water Department phone number, 269 927-8471, press 2, or contact Mr. Mike O'Malley, momalley@cityofbentonharbor.gov. City resources are limited to complete these tasks, but efforts are still in place, please understand and be patient. See Item 10 above.

For More Information

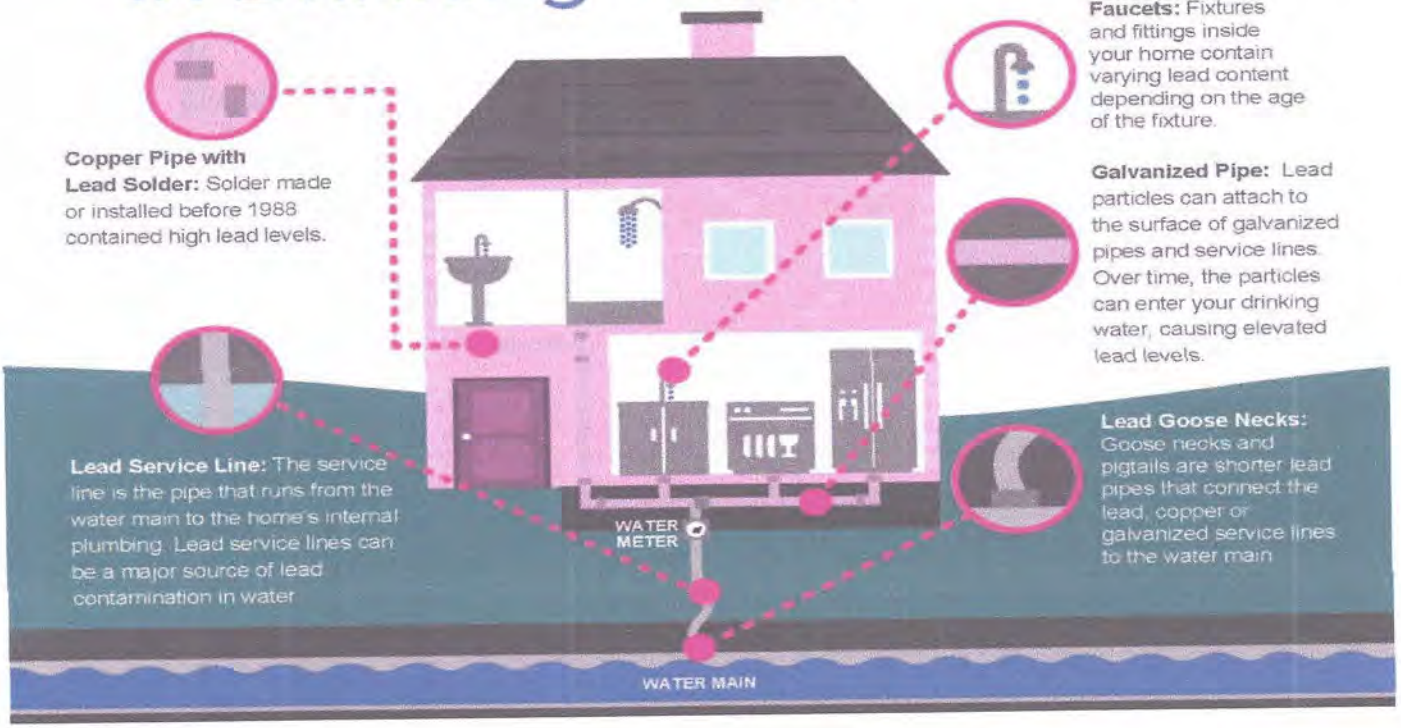
Contact the Berrien County Health Department at 800-815-5485, *the Benton Harbor Water Department at, 269-927-8471, press 2, or visit our website at* ***www.bhcity.us*** *or* www.michigan.gov/deqleadpublicadvisory. *For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at* ***www.epa.gov/lead****, call the National Lead Information Center at 800-424-LEAD, or contact your healthcare provider.*

BENTON·HARBOR
PORT·OF·OPPORTUNITIES

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

CONCERNED ABOUT LEAD IN YOUR DRINKING WATER?

Sources of **LEAD** in Drinking Water



This is what we have all over the City. This is a dig up of a Water Service Line going into a Residential Home. These are all over in Benton Harbor.
Most of All of our records (like this one) tell us where the tap and service is located. Some times it will say something about the materials; but usually not.
That is why we do not know until we dig a hole about 4-feet deep.
This line was installed to this home in September 1948.
This kind of water service is the majior reason for lead in you tap water, there could be other sources of Lead, but this leads to the BIG #'s



This is the City Side and it is made of lead piping.

This is the water shut off valve. It is made of brass mostly.

This is the Home Owner's side. The pipe is usually Galvanized. Like this one.

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

THE BENTON HARBOR WATER DEPARTMENT HAS EXCEEDED THE ACTION LEVEL FOR LEAD. Lead can cause serious health and development problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

This notice is brought to you by the Benton Harbor Water Department.
Water Supply Serial Number: 00600
Distribution Date: Friday, August 23, 2019

Health Effects of Lead

Lead can cause serious health and development problems. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, the Benton Harbor Water Department is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact the Berrien County Health Department at 800-815-5485.

Sources of Lead

Lead is a common metal found in the environment. Drinking water is one possible source of lead exposure due to the widespread use of lead in plumbing materials. EPA estimates that drinking water can make up 20 percent or more of a person's potential exposure to lead. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

The action level is 15 parts per billion (ppb) for lead and 1.3 parts per million (ppm) for copper. The action level is a measure of corrosion control effectiveness. It is not a health-based standard. To meet the requirements of the Lead and Copper Rule, 90 percent of the samples collected must be below the action level. The following table summarizes the lead and copper data collected during the most recent monitoring period:

Most Recent Sampling Information

Action Levels	90th Percentile Value	Range of results (minimum-maximum)	# of samples used for 90th Percentile
Lead 15 parts per billion (ppb)	**27 ppb**	0 ppb – 59 ppb	92
Copper 1.3 parts per million (ppm)	**0 ppm**	0 ppm – 0.1 ppm	92

Lead can enter drinking water when pipes, solder, home/building interior plumbing, fittings and fixtures that contain lead corrode. Corrosion is the dissolving, or wearing away, of metal caused by a chemical reaction between water and your plumbing. Several factors affect the amount of lead that enters the water, including the water quality characteristics (acidity and alkalinity), the amount of lead in the pipes, plumbing and/or fixtures, and the frequency of water use in the home.

Some plumbing products such as service lines, pipes and fixtures may contain lead. The infographic below demonstrates where sources of lead in drinking water could be in your home. Older homes may have more lead unless the service line and/or plumbing has been replaced.

Homes built…

* **Before the 1960s** are more likely to have lead service lines, lead pipes, fixtures, and/or solder that contain lead.
* **Before 1988** are likely to have fixtures and/or solder that contains lead.
* **Between 1996 and 2014** are likely to have fixtures that contain up to eight percent lead but were labelled "lead-free."
* **In 2014 or later** still have potential lead exposure. "Lead free" was redefined to reduce lead content to a maximum of 0.25 percent lead in fixtures and fittings. Fixtures that are certified to meet NSF Standard 61 meet this more restrictive definition of "lead free."

Leaded solder and leaded fittings and fixtures are still available in stores to use for non-drinking water applications. Be careful to select the appropriate products for repairing or replacing drinking water plumbing in your home.

Galvanized plumbing can be a potential source of lead. Galvanized plumbing can absorb lead from upstream sources like a lead service line. Even after the lead service line has been removed, galvanized plumbing can continue to release lead into drinking water over time. Homes that are served by a lead service line should consider replacing galvanized plumbing inside the home.

Drinking water is only one source of lead exposure. Other common sources of lead exposure are lead-based paint, and lead-contaminated dust or soil. Because lead can be carried on hands, clothing, and/or shoes, sources of exposure to lead can include the workplace and certain hobbies. Wash your children's hands and toys often as they can come in contact with dirt and dust containing lead. In addition, lead can be found in certain types of pottery, pewter, food, and cosmetics. If you have questions about other sources of lead exposure, please contact the Berrien County Health Department at 800-815-5485.

Particulate Lead

Lead results can vary between tests. A single test result is not a reliable indicator of drinking water safety. Two different types of lead can be present in drinking water, soluble lead and particulate lead. Soluble lead is lead that dissolves because of a chemical reaction between water and plumbing that contains lead. Particulate lead is dislodged scale and sediment released into the water from the sides of the plumbing and can vary greatly between samples. Disturbances, such as replacing a water meter, construction and excavation activities, or home plumbing repairs can cause particulates to shake free from inside pipes and plumbing. Particulate lead is a concern because the lead content can be very high. Lead particulate could be present in a single glass of water, but not present in water sampled just before or after. During construction, monthly aerator cleaning and using a filter certified to reduce lead are recommended to reduce particulate lead exposure.

Check whether your home has a lead service line.

Homes with lead service lines have an increased risk of having high lead levels in drinking water. Please contact the Benton Harbor Water Department for more information about your home's service line.

For More Information

Contact the Berrien County Health Department at 800-815-5485, *the Benton Harbor Water Department at, 269-927-8471, press 2, or visit our website at* ***www.bhcity.us*** *or* www.michigan.gov/deqleadpublicadvisory. *For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at* ***www.epa.gov/lead****, call the National Lead Information Center at 800-424-LEAD, or contact your healthcare provider.*



Berrien County Printing

BENTON HARBOR
Port of Opportunities

Benton Harbor extends advisory for lead in the water supply

By DUSTIN DWYER (/PEOPLE/DUSTIN-DWYER) • JUL 30, 2019

Share (http://facebook.com/sharer.php?u=http%3A%2F%2Ftinyurl.com%2Fy5jvjhn7&t=Benton%20Harbor%20extends%20advisory%20for%20lead%20in%20the%20water%20supp



(//www.michiganradio.org/sites/michigan/files/styles/x_large/public/201209/benton_harbor_city_hall.jpg)

L NDSEY SM TH / M CH GAN RAD O

The city of Benton Harbor says lead continues to be problem in the city water supply.

The city says 12 of 47 homes tested since January of this year were above the federal action level for lead in the water.

Benton Harbor first announced the higher lead levels in the water in October of last year. Since then, the city says it has started using corrosion controls in the water supply, and it's begun replacing lead service lines. Still, in tests from January through June of 2019, lead continued to show up in the water.

"The City is committed to continuing to take all corrective actions necessary to educate residents, improve the community water supply, and replace lead service lines with the goal of eliminating lead exposure in drinking water for residents," the city said in an advisory posted online (https://bhcity.us/wp-content/uploads/2019/07/Benton-Harbor-Lead-Public-Advisory-Notification.pdf).

[For more information on how to reduce lead exposure, or how to pick up a free filter in Berrien County, go here (http://www.bchdmi.org/1568/Lead-Drinking-Water).]

The Berrien County Health Department says it has handed out nearly 2,000 free water filters to residents.

Overall, there's been no uptick in the number of children who show elevated levels of lead in their blood. The county says blood tests actually show a decline in the number of kids with elevated blood lead levels.

Out of the homes that tested high for lead in the water, there have been two children who tested for elevated levels of lead in their blood, according to Gillian Conrad, a spokesperson for the Berrien County Health Department.

But, Conrad says, it's not clear that the two children were exposed to lead through the water supply.

"Lead-based paint continues to be the primary source for lead exposure for children all over Berrien County, including Benton Harbor," Conrad says.

And Benton Harbor is not alone among Michigan cities and towns that have had high levels of lead in the water.

Last year, Benton Harbor was one of four municipalities in Michigan that tested above the federal action level for lead in the water. Earlier this month, the city of Highland Park said it tested above the federal level.

The federal action level for lead in the water supply is set at 15 parts per billion. According to the federal lead and copper rule, cities can have some test results come in at above that level without triggering a system-wide advisory. The advisory kicks in after a complicated calculation to find the 90th percentile of test results. If the 90th percentile result is above 15 parts per billion, the water supplier is required to issue an advisory and take steps to fix the problem.

Following the Flint Water Crisis, Michigan Radio calculated (https://www.michiganradio.org/post/video-how-dropping-two-flints-lead-test-numbers-changed-things-state) the 90th percentile for Flint's tests should have been at 18.8 ppb.

Four of the five municipalities in Michigan that have had lead advisories in the past year were above that level. Hamtramck was at 28 ppb. The village of Lawrence was at 24 ppb. Highland Park was 57 ppb (https://www.michiganradio.org/post/elevated-lead-levels-found-highland-park-tap-water) and Benton Harbor's latest results came in at 27 ppb (https://bhcity.us/wp-content/uploads/2019/07/Benton-Harbor-Lead-Public-Advisory-Notification.pdf).

And Gillian Conrad with the Berrien County Health Department says expects even more cities to find high lead results in the coming years.

“So it is definitely going to be a lot of communities that will be going through this process of understanding where lead might be present in their communities,” she says. “And I think it’s something that’s important for all of us to understand for public health.”

Conrad says the county will continue to provide free filters for anyone concerned about lead in their water. Information on where to get the filters, and how to reduce exposure to lead, is available on the health department’s website (http://www.bchdmi.org/1568/Lead-Drinking-Water).

TAGS: ELEVATED LEAD LEVELS (/TERM/ELEVATED-LEAD-LEVELS) BENTON HARBOR (/TERM/BENTON-HARBOR)

Share (http://facebook.com/sharer.php?u=http%3A%2F%2Ftinyurl.com%2Fy5jvjhn7&t=Benton%20Harbor%20extends%20advisory%20for%20lead%20in%20the%20water%20supp

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Benton Harbor residents asked to flush taps, as more homes test positive for lead in the water (/post/benton-harbor-residents-asked-flush-taps-more-homes-test-positive-lead-water)

JAN 25, 2019

CITY OF BENTON HARBOR

DRINKING WATER & LEAD



OCT. 2018

During **routine** lead testing, required of every municipal water provider, City of Benton Harbor had 8 of 30 homes with lead levels greater than 15 part per billion.

This elevated result from testing triggered an **Action Level Exceedance (ALE).**

Notification & information was distributed to residents, including recommendations for flushing times.

NOV. 2018 - JAN. 2019

Additional investigation into the **source of lead in the drinking** water was completed.

335 homes participated in voluntary water testing (46 were elevated). MDHHS conducted sequential water sampling to further ensure good recommendations were being made for residents

JAN. - FEB, 2019

Following investigation period, it was determined that **lead service lines and aging infrastructure** were of concern.

Residents were recommended to use 5 minute flushing times or use a water filter that is NSF 53 certified for lead.

FEB. - MARCH, 2019

Berrien County Health Department, with support from the Michigan Department of Health & Human Services (MDHHS) **began to distribute water filters to all City residents**.

Michigan Department of Environment, Great Lakes, & Energy (EGLE) continues to work with City Water Plant; **corrosion prevention treatment** implemented by City of Benton Harbor - Water Treatment Plant on March 25th.



MAR. 2019 - PRESENT

Berrien County Health Department continues to provide water filters to residents & monitor blood lead levels in children throughout the City (and county). No increase in the trend of elevated blood lead levels has been seen.

City of Benton Harbor continues to replace lead service lines.

EGLE & MDHHS continue to support work and resident communication.

Updated April, 2020

I. 5. f BCHD Lead ALE Notice

LEAD ACTION LEVEL EXCEEDANCE IN THE CITY OF BENTON HARBOR

WATER FILTER DISTRIBUTION FOR CITY OF BENTON HARBOR:

How To Get A Water Filter or Replacement Cartridge During COVID-19 Pandemic:

Water filters and replacement cartridges are still available for Benton Harbor City Residents.

If you are in need of a water filter or your cartridge needs to be replaced, please call the Berrien County Health Department at 1-800-815-5485 (option 2) and a filter will be mailed to you.

If we miss your call, please leave a message with your phone number. We will call you back and arrange filter delivery. Stay home, stay safe!

At this time, all public distribution/pick-up dates have been cancelled.

BACKGROUND INFORMATION:

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) and the US Environmental Protection Agency (EPA) require public water supplies to test regularly for lead and copper in drinking water. The regularly scheduled testing discovered lead was in the water and that at least 10% of the samples tested had lead levels that exceeded the "action level" of 15 parts per billion (ppb) for lead in water. More information about water testing in the City of Benton Harbor can be found on the City of Benton Harbor Website.

When at least 10% of the samples tested exceed the action level for lead in drinking water (15ppb), public health officials recommend precautionary actions to protect residents - especially those most at risk of harm to their health, including children and fetuses. Lead exposure can pose a serious health risk for children because their bodies and

nervous systems are still developing. The use of water filters is recommended in any residence served by the City of Benton Harbor water system that is home to a child or a pregnant woman. However, free filters are being provided to any City of Benton Harbor resident who would like one.

In homes with children or pregnant women, the Berrien County Health Department also recommends using only cold filtered (or bottled) water for drinking, rinsing food, cooking, mixing powdered infant formula, and brushing teeth. When buying a water filter, make sure it is certified to NSF/ANSI Standard 53 for lead reduction and NSF/ANSI Standard 42 for particulate reduction. It is important to follow the manufacturer's instructions for installing and maintaining the filter.

FOR QUESTIONS ABOUT THE WATER OR WATER TESTING:

City of Benton Harbor
City of Benton Harbor Website
Email: bhwater@cityofbentonharbormi.gov
Phone: 269-927-8400 ext.1143

https://www.heraldpalladium.com/news/local/too-much-lead-in-benton-harbor-water/article_b5a94742-8edc-5574-8859-4e62159fa907.html

I. 5. g. October 23, 2018 Herald Palladium Newspaper Article

TOP STORY

Too much lead in Benton Harbor water

Officials hold press conference today to inform residents

By LOUISE WREGE - HP Staff Writer
Oct 24, 2018



Don Campbell / HP staff

BENTON HARBOR — Benton Harbor's water system is under a state advisory for lead after summer sampling revealed higher-than-acceptable levels, city officials confirmed Tuesday night.

City officials will hold a press conference at 11 a.m. today at City Hall to let residents know what it means now that the state has found there is too much lead in the city's tap water, City Manager Darwin Watson said.

According to an advisory from the Michigan Department of Environmental Quality, out of the water samples collected from 30 homes this summer, eight were above the action level of 15 parts per billion (ppb) for lead. And the 90th percentile of the samples was 22 ppb for lead.

“Exceeding the Action Level triggers additional actions, including, but not limited to, increased investigative sampling of water quality and educational outreach to customers,” the advisory states. “Elevated levels of lead in the drinking water can cause health concerns.”

Watson said one of the best ways to reduce the amount of lead in your drinking water is to run the tap cold for three to five minutes before using the water to drink or for cooking. He said stagnant water in pipes that aren’t used very often are more likely to contain higher levels of lead than pipes where the water is circulated more often.

“It’s all about stagnation,” he said. “Stagnant water allows for more interaction between the water and the pipes.”

To further reduce your risk of lead exposure, the advisory recommends:

• Use cold water tap for drinking or cooking.

• Use bottled water to prepare baby formula.

• Do not boil your water as boiling will not reduce the amount of lead in water.

• Water is safe for bathing.

The advisory states that the Berrien County Health Department has detected no increase in lead levels in Benton Harbor children under the age of 7. In fact, the advisory states that “there is a downward trend of elevated blood levels continuing into 2018.”

The city is being required to collect water samples every six months to determine if “corrective actions are necessary to reduce corrosion in household plumbing.”

Residents will receive more notices about lead in the city’s water, states the advisory.

More information on the health effects of lead in drinking water can be found at www.michigan.gov/deqleadpublicadvisory.

Lead can cause brain and kidney damage and can “interfere with the production of red blood cells that carry oxygen to all parts of your body.”

“The greatest risk of lead exposure is to infants, young children, and pregnant women,” states the information on the MDEQ website. “Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults.”

Questions about the water system, water testing, health concerns or getting your child’s blood lead level tested can be directed to the Benton Harbor Water Response Hotline at 1-800-815-5485 from 8:30 a.m. to 5 p.m.

Additional information can be found on the city's website at www.bhcity.us or the Berrien County Health Department website at www.bchdmi.org.

The city was notified in May that it received almost $300,000 in state grant money to replace lead and galvanized steel water service lines. At the time, Benton Harbor Water Superintendent Mike O'Malley estimated that 60 percent of the houses in Benton Harbor have lead and/or galvanized steel water lines from the main water line to the house.

Watson said the city needs to do a general inventory of the city's water service lines to determine how many are lead or galvanized steel. After that, he said, the rest of the money will be used to start replacing lead pipes.

He said state officials decided to replace galvanized steel pipes because it has been shown that lead can collect in them.

Watson said the city is responsible for the water lines up to the sidewalk. Homeowners are responsible for water lines from the sidewalk to the house. But this grant is allowing the city to replace water lines on private property.

Contact: lwrege@TheHP.com, 932-0361, Twitter: @HPWrege

I. 6. February 13, 2020 EGLE Corrosion Treatment Letter

STATE OF MICHIGAN

DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

February 13, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Water System Corrosion Treatment

On October 22, 2018, the Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), issued a letter to the City of Benton Harbor (the City) for a lead action level exceedance (ALE). In response, the City applied for a construction permit for installation of corrosion control treatment, under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). On February 25, 2019, EGLE issued the Act 399 construction permit to the City to address the ALE by means of installing a corrosion control treatment system. The treatment chemical permitted, based on a recommendation by Elhorn Engineering, was Carus 8600 which is comprised of 70% orthophosphate and 30% polyphosphate. The target dose was 1.5 milligrams per liter (mg/L) as orthophosphate, and the City's water operators have consistently reached that treatment goal. This has resulted in a residual of approximately 1.5 mg/L orthophosphate in the distribution system.

A review of the last three lead and copper sampling rounds collected by the City concludes the treatment is not achieving desired results quickly enough. The most recent round of samples was collected approximately eight months after the beginning of corrosion control treatment.

The City met with representatives from EGLE on January 15, 2020, to discuss results from the City's lead and copper sampling as it relates to the City's corrosion control treatment. The purpose of this letter is to provide a summary of that meeting and outline next steps for the City to pursue designation of optimized corrosion control treatment as required by Rule 604f of the administrative rules promulgated under Act 399.

Based on a review of the corrosion control treatment and the last three rounds of tap samples for lead and copper, **the City is hereby directed to change its current blended phosphate chemical from the 70%/30% ortho/poly-phosphate to a product with a minimum of 90% orthophosphate.** The chemical selected must be ANSI/NSF 60 certified for use in drinking water systems. **The City is also hereby directed to adopt a new treatment rate, such that a minimum of 3.0 mg/L orthophosphate (as phosphate) residual is maintained throughout the distribution system.** This

designation is being made under R325.10604f(3)(d). The reason for this change is to speed up treatment effectiveness. EGLE's intent is to quickly put into place treatment that will more efficiently lower corrosion rates in the distribution system for greater protection of public health. This decision is based on corrosion control treatment studies and analyses of documented analogous treatment systems with other water supplies of similar source water chemistry.

The above phosphate treatment strategy is intended to provide immediate improvement of corrosion protection in the distribution system but, without further study, it is not certain to be the optimum treatment strategy. Therefore, the City is directed to have a third-party consultant submit to the department a corrosion control study proposal following the requirements of Rule 325.10604f(3)(c) of the administrative rules promulgated under Act 399. This study proposal must be submitted to the department within six months following the date that the directed treatment change is completed. The study plan must focus on identifying optimum corrosion control treatment for the City's water system. Reference to analogous water systems alone will not suffice to meet this requirement.

In addition, the permitted corrosion control treatment scheme requires the high service pump suction header valve that is next to High Service Pump 3 be closed. This is to force the flow of all water from the suction well through the meter and corrosion control treatment. At the onsite meeting referenced above, it was indicated that the valve state is unknown. Please immediately verify in writing to the department the valve has been closed according to the permit.

TRANSITION AND TIMELINE

Prior to changing chemicals, the City must obtain approval of the specific chemical selected by requesting revision of the construction permit under Act 399.

Following approval, the transition to a minimum 90% orthophosphate product must occur as soon as possible, but not later than February 28, 2020.

The City must follow these guidelines during transition to the new chemical:

1. Blending of the two phosphate products must not occur. The transition should be abrupt.
2. Immediately following the transition to the new treatment, gentle flushing of the distribution system will help provide a thorough transition.
3. Increased monitoring of the plant tap and distribution sites will verify when the transition has concluded and the directed residual of a minimum 3.0 mg/L orthophosphate as phosphate is achieved.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this letter, please contact me at 616-307-6736 or OnanB@Michigan.gov; or you can contact Mr. Ernie Sarkipato, Surface Water Treatment Specialist, Engineering Unit, Field Operations Section, DWEHD, at 616-307-0261; SarkipatoE@Michigan.gov; or EGLE-DWEHD, 350 Ottawa Avenue NW, Unit 10, Grand Rapids, Michigan 49506.

Sincerely,

Brandon Onan, Supervisor
Lead & Copper Unit
Community Water Supply Section
Drinking Water and Environmental Health Division

cc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Darold Harlan, Fleis & Vandenbrink
Mr. Todd Luks, Elhorn Engineering
Ms. Nicki Britten, Berrien County Health Department
Mr. Eric Oswald, EGLE
Mr. Mike Bolf, EGLE
Mr. Ernie Sarkipato, EGLE

I. 6. February 13, 2020 EGLE Corrision Treatment Letter

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

February 13, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: 00600
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Water System Corrosion Treatment

On October 22, 2018, the Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), issued a letter to the City of Benton Harbor (the City) for a lead action level exceedance (ALE). In response, the City applied for a construction permit for installation of corrosion control treatment, under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). On February 25, 2019, EGLE issued the Act 399 construction permit to the City to address the ALE by means of installing a corrosion control treatment system. The treatment chemical permitted, based on a recommendation by Elhorn Engineering, was Carus 8600 which is comprised of 70% orthophosphate and 30% polyphosphate. The target dose was 1.5 milligrams per liter (mg/L) as orthophosphate, and the City's water operators have consistently reached that treatment goal. This has resulted in a residual of approximately 1.5 mg/L orthophosphate in the distribution system.

A review of the last three lead and copper sampling rounds collected by the City concludes the treatment is not achieving desired results quickly enough. The most recent round of samples was collected approximately eight months after the beginning of corrosion control treatment.

The City met with representatives from EGLE on January 15, 2020, to discuss results from the City's lead and copper sampling as it relates to the City's corrosion control treatment. The purpose of this letter is to provide a summary of that meeting and outline next steps for the City to pursue designation of optimized corrosion control treatment as required by Rule 604f of the administrative rules promulgated under Act 399.

Based on a review of the corrosion control treatment and the last three rounds of tap samples for lead and copper, **the City is hereby directed to change its current blended phosphate chemical from the 70%/30% ortho/poly-phosphate to a product with a minimum of 90% orthophosphate.** The chemical selected must be ANSI/NSF 60 certified for use in drinking water systems. **The City is also hereby directed to adopt a new treatment rate, such that a minimum of 3.0 mg/L orthophosphate (as phosphate) residual is maintained throughout the distribution system.** This

designation is being made under R325.10604f(3)(d). The reason for this change is to speed up treatment effectiveness. EGLE's intent is to quickly put into place treatment that will more efficiently lower corrosion rates in the distribution system for greater protection of public health. This decision is based on corrosion control treatment studies and analyses of documented analogous treatment systems with other water supplies of similar source water chemistry.

The above phosphate treatment strategy is intended to provide immediate improvement of corrosion protection in the distribution system but, without further study, it is not certain to be the optimum treatment strategy. Therefore, the City is directed to have a third-party consultant submit to the department a corrosion control study proposal following the requirements of Rule 325.10604f(3)(c) of the administrative rules promulgated under Act 399. This study proposal must be submitted to the department within six months following the date that the directed treatment change is completed. The study plan must focus on identifying optimum corrosion control treatment for the City's water system. Reference to analogous water systems alone will not suffice to meet this requirement.

In addition, the permitted corrosion control treatment scheme requires the high service pump suction header valve that is next to High Service Pump 3 be closed. This is to force the flow of all water from the suction well through the meter and corrosion control treatment. At the onsite meeting referenced above, it was indicated that the valve state is unknown. Please immediately verify in writing to the department the valve has been closed according to the permit.

TRANSITION AND TIMELINE

Prior to changing chemicals, the City must obtain approval of the specific chemical selected by requesting revision of the construction permit under Act 399.

Following approval, the transition to a minimum 90% orthophosphate product must occur as soon as possible, but not later than February 28, 2020.

The City must follow these guidelines during transition to the new chemical:

1. Blending of the two phosphate products must not occur. The transition should be abrupt.
2. Immediately following the transition to the new treatment, gentle flushing of the distribution system will help provide a thorough transition.
3. Increased monitoring of the plant tap and distribution sites will verify when the transition has concluded and the directed residual of a minimum 3.0 mg/L orthophosphate as phosphate is achieved.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this letter, please contact me at 616-307-6736 or OnanB@Michigan.gov; or you can contact Mr. Ernie Sarkipato, Surface Water Treatment Specialist, Engineering Unit, Field Operations Section, DWEHD, at 616-307-0261; SarkipatoE@Michigan.gov; or EGLE-DWEHD, 350 Ottawa Avenue NW, Unit 10, Grand Rapids, Michigan 49506.

Sincerely,

Brandon Onan, Supervisor
Lead & Copper Unit
Community Water Supply Section
Drinking Water and Environmental Health Division

cc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Darold Harlan, Fleis & Vandenbrink
Mr. Todd Luks, Elhorn Engineering
Ms. Nicki Britten, Berrien County Health Department
Mr. Eric Oswald, EGLE
Mr. Mike Bolf, EGLE
Mr. Ernie Sarkipato, EGLE

Security settings or invalid file format do not permit using WS00503987-EPA4700_4_2_1-V2.1_1.pdf (578894 Bytes).

THIS NOTIFICATION IS ISSUED UNDER THE AUTHORITY OF ACTS 220 & 453, PA OF 1976 AS AMENDED

STATE OF MICHIGAN

DEPARTMENT OF CIVIL RIGHTS

350 OTTAWA NW
4TH FLOOR
GRAND RAPIDS, MI, 49503

NOTICE OF DISPOSITION AND ORDER OF DISMISSAL

EEOC #: C 23A-2018-10555C

MDCR #: 489669

Claimant:

Terrie Tabbert
21825 Dutch Settlement Street
Cassopolis, MI 49031

Respondent:

City of Benton Harbor
200 East Wall Street
Water Department
Benton Harbor, MI 49022

REASON FOR DISMISSAL:

This complaint alleges that the respondent discriminated against the claimant in violation of civil rights laws. The claimant submitted a written request for withdrawal indicating that this matter will be pursued in court.

It is therefore ordered that this complaint is dismissed.

Date Dismissed : October 22, 2019	Date Mailed : OCT 2 4 2019
/s/ Lori Vinson/Director, Civil Rights Operations	

RULES OF CIVIL RIGHTS COMMISSION AND DEPARTMENT RELATING TO RECONSIDERATION AND APPEAL

Rule 7.(1) ***A claimant may request of the department a reconsideration of its refusal to issue a charge. The request shall be in writing, state specifically, the grounds upon which it is based, and be filed within 30 days after the date of mailing of the notice of disposition of which reconsideration is requested. It shall be filed at any office of the department by personal delivery or by mail.***

(2) ***The department may authorize a hearing on the request for reconsideration at such time and place, and before such hearing commissioner or commissioners or hearing referee or referees as it or the director may detemine, and notice thereof shall be given to all parties to the proceedings.***

Rule 18. ***Any party claiming to be aggrieved by a final order of the commission or the department, including without limitation a refusal to issue a charge, may appeal to the circuit court of the State of Michigan having jurisdiction provided by law within 30 days of the date of service of an appealable order.***

Note: *To Secure a review by the U.S. Equal Employment Opportunity Commission of this dismissal, you must request a review in writing within 15 days of your receipt of this notice. Send your request to: EEOC Detroit District Office, 477 Michigan Ave., Suite 865, Detroit, MI 48226.*

EEOC Form 161 (11/16) U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

DISMISSAL AND NOTICE OF RIGHTS

To: Kevin C. Jacisin
11260 Sherman Ave
Warren, MI 48089

From: Detroit Field Office
477 Michigan Avenue
Room 865
Detroit, MI 48226

☐ *On behalf of person(s) aggrieved whose identity is CONFIDENTIAL (29 CFR §1601.7(a))*

EEOC Charge No.	EEOC Representative	Telephone No.
471-2020-00340	Anthony Warren, Investigator	(313) 226-6550

THE EEOC IS CLOSING ITS FILE ON THIS CHARGE FOR THE FOLLOWING REASON:

☐ The facts alleged in the charge fail to state a claim under any of the statutes enforced by the EEOC.

☐ Your allegations did not involve a disability as defined by the Americans With Disabilities Act.

☐ The Respondent employs less than the required number of employees or is not otherwise covered by the statutes.

☐ Your charge was not timely filed with EEOC; in other words, you waited too long after the date(s) of the alleged discrimination to file your charge

☒ The EEOC issues the following determination: Based upon its investigation, the EEOC is unable to conclude that the information obtained establishes violations of the statutes. This does not certify that the respondent is in compliance with the statutes. No finding is made as to any other issues that might be construed as having been raised by this charge.

☐ The EEOC has adopted the findings of the state or local fair employment practices agency that investigated this charge.

☐ Other *(briefly state)*

- NOTICE OF SUIT RIGHTS -

(See the additional information attached to this form.)

Title VII, the Americans with Disabilities Act, the Genetic Information Nondiscrimination Act, or the Age Discrimination in Employment Act: This will be the only notice of dismissal and of your right to sue that we will send you. You may file a lawsuit against the respondent(s) under federal law based on this charge in federal or state court. Your lawsuit **must be filed WITHIN 90 DAYS of your receipt of this notice**; or your right to sue based on this charge will be lost. (The time limit for filing suit based on a claim under state law may be different.)

Equal Pay Act (EPA): EPA suits must be filed in federal or state court within 2 years (3 years for willful violations) of the alleged EPA underpayment. This means that **backpay due for any violations that occurred more than 2 years (3 years) before you file suit may not be collectible.**

On behalf of the Commission

Michelle Eisele,
District Director

11.27.19
(Date Mailed)

Enclosures(s)

cc: City of Benton Harbor
c/o: Lisa Golliday
Human Resources Coordinator
200 E. Wall Street
Benton Harbor, MI 49022

NOTICE OF RIGHTS UNDER THE ADA AMENDMENTS ACT OF 2008 (ADAAA): The ADA was amended, effective January 1, 2009, to broaden the definitions of disability to make it easier for individuals to be covered under the ADA/ADAAA. A disability is still defined as (1) a physical or mental impairment that substantially limits one or more major life activities (actual disability); (2) a record of a substantially limiting impairment; or (3) being regarded as having a disability. *However, these terms are redefined, and it is easier to be covered under the new law.*

If you plan to retain an attorney to assist you with your ADA claim, we recommend that you share this information with your attorney and suggest that he or she consult the amended regulations and appendix, and other ADA related publications, available at http://www.eeoc.gov/laws/types/disability_regulations.cfm.

"Actual" disability or a "record of" a disability (note: if you are pursuing a failure to accommodate claim you must meet the standards for either "actual" or "record of" a disability):

- **The limitations from the impairment no longer have to be severe or significant** for the impairment to be considered substantially limiting.
- In addition to activities such as performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, thinking, concentrating, reading, bending, and communicating (more examples at 29 C.F.R. § 1630.2(i)), **"major life activities" now include the operation of major bodily functions**, such as: functions of the immune system, special sense organs and skin; normal cell growth; and digestive, genitourinary, bowel, bladder, neurological, brain, respiratory, circulatory, cardiovascular, endocrine, hemic, lymphatic, musculoskeletal, and reproductive functions; or the operation of an individual organ within a body system.
- **Only one** major life activity need be substantially limited.
- With the exception of ordinary eyeglasses or contact lenses, **the beneficial effects of "mitigating measures"** (e.g., hearing aid, prosthesis, medication, therapy, behavioral modifications) **are not considered** in determining if the impairment substantially limits a major life activity.
- An impairment that is **"episodic"** (e.g., epilepsy, depression, multiple sclerosis) or "**in remission**" (e.g., cancer) is a disability if it **would be substantially limiting when active**.
- An impairment **may be substantially limiting even though** it lasts or is expected to last **fewer than six months**.

"Regarded as" coverage:

- An individual can meet the definition of disability if an **employment action was taken because of an actual or perceived impairment** (e.g., refusal to hire, demotion, placement on involuntary leave, termination, exclusion for failure to meet a qualification standard, harassment, or denial of any other term, condition, or privilege of employment).
- "Regarded as" coverage under the ADAAA no longer requires that an impairment be substantially limiting, or that the employer perceives the impairment to be substantially limiting.
- The employer has a defense against a "regarded as" claim only when the impairment at issue is objectively *BOTH* transitory (lasting or expected to last six months or less) *AND* minor.
- A person is not able to bring a failure to accommodate claim *if* the individual is covered only under the "regarded as" definition of "disability."

Note: Although the amended ADA states that the definition of disability "shall be construed broadly" and "should not demand extensive analysis," some courts require specificity in the complaint explaining how an impairment substantially limits a major life activity or what facts indicate the challenged employment action was because of the impairment. Beyond the initial pleading stage, some courts will require specific evidence to establish disability. For more information, consult the amended regulations and appendix, as well as explanatory publications, available at http://www.eeoc.gov/laws/types/disability_regulations.cfm.

Enclosure with EEOC
Form 161 (11/16)

INFORMATION RELATED TO FILING SUIT UNDER THE LAWS ENFORCED BY THE EEOC

(This information relates to filing suit in Federal or State court under Federal law. If you also plan to sue claiming violations of State law, please be aware that time limits and other provisions of State law may be shorter or more limited than those described below.)

PRIVATE SUIT RIGHTS -- Title VII of the Civil Rights Act, the Americans with Disabilities Act (ADA), the Genetic Information Nondiscrimination Act (GINA), or the Age Discrimination in Employment Act (ADEA):

In order to pursue this matter further, you must file a lawsuit against the respondent(s) named in the charge **within 90 days of the date you *receive* this Notice**. Therefore, you should **keep a record of this date**. Once this 90-day period is over, your right to sue based on the charge referred to in this Notice will be lost. If you intend to consult an attorney, you should do so promptly. Give your attorney a copy of this Notice, and its envelope, and tell him or her the date you received it. Furthermore, in order to avoid any question that you did not act in a timely manner, it is prudent that your suit be filed **within 90 days of the date this Notice was *mailed* to you** (as indicated where the Notice is signed) or the date of the postmark, if later.

Your lawsuit may be filed in U.S. District Court or a State court of competent jurisdiction. (Usually, the appropriate State court is the general civil trial court.) Whether you file in Federal or State court is a matter for you to decide after talking to your attorney. Filing this Notice is not enough. You must file a "complaint" that contains a short statement of the facts of your case which shows that you are entitled to relief. Courts often require that a copy of your charge must be attached to the complaint you file in court. If so, you should remove your birth date from the charge. Some courts will not accept your complaint where the charge includes a date of birth. Your suit may include any matter alleged in the charge or, to the extent permitted by court decisions, matters like or related to the matters alleged in the charge. Generally, suits are brought in the State where the alleged unlawful practice occurred, but in some cases can be brought where relevant employment records are kept, where the employment would have been, or where the respondent has its main office. If you have simple questions, you usually can get answers from the office of the clerk of the court where you are bringing suit, but do not expect that office to write your complaint or make legal strategy decisions for you.

PRIVATE SUIT RIGHTS -- Equal Pay Act (EPA):

EPA suits must be filed in court within 2 years (3 years for willful violations) of the alleged EPA underpayment: back pay due for violations that occurred **more than 2 years (3 years) before you file suit** may not be collectible. For example, if you were underpaid under the EPA for work performed from 7/1/08 to 12/1/08, you should file suit before 7/1/10 – *not* 12/1/10 -- in order to recover unpaid wages due for July 2008. This time limit for filing an EPA suit is separate from the 90-day filing period under Title VII, the ADA, GINA or the ADEA referred to above. Therefore, if you also plan to sue under Title VII, the ADA, GINA or the ADEA, in addition to suing on the EPA claim, suit must be filed within 90 days of this Notice and within the 2- or 3-year EPA back pay recovery period.

ATTORNEY REPRESENTATION -- Title VII, the ADA or GINA:

If you cannot afford or have been unable to obtain a lawyer to represent you, the U.S. District Court having jurisdiction in your case may, in limited circumstances, assist you in obtaining a lawyer. Requests for such assistance must be made to the U.S. District Court in the form and manner it requires (you should be prepared to explain in detail your efforts to retain an attorney). Requests should be made well before the end of the 90-day period mentioned above, because such requests do not relieve you of the requirement to bring suit within 90 days.

ATTORNEY REFERRAL AND EEOC ASSISTANCE -- All Statutes:

You may contact the EEOC representative shown on your Notice if you need help in finding a lawyer or if you have any questions about your legal rights, including advice on which U.S. District Court can hear your case. If you need to inspect or obtain a copy of information in EEOC's file on the charge, please request it promptly in writing and provide your charge number (as shown on your Notice). While EEOC destroys charge files after a certain time, all charge files are kept for at least 6 months after our last action on the case. Therefore, if you file suit and want to review the charge file, **please make your review request within 6 months of this Notice.** (Before filing suit, any request should be made within the next 90 days.)

IF YOU FILE SUIT, PLEASE SEND A COPY OF YOUR COURT COMPLAINT TO THIS OFFICE.

Security settings or invalid file format do not permit using WS00503987-EPA_KeyContacts-V1.1_1.pdf (287030 Bytes).

Security settings or invalid file format do not permit using WS00503987-SF424A-V1.0_1.pdf (332383 Bytes).

Security settings or invalid file format do not permit using WS00503987-SF424_2_1-V2.1_1.pdf (301634 Bytes).

From:	Sarkipato, Ernest (EGLE)
To:	emitchell@bhcity.us; Mike O"Malley; Darold Harlan; Darel Rice
Cc:	Bolt, Jennifer (EGLE); Onan, Brandon (EGLE); Bolf, Michael (EGLE)
Subject:	Lead Consumer Notice for 1st half 2020 sampling
Date:	Thursday, October 22, 2020 12:22:03 PM
Attachments:	image001.png Consumer Notice of Lead and Copper Results A.pdf Consumer Notice distribution certificate.pdf MI 0600 Benton Harbor Lead Results to Customer Certification.pdf

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Dear Mr. Mitchell and the Benton Harbor Water Team,

EGLE has recently received a copy of the Consumer Notice of Lead and Copper Results form (Consumer Notice) that was due to EGLE by 9/30/2020 for the city of Benton Harbor. This submission was timely, and is attached here for reference.

Upon review, the content of the Consumer Notice failed to address all requirements of the Safe Drinking Water Act. Rule 410 (5)(c) states that the Consumer Notice shall include

- The results of lead and copper tap water monitoring for the tap that was tested,
- An explanation of the health effects of lead and copper,
- List steps consumers can take to reduce exposure to lead and copper in drinking water,
- Contact information for the water utility,
- The maximum contaminant level goals and the action levels, including definitions for these 2 terms from R 325.10413(4) and (6).

Benton Harbor's Consumer Notice did include the majority of these requirements. However, it failed to include the definitions for the maximum contaminant level goal and action levels, and failed to provide residents with the proper flushing times for customers served by lead service lines. Homes with lead service lines have an increased risk of having high lead levels in drinking water and require longer flushing times.

To reduce exposure to lead in drinking water, the following flushing recommendations have been developed in coordination with the Michigan Department of Health and Human Services and should be included in **all** of Benton Harbor's communications to its customers about lead in drinking water:

o If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
o If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.

To correct the issues as noted above, Benton Harbor must redistribute a corrected Consumer Notice with all required information and the correct flushing times to each of the 61 homes sampled between January 1, 2020 and June 30, 2020. **You shall redistribute the corrected notices and submit documentation to EGLE no later than November 5, 2020, two weeks from the date of this communication.** Please provide a copy of the corrected Consumer Notice for review **BEFORE** distribution as soon as possible. After redistributing the corrected Consumer Notice, please submit an example copy of the corrected Consumer Notice and a new certificate of distribution.

EGLE has developed a template Consumer Notice for water systems to use to notify their residents of their results. The template meets all the content requirements of the Safe Drinking Water Act and is available at www.michigan.gov/lcr. We highly recommend Benton Harbor use this template in the future to reduce errors.

If you have any questions, please contact me at the number below.

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile



www.michigan.gov/drinkingwater



LET'S **STAY SAFE** TOGETHER

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name: _____

County: _____ WSSN: _____

Sample Location: _____ Date Sampled: _____

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run your water before drinking**. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
    - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
    - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for drinking, cooking, and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. As part of routine maintenance, the aerator should be removed at least every six months to rinse out any debris that may include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: _____.

CONSUMER NOTICE OF LEAD AND COPPER RESULTS REQUIREMENTS AND CERTIFICATION

Each community water supply must deliver a Consumer Notice of Lead and Copper Results (Consumer Notice) to the occupants at each location sampled within 30 days of learning the sample results as required under R 325.10410(5) of the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. Failure to deliver the Consumer Notice to each location on time will result in a reporting violation.

Instructions:

A. Use the Consumer Notice Form A template for sites with lead service lines or Consumer Notice Form B template for sites without lead service lines. See the examples on Page 10 to document results from both sites with a lead service line and without a lead service line.

B. Complete one Consumer Notice for each home or building that was sampled. MAKE SURE UNITS ARE CORRECT BEFORE DISTRIBUTING TO CONSUMERS.

   Note: 1 mg/L = 1 ppm = 1,000 ppb Example: 0.002 mg/L = 0.002 ppm = 2 ppb

C. Mail or hand deliver each Consumer Notice to the corresponding home or building sampled.

D. Water supplies have 90 days after the end of the monitoring period to submit a sample copy of the Consumer Notice along with a signed certification that notices have been distributed as required under R 325.10710d(f)(3) to the appropriate EGLE district office. When possible, EGLE encourages water supplies to send the sample Consumer Notice and certification (page 4 of this document) along with the Lead and Copper Report (pages 1 and 2 of this document), which is due within ten days after the end of the monitoring period. Please COMPLETE all forms accurately to avoid resubmittal.

Certification:

I hereby certify that the Consumer Notice of Lead and Copper Results (Consumer Notice) has been provided to persons served at each of the taps that were tested, including all the following information:

- Delivery was by mail, hand delivery, or another method approved by EGLE.
- Delivery was within 30 days of knowing the result.
- Consumer Notice includes required content:
  - The results of lead and copper tap monitoring for the site that was sampled.
  - An explanation of the health effects of lead and copper.
  - Steps consumers can take to reduce exposure to lead in drinking water.
  - Contact information for the public water supply.
  - The maximum contaminant level goal and the action level for lead and copper with the definitions explaining each.

*Please **initial** each line verifying that each requirement was completed:*

_____A Consumer Notice was sent to persons served at each of the taps that were tested.

_____Delivery was by mail, hand delivery, or another method approved by EGLE.

_____Each Consumer Notice was delivered to the resident within 30 days of knowing the results.

_____Each Consumer Notice included the required content as stated above.

_____A sample copy of a Consumer Notice sent to a resident <u>is attached</u>.

Signature	Title	Date

Copy of Report letter MI0600 Benton Harbor Water
Sent in Groups Results to Resident that
5/15/20 19 homes 62 total Sampled
9/23/20

6/26/20 20 letters
6/29/20 16 letters
6/30/20 7 letters

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Benton Harbor Water Department Report of Lead and Copper Testing Results.

To: Name; [redacted] At: Address; [redacted] Your home's code; rpb1; Report Date: June 26, 2020

Thank you for participating in our 2nd group of 60 testing sites for Lead and Copper with Rev Pinkney Help. The samples you returned to us have been analyzed for Our new Corrosion Protection system by our laboratory operators. That was sample bottle #4. The first draw, bottle 1st and the 5th draw sample were sent to the EGLE (MDEQ) Laboratory in Lansing, MI. and the reports have returned back to us. The Action Level for Lead is 15 ppb ; the goal level for lead is 0; The Action Level for Copper is 1300 ppb

A 0 (zero) is considered a Non-Detect of either Lead or Copper.

1st Draw Lead Result ppb	1st Draw Copper Result ppb	5th Draw Lead Result ppb	5th Draw Copper Result ppb		Action Level for Lead is	15 ppb
1.1	9.4	0	2.5		Action Level for *Copper is*	1,300 ppb
In House	Testing	For Water	Quality	Parameters		
OPP Residual mg/L Target is *set at 1.5 mg/L*	Chloride results mg/L	Sulfate results mg/L	Chloride to Sulfate Ratio	A ratio < 1.0 is not corrosive and > 1.0 is *Corrosive.*		
2.76	29	40	0.73			

OPP is our corrosion treatment it stands for Orthopolyphosphate. It is specific for Lead material and has a recommended rate of 3.0 mg/L. Michigan Water Quality Experts consider OPP as an excellent Lead corrosion inhibitor.

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

To reduce exposure to lead and copper in drinking water:

- Run the water until it becomes cold, approximately 30 seconds to 2 minutes.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead and copper dissolves more easily in hot water.
- Do not boil water to remove lead and copper. Boiling water will not reduce lead and copper levels.
- Look for alternative sources or treatment of water. If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Faucets, fittings, and valves purchased before 2014 may contain up to 8 percent lead. Faucets, fittings, and valves purchased after 2014 may contain up to 0.25 percent lead, including those advertised or labeled as "lead-free". These items may be contributing to the lead found in your drinking water.

Additional Information is available on the City Web Site at *bhcity.us.* You can also visit the Berrien County Health Department's web site at *www.bchdmi.org › Lead-Drinking-Water*

Any questions you can call or email Mike O'Malley, Water Spt. at (269) 363-0575 and momalley@cityofbentonharbormi.gov Mike is hard to reach, his email is readily available.

Copy of Report letter MI0600 Benton Harbor Water Results to Resident that Sampled

Sent in Groups
5/15/20 19 homes 62 total
6/22/20 20 letters
6/29/20 16 letters
6/30/20 1 letter

9/23/20

City of Benton Harbor
200 East Wall Street
Benton Harbor, Michigan 49022

Benton Harbor Water Department Report of Lead and Copper Testing Results.

To: Name; [redacted] At: Address; [redacted] Your home's code; rpb1; Report Date: June 26, 2020

Thank you for participating in our 2nd group of 60 testing sites for Lead and Copper with Rev Pinkney Help. The samples you returned to us have been analyzed for Our new Corrosion Protection system by our laboratory operators. That was sample bottle #4. The first draw, bottle 1st and the 5th draw sample were sent to the EGLE (MDEQ) Laboratory in Lansing, MI. and the reports have returned back to us. The Action Level for Lead is 15 ppb ; the goal level for lead is 0; The Action Level for Copper is 1300 ppb

A 0 (zero) is considered a Non-Detect of either Lead or Copper.

1st Draw Lead Result ppb	1st Draw Copper Result ppb	5th Draw Lead Result ppb	5th Draw Copper Result ppb		Action Level for Lead is	15 ppb
1.1	9.4	0	2.5		Action Level for *Copper is*	1,300 ppb
In House	Testing	For Water	Quality	Parameters		
OPP Residual mg/L Target is *set at 1.5 mg/L*	Chloride results mg/L	Sulfate results mg/L	Chloride to Sulfate Ratio	A ratio < 1.0 is not corrosive and > 1.0 is *Corrosive.*		
2.76	29	40	0.73			

OPP is our corrosion treatment it stands for Orthopolyphosphate. It is specific for Lead material and has a recommended rate of 3.0 mg/L. Michigan Water Quality Experts consider OPP as an excellent Lead corrosion inhibitor.

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

To reduce exposure to lead and copper in drinking water:

- Run the water until it becomes cold, approximately 30 seconds to 2 minutes.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead and copper dissolves more easily in hot water.
- Do not boil water to remove lead and copper. Boiling water will not reduce lead and copper levels.
- Look for alternative sources or treatment of water. If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Faucets, fittings, and valves purchased before 2014 may contain up to 8 percent lead. Faucets, fittings, and valves purchased after 2014 may contain up to 0.25 percent lead, including those advertised or labeled as "lead-free". These items may be contributing to the lead found in your drinking water.

Additional Information is available on the City Web Site at *bhcity.us.* You can also visit the Berrien County Health Department's web site at *www.bchdmi.org › Lead-Drinking-Water*

Any questions you can call or email Mike O'Malley, Water Spt. at (269) 363-0575 and momalley@cityofbentonharbormi.gov Mike is hard to reach, his email is readily available.

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name: Benton Harbor Water

County: Berrien WSSN: 0600

Sample Location: Residential Homes 62 of Date Sampled: 4/28/20 - 6/9/20

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run your water before drinking.** The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
    - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
    - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for drinking, cooking, and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. As part of routine maintenance, the aerator should be removed at least every six months to rinse out any debris that may include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: BC(1)) # 410

From:	Sarkipato, Ernest (EGLE)
To:	Mike O"Malley; emitchell@bhcity.us; Darold Harlan; Darel Rice; Lesia Osler
Cc:	Bolt, Jennifer (EGLE); Bolf, Michael (EGLE); Onan, Brandon (EGLE)
Subject:	Lead and Copper monitoring
Date:	Thursday, October 8, 2020 3:03:07 PM
Attachments:	00600 COBH LCR compliance communication.pdf deq-dwmad-cws-tsu-LC_Sampling_Pool_Form_649625_7 (1).docx

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Attached is a compliance communication related to lead and copper monitoring remaining in 2020. We appreciate the city providing actual locations as required by the rule for this round of sampling, and documenting them with a sample plan (also attached).

Ernie Sarkipato, P.E.
Surface Water Treatment Specialist
Drinking Water and Environmental Health Division
MI Department of Environment, Great Lakes, and Energy
616-307-0261 mobile

www.michigan.gov/drinkingwater

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE

LIESL EICHLER CLARK
D RECTOR

October 8, 2020

VIA EMAIL AND U.S. MAIL

Mr. Ellis Mitchell
City of Benton Harbor
200 Wall Street
Benton Harbor, Michigan 49022

WSSN: **00600**
County: Berrien
Supply: Benton Harbor

Dear Mr. Mitchell:

SUBJECT: Lead and Copper Sampling Compliance Communication

The City of Benton Harbor (City) must collect lead and copper compliance samples at sixty (60) locations before December 31, 2020. However, in order for the City to successfully complete its compliance monitoring it must complete and submit a Lead and Copper Sampling Pool/Plan (LCSP). This requirement is fundamental for completing compliance monitoring. Rule 325.10710a, *Lead and copper in tap water; monitoring requirements,* states:

- The sampling pool shall, at a minimum, identify sufficient sites to ensure the water supply can collect the number of tap samples required for standard monitoring (Rule 710a(1)(a)(i));
- The sampling pool shall identify the location of the sites and describe how each site meets selection criteria (Rule 710a(1)(a)(ii));
- All sites from which samples are collected shall be selected from the pool of targeted sampling sites (Rule 710a(1)(a));
- A water supply shall collect each tap sample from the same sampling site from which it collected a previous sample (Rule 710a(2)(c).

All water systems were required to submit a LCSP by January 1, 2020. A compliance communication was sent on May 14, 2020, reminding the City of this requirement and requesting that the LCSP be submitted by June 13, 2020. To date, the City has not submitted a LCSP.

Benton Harbor has previously used site codes to identify its compliance sampling locations. These site codes do not provide the **location** of the sites, as required by Rule. Therefore, the City is directed to discontinue the use of site codes and submit a LCSP with information necessary to identify locations to Environment, Great Lakes and Energy (EGLE) by **November 15, 2020**.

In summary, a complete LCSP is key to identify and utilize sampling locations that must be used for compliance monitoring. Please submit a complete LCSP by **November 15, 2020** and collect the required lead and copper compliance samples according to the LCSP no later than **December 31, 2020** to avoid monitoring violations, public notice requirements, and possible administrative fines of at least $200.

If you have any questions, please contact me at sarkipatoe@Michigan.gov; EGLE, Drinking Water and Environmental Health Division, 350 Ottawa Avenue, N.W., Unit 10, Grand Rapids, Michigan 49503; or at 616-307-0261.

Sincerely,



Ernie Sarkipato,
Surface Water Treatment Specialist
Community Water Supply Section
Drinking Water and Environmental Health Division

cc: Mr. Mike O'Malley, City of Benton Harbor
Mr. Darold Harlan, Fleis & Vandenbrink
Mr. Brian Thurston, EGLE
Mr. Brandon Onan, EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION

SAMPLING PLAN – LEAD AND COPPER

Issued under authority of the Michigan Safe Drinking Water Act, 1976 PA 399, and Administrative Rules, as amended. Administrative Rule R 325.10710a requires a water supply to monitor for lead and copper according to a pool of targeted sampling sites in accordance with designated site selection criteria. Complete and submit this form to MDEQ.

Water Supply Information

Supply Name	WSSN
Address	County
City, State, Zip	Population Served

Contacts – Water Supply

Name and Title	E-mail	( ) Telephone
Name and Title	E-mail	( ) Telephone
Name and Title	E-mail	( ) Telephone

Contacts – DEQ and Other

Ms. Jeni Bolt Lead and Copper Rule Specialist (517) 331-5161; boltj@michigan.gov	Ms. Heather Jackson Lead and Copper Rule Analyst (517) 242-3997; jacksonh@michigan.gov	Mr. Brandon Onan, P.E., Corrosion Control Engineer (616) 307-6736; onanb@michigan.gov

MDEQ Lead and Copper Contacts

MDEQ Drinking Water District Analyst Name	E-mail	( ) Telephone
MDEQ Drinking Water District Engineer Name	E-mail	( ) Telephone
Pollution Emergency Alerting System Information (PEAS) Call PEAS number if unable to contact MDEQ staff.		(800) 292-4706 Telephone
Local Official	E-mail	( ) Telephone
Local Official	E-mail	( ) Telephone
Health Department	E-mail	( ) Telephone

Public Advisory, Education, and Notification

Means of Distributing Information to the Public

Newspaper Name and City	E-mail	( ) Telephone
Radio/Television Name and Address or City	E-mail	( ) Telephone

Date Cover Sheet Updated

MICHIGAN COMMUNITY WATER SUPPLY LEAD AND COPPER TAP SAMPLING POOL

>>> REVIEW INSTRUCTIONS ON PAGES 4 AND 5 BEFORE COMPLETING FORM BELOW <<<

WSSN: _____ Supply Name: _____ Page _____ of _____

Standard Number of Sites Required: _____ Reduced Number of Sites Required: _____

Site No.	Address	Tier Level	Category	Structure Type	Service Line Material	Interior Plumbing Material	Site Validation Method
00	*Ex: 0000 Any Street – Any Town, MI*	*1*	*A*	*SFR*	*L*	*C*	*Visual*
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Use next page to record additional sampling sites.

Plan Completed By

_____ _____
Name Signature

_____ _____
Title Date

For MDEQ Use Only
☐ Plan Accepted
☐ Revisions necessary as indicated
Staff: Date:

MICHIGAN COMMUNITY WATER SUPPLY LEAD AND COPPER TAP SAMPLING POOL (cont.)

WSSN: _____ Supply Name: _____ Page _____ of _____

Site No.	Address	Tier Level	Category	Structure Type	Service Line Material	Interior Plumbing Material	Site Validation Method
00	*Ex: 0000 Any Street – Any Town, MI*	*1*	*A*	*SFR*	*L*	*C*	*Visual*

Use additional pages for water supplies requiring more sampling sites.

Michigan Lead and Copper Rule
Lead and Copper Tap Sample Site Selection Criteria

Community water supplies must identify a pool of lead and copper sampling sites containing **AT LEAST** the number of sites necessary to conduct **STANDARD** monitoring (see instructions for number of required sites). It is highly recommended that the sampling pool contain more sites than required in case routine sites are unavailable at time of sampling. The sampling pool must target high risk sites using the criteria below.

- **Samples must be collected from Tier 1 sites, unless …**
- insufficient Tier 1 sampling sites are available, then **Tier 2** sites must be used, unless …
- insufficient Tier 1 and Tier 2 sampling sites are available, then **Tier 3** sites must be used.
- If no Tier 1, 2, or 3 sites are available, sampling sites must be representative of plumbing materials typically found throughout the water system.

TIER 1 SITES - Single family residences with either: o Lead service lines (LSL)***** o Interior lead plumbing Multiple family residences (MFR) with LSLs or interior lead plumbing may be used as Tier 1 sites when MFR comprise at least 20 percent of the total service connections.
TIER 2 SITES – Other buildings or multiple family residences with either: o Lead service lines***** o Interior lead plumbing
TIER 3 SITES - Single family residences with: o Copper plumbing with lead solder installed before July 1988
OTHER SITES o Sites representative of plumbing materials commonly found throughout the water supply.
*** Priority should be placed on sites with full LSLs, followed by partial LSLs, followed by lead goosenecks or pigtails.**

Also Note:

- Each round of sampling should be conducted at the **SAME** sampling sites unless …
  - a site no longer meets tiering criteria (for example, a site is no longer Tier 1 after having the lead service line replaced); or
  - a site is unavailable (for example, a site has no water service, resident refuses to participate, etc.)
- **DO NOT** sample from outside hose spigots or utility sinks.
  - For residential sites, samples **MUST BE** collected from kitchen or bathroom taps typically used for consumption. For non-residential sites, samples **MUST BE** collected from taps typically used for consumption.
- Samples **MAY NOT** be taken from taps that have point of use or point of entry treatment devices designed to remove inorganic contaminants, such as an iron removal filter, reverse osmosis system, or water softener.

Lead and Copper Sampling Pool Form Instructions

Water Supply Name, WSSN, and County: Enter your water supply information.

Standard Number of Sites Required: Enter the standard number of sites you are required to sample based on your population.

Reduced Number of Sites Required: Enter the number of sites you would be required to sample if the MDEQ reduces your monitoring.

People Served	Standard Sites	Reduced Sites
More than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Fewer than 101	5	5

Address: Enter the street number or other unique identifier (such as lot or unit number) of the sampling site and include the city if the water utility services multiple cities.

Tier, Category, and Structure Type: Enter the appropriate codes from the table below in the Tier, Category, and Structure Type columns to identify the selection criteria for each site.

Tier	Category	Structure Type	Description
Tier 1	A	SFR	Single Family Residence (SFR) with lead service line
	B	SFR	SFR with interior lead plumbing
	C	MFR	Multi-family Residence (MFR) if MFRs comprise at least 20% of total service connections
Tier 2	D	MFR or BLDG	MFR or other building (BLDG) with lead service line
	E	MFR or BLDG	MFR or other BLDG with interior lead plumbing
Tier 3	F	SFR	SFR with copper plumbing with lead solder installed before 1988
Other	OT	SFR, MFR, Or BLDG	If no Tier 1, 2, 3 sites, use sites representative of plumbing commonly found throughout the supply

Service Line and Interior Plumbing Material: Enter the appropriate codes from the table below in the Service Line Material and Interior Plumbing Material columns.

Material		
L	=	Lead
CLS	=	Copper with lead solder installed before July 1988
C	=	Copper installed after July 1988
G	=	Galvanized
P	=	Plastic

Site Validation Method: Enter method used to verify site information (permit records, visual inspection, etc.).

NOTE: It is **highly recommended** that the plan contains more sites than are required for standard monitoring. For example, if the standard number of required sampling sites is 10, list 5 or more additional, appropriately tiered sites that may be used as an alternate if an original site is unavailable.

From:	Mike O"Malley
To:	Sarkipato, Ernest (EGLE); Onan, Brandon (EGLE); Worthington, David (EGLE)
Cc:	James McPhail; Mike Kalin (mike@kalininc.com); Bob Marvin (bmarvin@kalininc.com); Eric Kamps; Chris J Cook; Tim Drews; Dan Dombos; Mike O"Malley; Demetris Meeks
Subject:	Re: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13
Date:	Monday, October 26, 2020 2:53:19 PM

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Please note City email changes; momalley@*bhcity.us*

Gentlemen,

I left EGLE on this email and added Brandon Onan. I do not know David Worthington, however.
In hope that they will support my reference to Lead Service Line Replacement.

Now, 1st, I know there are some lead service lines, I have seen them.
However, 1 important note: a lead service line that is not in use, need not be anything more than removed, or left underground.

I spoke of this before: This 1st segment of work is mostly commercial work.
In so much some of the smaller commercial properties may have a lead service.

There was chatter about replacing all of the galvanized or iron pipes to buildings. That is fine, but only to the entrance of the building or, like was done on Main Street, actually some piping was obliged to go in side.

Note the 3rd paragraph:

When conducting service line replacements, ***no portion of the service line consisting of lead, or galvanized piping currently or previously connected to lead, may remain in place****, whether publicly or privately owned. Restoring water service to the service line prior to the removal of all lead, or galvanized piping currently or previously connected to lead, constitutes a partial lead service line replacement, and is banned. The expense of the replacement of privately-owned portions of customer service lines shall be covered by the water supply owner, per R 325.10604f(5)(c) and R 325.10604f(6)(e) of Act 399.*

So in this commercial section, much of it will not be lead, and if not, it does not need replacement under the Rule above.
And would not qualify for a Partial Lead Service line as EGLE has pointed out.
It may be old and worn Iron, steel or galvanized, and choosing to replace that is another consideration.
And, interestingly enough, most of the buildings, the outer wall is actually located on the ROW.
Hence if there is no lead, the galvanized piping remains as a water service. And connected to the new main as is appropriate.

If that piping at the wall is in rough shape, the City (through Abonmarche) may choose to go inside, to improve the connection. Again as we did on Main Street in 2009.
Keep in mind, this is exactly what was done at 132 Pipestone, the one you have allowed access to their lower level restaurant (Thank you)
The water service was lead, but the owner provided new copper outside and inside.
If I have misspoken, Ernie or Brandon, please advise.

Now as I said, if there is a lead service line, like the old barber shop (161 Pipestone), then go ahead and provide the service stated in the above rule.
Same as you will likely find others once you get past the Fidelity Building.

Thanks,

Mike O'Malley
Benton Harbor Water Superintendent

On Mon, Oct 26, 2020 at 1:39 PM Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov> wrote:

> Thank you for including me on the construction updates for these projects in Benton Harbor. The importance of property sign-offs cannot be overstated, especially in a community with an Action Level Exceedance. Act 399 does not allow partial service line replacements if there is lead present, due to increased exposure. Attached is a letter to this effect which should have gone out with the permit.
>
> If you have questions about this process please contact me,
>
> Ernie Sarkipato, P.E.
>
> Surface Water Treatment Specialist
>
> Drinking Water and Environmental Health Division
>
> MI Department of Environment, Great Lakes, and Energy
>
> 616-307-0261 mobile
>
> ---
>
> **From:** James McPhail <jmcphail@abonmarche.com>

Sent: Thursday, October 22, 2020 12:55 PM
To: Mike Kalin (mike@kalininc.com) <mike@kalininc.com>
Cc: Mike O'Malley - City of Benton Harbor (momalley@bhcity.us) <momalley@bhcity.us>; Demetris Meeks (dmeeks@cityofbentonharbormi.gov) <dmeeks@cityofbentonharbormi.gov>; Bob Marvin (bmarvin@kalininc.com) <bmarvin@kalininc.com>; Mike Kalin (mike@kalininc.com) <mike@kalininc.com>; Eric Kamps <ekamps@abonmarche.com>; Worthington, David (EGLE) <WORTHINGTOND@michigan.gov>; Chris J Cook <cjcook@abonmarche.com>; Tim Drews <tdrews@abonmarche.com>; Sarkipato, Ernest (EGLE) <SARKIPATOE@michigan.gov>; Ehinger, Dale (EGLE) <EHINGERD@michigan.gov>; Dan Dombos <ddombos@abonmarche.com>
Subject: DWSRF 7464-01/ CWSRF 5682-01: Pipestone Street Corridor - Progress Meeting 2020-10-13

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

All,

Please find attached a copy of the progress meeting minutes for this weeks meeting.

Regards,

JD McPhail

Construction Manager

Abonmarche

C 574.850.0195

O 574.232.8700

www.abonmarche.com



“Rest at the end, not in the middle”

CONFIDENTIALITY NOTICE: This e-mail and any attachments are for the exclusive and confidential use of the intended recipient. If you are not the intended recipient, please do not read, distribute or take action in reliance upon this message. If you have received this e-mail in error, please notify us immediately and promptly delete this message and its attachments from your computer system. We do not waive any work product privilege by the transmission of this message.

From:	SARKIPATOE@michigan.gov
To:	Sarkipato, Ernest (EGLE)
Bcc:	Josh Crots; deerfieldclerk@intouchmi.com; JIM WONACOTT; WILLIAM SADLER; Mike Osborn; CLYDE DUGAN; Jason DeFeyter; WILLIAM PILMORE; MARK HEYDLAUFF; ARTHUR KRUEGER; Jamie Hockemeyer; RICK SOLLE; JOHN ALLEN; tbell@cityofmuskegonheights.org; Leo Evans; Eric Law; Wayne Jernberg; Bob Veneklasen; JAIME FLEMING; Joel Davenport; BILL HUNTER; Ellis Mitchell; MICHAEL O"MALLEY; Lesia Osler; JOHN HODGSON; Tim Zebell; KYLE TRYAN; MIKE BALDWIN; Jeff Burkhard; Toby Riley; JUAN GANUM; KEN ANDERSON
Subject:	EGLE funding webinar
Date:	Monday, November 15, 2021 10:26:15 AM
Attachments:	egle-tou-FD-MiCleanWaterPlan-Factsheet.pdf ATT00001.htm 10-14-20 MI Clean Water webinar slides.pdf ATT00002.htm

---

I wanted to make sure at least one representative from the District 93 water supplies had access to this information about **available funding.** Please see below and attached info**.**

-Ernie

> **From:** "Ostrowski, James (EGLE)" <OSTROWSKIJ2@michigan.gov>
> **Date:** October 14, 2020 at 3:13:37 PM EDT
> **To:** "Ostrowski, James (EGLE)" <OSTROWSKIJ2@michigan.gov>
> **Subject: 10/14/20 EGLE MI Clean Water webinar - Follow up Info**
>
> Thank you for attending this morning's **MI Clean Water - Water Infrastructure Funding Webinar**. We hope you found the information shared was helpful.
>
> Your feedback is valuable to us. Please take a moment to complete a short, 4-question evaluation for the webinar at https://www.surveymonkey.com/r/infrastructurefunding101420. Note – this email is only going to those who logged into the webinar, if others viewed the webinar with you, please forward this e-mail to them so they can complete the webinar evaluation as well.
>
> Unfortunately we were not able to get to all of your questions. Please know that all questions were shared with our team here at EGLE and they will be used to help us prepare for upcoming webinars on the funding opportunities and develop FAQ documents.
>
> Below are some resources that you may find helpful.
>
> - Grant Info as available will be posted at www.michigan.gov/eglegrantsandloans
> - Questions about MI Clean Water Investment? Send email to EGLE-DWGrants@michigan.gov

- EGLE Office of Clean Water Public Advocate https://www.michigan.gov/cleanwater or email EGLE-CleanWater@Michigan.gov

- **Join EGLE's Grant and Loan Opportunities notifications list**

I've also attached the two handouts that were provided during the webinar in case you were unable to download them.

A recording of the webinar will be posted soon. We'll send an email to everyone who registered with the link as soon as it's available.

Thank you.

- Jim

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

MI CLEAN WATER PLAN

FACT SHEET

COVID-19 has magnified the need to ensure all Michiganders have access to clean, safe, affordable water, which starts with healthy surface and groundwater and clean discharges of wastewater into our rivers and lakes. While helping meet that basic need, major water infrastructure investments can support communities and workers across our state in recovering from the economic crisis and building resilient futures.

The **MI Clean Water** plan will align $500 million in federal dollars, state bonding authority, and existing/prospective state revenues into a comprehensive water infrastructure package that will support communities in every corner of Michigan in creating jobs, protecting public health, and improving environmental quality. The plan addresses urgent infrastructure issues including undersized sewers, failing septic systems, unaffordable water rates, and protection from lead, PFAS and other contaminants that can affect drinking water. With the U.S. Environmental Protection Agency estimating that every $1 million invested in water infrastructure creates 15 jobs, this package will provide a major boost to Michigan's economy as it recovers from the global pandemic.

As described below, the MI Clean Water plan consists of a $207 million in investments directly related to clean, safe drinking water and $293 in investments related to improving the wastewater management. These new investments are in addition to the traditional low interest loans that the Michigan Department of Environment, Great Lakes, and Energy (EGLE) provides to Michigan's communities annually through the State Revolving Loan Fund program. Last year, EGLE authorized $304 million in wastewater loans and $258 million in drinking water loans.

DRINKING WATER QUALITY - $207 MILLION

- **Disadvantaged Community Lead Service Line Replacement Program - $102 million**
  The federal Water Infrastructure Transfer Act of 2019 allows states to transfer funds from the Clean Water State Revolving Fund (CWSRF) to the Drinking Water State Revolving Fund (DWSRF) for lead service line replacements. The MI Clean Water plan proposes using Michigan's allowed allocation of $102 million to provide disadvantaged community 100% loan forgiveness for lead service line replacements. Grants will be capped based on population size.

- **Drinking Water Asset Management Grants - $37.5 million**
  The State Legislature established a $37.5 million grant program for asset management planning in 2019. While other projects will be eligible, these grants will be prioritized to help communities implement Michigan's strengthened Lead and Copper Rule.

- **Drinking Water Infrastructure Grants - $35 million**
  Last year, state lawmakers appropriated $35 million in DWSRF loan forgiveness for projects to facilitate overall drinking water system upgrades. Combining these funds with the two above programs, communities can submit comprehensive proposals involving water main work, service line replacements, plant enhancements, and other upgrades. Grants will be capped at the lesser of 30% of project costs or $2 million.

- **Consolidation and Contamination Risk Reduction Grants - $25 million**
  The State Legislature also created a $25 million grant program in 2019 for projects related to PFAS or other drinking water contaminants. These funds will support communities in addressing PFAS and other emerging contaminants by consolidating local water systems and/or connecting residents on private wells to municipal systems.

- **Affordability and Planning Grants - $7.5 million**
  The State Legislature appropriated $7.5 million in 2019 for affordability and planning grants. These funds will support communities in developing sustainable water rate plans and implementing affordability pilots. Grants will be capped at $500,000 for water supplies applying individually. Multiple supplies partnering to develop a regional plan can receive up to $2 million.

Wastewater Protection - $293 million

The MI Clean Water plan proposes leveraging $290 million of authorization from the Great Lakes Water Quality Bond of 2002. This will occur upon enactment of legislation and an appropriation by the legislature to provide grants to Michigan communities for sewage treatment, stormwater, and non-point-source pollution projects. These dollars will be supplemented by previous bond authorization to round out the $293 million wastewater portion of the MI Clean Water plan.

- **Clean Water Infrastructure Grants - $235 million**
  These funds will be granted to communities for design and construction projects to address sanitary and combined sewer overflows, expand green infrastructure, and correct illicit connections to municipal MS4 drainage systems.

- **Substantial Public Health Risk Reduction Grants - $20 million**
  Expanding on an existing $10 million pilot, this funding will help communities address significant public health and environmental risks related to raw sewage discharges. For example, a project to repair or replace a failing wastewater lagoon treatment system would be eligible.

- **Failing Septic System Elimination Program - $35 million**
  The MI Clean Water plan proposes establishing a Community Development Financial Institution (CDFI) to administer a revolving low-interest loan program to support homeowners and communities in replacing failing septic systems or eliminating septic systems. Septic systems are used by about 30% of Michigan households to manage residential wastewater. Failing systems can lead to public health and environmental risks, including impacts to Michigan's lakes and rivers.

- **Stormwater, Asset Management, and Wastewater (SAW) Grants - $3 million**
  The SAW program was established in 2013 to help municipalities develop, update, and improve asset management plans for their wastewater and stormwater systems. The plans provided communities with an increased understanding of current and future needs and informed rate decisions. An additional $3 million is being made available for the expansion of the program.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Michigan's Environmental Justice Policy promotes the fair, non-discriminatory treatment and meaningful involvement of Michigan's residents regarding the development, implementation, and enforcement of environmental laws, regulations, and policies by this state. Fair, non-discriminatory treatment intends that no group of people, including racial, ethnic, or low-income populations, will bear a disproportionately greater burden resulting from environmental laws, regulations, policies, and decision-making. Meaningful involvement of residents ensures an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.

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MICHIGAN DEPARTMENT OF
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MI Clean Water

$500 Million Investment to Rebuild Michigan's Water Infrastructure

MI Clean Water - overview

- Governor's program invests directly into protecting public health, environment and the economy.
- $500 million total commitment towards Michigan's water infrastructure needs
  - $207 million for Drinking Water Investments
  - $293 million for Clean Water Investments
- Grant programs used in conjunction with State Revolving Fund (SRF) financing can help maximize impact in communities

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State Revolving Funds

- SRF - provides low-interest loan financing to qualified municipalities to assist with the construction or improvement of public water systems or water pollution control facilities.
  - Drinking Water State Revolving Fund (DWSRF) FY2021
    - Fundable range $275 million
    - 28 projects for $247.3 million
  - Clean Water State Revolving Fund (CWSRF) FY2021
    - Fundable range $500 million
    - 26 projects using $285.8 million

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Drinking Water Investment Objectives

- Protect citizens, and especially children, by removing lead service lines in communities that can least afford to do this critical work
- Help communities assess their systems and develop plans that help them efficiently ensure they are always delivering high quality drinking water
- Invest in communities that are struggling with PFAS contamination by funding improvements at treatment plants and running lines to neighborhoods with contaminated wells.

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Drinking Water Investment

- $207 million for drinking water quality:
  - $102 million - Disadvantaged Community Lead Service Line Replacement Program
  - $37.5 million – Drinking Water Asset Management Grants
  - $25 million - Consolidation and Contamination Risk Reduction Grants
  - $35 million - Drinking Water Infrastructure Grants
  - $7.5 million - Affordability and Planning Grants

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Drinking Water Investment (cont)

- $102 million - Disadvantaged Community Lead Service Line Replacement (DCLSLR) Program
  - Funding focuses on replacing known lead service lines in disadvantaged communities identified in DWSRF project plans.
  - Commonly referred to as “Booker” funding
  - Funding must follow federal program requirements of the DWSRF
  - Apply via the DWSRF process
    - www.michigan.gov/DWSRF
  - Awards identified as part of the DWSRF Intended Use Plan (IUP)

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Drinking Water Investment (cont)

- $37.5 million – Drinking Water Asset Management (DWAM) Grants
  - Program focuses on helping communities inventory their infrastructure and efficiently plan for the ongoing management of their critical assets.
    - $1 million of funding legislatively directed towards education efforts through water supply advisory councils
  - Program details and application posted on EGLE internet by 10/15/2020 - www.michigan.gov/eglegrantsandloans
  - DWAM question and answer webinar on 11/18/2020
  - Application deadline 1/1/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 3/15/2021

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Drinking Water Investment (cont)

- $25 million - Consolidation and Contamination Risk Reduction (C2R2) Grants
  - Program will address PFAS or other contaminants affecting drinking water systems and help fund system consolidation efforts.
  - Program details and application posted on EGLE internet by 11/15/2020 - http://www.michigan.gov/eglegrantsandloans
  - C2R2 Question and Answer webinar on 12/14/2020
  - Application deadline 1/31/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 4/15/2021

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Drinking Water Investment (cont)

- $35 million - Drinking Water Infrastructure (DWI) Grants
  - Program used in conjunction with DWSRF to enable comprehensive projects for drinking water systems allowing applicants to receive 30% of total project cost or $2M, whichever is less
  - Apply via the DWSRF process
    - www.michigan.gov/DWSRF
  - Awards issued as part of the DWSRF review process

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Drinking Water Investment (cont)

- $7.5 million - Affordability and Planning (AP) Grants
  - Program will allow communities to develop sustainable water rate plans and implement pilot affordability plans within their community.
  - Program details and application posted on EGLE internet on 12/1/2020
  - Application deadline 1/31/2021 with rolling quarterly application periods
  - Anticipated grant award date no later than 4/15/2021

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Clean Water Investment Objectives

- Reduce the number of illicit and inadequately treated discharges that create health risk our neighborhoods, lakes and streams
- Incentivize proper stormwater management to avid rainwater from impacting our ability to properly collect and treat the state's sewage.
- Assist small, rural communities struggling to fund and operate their wastewater systems
- Encourage replacement or maintenance of failing septic systems impacting Michigan's water resources
- Build on the successes of the SAW program by continuing to invest in wastewater asset planning

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Clean Water Investment

- Items needed before programs available
  - Legislature's assistance
    - Amend legislation
    - Appropriation authority
  - Bond issuance
  - Similar question and answer webinars will be held when preceding bullet points are completed.

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Clean Water Investment (cont)

- $293 million for wastewater protection, including:
  - $235 million – Clean Water Infrastructure Grants
  - $20 million – Substantial Public Health Risk Reduction Grants
  - $35 million - Failing Septic System Elimination Program
  - $3 million - Stormwater, Asset Management, and Wastewater Grants

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Michigan Department of

Environment, Great Lakes, and Energy

800-662-9278

Michigan.gov/EGLE



MI Clean Water Investment ?s: EGLE-DWGrants@michigan.gov

Grant Info as available: www.michigan.gov/eglegrantsandloans

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