

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, October 15, 2014 11:56 AM
To: Busch, Stephen (DEQ)
Subject: Fwd: Governor questions

Not sure if you are aware of this

Sent from my iPhone

Begin forwarded message:

From: Daugherty Johnson <djohnson@cityofflint.com>
Date: October 15, 2014, 11:12:00 AM EDT
To: "Mike Prysby (DEQ)" <PRYSBYM@inichigan.gov>
Subject: Governor questions

Hello Mike. We have a conference call with the Governor's office at noon to respond to questions from Council persons about the safety of Flint s water. Is your office on the call? The TTHM issue may come up. My question is how many other communities are dealing with TTHM corrective actions in Michigan? Estimate would be fine.

Thanks
Duffy

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, March 11, 2015 7:35 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: Fwd: Information Request and Documentation
Attachments: image001.gif; ATT00001.htm; FOIA Request Flint Water.doc; ATT00002.htm

I am out today and will return tomorrow. Having trouble getting the attachment to open on my phone...but since it appears to be a FOIA regarding Legionella, I felt it is prudent to get this message to you. I will be available tomorrow to discuss or compile any info that we have.

Sent from my iPhone

Begin forwarded message:

From: "Henry, James" <jhenry@gchd.us>
Date: March 10, 2015 at 6:40:17 PM EDT
To: Howard Croft <hcroft@cityofflint.com>, "Mike Prysby (DEQ)" <prysbym@michigan.gov>, Elizabeth Murphy <emurphy@cityofflint.com>, "Natasha Henderson" <nhenderson@cityofflint.com>, Jerry Ambrose <gambrose49@gmail.com>, Dayne Walling <dwalling@cityofflint.com>
Cc: "Valacak, Mark" <MVALACAK@gchd.us>, "Cupal, Suzanne" <scupal@gchd.us>, "Hasan, Shurooq" <shasan@gchd.us>, "Childs, Bonnie" <BCHILDS@gchd.us>, "Hallwood, Dawn" <dhallwood@gchd.us>, "Johnson, M.D., Gary" <GJOHNSON@gchd.us>
Subject: Information Request and Documentation

Hello everyone,

The Genesee County Health Department has made several written and verbal requests for specific information since October, 2014, including a Freedom of Information Act Request on January 27, 2015. The information still has not been received and the city's lack of cooperation continues to prevent my office from performing our responsibilities.

The Genesee County Health Department has the responsibility to conduct illness investigations and consider all potential sources, this is not optional. In 2014, Genesee County experienced a significant increase of confirmed Legionella illnesses relative to previous years. Legionella can be a deadly, waterborne disease that typically affects the respiratory system.

The increase of the illnesses closely corresponds with the timeframe of the switch to Flint River water. The majority of the cases reside or have an association with the city. Also, McLaren Hospital identified and mitigated Legionella in their water system. This is rather glaring information and it needs to be looked into now, prior to the warmer summer months when Legionella is at its peak and we are potentially faced with a crisis.

This situation has been explicitly explained to MDEQ and many of the city's officials. I want to make sure, in writing that there are no misunderstandings regarding this significant and urgent public health issue. The Trihalomethane issues "pale in comparison" to the potential public health risks of Legionella.

I am submitting the attached FOIA request again and requesting that the legal obligations of the request are met. If the information is not available, please let me know. In the past, I have requested to meet with the water plant staff and MDEQ regarding Legionella concerns. I did not receive a response from the water plant staff and MDEQ declined. I think it is in the best interest for all stakeholders that we meet and discuss the issues.

Respectfully,

Jim

Jim Henry

Jim Henry RS, MBA

Environmental Health Supervisor

Genesee County Health Department www.gchd.us

630 S. Saginaw St., Suite 4

Flint, MI 48502-1540

Phone (810) 257-3618 Fax (810) 257-3125

E-mail jhenry@gchd.us



Genesee County Health Department

Mark Valacak, M.P.H., Health Officer
Gary K. Johnson, M.D., M.P.H., Medical Director

January 27, 2015

FOIA Coordinator, City of Flint
1101 S. Saginaw Street, 3rd floor
Flint, MI 48502

RE: Flint Water Plant Information Request

Dear FOIA Coordinator,

Under provisions of the Michigan Freedom of Information Act (MCLA 15.231 et seq; MSA 4.1801 (1) et seq) please provide copies of the following:

Provide specific water testing locations and laboratory results within the City of Flint public water system for Coliform, E-coli, Heterotrophic Bacteria and Trihalomethanes from January 1, 2010 to January 27, 2015. Provide any additional water testing that has been conducted for identifying potential public health risks. Include any available mapping of the water testing areas.

Provide a map delineating the boundaries of the City of Flint water distribution system. Include any changes to the boundaries, along with corresponding dates from January 1, 2014 to January 27, 2015.

Provide a map or list of locations, detailing dead ends, pooling, low pressure and any additional areas of concern within the City of Flint water distribution system. Include any modifications to the water distribution system addressing concerns, along with corresponding dates from January 1, 2014 to January 27, 2015.

If you determine that any of the requested information is exempt from disclosure, please detail what is being withheld and cite the exemption under FOIA. I anticipate the request being filled within five working days of receipt of this letter, as provided under FOIA. Please contact me at (810) 257-3618 if there are fees associated to comply with this request.

Sincerely,

Jim Henry

Jim Henry
Environmental Health Supervisor
Genesee County Health Department
630 S. Saginaw Street
Flint, MI 48502

Better Life Through Better Health

Floyd J. McCree Courts & Human Services Building ♦ 630 S. Saginaw Street, Ste. 4 ♦ Flint, Michigan 48502-1540

Burton Branch ♦ G-3373 S. Saginaw Street ♦ Burton, Michigan 48529

Main Phone 810-257-3612 ♦ Visit us at: www.gehd.us

Rennaker, Joanne (DEQ)

From: Wyant, Dan (DEQ)
Sent: Wednesday, September 30, 2015 7:44 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Pallone, Maggie (DEQ)
Subject: Fwd: MDEQ - EPA call tomorrow on methodological issues

Sent from my iPhone

Begin forwarded message:

From: "Hedman, Susan" <hedman.susan@epa.gov>
Date: September 30, 2015 at 7:23:33 PM EDT
To: "wyantd@michigan.gov" <wyantd@michigan.gov>
Cc: "Burke, Thomas" <Burke.Thomas@epa.gov>
Subject: MDEQ - EPA call tomorrow on methodological issues

Hi Dan –

I am writing to follow up on our conversation regarding methodological issues that MDEQ and MDHSS may face in connection with some of the sampling activities planned in Flint – and would like to schedule a call tomorrow morning that includes US EPA experts who would be able to address these topics in detail. I am cc-ing Tom Burke in the hope that he will let us know when he can get the right people together for this discussion.

Thanks,

Susan

Susan Hedman
Region 5 Administrator/Great Lakes National Program Manager
U.S. Environmental Protection Agency
77 West Jackson Blvd - 19th Floor
Chicago, Illinois 60604-3590

Rennaker, Joanne (DEQ)

From: Pallone, Maggie (DEQ)
Sent: Tuesday, September 29, 2015 1:58 PM
To: Busch, Stephen (DEQ)
Subject: Fwd: MDEQ Water Testing for Flint Community Schools
Attachments: Copy of 2015-2016 FCS Telephone Address Lists.pdf; ATT00001.htm

FYI

Begin forwarded message:

From: "Sitko, Anthony M" <tsitko@flintschools.org>
Date: September 29, 2015 at 1:23:19 PM EDT
To: "pallonem@michigan.gov" <pallonem@michigan.gov>
Cc: "Tawwab, Bilal" <btawwab@flintschools.org>, FARRIS SHARRECE <sfarris@flintschools.org>, Lisa Ermak <lermak@byrumfisk.com>
Subject: MDEQ Water Testing for Flint Community Schools

Greetings, Maggie,

Thank you for taking the time to talk with me this afternoon regarding water testing for our schools. Please find the attached list of sites within the Flint Community Schools at which Superintendent Tawwab would like water tested.

Per our discussion on the phone this afternoon, the list of school buildings is attached and I will be available between 3:00PM and 5:00PM for a conference call with yourself and the identified other parties.

I await your reply on the time for the conference call.

Regards,
Tony

Rennaker, Joanne (DEQ)

From: Pallone, Maggie (DEQ)
Sent: Friday, October 02, 2015 6:13 AM
To: Wurfel, Brad (DEQ); Wyant, Dan (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Krisztian, George (DEQ); Sygo, Jim (DEQ)
Subject: Fwd: Media conference call re: Flint water action plan
Attachments: NR 151002 - Flint water action plan.docx; ATT00001.htm; Infographic - Flint Water Action Plan 10-2-15.pdf; ATT00002.htm; Infographic - Flint water tips 10-2-15.pdf; ATT00003.htm; Flint water - talking points (draft 151001).docx; ATT00004.htm

In light of the possible topics Director will need a clear understanding of what the Genesee county health emergency declaration means? Is there ANY role the DEQ may have?

Thanks
 Maggie

Begin forwarded message:

From: "Wurfel, Sara (GOV)" <Wurfels@michigan.gov>
Date: October 2, 2015 at 12:04:34 AM EDT
To: "Wyant, Dan (DEQ)" <WyantD@michigan.gov>, "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>, "Tommasulo, Karen (DEQ)" <TommasuloK@michigan.gov>, "Pallone, Maggie (DEQ)" <PalloneM@michigan.gov>, "Lyon, Nick (DHHS)" <LyonN2@michigan.gov>, "Lasher, GERALYN (DHHS)" <lasergh@michigan.gov>, "Minicuci, Angela (DHHS)" <MinicuciA@michigan.gov>, "Eisner, Jennifer (DHHS)" <EisnerJ@michigan.gov>, "Hertel, Elizabeth (DHHS)" <HertelE@michigan.gov>
Cc: "Murray, David (GOV)" <MurrayD1@michigan.gov>, "Kennedy, Jordan (GOV)" <KennedyJ4@michigan.gov>, "Brown, Jessica (GOV)" <BrownJ53@michigan.gov>, "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov>
Subject: Media conference call re: Flint water action plan

Hi all –

Per conversations today, here are the details for Friday's embargoed media conference call.

Given some of the changing information, we added in a quick pre-brief with the Governor from 11 to 11:10 a.m. to give us a chance to go over any last details and finalize flow. This will be followed by the actual media conf. call from 11:15 to 11:40 a.m. Know that folks will be needing to head to Flint immediately afterward.

Sounds like we'll have Dan, Nick and Dr. Wells in person. That's great and will work best when most everyone is in the same room. The location is Romney Building, 1st floor communications conference room. The governor will be joining us from phone.

We'll need to be fairly quick in overview and framing comments so we can get to as many Qs as possible.

Please let me know if anyone has any Qs, concerns or needs anything else at all. Or if you'd like a listen only line for anyone back in the depts. to catch the call.

Otherwise, see you in the Romney by 11 a.m. tomorrow.

Thanks so much!
SW

p.s. Also attached key documents as stand right now – release, 2 infographics and the high level points.

Agenda:

11:15-11:16 AM SW intro; sets parameters; introduces other participants; turns over to Governor for opening remarks
 11:16-11:20 AM Governor gives opening remarks; highlights reason for state action; introduces Director Wyant
 11:20-11:24 AM Director Wyant remarks; highlights key steps in the action plan; introduces Director Lyon
 11:24-11:27 AM Director Lyon remarks; highlights key health components of the plan and mentions Dr. Wells; turns back to Governor
 11:27-11:37 AM Governor opens it up for Q&A
 11:37-11:39 AM Governor closing remarks
 11:39-11:40 AM SW wraps up call; reminds reporters of embargo, 1:30 p.m. press conference, and how to get a hold of everyone

Possible Topics:

Flint water action plan
 Lead in Flint water
 Handling of Flint water issue
 Genesee Co. health emergency action
 ACLU action
 Hurley data
 Reconnecting Flint to Detroit water

Media invited:

Flint area media (print, TV and radio) – Flint Journal/Ron Fonger; WJRT TV 12, WNEM TV 5, WEYI TV 25, WFNT Radio
 Associated Press – Ed White
 Detroit News – Jim Lynch
 Detroit Free Press – Nancy Kaffer, Kristi Tanner & Kathy Gray
 Michigan Radio – Steve Carmody



STATE OF MICHIGAN
EXECUTIVE OFFICE
LANSING

RICK SNYDER
GOVERNOR

BRIAN CALLEY
LT. GOVERNOR

CONTACTS:

Sara Wurfel or Dave Murray
Governor's Office: 517-335-6397

Brad Wurfel, 517-284-6713
or Karen Tommasulo, 517-284-6714
Department of Environmental Quality

Jennifer Eisner, 517-230-9804
Department of Health and Human Services

FOR IMMEDIATE RELEASE

Friday, Oct. 2, 2015

Gov. Rick Snyder: Comprehensive action plan will help Flint residents address water concerns

Collaborative effort with state, federal and city leaders focuses on testing, assistance

FLINT, Mich. – Flint residents need to have access to safe, clean, water now and long into the future, Gov. Rick Snyder said, announcing a comprehensive action plan created with state, federal and city leaders to address concerns about drinking water.

The water leaving Flint's drinking water system is safe to drink, but some families with lead plumbing in their homes or service connections could experience higher levels of lead in the water that comes out of their faucets.

The action plan focuses on increasing water testing, offering additional precautions for families with lead plumbing in their homes, and providing long-term solutions to address the city's water infrastructure challenges. The plan was created at Snyder's direction by the Michigan Departments of Environmental Quality (DEQ) and Health and Human Services (DHHS), the U.S. Environmental Protection Agency, and the city of Flint.

"We are focused on helping ensure safe, clean, accessible drinking water and addressing and mitigating concerns and protecting public health," Snyder said. "Today's action plan builds upon ongoing work with local, state and federal agencies and our partnership with city and community leaders. Together, we are working to ensure that all Flint residents have accurate information and know that help is available to address potential problems."

The city and the state also are working together to gather more data to ensure the water that leaves the treatment plant as well as the water that arrives in Flint homes is safe for all residents. The plan includes:

- Testing in Flint public schools immediately to ensure that drinking water is safe, with testing also available at no cost to any other school in Flint.

- Offering free water testing to Flint residents to assure their drinking water is safe.
- Providing free water filters to residents with concerns or who are included in state assistance programs.
- Expanding health exposure testing of individual homes.
- Accelerating corrosion controls in the Flint drinking water system.
- Accelerating water system improvements to address replacing lead service lines.
- Expediting the completion of the Karegnondi Water Authority pipeline.
- Expanding a Safe Drinking Water Technical Advisory Committee to ensure the best technology, practices and science are being followed by adding an expert from the Environmental Protection Agency's Office of Research and Development to the group.
- Naming Dr. Eden Wells, chief medical executive for the Michigan Department of Health and Human Services, as the Flint drinking water public health adviser.
- Boosting a comprehensive lead education program to make sure residents have detailed information about how to protect themselves and their homes.

Residents can have their water tested by calling 810-787-6537 and pressing 1, or emailing flintwater@cityofflint.com. The DEQ is covering the cost of this testing.

State leaders have been working closely with state and federal lawmakers to tap resources at all levels of government to address concerns.

State health experts said there has been an increase in elevated childhood blood lead levels in some specific communities. Initial analysis of MDHHS data found that blood lead levels of children in Flint have followed an expected seasonal trend. While this analysis for Flint as a whole remains true, a comprehensive and detailed review breaking down data by ZIP codes with the city revealed that MDHHS data is consistent with a study presented recently by Hurley Children's Hospital.

"While we cannot conclusively say that the water source change is the sole cause of the increase, this analysis supports our efforts as we take active steps to reduce all potential lead exposures in Flint," MDHHS Director Nick Lyon said. "As part of this, we are working closely with our public and private partners to provide Flint residents on MDHHS assistance programs with free water filters and inform families about the steps they can take to reduce all lead exposures in their home."

As a part of the action plan, MDHHS is making National Sanitation Foundation certified water filters available to clients who are active Family Independence Program, Food Assistance Program, Child Development and Care or Social Security Insurance recipients.

"This action plan offers concrete steps we will take in a local, state and federal partnership to ensure all Flint residents have safe water to drink," DEQ Director Dan Wyant said. "The DEQ will work closely with the city to gather further data to ensure the water that leaves Flint's system as well as the water that arrives in Flint homes is safe to drink."

Additional information is available at www.michigan.gov/flintwater.

###

Flint Drinking Water Action Plan

Talking Points

Overall Messaging

- Repeated testing shows the water leaving Flint's drinking water system is safe to drink and meets all federal guidelines, including lead.
- After the switch the Flint River, the compliance testing protocol yielded results of 6 ppb in December 2014 and 11 ppb in June 2015. Both results were below the federal action level of 15 ppb.
- However, we recognize some residents experience higher levels of lead in the water that comes out of their faucets because of lead plumbing in the home, and that's a concern.
- Out of an abundance of caution, we want to address the needs of all Flint families, and so we have developed an action plan that includes both short- and long-term solutions.
- The state plan focuses on increasing water testing, offering additional precautions for families, and providing long-term solutions to address the city's water infrastructure.

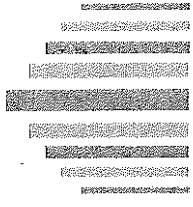
Messaging regarding the action plan

The city and the state are working together to gather more data to ensure the water that leaves the treatment plant as well as the water that arrives in Flint homes is safe for all residents.

- **Immediately test Flint public schools to ensure that drinking water is safe. Testing will also be available at no cost to any other school in Flint.**
 - Although Flint's drinking water meets all federal requirements, the state wants to take extra steps to ensure that drinking water is safe for the city's children.
 - The state will fund this testing (about \$30,000) at no cost to the city or the local schools, and make the results publicly available.
- **Expand health exposure testing of individual residences.**
 - To double-check its data as well as provide residents with an additional layer of assurance, the DEQ will conduct more tests at Flint properties.
 - The Technical Advisory Committee will determine the scope of this expanded testing.
- **Offer water testing at no cost to Flint residents to assure water is safe.**
 - Although all testing indicates water in the city of Flint meets all federal standards, we understand some residents are concerned.
 - To ensure water in individual homes is safe, free water testing is available to all Flint residents.
 - We encourage anyone with a concern to get their water tested.
 - Contact the city water department to have your water tested.

- **Accelerate optimizing corrosion controls in the Flint drinking water system.**
 - A fully optimized corrosion control system can help coat the inside of pipes to minimize the amount of lead that enters the drinking water after it leaves the treatment plant.
 - This is a helpful step that can help minimize lead system-wide, and we're pleased the city is moving to take this step.
 - If asked: This was not initially required because a fully optimized corrosion control system is not federally required in many water systems. Even today, since Flint is meeting all federal standards, this fully optimized system is not required. However, to address public concerns and ensure every possible precaution is taken, the city is moving forward with installing this corrosion control system.
- **Expand the "Safe Drinking Water Technical Advisory Committee" to ensure the best technology, practices and science are being utilized, and add an expert from the EPA's Office of Research and Development to the group.**
 - The Safe Drinking Water Technical Advisory Committee will meet Oct. 7 to discuss fully optimizing the corrosion control system, expanding testing of at-risk properties, and other topics.
 - Tom Burke, the Deputy Assistant Administrator of EPA's Office of Research and Development as well as the EPA's Science Advisor, will participate on the committee. Prior to joining EPA, he held prominent positions at the Johns Hopkins Bloomberg School of Public Health and founded the Johns Hopkins Risk Sciences and Public Policy Institute. He brings substantial expertise, and we're pleased he is able to join the committee.
- **Accelerate water system improvements to address replacement of lead service lines.**
 - Regardless of the drinking water source – whether it be DWSD, the Flint River or Lake Huron – the only permanent fix for lead is to replace all 18,000 of the private lead service lines in the city. These are the lines on private property that lead from the curb to individual homes.
 - This is a problem in communities statewide, and one we want to address with a long-term solution.
 - The state and EPA are working together to find a way for the city to access Drinking Water Revolving Loan funds for the work.
- **Expedite completion of Karegnondi Water Authority.**
 - The move to the Flint River was always a temporary measure until the connection to the KWA and to Lake Huron was completed.
 - This is the ultimate goal of the venture, and the state and locals will work together to speed up completion of the connection.
 -

- **Name Dr. Eden Wells as Flint Drinking Water Public Health Advisor.**
 - Dr. Wells is the Director for the Preventive Medicine Residency at the University of Michigan School of Public Health in Ann Arbor as well as the Chief Medical Executive for MDHHS.
 - She brings years of experience in epidemiology and preventative medicine to the issue, and we're thrilled to have her expertise.
 - Dr. Wells will coordinate with Hurley Medical Center to share data on blood lead levels in children, as well as address other emerging issues.
- **Provide water filters to residents of Flint.**
 - As an additional precaution, water filters will be available to low-income families.
 - This provides another safeguard to ensure everyone in the city of Flint has access to clean drinking water that they feel confident drinking.
- **Expand a comprehensive lead education initiative.**
 - Lead plumbing is common in homes built prior to 1986, and anyone in the state with lead pipes in their home can take some extra precautions to minimize lead in their drinking water.
 - It takes time for lead to accumulate in drinking water from plumbing, and so flushing your pipes prior to using them can minimize your exposure.
 - To flush your pipes, run the water until it's as cold as it will go. This can take as little as 5 to 30 seconds if you have recently flushed the toilet or otherwise used water in your home, or as long as 2 to 5 minutes if you have not used any water in hours.
 - In the city of Flint, running the water for 5 minutes only costs about 3-16 cents, depending on your faucet.
 - Additionally, more lead gets into hot water than cold water. Use only cold water for drinking, cooking and making baby formula.



TAKING ACTION ON FLINT WATER

www.mi.gov/FlintWater

- The Action Plan -

- Testing in Flint public schools immediately to ensure that **drinking water is safe**, with testing also available at no cost to any other school in Flint.
- Offering **free water testing** to Flint residents to assure their drinking water is safe.
- Providing **free water filters** to residents with concerns or who are included in state assistance programs.
- Expanding **health exposure testing** of individual homes.
- Accelerating **corrosion controls** in the Flint drinking water system.
- Accelerating **water system improvements** to address replacing lead service lines.
- Expediting the completion of the **Karegnondi Water Authority** pipeline.
- Expanding a **Safe Drinking Water Technical Advisory Committee** to ensure the best technology, practices and science are being followed by adding an expert from the Environmental Protection Agency's Office of Research and Development to the group.
- Naming Dr. Eden Wells, chief medical executive for the Michigan Department of Health and Human Services, as the **Flint drinking water public health adviser**.
- Boosting a **comprehensive lead education program** to make sure residents have detailed information about how to protect themselves and their homes.

To get your water tested for free, please call the city of Flint Water Plant at (810) 787-6537 and then press 1.
You can also email flintwater@cityofflint.com

Visit www.mi.gov/FlintWater for more information

TAKING ACTION ON FLINT WATER

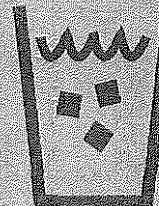
www.mi.gov/FlintWater

- Tips for Flint Residents -

Lead plumbing is common in homes built prior to 1986, and **anyone in the state with lead pipes in their home can take some extra precautions** to minimize lead in their drinking water.

1.

Get your water tested at no cost to ensure water is safe. **To get your water tested**, please call the city of Flint Water Plant at (810) 787-6537 and then press 1.



2.

To ensure safe drinking water, you can also get a free filter. Please visit **mi.gov/FlintWater** to find where you can get a free filter.

3.

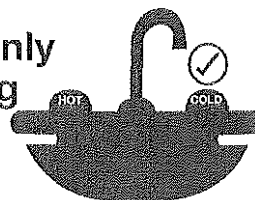
It takes time for lead to accumulate in drinking water from plumbing, and so **flushing your pipes prior to using them** can minimize your exposure.

- To flush your pipes, run the water until it's as cold as it will go. This can take as little as 5 to 30 seconds if you have recently flushed the toilet or otherwise used water in your home, or as long as 2 to 5 minutes if you have not used any water in hours.

- In the city of Flint, running the water for 5 minutes costs between 3 and 16 cents.

4.

Additionally, more lead gets into hot water than cold water. **Use only cold water for drinking, cooking and making baby formula.**



To get your water tested for free, please call the city of Flint Water Plant at (810) 787-6537 and then press 1. You can also email flintwater@cityofflint.com

Visit **www.mi.gov/FlintWater** for more information

Rennaker, Joanne (DEQ)

From: Sygo, Jim (DEQ)
Sent: Saturday, October 24, 2015 3:01 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shaler, Karen (DEQ); Krisztian, George (DEQ)
Subject: Fwd: One further comment

Please review and let's discuss next week.

Sent from my iPhone

Begin forwarded message:

From: "Kaplan, Robert" <kaplan.robert@epa.gov>
Date: October 24, 2015 at 8:58:12 AM EDT
To: Jim Sygo <SygoJ@michigan.gov>
Subject: One further comment

Jim, I'm sorry that we have a straggler. This morning I received one last comment. I ordinary would say "too late" but this comment reflects deep knowledge of the Flint system (esp. the residence at issue). Pls let me know if there are any issues. Again, sorry for the late and unconsolidated comment.

Bob

1) Has anyone evaluated where the water quality parameter monitoring is being conducted by Flint? If not, we might want to do that to make sure that the sites selected are representative of the water quality throughout the city. My concern is that the chlorine residual range reported by the City in their October 2015 water quality report is given as 0.2 – 4.0(<https://www.cityofflint.com/public-works/utilitieswater/water-treatment-plant/>). However, we know that in at least one area of the city, even after flushing the tap for 8 hours, there was no detectable chlorine residual. Repeated tests over 18 days (last one was September 3) show the same. These measurements were done after the replacement of the old service line, so the chlorine is not getting to this area (<http://flintwaterstudy.org/information-for-flint-residents/chlorine-monitoring-in-flint-resident-ms-leeanne-walters-home/>)

2) The recommendations in the final report on the sampling we did in Flint are linked to the corrosion control treatment. The lead concentrations in the scale/sediment are orders of magnitude higher than what we typically see in drinking water samples, so I think from a risk perspective, we need to better understand the composition and stability of the scales within the pipes to assess the stability of the scales and inform the treatment. Although the release of scale/sediment is not unique to Flint, the dislodging of scale/sediment would pose the greatest risk to residents by far. Our final report will be posted in the near future so should we include the assessment sampling in our comments on corrosion control (see below)?

Recommendations

As indicated by the results from the Walters' home and previous EPA work, the presence of lead pipes over many years has likely resulted in the accumulation of lead in the scales within non-lead pipes downstream of the lead pipe and physical disturbances to the leaded or non-leaded portions of the service lines have the potential to release large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents. Consequently, even with corrosion control treatment in place in the future, physical disturbances will be capable of dislodging the high lead-bearing scale and sediment from non-lead pipes as well as lead pipes, as was the case in the earlier EPA study.

Obtaining information on the lead reservoirs in the scales within the lead and non-leaded portions of intact service lines is essential for determining the potential risk to residents from lead-bearing scale released as lead lines are replaced as well as the risk that may remain following removal of the lead lines, where the non-leaded portions of service lines are left in place.

As the Walters' service line was very long compared to the length of most typical service lines, it is important to assess the potential risk posed by the scale reservoirs in more typical lengths of service lines by extracting both the leaded and non-leaded portions of service lines which have not been physically disturbed. The service lines chosen for extraction and analysis should be representative of the materials commonly used downstream of the lead pipe (e.g., galvanized iron, copper, plastic). Extraction/handling procedures should be developed by EPA to ensure that damage to the scales from the excavation, extraction and delivery of the service line segments is minimized. Sequential sampling should also be conducted on a representative group of homes with common plumbing materials (e.g., galvanized iron, copper, plastic) to determine the extent to which the lead from the service line has seeded the interior plumbing in homes.

It is also critically important to develop and incorporate ongoing training and public education on the potential for high lead release from the scales as a result of any future physical disturbances to service lines and mitigative actions that residents can take to lower their exposure risk. The training and educational material should be assessed for clarity, meaningfulness, and accessibility by a group of residents and health experts to ensure the effectiveness of the communications.

At a minimum, immediate training and public education on the potential risks posed by physical disturbances to service lines should be developed by communications experts and provided to residents, community groups, elected officials, health departments, pediatricians and gynecologists, water and non-water utilities (gas, electric, cable, etc.), plumbing organizations and contractors. Residents should be notified of scheduled work by water and non-water utilities and informed of the potential risk of increased lead levels due to these disturbances.

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Daugherty Johnson <djohnson@cityofflint.com>
Sent: Wednesday, October 15, 2014 4:35 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Fwd: Re: water main break
Attachments: Water Main Repairs 10.15.14.docx

Here is the release with the map. We are amending the notice to reflect 24 HR all clear after initial good sample.

----- Forwarded message -----

From: "Jason Lorenz" <jlorenz@cityofflint.com>
 Date: Oct 15, 2014 4:28 PM
 Subject: Re: water main break
 To: "Daugherty Johnson" <djohnson@cityofflint.com>
 Cc: "Howard Croft" <hcroft@cityofflint.com>, "Gerald Ambrose" <gambrose@cityofflint.com>, "Robert Binsik" <rbinsik@cityofflint.com>, "dwalling@cityofflint.com" <dwalling@cityofflint.com>, "Dearly@cityofflint.com" <Dearly@cityofflint.com>, "Elizabeth Murphy" <emurphy@cityofflint.com>, "Kelly Rossman-McKinney" <krossman@truscottrossman.com>, "Michael Glasgow" <mglasgow@cityofflint.com>

All,

Here is the release with the map. This should go out tonight with media availability for interview no later than tomorrow at 9am.

-Jason Lorenz
 Public Information Officer
 City of Flint
 (810) 237-2039
jlorenz@cityofflint.com

On Wed, Oct 15, 2014 at 1:40 PM, Jason Lorenz <jlorenz@cityofflint.com> wrote:
 All,

After our meeting and some suggestions, I've amended my previous draft. See attached.

-Jason Lorenz
 Public Information Officer
 City of Flint
 (810) 237-2039
jlorenz@cityofflint.com

On Wed, Oct 15, 2014 at 10:30 AM, Jason Lorenz <jlorenz@cityofflint.com> wrote:
 All,

Based upon some notes, attached is a revised release. Also attached is my draft response to the GM issue.

Thanks,

-Jason Lorenz
Public Information Officer
City of Flint
(810) 237-2039
jlorenz@cityofflint.com

On Wed, Oct 15, 2014 at 9:21 AM, Daugherty Johnson <djohnson@cityofflint.com> wrote:

Hello Jason, Liz had some specific concerns with some of the technical language. I have her notes. I'll get them to you.

Howard said he had Press coming in today? Is that on the schedule?

Duffy

On Oct 15, 2014 9:01 AM, "Jason Lorenz" <jlorenz@cityofflint.com> wrote:
Here is a draft release regarding the water main repairs. Please review and advise.

Thanks,

-Jason Lorenz
Public Information Officer
City of Flint
(810) 237-2039
jlorenz@cityofflint.com

On Tue, Oct 14, 2014 at 5:55 PM, Howard Croft <hcroft@cityofflint.com> wrote:

The Utilities team has taken the time to develop a plan that will repair more than just this main break. The plan which was finalized today will also replace a larger 24" main transmission valve that has negatively impacted the system for years and three additional large valves that are impacting circulation. The developed plan will take into account the impact area, will address all of the related questions, and will get us in front of the repair with accurate public information.

This will fit into the long term plan of infrastructure repairs that will continue to occur within the distribution system but we are looking to upgrade the communication within the community with the appropriate message.

On Mon, Oct 13, 2014 at 5:45 PM, Chris Zuwala <chriszuwala@yahoo.com> wrote:
Its time to hire some new knuckle heads that can fix a pipe!

--
Howard Croft

Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7346 Ext.2043
hcroft@cityofflint.com



CITY OF FLINT
OFFICE OF EMERGENCY MANAGER
DARNELL EARLEY
ICMA-CM, MPA

Jason Lorenz
Public Information Officer
(810) 237-2039
jlorenz@cityofflint.com

For Immediate Release

Major Water Line Repairs Will Take Place in Robert T. Longway Blvd & Dort Hwy. Area, More Repairs to System Scheduled

Flint, Michigan – October 15, 2014 – The City of Flint's Department of Public Works is working to repair a water main break in the area of Dort and Longway. That repair will be followed by more scheduled repairs to the system in the area which will begin on Saturday, October 18, 2014 and which should be completed by evening Sunday, October 19. The work being performed will result in improved operational control over a large transmission line running down Dort Hwy. which will include improving chlorine residuals in the southern portion of Flint. No residential customers are connected to this line; however, there will be a reduction of pressure to the system, which may cause low water pressure in the surrounding area.

In accordance with DEQ regulations the City of Flint will be issuing a Boil Water Advisory for the area (see attached map) ONLY to residents who lose water service during this 24 hour period. Residents who lose water service during that time should expect use boiled water for 48 hours after service is restored based on testing.

–CONTINUE–



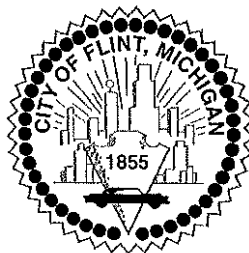
CITY OF FLINT
OFFICE OF EMERGENCY MANAGER
DARNELL EARLEY
ICMA-CM, MPA

A Boil Water Advisory is restricted to drinking water and un-boiled water used for cooking. Once again, this is merely a precaution as no one in the affected area should be directly connected to the portion of the system being repaired. Low pressure and discoloration may occur for those in the area, but this is no cause for concern. The City of Flint asks that residents watch their local news station for announcement of the completion of repairs.

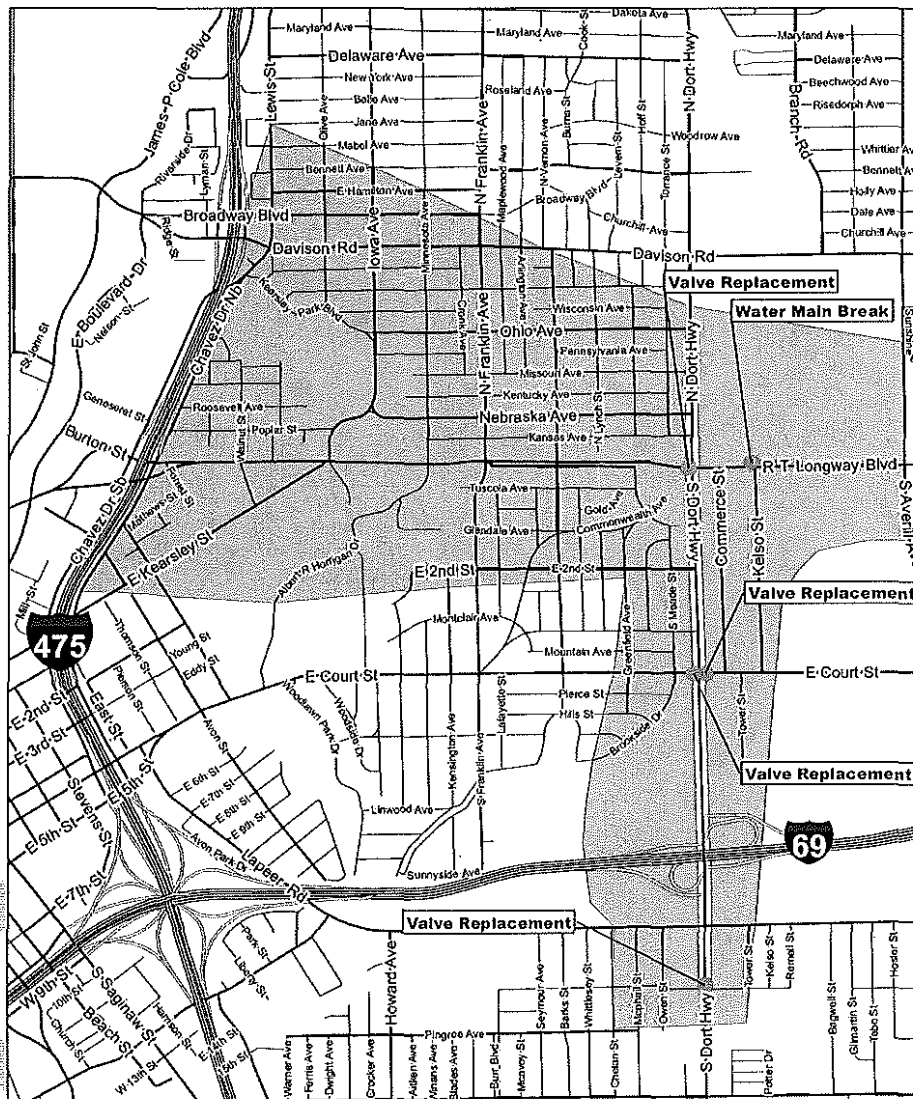
A break in the sixteen inch water main was discovered a week ago and crews have since been examining the surrounding system. As a result of that examination, a number of valves in the area were identified as "long overdue" for replacement. "The valves we are replacing in this area have needed attention for quite some time," said Flint Utilities Administrator Daugherty Johnson, "the fact that we now have the resources and planning to perform this work is a tremendous benefit for the entire City."

All of the scheduled work taking place is part of an ongoing, broader plan to examine different sections of the water system citywide for needed repairs and upgrades. Upgrading critical infrastructure such as the water system is a key part of the City's Strategic Plan, which is directly guided by the Master Plan, and part of the City's commitment to deliver the highest quality water possible.

— ATTACHMENT (Affected Area Shaded)—



CITY OF FLINT
OFFICE OF EMERGENCY MANAGER
DARNELL EARLEY
ICMA-CM, MPA

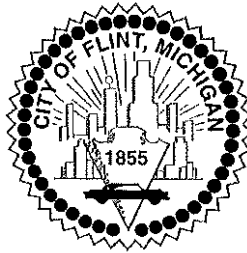


1 in = 1,438 ft
0 500 1,000 2,000 3,000
Feet

GIS
City of Flint
Date: 10/15/2014

-END-

City Hall
1101 S. Saginaw Street - Flint, Michigan 48502
810-766-7346 FAX: 810-766-7218 www.cityofflint.com



CITY OF FLINT
OFFICE OF EMERGENCY MANAGER
DARNELL EARLEY
ICMA-CM, MPA

DRAFT

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Thursday, January 22, 2015 9:49 PM
To: Busch, Stephen (DEQ)
Subject: Fwd: Talked with Ambrose.

Do we have a shareable briefing document?

Sent from my iPhone

Begin forwarded message:

From: "Stanton, Terry A. (Treasury)" <StantonT@michigan.gov>
Date: January 22, 2015 at 5:00:19 PM EST
To: "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>
Subject: RE: Talked with Ambrose.

Do you have any TPs, bullets, etc. on what's been done thus far in Flint to address the water issue...from DEQ perspective?

From: Wurfel, Brad (DEQ)
Sent: Wednesday, January 21, 2015 11:46 AM
To: Stanton, Terry A. (Treasury)
Subject: Talked with Ambrose.

THAT's why his name is familiar. He's been down there for years!
Turns out, he's got this thing handled. Just had a good conversation.
Let me know if I can be of help. Two of our best guys will be there from the drinking water program.
b

Brad Wurfel
Communications Director
Michigan Department of Environmental Quality
517-284-6713
517-230-8006 cell

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, February 19, 2015 4:00 PM
To: Busch, Stephen (DEQ)
Subject: Fwd: Technical Advisory Committee Update
Attachments: Technical Advisory Team List.pdf; ATT00001.htm

Steve,
 The city of Flint has formed their TAC with me included...fyi...see attached list....they put the wrong title for me...

Sent from my iPhone

Begin forwarded message:

From: Howard Croft <hcroft@cityofflint.com>
Date: February 19, 2015 at 3:52:07 PM EST
To: "donna. cole" <donna.cole@genesys.org>, <gdn2@aol.com>, John O'Brien <jfobrien@gcdcwws.com>, Kirk Smith <ksmith@flint.org>, <larry.koehler@mcc.edu>, <mgavulil@hurleymc.com>, Mike Lane <mjlane@umflint.edu>, "Mike Prysby (DEQ)" <prysbym@michigan.gov>, Pete Levine <plevine@gcms.org>, <rosejo@msu.edu>, <Russell.Hudson@mclaren.org>, "Brent Wright" <bwright@cityofflint.com>, Daugherty Johnson <djohnson@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, "Michael Glasgow" <mglasgow@cityofflint.com>, <rob.nicholas@veolia.com>
Cc: Flint Mayor <dwalling@cityofflint.com>, Gerald Ambrose <gambrose@cityofflint.com>, Elizabeth Murphy <emurphy@cityofflint.com>, David Gadis <david.gadis@veolia.com>, Jason Lorenz <jlorenz@cityofflint.com>
Subject: Technical Advisory Committee Update

Team,

I have include a list of all of the current participants in the Technical Advisory Team. We are targeting Wednesday March 4th as the first meeting and the time and place are yet to be determined. I have listed a few items to help craft the direction that we are hoping to go with this team;

1. We will likely have a conference number as well as a physical meeting place in case someone is not able to be there.
2. We will define as we go along how often to hold meetings, but we plan to continue throughout the implementation of the KWA.
2. We will start with a general scope and set of deliverables but will look for open input from the group in order to develop additional specifics as to what each member would like to accomplish.

3. Certainly with this assembled team we would want to develop a set of medical FAQ's that would assist the medical community with current and future details of chemicals and risk assessments.
4. We will discuss the treatment process and look at the national discussion on whether or not to use fluoride as well as what additional regulations are possibly being considered the EPA for the future.
5. We will look at what is upcoming with the KWA and water from Lake Huron. What will the chemical challenges be? What will the final product entail?
6. We will evaluate testing options or partners and determine if there is an avenue or demand for such.

These are some of the topics that I plan to delve into and I believe that we have assembled a professional team that can bring enlightenment to all of us. I look forward to working with each of you.

Respectfully Submitted,

--

Howard Croft
Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

City of Flint / Veolia Technical Advisory Committee

	COMPANY	NAME	TITLE	PHONE	DESIGNEE	CONTACT INFO	
1	General Motors	Randy Tanner	Head of Engineering	810-577-8552			Yes
2	MSU - Lansing	Dr. Joan Rose	Chair in Water Research	517-432-4412	Dr. Joan Rose	rosejo@msu.edu	Yes
3	Greater Flint Health Coalition	Kirk Smith	President	810-232-2228	Kirk Smith	ksmith@flint.org	Yes
4	County Drain Commissioner	Jeff Wright	Deputy Drain Commissioner	810-732-7870	John O'Brien	jfobrien@gcdcwws.com	Yes
5	U of M Flint	Michael Lane	Dir. Environmental Health & Safety	810-766-6763	Michael Lane	mjlane@umflint.edu	Yes
6	Mott Community	Larry Kohler	Executive Director		Larry Koehler	larry.koehler@mcc.edu	Yes
7	Genesys Pace Hospital	Donna Cole	Property Manager	810-606-5611	Donna Cole	donna.cole@genesys.org	Yes
8	Hurley Hospital	Melanie Gavulic	President / CEO		Norb Birchmier	mgavuli1@hurleymc.com	Yes
9	McLaren Hospital	Don Kooy	President / CEO		Russell Hudson	don.kooy@mclaren.org	Yes
10	Genesee County Medical Society	Pete Levine	Executive Director	810-733-9925	Gerald Natzke	plevine@gcms.org	Yes
11	Dept. of Environmental Quality	Mike Prysby	District Supervisor	517-290-8817	Mike Prysby	prysbym@michigan.gov	Yes
	City of Flint	Howard Croft	DPW Director	810-577-1202	Howard Croft	hcroft@cityofflint.com	Yes
	City of Flint	Daugherty Johnson	Utilities Administrator	810-577-8906	Duffy Johnson	djohnson@cityofflint.com	Yes
	City of Flint	Brent Wright	Plant Supervisor	810-787-6537	Brent Wright	bwright@cityofflint.com	Yes
	City of Flint	Mike Glasgow	Asstant Plant Supervisor		Mike Glasgow	mglasgow@cityofflint.com	Yes

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Friday, July 31, 2015 2:32 PM
To: Wyant, Dan (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Karen Tommasulo; Wurfel, Sara (GOV)
Subject: Fwd: Updated Memo on Water Coalition Questions - July 29
Attachments: Flint Testing and EBLLs_2.xlsx; ATT00001.htm

Interesting.

Sent from my iPhone

Begin forwarded message:

From: "Lyon, Nick (DCH)" <LyonN2@michigan.gov>
Date: July 31, 2015 at 10:56:42 AM EDT
To: "Muchmore, Dennis (GOV)" <muchmored@michigan.gov>, "Workman, Wayne (TREASURY)" <WorkmanW@michigan.gov>, "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>, "Clement, Elizabeth (GOV)" <clemente@michigan.gov>, "Hollins, Harvey (GOV)" <hollinsh@michigan.gov>
Cc: "Saxton, Thomas (Treasury)" <SaxtonT@michigan.gov>, "Wisniewski, Wendy (GOV)" <wisniewski@michigan.gov>, "Grijalva, Nancy (DCH)" <GrijalvaN@michigan.gov>
Subject: Re: Updated Memo on Water Coalition Questions - July 29

Our Public Health staff followed up a bit more on the lead question. Below is their email update to me.

From: Grijalva, Nancy (DCH)
 Sent: Wednesday, July 29, 2015 11:23 AM
 To: Lyon, Nick (DCH)
 Subject: FW: Director's Office Assignment -- Flint - need update asap

FYI.....

-----Original Message-----

From: Peeler, Nancy (DCH)
 Sent: Tuesday, July 28, 2015 2:57 PM
 To: Anderson, Paula (DCH); Miller, Corinne (DCH); Travis, Rashmi (DCH); Moran, Susan (DCH); Grijalva, Nancy (DCH); Fink, Brenda (DCH)
 Cc: Priem, Wesley F. (DCH); Dykema, Linda D. (DCH); Bouters, Janese (DCH); Barr, Jacqui (DCH)

Subject: RE: Director's Office Assignment -- Flint - need update asap

I apologize for the delay in responding more specifically to this assignment, it took some time to review our Childhood Lead Poisoning Prevention program data to see if it might contribute to the understanding of the situation in Flint with their water supply. Here is what we found:

We looked at lead testing results for May 2014-April 2015, which is the 12 month time frame just after Flint started drawing their water from the river (water source changed in April 2014).

We compared lead testing rates and lead testing results to the same time frame for the previous 3 years, to see if there were any patterns that suggested that there were increased rates of lead poisoning after the water supply was switched. Per the attached charts –

- Lead testing rates remained about the same from year to year (chart on the right).
- There was a spike in elevated blood lead tests from July-September 2014 (chart on the left, gold line).
- However that pattern was not terribly different from what we saw in the previous three years, especially in 2011-2012 (we are working with our Epidemiologist to statistically verify any significant differences).
- We commonly see a 'seasonal effect' with lead, related to people opening and closing windows more often in the summer, which disturbs old deteriorating paint on the windows, sills and sashes. Window fans frequently blow and spread the lead dust from the deteriorating paint to other parts of the room/house. We suspect that the summer data spike may be related to this effect.
- If the home water supply lines and/or river water were contributing to elevated blood lead tests, we expected that the increased rates would extend beyond the summer, but they drop quite a bit from September to October, stayed low over the winter, and are just starting to tail up again in the spring of 2015.

So upon review, we don't believe our data demonstrates an increase in lead poisoning rates that might be attributable to the change in water source for Flint. We recognize that lead exposure via the water is only a small piece of what may be happening for families in Flint, however, we hope the information is helpful.

Nancy Peeler

From: Muchmore, Dennis (GOV)
Sent: Wednesday, July 29, 2015 9:02 AM
To: Workman, Wayne (TREASURY); Wurfel, Brad (DEQ); Lyon, Nick (DCH); Clement, Elizabeth (GOV); Hollins, Harvey (GOV)
Cc: Saxton, Thomas (Treasury); Wisniewski, Wendy (GOV)
Subject: RE: Updated Memo on Water Coalition Questions - July 29

I think this information is very helpful. It will not answer the main question about the quality of the water (DEQ is working on that through Brad I believe), and the color and smell of the present water, but it does get us to the answers to the less subjective issues. Frankly, the only way the issues will be totally resolved is when the KWA comes on line and the water is perceived to be cleaner and healthier. I am somewhat surprised that the leadership in Flint has not responded better to the community questions, which don't seem unreasonable at all. Seems like Harvey has a better network into some of the neighborhoods than the city does. The KWA PR department definitely needs to do some outreach or they're headed down the same road as DWSD. Do you know if they go out on a regular basis to the community and talk about the rates, costs, etc.?

From: Workman, Wayne (TREASURY)
Sent: Wednesday, July 29, 2015 8:36 AM
To: Muchmore, Dennis (GOV); Wurfel, Brad (DEQ); Lyon, Nick (DCH); Clement, Elizabeth (GOV)
Cc: Saxton, Thomas (Treasury); Wisniewski, Wendy (GOV)
Subject: FW: Updated Memo on Water Coalition Questions - July 29
Importance: High

All, Attached is a memo and water rate summary answering several of the questions raised by the Flint pastors. Please let me know if you have any questions. Wayne

Wayne L. Workman
 Deputy State Treasurer
 Michigan Department of Treasury

From: Cline, Richard (Treasury)
Sent: Wednesday, July 29, 2015 8:21 AM
To: Workman, Wayne (TREASURY)
Cc: Dempkowski, Angela (Treasury); Byrne, Randall (Treasury)
Subject: Updated Memo on Water Coalition Questions - July 29
Importance: High

Wayne,

Attached is the water rate table you asked for and I have updated the memo to reference this as an attachment.

If you need anything else, please let me know.

Note that Rob, Randy and I will be in Benton Harbor for a portion of today conducting their annual RTAB evaluation.

Eric Cline | Department Manager
 State of Michigan | Michigan Department of Treasury | Office of Fiscal Responsibility

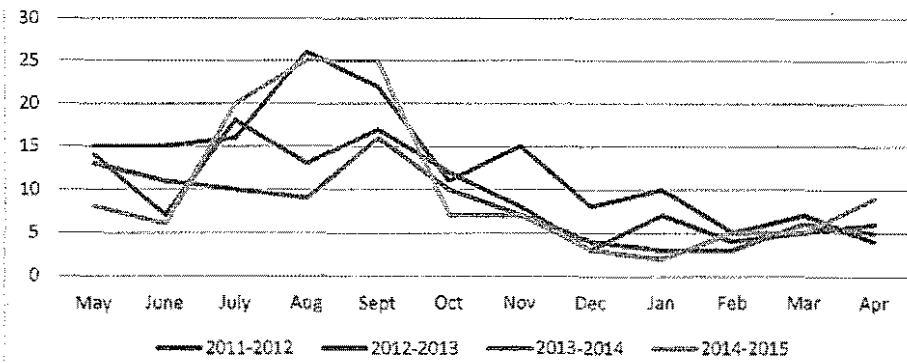
430 W. Allegan Street, 3rd Floor | Lansing, MI 48922

Lansing Office (517) 335-2078 | Cell Phone (517) 243-8450 | Traverse City Office (231) 922-5228

E-mail cliner1@michigan.gov

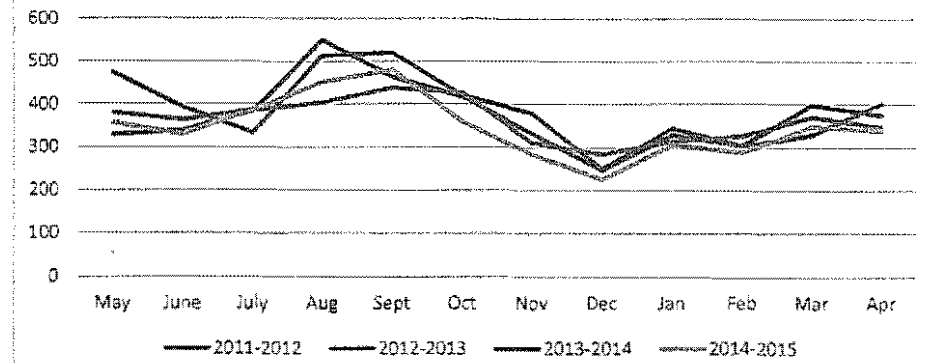
CONFIDENTIALITY NOTICE: This e-mail, and any attachments, is for the sole use of the intended recipient(s) and may contain information that is confidential and protected from disclosure under the law. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail, and delete/destroy all copies of the original message and attachments Thank you.

City of Flint, Children less than 16 years of age
with First-Time Elevated Blood Lead Levels

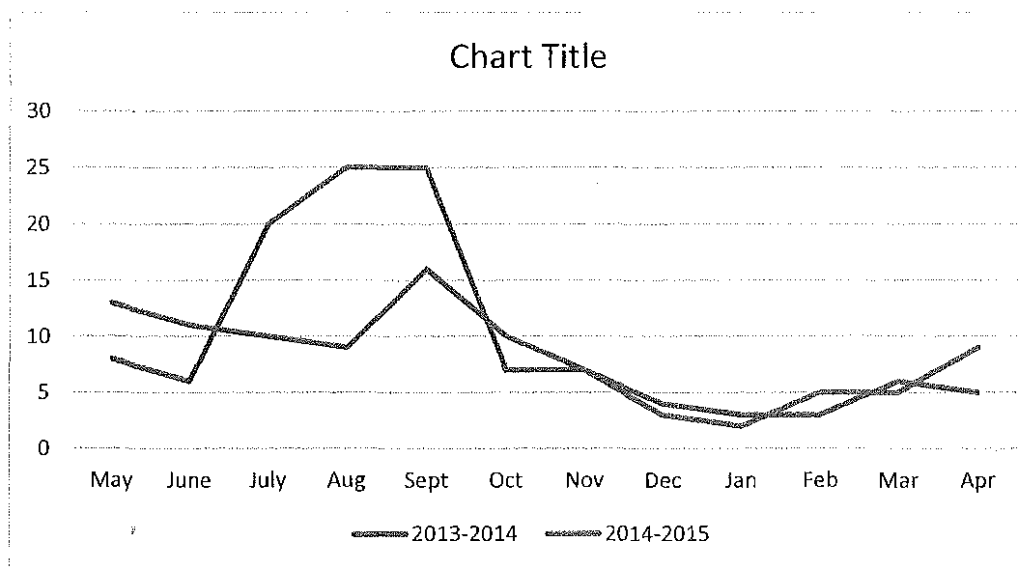


	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2011-2012	15	15	16	26	22	11	15	8	10	5	7	4
2012-2013	14	7	18	13	17	12	8	3	7	4	5	6
2013-2014	13	11	10	9	16	10	7	4	3	3	6	5
2014-2015	8	6	20	25	25	7	7	3	2	5	5	9

City of Flint, Children less than 16 years of age
Tested for Lead Poisoning



	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2011-2012	474	393	332	513	520	420	379	249	343	303	399	375
2012-2013	328	338	383	550	464	417	332	246	328	303	328	402
2013-2014	380	363	385	404	438	427	310	283	313	325	371	346
2014-2015	356	329	386	452	480	361	283	224	305	287	348	339



Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Monday, August 31, 2015 10:25 AM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wyant, Dan (DEQ); Prysby, Mike (DEQ)
Cc: Muchmore, Dennis (GOV); Hollins, Harvey (GOV); Murray, David (GOV); Wurfel, Sara (GOV); Jessica Brown; Brown, Eric (GOV)
Subject: Fwd: Urgent: Independent Flint Water Study

Liane / Steve, can you look into this situation as a priority?

Everyone else -- just got this from the ACLU. Call me if you have questions / counsel.

Thanks.

b

Sent from my iPhone

Begin forwarded message:

From: Curt Guyette <cguyette@aclumich.org>
Date: August 31, 2015 at 10:18:34 AM EDT
To: "wurfelb@michigan.gov" <wurfelb@michigan.gov>
Subject: Urgent: Independent Flint Water Study

Mr. Wurfel,

Prof. Marc Edwards of Virginia Tech university has been leading a research project to conduct an independent study of lead in Flint's water. Working with a group of city residents, they have been collecting water samples from homes throughout the city. The study is still under way, but the results so far have been so disturbing that VT has begun posting results on the web in order to alert residents about how serious the problem may be.

This is what VT is reporting:

Over the weekend we analyzed another 72 lead samples collected by Flint residents and mailed to VT. For the 120 samples analyzed to date, forty two percent were over 5 ppb, which suggests a serious lead in water problem according to our experience and criteria. Twenty-three (20% of those collected) also exceeded 15 ppb lead, suggesting a serious lead in water problem. That is, the Flint Citizen Science study to date, is finding results worse than the EPA standard which is applied to sampling "worst case" homes. The highest lead sampled in first draw so far was 158 ppb, and the highest sample after 45 second flushing is 1051 ppb. Six of 120 homes sampled (5%), had over 15 ppb lead even after 2 minutes of continuous flushing. The 90%ile lead level in the Flint Water Study is currently 30 ppb, which is double the EPA standard applied to "worst case" homes, and in a range where water consumption has caused lead poisoning in children and adverse pregnancy outcomes. Needless to say, these data are very worrisome.

Here is the website containing the information.

I am writing about this for a story that will be posted tomorrow. If the city chooses to respond, I need to hear back from you by the end of the day today, Aug. 31.

Sincerely,

Curt Guyette

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Monday, February 09, 2015 9:22 AM
To: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: FYI: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Forgot to cc you all. Jen

From: Crooks, Jennifer
Sent: Monday, February 09, 2015 8:09 AM
To: Dee, Rhiannon
Cc: Poy, Thomas
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Rhiannon—Let me tell you, this Flint situation is a nasty issue—I've had people call me 4 letter words over the phone, yell at me, and call me a crook—yes, the last one was a play on my last name—I didn't think it was funny, though I'm developing a thick skin ☺.

I can respond to the Flint drinking water issue, and the water rate issue, and refer them back to the State if they have further questions. But I cannot respond to the sewerage dump (who receives the report when there is a sewer overflow?) or the chemical—though Richard is probably right—the 'toxic chemical' is probably chlorine—and that's what I'll say in my response. One citizen was confused about 'chlorides' being 'chlorine'....

Let me know if you would like me to respond to this citizen complaint as I explained above.

Jennifer

From: Dee, Rhiannon
Sent: Friday, February 06, 2015 10:50 AM
To: Benzie, Richard (DEQ)
Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas; Vantil, Barbara
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Richard,

While I understand this complaint conflates various issues, my intention of forwarding it on to Pete and Barry was to relay the potential NPDES impacts of the complainants allegations.

Best,

Rhiannon Dee
 Program Analyst
 U.S. Environmental Protection Agency
 Water Division, WC-15J
 (312) 886-4882
dee.rhiannon@epa.gov

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Friday, February 06, 2015 9:38 AM

To: Dee, Rhiannon

Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas

Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

I'm not sure what this complainant is alleging. Do you want Michigan to respond to the allegation that a "company or individual dumped millions of gallons of raw sewage into the city of Flint drinking water" or the allegation that "they(?) have dumped a potential cancer causing chemical into the city's drinking water" or the allegation that the city of Flint is flushing hydrants and charging customers double? The Office of Drinking Water and Municipal Assistance cannot address the issue surrounding the dumping of raw sewage and we don't interfere with water rates, but maybe an explanation of the issues that have confronted the city of Flint and their public water supply will help you understand the overall problem.

Last spring, the city of Flint decided to begin relying upon the Flint River as their source of drinking water using a treatment plant that was designed to do so. Last summer, they experienced difficulties with stagnation in some areas of the distribution system due to significantly reduced demands as a result of the loss of a significant percentage of their residential and industrial demands that accelerated over the last decade. During the summer of 2014, they also had a couple of monitoring periods where they detected total coliform at monitoring sites in these stagnant areas, and one time they detected E.coli present. The ensuing boil water advisories and public notification heightened customer concern about the quality of drinking water as a result of the switch from Detroit to the Flint River. Detroit supplied Flint with drinking water from Lake Huron, a much higher quality source than the Flint River. However, monitoring of the Flint water treatment plant tap has never indicated unacceptable water entering the distribution system. In response to these coliform detections and in an effort to prevent a recurrence, the city also increased flushing water mains in low flow areas and they have attempted to ensure the presence of a chlorine residual throughout the distribution system (is this the "potential cancer causing chemical" the complainant mentions?).

Compounding the problem of customer confidence was the initial monitoring for disinfection byproducts conducted by Flint under the Stage 2 DBR after their switch to the Flint River. The initial monitoring reported significantly elevated levels of total trihalomethane (TTHM) compounds throughout the city's distribution system. Our district office advised the city that they needed to immediately implement operational techniques at the treatment plant and in the distribution system to reduce the formation of these compounds. The steps the city of Flint has taken have been successful and have reduced TTHM concentrations to the point where the latest results are below the drinking water standard. However, the standard is calculated on a running annual average and it is likely to be another 3 to 6 months before the annual average at each monitoring station will (hopefully) meet the standard. Until then, the city has to continue to provide quarterly public notification, which will continue to concern residents despite the latest TTHM results.

The switch to the Flint River, the microbiological problems and the elevated TTHM concentrations experienced last year in Flint have caused a high level of customer dissatisfaction and distrust. The city is working diligently to restore that confidence, but it will not be accomplished easily or overnight. You should also know that the switch to the Flint River is an interim measure intended to last only until a 72-inch pipeline from Lake Huron to the Flint water treatment plant is completed. It is currently under construction and expected to be in operation in mid-2016. At that point, the city's drinking water should again be very similar in quality to what they were receiving from Detroit.

Although the subject(s) of this complaint are not clear to me, I suspect it is a result of the media coverage of the recent problems with the city's water supply. However, the information from your initial contact indicates a Grand Blanc, Michigan address, which is not in the city of Flint service area. As I mentioned, our Lansing district office has been dealing with city representatives on this issue. If you have further questions, feel free to contact either Michael Prysby or Steve Busch. They are receiving this message so you have their contact information. You may also wish to communicate with your Region 5 counterparts in the Office of Drinking Water & Ground Water, Jennifer Crooks or Tom Poy, who have received similar complaints and with whom we have communicated regularly on these issues.

Please let us know if someone from EPA will respond to the complainant, or if you expect Michigan DEQ to do so.

Richard Benzie, P.E., Chief
Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 6:55 AM
To: Dee, Rhiannon
Cc: Selden, Barry (DEQ); Benzie, Richard (DEQ); Bartley, Cheryl (DEQ)
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Rhiannon, this is a drinking water complaint, not an NPDES complaint. Flint does have SSOs, and reports those. That's not the cause of this complaint.

There are public concerns with Flint's drinking water system, which switch from the city of Detroit supply to their own supply. Detroit's source water is much better, so the public may be noticing some changes.

I've copied Richard Benzie, how is the Field Operations Chief in our division that handles drinking water. If you need more follow up, he can provide it.

Thanks, Pete

Peter Ostlund
Field Operations Section Chief
Water Resources Division
Michigan Dept. of Environmental Quality
P.O. Box 30458
Lansing, Michigan 48909-7958
517-898-5128 (iPhone)
ostlundp@michigan.gov

From: Dee, Rhiannon [<mailto:dee.Rhiannon@epa.gov>]
Sent: Thursday, February 05, 2015 5:11 PM
To: Ostlund, Peter (DEQ); Selden, Barry (DEQ)
Subject: FW: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Hi there,

Hope all is well. We received this complaint a while back. Complainant is alleging discharges into Flint River.

Let me know if you have any questions or if I should forward this on to someone else.

Best,

Rhiannon Dee
Program Analyst
U.S. Environmental Protection Agency
Water Division, WC-15J

(312) 886-4882

dee.rhiannon@epa.gov

From: howard.donna@epa.gov [mailto:howard.donna@epa.gov]

Sent: Monday, January 12, 2015 11:21 AM

To: Dee, Rhiannon

Cc: Beese, Jennifer

Subject: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

01/12/2015

SUBJECT: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

FROM: howard.donna@epa.gov

TO: Dee.Rhiannon@epa.gov

CC: Beese.Jennifer@epa.gov

-----Original Message-----

1/11/2015 10:55 AM

HQ LEAD NUMBER: FY15-124819-3709-CV

SUBJECT: Referred to Region - Michigan

FROM: sargent

TO:

Name: marcia

Address: po box 277

City: grand blanc

State: Michigan

Zip: 48480

Phone: 8103368486

Alleged Violator's Name: city of flint michigan

Alleged Violator's Address: water department

Alleged Violator's City: flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48503

Tip or Complaint: an individual or company dumped several million gallons of raw sewage into the city of flint Michigan drinking water and now they have dumped a potential cancer causing chemical into the water to cover up their negligent act. people are getting sick and skin rashes are becoming apparent, especially in the young and elderly. we will keep going until something is done to correct this "mistake"

Specific Directions: Flint river. runs right through the city of flint. they have been opening the hydrants and letting water pour out of them to "purge" the system, then charging consumers double for their mistake.

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, February 24, 2015 12:55 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: FYI: Flint Michigan control 2-20-15
Attachments: Flint Michigan Control 22015.pdf

You'll receive a hard copy, too.
Jen

From: Sulej, Erik
Sent: Friday, February 20, 2015 12:34 PM
To: Crooks, Jennifer; Murphy, Thomas
Subject: Flint Michigan control 2-20-15

Here is a copy for your records. Everything went out today.

Have great weekend!

Erik S. Sulej

*Ground Water and Drinking Water Branch
U.S. Environmental Protection Agency, Region 5
77 W. Jackson Blvd (WG-15J), Chicago, IL 60604
Phone: (312) 886-3473 / Email: sulej.erik@epa.gov*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 20 2015

REPLY TO THE ATTENTION OF:

WG-15J

Mrs. Stephanie Pumfrey
4071 Mitchell Drive
Flint, Michigan 48506

Dear Mrs. Pumfrey:

Thank you for your January 9, 2015 email to President Obama concerning the quality of the drinking water in the City of Flint, Michigan. Your email was forwarded to me for a response, since the City of Flint's municipal water supply is located within the geographical boundaries of the Region 5 office of the U.S. Environmental Protection Agency.

To summarize the background of your concerns with the City of Flint's drinking water, the source of drinking water for the City of Flint was changed from Detroit (which comes from Lake Huron) to the Flint River at the end of April 2014. The quality of the water in the Flint River is different than that from Lake Huron; and requires additional treatment to ensure an acceptable quality drinking water. The Michigan Department of Environmental Quality (MDEQ) has been working closely with the Operator-in-Charge at the City of Flint's Water Treatment plant to ensure that the citizens of Flint are provided drinking water that meets health standards. As you stated in your letter, the use of Flint River water as a source for your drinking water is an interim source. The City of Flint plans to connect to the Karegnondi pipeline, which will draw water from Lake Huron, in 2016.

My staff contacted the MDEQ District Supervisor for the Lansing District, Steve Busch, to discuss the City of Flint's drinking water issues. Mr. Busch is aware of the multiple complaints from citizens. He and his staff are working closely with the City of Flint's Water Department to ensure the distribution system and the water treatment processes work more efficiently and effectively. The most recent laboratory analyses obtained from MDEQ of the City of Flint's drinking water indicate that almost all regulated contaminants meet State and Federal health standards, as required under the Federal and Michigan Safe Drinking Water Acts. It is true that the City of Flint exceeded the maximum contaminant levels (MCL) for *E. coli* in August 2014, for total coliform bacteria in September 2014, and total trihalomethanes (TTHM) in the fourth quarter of 2014. The City of Flint conducted the proper follow-up to these violations as required by Federal and State regulations. The City of Flint has returned to compliance the two bacteria MCL violations that occurred in August and September 2014.

The TTHM violation is based upon the average of data from four quarters for each sampling location. The initial monitoring in early summer reported significantly elevated levels of TTHM compounds throughout the City's distribution system. The MDEQ's Lansing District office advised the City that it needed to immediately implement operational techniques at the drinking

water treatment plant and in the distribution system to reduce the formation of TTHM compounds. The City of Flint's actions have reduced TTHM concentrations to the point where the most recent results at seven of the eight sample locations are below the drinking water TTHM health standard. At this time, the City must continue to provide quarterly public notification, as it continues to work with the MDEQ engineers to reduce the TTHM levels within the distribution system.

For further information regarding MDEQ's oversight and assistance to the City of Flint regarding its drinking water quality, you can contact Mr. Busch at:

Steve Busch, District Supervisor
Lansing District Office
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
P.O. Box 30242
Lansing, Michigan 48909-7742
(517) 643-2314
buschs@michigan.gov

In your email, you suggested that the source of drinking water should be switched back to Detroit drinking water which comes from Lake Huron. Unfortunately, EPA does not have the authority to require the City to change its source of drinking water back to Detroit drinking water. The decision to change the source of the City of Flint's drinking water was a local decision, and continues to be a local decision only.

Your email also stated that you are paying high monthly bills for drinking water. A part of the water rate is based upon the amount of water the resident is using; however, the base rate/service charge includes debt service charges and operation and maintenance costs of the water supply. The Michigan Department of Treasury conducts annual financial audits of local units of government in accordance with U.S. government auditing standards and Michigan Public Act 34 of 2001, the Municipal Finance Act. This includes the City of Flint and its proprietary utility funds. While these audits do not set the rate structure, they do ensure that funds generated through water rates are accounted and directed in accordance with applicable laws.

Copies of these audits can be obtained online at the following location:

<https://treas-secure.state.mi.us/LAFDocSearch/>

There is currently no Federal regulatory oversight of water utility rates in Michigan.

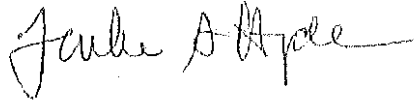
Telephone numbers for you to call if you have further concerns about your drinking water quality:

Flint Water Service Center deals with problems in the distribution system: (810) 766-7202

Water Treatment Plant deals with the actual treatment of the water prior to its pumping into the distribution system: (810) 787-6537

We appreciate your interest in this matter. If you have additional questions, please contact Jennifer Crooks of my staff at (312) 886-0244 or crooks.jennifer@epa.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tinka G. Hyde".

Tinka G. Hyde
Director, Water Division

cc: Mike Prysby, MDEQ
Steve Busch, MDEQ
Richard Benzie, MDEQ

bcc: J. Crooks, GWDWB
T. Murphy, GWDWB

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Monday, March 30, 2015 3:00 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: FYI: Kildee Letter to EPA on SRF Loan Forgiveness
Attachments: 03-27-15 - SRF Loan Forgiveness for Flint - EPA (McCarthy).pdf

Here is the issue – Flint has an old SRF loan and they want principle forgiveness. We told them it was not allowed as PF is for initial financing....and for debt incurred on or after the enactment of the act pursuant to the approps text.

Please let me know if we should work with someone on this. thanks

Steve Marquardt
 USEPA Region 5
 77 West Jackson Blvd
 Chicago, Illinois 60604
 (312)353-3214

From: Deamer, Eileen
Sent: Monday, March 30, 2015 8:42 AM
To: Marquardt, Steve
Cc: Baltazar, Debbie; Fortin, Denise
Subject: FW: Kildee Letter to EPA on SRF Loan Forgiveness

I haven't completely gone through the letter, but giving you a heads up that we will be assigned this letter for response.
 Eileen

From: Davis, CatherineM
Sent: Monday, March 30, 2015 8:30 AM
To: Eades, Cassaundra; Mims, Kathy
Cc: Deamer, Eileen
Subject: Fw: Kildee Letter to EPA on SRF Loan Forgiveness

Hi Sandy and Kathy,

Can you put this in CMS and assign it to R5? They've been working with Cong. Kildee's office on this issue.

Thanks,
 Cathy Davis
 Office of Congressional and Intergovernmental Relations
 Office: 202-564-2703
 Mobile: 202-573-1704
 Email: davis.catherinem@epa.gov

Send mail to:
 US Environmental Protection Agency
 1200 Pennsylvania Ave, NW
 MC: 1305A

Washington, DC 20460

From: Dickinson, Jordan <Jordan.Dickinson@mail.house.gov>
Sent: Friday, March 27, 2015 4:19 PM
To: Davis, CatherineM
Subject: Kildee Letter to EPA on SRF Loan Forgiveness

Hi Eileen,

I want you to see the letter that Congressman Kildee sent to Administrator McCarthy today. We sent a hard copy in the mail and you were cc'd. Could you make sure the Administrator and the corresponding staff see the letter?

Let me know if you have any questions.

Thanks,

Jordan Dickinson
Legislative Assistant
Congressman Dan Kildee (MI-05)
227 Cannon House Office Building
Washington, D.C. 20515
Phone: (202) 225-3611
www.dankildee.house.gov



[Sign up for Congressman Dan Kildee's e-newsletter](#)

DANIEL T. KILDEE
5TH DISTRICT, MICHIGAN

**COMMITTEE ON
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**SUBCOMMITTEE ON
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**SUBCOMMITTEE ON
MONETARY POLICY AND TRADE**

SENIOR WHIP

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COMMUNICATIONS COMMITTEE**



Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE

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WASHINGTON, DC 20515
(202) 225-3611
(202) 225-6393 (Fax)

DISTRICT OFFICE

801 SOUTH SAGINAW STREET
PLAZA LEVEL
FLINT, MI 48502
(810) 238-8627
(810) 238-8658 (Fax)

March 26, 2015

Ms. Gina McCarthy
Administrator, Environmental Protection Agency
1101 A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator McCarthy:

My office has reached out to both the Office of Congressional and Intergovernmental Relations at the Environmental Protection Agency (EPA) and the Congressional Research Service (CRS) to determine if there are any statutory limitations on states to forgive the principal on loans made through the Safe Drinking Water State Revolving Fund (SDWSRF) program. After talking to both of these offices, there seems to be a difference in legal opinion between the two interpretations as to whether forgiveness of principal is statutorily allowed, and I am requesting further clarification.

The City of Flint, Mich., located in my district, continues to endure prolonged and severe financial stress due to the loss of thousands of manufacturing jobs, resulting in population loss and an erosion of its tax base. In an effort to improve the city's financial stability, Flint decided to end its 50-plus-year affiliation with the City of Detroit Water and Sewage Department in April of 2013. Instead, Flint would become a partner in the Karegnondi Water Authority (KWA) to bring raw water from Lake Huron to the city.

The water contract between the City of Detroit Water and Sewage Department and Flint was terminated in May of 2014. The KWA, however, will not be able to provide water to the city until its pipeline from Flint to Lake Huron is completed at the end of 2016. To fill the gap in service until the KWA is completed, Flint has turned to the Flint River as its current source for raw water. The Flint River has proven to have an inconsistent quality because of high levels of organic matter. Flint water officials have used high levels of trihalomethanes to treat the occasional elevated levels of organic matter in the water. On December 16, 2014, the Michigan Department of Environmental Quality cited the city for being in violation of water standards determined by the Safe Drinking Water Act (SDWA) due to high levels of trihalomethanes. In accordance with the SDWA, a cautionary notice about the citation was subsequently sent to residents.

Since its citation, Flint has engaged local and state leaders to find a solution for the poor quality of the water. On February 3, 2015, the state gave the city close to \$2 million to hire consultants to assess the condition and find leaks in the water infrastructure system. While this funding is a step in the right direction, it is not nearly enough to significantly improve the water quality.

This background on Flint's water situation is to point out that the SDWA is intended to improve drinking water in America's cities, such as Flint, by creating water quality standards and funding the SDWSRF to invest in water infrastructure. In addition to the high levels of trihalomethanes, the poor condition of water infrastructure in Flint, regardless of the water's source, contributes to discolored and poor tasting water. Furthermore, Flint currently suffers an over 35 percent loss ratio of water between the treatment plant and the end user. In the past, Flint has benefitted from the SDWSRF and currently has close to \$22 million in outstanding loans from it that the city has used to repair the water system. The financial stress of making payments on these loans, however, has prevented the city from making the necessary ongoing investments to its water infrastructure.

To decrease the burden of these loans, on January 18, 2015, Flint requested that the state of Michigan, as the responsible party in appropriating funds from the SDWSRF to local governments, forgive part of the principal. The state responded that forgiving the principal is not an option as the state does not have the authority to do so.

In response to the state's reply, on February 10, 2015, my staff reached out to the Office of Congressional and Intergovernmental Relations at the EPA to ask if they were aware of any statutory language that prevents principal forgiveness of loans made under the SDWSRF. On February 25, 2015, the EPA responded that they "could find ... no provision that would allow a state to [forgive an existing loan made from a Safe Drinking Water Act state revolving fund]."

On February 23, 2015, my staff also reached out to the CRS for their legal opinion on this matter. Although they could not find any precedent for doing so, the CRS did find two instances in statute that, in their opinion, allows states to forgive the principal on loans made through the SDWSRF.

First, SDWA sec. 1452(d)(1), 42 USC 300j-12(d)(1), states – "Notwithstanding any other provision of this section, in any case in which the State makes a loan pursuant to subsection (a)(2) of this section to a disadvantaged community ... , the State may provide additional subsidization (including forgiveness of principal)."

Second, the Consolidated and Further Continuing Appropriations Act, 2015, Pub. Law 113-235, states on page 296 – "Provided further, [t]hat not less than 20 percent but not more than 30 percent of the funds made available under this title to each State for Drinking Water State Revolving Fund capitalization grants shall be used by the State to provide additional subsidy to eligible recipients in the form of forgiveness of principal, negative interest loans, or grants (or any combination of these), and shall be so used by the State only where such funds are provided as initial financing for an eligible recipient or to buy, refinance, or restructure the debt obligations of eligible recipients only where such debt was incurred on or after the date of enactment of this Act;"

The difference in opinion between EPA and CRS has created ambiguity for the affected parties. The ability of states to forgive portions of the principal on loans made through the SDWSRF could have a significant impact on the financial state of Flint and many other distressed municipalities across the county. I would appreciate clarification from you on what, according to EPA's interpretation of the law, statutorily prevents states from forgiving the principal on loans made under the SDWSRF.

Due to critical nature of the water quality in Flint and the impact that loan forgiveness could have on improving the quality of the water, I ask for your prompt attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Kildee", with a stylized, flowing script.

Dan Kildee
MEMBER OF CONGRESS

cc:

Cathy Davis, EPA
Eileen Deamer, EPA
Robert Meltz, CRS

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Monday, March 30, 2015 10:35 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Cc: Harris, Kimberly; Murphy, Thomas
Subject: FYI: Water Dilemma in Flint

Did you all see this news article?

From: Bair, Rita
Sent: Thursday, March 26, 2015 9:31 AM
To: Poy, Thomas; Damato, Nicholas; Crooks, Jennifer; Shoven, Heather
Subject: FYI: Water Dilemma in Flint

A Water Dilemma in Michigan: Cloudy or Costly?

By MITCH SMITH MARCH 24, 2015



Vernon White over the Flint River, which replaced Lake Huron as the water source in Flint, Mich. Mr. White says he buys soda to avoid the water.

FLINT, Mich. — Depending on the day, Melissa Mays says, the water flowing out of her home's faucets might have a blue tint. Or it might smell like mothballs. Or it might fill her home with the scent of an overchlorinated swimming pool.

Lately, Ms. Mays, who is 36 and works in marketing, has not been turning on her tap much at all. After Flint changed the source of its drinking water last spring, Ms. Mays said, she noticed a change in the water's color and odor. Then she started having rashes, and clumps of her hair fell out. When the city issued a boil order, she stopped using the water for drinking and cooking. Now her family spends roughly \$400 a month on bottled water.

"My cat gets bottled water, our plants get bottled water, our fish gets bottled water," said Ms. Mays, who has helped organize marches to protest the water conditions and is on a city commission seeking input on how to move forward. "It takes four to five bottles of water to fill up a pot for spaghetti."

Flint officials insist that the city's water is safe. They say that the issues of odor and color are separate from the question of whether the water meets federal standards, and that no link to health problems has been proved.

Photo



Tony Palladeno Jr., escorted from a water advisory committee meeting for outbursts, says that the water in this bottle came out of his tap in January.

"We understand the concerns about discoloration and odors," said Gerald Ambrose, Flint's state-appointed emergency manager. "We tell everyone who complains that we would be more than happy to come out to their house and test their water."

Mr. Ambrose's position hints at deeper issues in Flint. Though the city has not declared bankruptcy, it has been in state receivership since 2011 and has deep-seated financial problems, which Mr. Ambrose was appointed to help untangle. Add to that a plummeting population and violent crime rates that rank among the nation's worst, and the water question becomes one headache among many.

The problems, almost everyone agrees, started shortly after the city, in an effort to save money, switched from the supply of treated Lake Huron water it had long purchased from Detroit and started drawing water from the Flint River, treating it locally.

On Monday, Flint's City Council voted to "do all things necessary" to reconnect to the Detroit Water and Sewerage Department. Mr. Ambrose's response was swift. Flint water today is safe by all federal and state standards, he said in a statement Tuesday. "Water from Detroit is no safer than water from Flint," he said. "Users also pay some of the highest rates in the state because of the decreased numbers of users and the age of the system."

A sign downtown still refers to Flint as Vehicle City. Older residents recall growing up in a place that 200,000 people called home, where good-paying jobs in the General Motors factories were plentiful. Today, many of the auto plants are gone, the population is below 100,000, and once-prosperous neighborhoods are dotted with abandoned homes and vacant lots.

Photo



Tim Bednarski checking water at the treatment plant. Flint has increased chemical monitoring and hired a consulting firm to suggest improvements.

As Flint has shrunk, its network of water pipes built for a much larger metropolis has deteriorated. With fewer customers, water sometimes languishes in the system, becoming discolored. Moreover, water bills in Flint are far higher than those in neighboring communities. Officials say the switch away from Detroit water saves the city \$12 million a year.

"It's a very sore point, particularly when you have a population with a high degree of low-income folks," Mr. Ambrose said. "To me, the conversation we need to be having is, how do we lower those rates?"

Some residents say they would rather not debate the cost until they are confident that the water is safe. When fecal coliform bacteria showed up in parts of the city last summer, residents were told to boil their water before using it. Officials addressed the issue by pumping extra chlorine into the system, but in solving one problem, they created another.

The high chlorine levels led to elevated levels of total trihalomethanes or T.T.H.M., which required another public notice in January. Residents will again receive a notice of elevated T.T.H.M. levels in the mail later this month, Mayor Dayne Walling has said. Long-term consumption of water with high T.T.H.M. levels can lead to liver or kidney troubles and an increased risk of cancer, according to the Environmental Protection Agency.

Some here say Flint had been on the verge of a rebound when the water problems started. The walkable downtown area, just steps from the University of Michigan's campus here, is now home to the Flint Crepe Company and other new restaurants. And perhaps most significant, the emergency manager was expected to leave office in the coming weeks, handing power back to the elected mayor and City Council.



Melissa Mays said that after Flint changed its water source last spring, she developed rashes and clumps of her hair fell out.

"We continue to deal with a number of longstanding challenges with concentrated poverty and high crime and expensive, old infrastructure," said Mr. Walling, a Flint native who returned to his hometown after

studying at Oxford as a Rhodes scholar. "But we're now 30 years past the major General Motors plant closings in the 1980s, and people are ready to move forward, so the new problems with water have been a huge setback." Mr. Walling said he and his family drank city water.

Mr. Walling and Mr. Ambrose conceded that communication should have been better when water problems emerged. But they say the city is reaching out to residents and answering questions. Officials installed a T.T.H.M. monitor at the treatment plant and hired a consulting firm to suggest improvements there, and they have asked state and federal officials for help. They also note that the switch to the Flint River is not permanent. A new pipeline connecting Flint to Lake Huron is expected to be completed next year.

Many in Flint, though, seem unconvinced. Saterra Hill, 17, a health sciences major at the University of Michigan-Flint, said she and her father purchased several gallon jugs of water each month instead of drinking tap water. Vernon White, 57, said he often bought soda to avoid the water. For many, the water issue stirs emotions. On a recent weekday afternoon, dozens of people filled the basement of the city's transportation center for a meeting of a water advisory committee.

Tony Palladeno Jr., who arrived at the meeting in a red Flint baseball cap, was escorted out by a police officer for repeated outbursts. Mr. Palladeno, 53, keeps a bottle of yellowish water with a layer of sediment that he said came out of his tap in January. He said local officials had not acted quickly enough to fix the problems.

"I don't feel hopeful," Mr. Palladeno said. "At one time, I loved this town. I still love it. There's good people here. But the governing is killing us. I think we need a federal intervention."

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, February 26, 2015 5:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results
Attachments: Flint lean level results Feb 2015 212 Browning (Pb Cu).pdf

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

Yes, the stagnation of the water would increase the lead levels, and I'm glad you're following up with the City to get the lead levels reduced for Mrs. Walters' home—which will hopefully be effective for her neighbors because they are also most likely being exposed to these high lead levels. Miguel reminded me this morning, there are no safe levels of lead in drinking water.

I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Mrs. Walters' home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Mrs. Walters' neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)....as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL...and the city

will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Ms. Walter's concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Mrs. Walters.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with LeeAnn Walters since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb**. She has 2 children under the age of 3... Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Ms. Walters' drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:
LeeAnn Walters
212 Browning Ave
Flint, MI 48507
616-212-6233
Lwalters313@gmail.com

Jennifer

From: Lea Moste [<mailto:lwalters313@gmail.com>]
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

----- Forwarded message -----

From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: "Lea Moste" <lwalters313@gmail.com>
Cc:

Lee,

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee,

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Lea Moste <lwalters313@gmail.com> wrote:

Mike,

Thank you for the water reports and we already planned to see you on the 25th at 10:00am. I was wondering if you know who I need to talk to in the water plant to obtain the Annual Drinking Water Report from last year. According to the EPA website there is link to access but when you click on it, it cannot be accessed. Was also curious if there is an expected time frame for this years report due to the switch. If you can be of any assistance I would appreciate it.

Thank You
 LeeAnne Walters

On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee & Dennis,

Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results

from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

Consumer Notice of Lead & Copper Results in Drinking Water

Water Supply Name: City of Flint
 County: Genesee WSSN: 2310
 Sample Location: 212 Browning Date Sampled: 2/18/2015

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.

Key to Table	Contaminant	AL	MCLG	Your Result
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 which there is no known or expected risk to health. MCLG's allow for a margin of safety. ppb: parts per billion or micrograms per liter.	Lead (ppb)	15	0	104
	Copper (ppb)	1300	1300	Not Detected

Lead can cause serious health problem 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 on the brain with lower 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 can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

To reduce exposure to lead in drinking water:

- *Run your water to flush out lead.* Run the water until it becomes cold.
- *Use cold water for cooking and preparing baby formula.* Do not cook with or drink water from the hot tap; lead dissolves more easily in hot water.
- *Do not boil water to remove lead.* Boiling water will not reduce lead levels.
- *Look for an 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.
- *Identify if your plumbing fixtures contain lead.* New faucets, fittings, and valves, may contain up to 8 percent lead including those advertised as lead-free" and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Although the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure to lead may come from drinking water.

For more information, contact us at: **City of Flint Water Plant (810)787-6537.**

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY**

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270

Lansing, MI 48909

TEL: (517) 335-8184

FAX: (517) 335-8562

Sample Number

LF54945

Official Laboratory Report

Report To: MIKE GLASGOW
4500 N DORT HWY
FLINT MI 48505

System Name/Owner: CITY OF FLINT
Collection Address: 212 BROWNING AVE, FLINT
Collected By: LEANNE WALTERS
Township/Well#/Section: //
County: Genesee
Sample Point: KITCHEN
Water System: Treated Public Distribution System

WSSN/Pool ID: 2310
Source: TYPE I
Site Code:
Collector: Private Citizen
Date Collected: 02/18/2015 07:15
Date Received: 02/19/2015 11:13
Purpose: Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	Not detected	02/20/2015	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.104	02/20/2015	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Genesee County Health Dept.
630 South Saginaw
Flint, MI 48502-1540
810 257-3803

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krszlian

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results
Attachments: 212 Browning (Pb & Cu).pdf; Flint Technical Advisory Team List_R1.pdf

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with LeeAnn Walters since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb**. She has 2 children under the age of 3... Big worries here.

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County: Genesee WSSN: 2310

Sample Location: 212 Browning Date Sampled: 2/18/2015

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**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY**

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

**Sample Number
LF54945**

Official Laboratory Report

Report To: MIKE GLASGOW
4500 N DORT HWY
FLINT MI 48505

System Name/Owner: CITY OF FLINT
Collection Address: 212 BROWNING AVE, FLINT
Collected By: LEANNE WALTERS
Township/Well#/Section: //
County: Genesee
Sample Point: KITCHEN
Water System: Treated Public Distribution System

WSSN/Pool ID: 2310
Source: TYPE I
Site Code:
Collector: Private Citizen
Date Collected: 02/18/2015 07:15
Date Received: 02/19/2015 11:13
Purpose: Routine Monitoring

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	Not detected	02/20/2015	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.104	02/20/2015	0.001	0.015	EPA 200.8	7439-92-1

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Flint, MI 48502-1540
810 257-3603**

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AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

City of Flint / Veolia Technical Advisory Committee

	COMPANY	NAME	TITLE	PHONE	DESIGNEE	CONTACT INFO	
1	General Motors	Randy Tanner	Head of Engineering	810-577-8552			Yes
2	MSU - Lansing	Dr. Joan Rose	Chair in Water Research	517-432-4412	Dr. Joan Rose	rosejo@msu.edu	Yes
3	Greater Flint Health Coalition	Kirk Smith	President	810-232-2228	Kirk Smith	ksmith@flint.org	Yes
4	County Drain Commissioner	Jeff Wright	Deputy Drain Commissioner	810-732-7870	John O'Brien	ifobrien@gcdcwws.com	Yes
5	U of M Flint	Michael Lane	Dir. Environmental Health & Safety	810-766-6763	Michael Lane	mjlane@umflint.edu	Yes
6	Mott Community	Larry Kohler	Executive Director		Larry Koehler	larry.koehler@mcc.edu	Yes
7	Genesys Pace Hospital	Donna Cole	Property Manager	810-606-5611	Donna Cole	donna.cole@genesys.org	Yes
8	Hurley Hospital	Melanie Gavulic	President / CEO		Norb Birchmier	mgavuli1@hurleymc.com	Yes
9	McLaren Hospital	Don Kooy	President / CEO		Russell Hudson	don.kooy@mclaren.org	Yes
10	Genesee County Medical Society	Pete Levine	Executive Director	810-733-9925	Gerald Natzke	plevine@gcms.org	Yes
11	Dept. of Environmental Quality	Mike Prysby	District Supervisor	517-290-8817	Mike Prysby	prysbym@michigan.gov	Yes
12	Genesee Health Department	Jim Henry			Jim Henry	jhenry@gchd.com	Yes
	City of Flint	Howard Croft	DPW Director	810-577-1202	Howard Croft	hcroft@cityofflint.com	Yes
	City of Flint	Daugherty Johnson	Utilities Administrator	810-577-8906	Duffy Johnson	djohnson@cityofflint.com	Yes
	City of Flint	Brent Wright	Plant Supervisor	810-787-6537	Brent Wright	bwright@cityofflint.com	Yes
	City of Flint	Mike Glasgow	Asstant Plant Supervisor		Mike Glasgow	mglasgow@cityofflint.com	Yes

Rennaker, Joanne (DEQ)

From: Wyant, Dan (DEQ)
Sent: Monday, October 19, 2015 3:59 PM
Subject: Information on the City of Flint's Drinking Water and Announcement of Interim Chief for ODWMA - Message from Director Dan Wyant

Dear Colleagues:

I know you have all heard a lot lately about the drinking water situation in Flint, and I want to update you on recent developments.

Today, I released a statement announcing Chief Deputy Director Jim Sygo will immediately assume the role of interim chief of the Office of Drinking Water and Municipal Assistance.

As details of the situation have emerged, it has become apparent staff made a mistake while working with the city of Flint. Simply stated, staff employed a federal protocol they believed was appropriate, and it was not. However, I am convinced our program staff believed they were doing their job correctly, and simply did not have the experience with the particular issue of corrosion control in cities of more than 50,000 people.

Today's actions were the result of a long process. In the spring of 2013, the city of Flint announced it would leave the Detroit Water and Sewerage Department (DWSD) in favor of joining the Karegnondi Water Authority, which is constructing a pipeline to bring drinking water from Lake Huron. In the meantime, the city used the Flint River, treated at the Flint Water Treatment Plant, as its full-time drinking water source.

Since then, the system experienced a number of problems, including most recently, elevated lead levels in some homes and schools. To address public health, the Governor led a charge to bring \$6 million in state funds, plus an additional \$2 million from the city and \$4 million from the C.S. Mott Foundation, to fund the city's reconnection with DWSD.

This was a huge first step in fixing the problem. However, while the switch back to Detroit water carried numerous public health benefits, lead in drinking water is largely a function of outdated local infrastructure. For a long-term fix, we are looking at several options to help the city update its infrastructure and remove all lead service lines.

To ensure safe drinking water in the short-term, the state is providing water filters to every resident in the city of Flint. Many local partners, including the United Way, are also stepping up to ensure the city's schools have bottled water available for children as we design a thorough protocol to test all schools.

I know this is a stressful time for many of you, and I appreciate your dedication and hard work. This is a good time to reflect, as a staff, on our purpose as an agency. Our mission is to protect public health and the environment. Whatever the particular protocol or statute you help to implement or uphold, that is our core reason for being. Keep that at the forefront of your mind.

I am proud to lead a staff of such knowledgeable, committed individuals. Thanks, as always, for the work you do.

Sincerely,

Dan Wyant
Director

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, November 04, 2015 12:55 PM
To: Michael Glasgow
Cc: Howard Croft (hcroft@cityofflint.com); 'bwright@cityofflint.com'; Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: Installation of Corrosion Control Treatment

Michael,

Please notify our department regarding the anticipated timeframe to install the corrosion control treatment system at the water treatment plant. The timeframe should take into account estimated time to receive the chemical feed pumps, storage equipment, and the orthophosphate compound. Coordination of the contractor to install the equipment also needs to be included. If there any delays with the installation of the corrosion control treatment system, please notify us as soon as possible. Finally, please inform us when the corrosion control treatment system is installed. If this occurs by next Monday, I may take the opportunity to conduct an inspection prior to our 12pm meeting.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Chastity Pratt <cpratt@bridgemi.com>
Sent: Monday, January 26, 2015 11:35 AM
To: Busch, Stephen (DEQ)
Subject: interview for article on Flint drinking water

Hi,

I am a reporter for Bridge Magazine working on a deadline story about Flint's drinking water. My story will focus on state involvement and state policy.

My major questions:

1. Several agencies and officials are involved - can you clarify DEQ's role in the Flint water situation?
2. What is the DEQ's response to the mayor's request for assistance?
3. What on-going testing is DEQ doing with Flint water and how often?
4. So far, how many drinking water violations have occurred in Flint since the switch to Flint River water and what sanctions - if any - does the city face?
5. What does DEQ tell Flint residents who call DEQ with concerns about discolored water?

Those are my major questions. Could you please give me a call today?

--

Chastity Pratt Dawsey

Reporter

Bridge Magazine/The Center for Michigan

28 W. Adams Suite 330, Detroit, MI 48226

www.bridgemi.com

C: 313-310-7867

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Thursday, January 22, 2015 12:58 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: Jim lynch, Detroit news.

313-222-2034

Re flint. Can one of you please call him? Thanks.

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, March 20, 2013 12:10 PM
To: Daugherty Johnson
Cc: bwright@cityofflint.com; Shekter Smith, Liane (DEQ); Bloemker, Jon (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: KWA Raw Water Capacity - City of Flint

Daugherty,

This email confirms our discussion this morning concerning the possibility of modifying a resolution to purchase 18.0 million gallons per day (MGD) of raw water from the KWA to 15.0 MGD. The MDEQ does not concur with the potential reduction to 15.0 MGD of raw water based on the capacity requirements under the Michigan Safe Drinking Water Act. This volume of raw water will not be sufficient in meeting Flint's maximum day demands (MDD) and the MDEQ will not support a contract between Flint and the KWA that provides only 15.0 MGD of raw water. The MDEQ is also concerned that an 18.0 MGD contract will only be marginal in meeting Flint's MDD. Our concerns are based on the following demand data on record as provided by the city.

- Flint's 5-year average day demand: 13.9 MGD
- Flint's 5-year max day demand: 21.6 MGD

Next, R 325.11204 (1) of the Michigan Safe Drinking Water Act, 1976 PA 399, as Amended and the Administrative Rules require a public water supply to provide sufficient capacity in the waterworks system to meet the finished water supply requirements and, in Flint's case, needs to consist of rated capacity from an approved surface water supply. Flint's capacity needs are also based on treated water; thus the capacity of available raw water will need to be slightly higher (2 to 3 percent) to account for the water needed for production at the treatment plant.

While we understand that Flint's population and water use has declined over the past 10 years, there are other important considerations for providing sufficient source capacity and these include:

- Flint has the potential to fill many existing industrial vacancies over the next 20 years. Additional capacity will be needed to meet this need.
- Potential permit bans and/or connection bans if MDD cannot be met under contracted capacity
- Water use restrictions measures if MDD cannot be met

- Flint needs to plan for future capacity requirements. Most future capacity plans allow for some increase in capacity to allow for expansion of residential, commercial, or industrial customer base
- Flint's 2011 Water Reliability Study's 2030 projected MDD is 24.0 MGD. This MDD is consistent with Flint's most recent water system Sanitary Survey prepared by the MDEQ.

If you have any questions concerning this matter, please call me at your earliest convenience.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 335-6122 - office
517 599-5437 – cell

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 335-6122

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, March 26, 2013 11:44 AM
To: Busch, Stephen (DEQ)
Subject: kwa
Attachments: KWA TYJT Report MFP Comments.doc

See attached

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 335-6122

**City of Flint Water Supply Assessment
Tucker, Young, Jackson, Tull Inc.
February 2013**

MDEQ – LDO Comments

1. DWSD's most cost-effective option of 8 MGD maximum day from either the Imlay Station or from FL-1 in Table 6-1 clearly causes the Flint WTP to exceed the 2:1 DWSD – Flint River blending ratio during maximum day demand and the high usage months in the summer. The need to soften during higher usage from the Flint River will increase capital improvement costs and on-going operation/maintenance costs at the Flint WTP.

Additional capital improvement include:

- Repairs to lime slakers and lime storage silos
- Disposal of lime sludge residuals – on site de-watering/filter press system
- Potential for higher Cryptosporidium Bin classification from the Flint River which will require more advanced treatment (UV disinfection, etc).
- Flint WTP is rated at 36 MGD. Existing components (pumps, treatment basins, chemical feed systems) may not be suitable for treating at very low rates (8.0 MGD or less).

Additional operational costs include:

- Additional treatment chemical cost – lime-soda ash for softening
- Additional electrical usage for increased ozone generation and softening
- Additional system monitoring for increased levels of disinfection by-products

The TYJT report does not address these additional costs.

2. The Average Unit Cost of purchased water from DWSD presented in Table 4-2 is misleading since the annual change was based on a hypothetical rate that Flint would be been offered had they signed a new purchase contract with DWSD. The actual annual change (average) of water purchased from DWSD by Flint is approximately 10.5% based on a rate analysis conducted by Flint and their consultant.

3. The TYJT report projects the cost of the pumping stations at \$71 million and is approximately \$40 million higher than KWA's cost estimate. KWA, Flint, and their consultant provide accurate construction costs that would support their cost estimate. We would agree with TYJT's experience of higher construction costs in the immediate Detroit metropolitan area due to local construction costs and requirements; however, these higher are not always applicable in out-state areas.
4. In Table 5-5 TYJT's estimate of \$71 million and \$218 million for the pumping stations and transmission main respectively includes their 30% ELAC estimate. TYJT; however, includes an additional \$32.5 million for further ELAC costs and increases the total ELAC costs to approximately 43%. It appears that the ELAC is being double-counted and a 43% ELAC seems unwarranted for a project having a significant amount of preliminary design engineering completed.
5. Page 19 of the TYJT report states that under the KWA option, two separate treatment process streams would need to be maintained for the Flint River as a back-up supply. This is not true. The Flint WTP could use their existing KWA treatment train to treat Flint River water; however, some of treatment processes would need to be adjusted (increase coagulant and disinfectant dosages).
6. TYJT states on Page 15 that approximately \$7.1 million in capital improvements will be needed at the Flint WTP for the KWA option based on the 2009 KWA preliminary engineering report. A decrease in these costs (KWA option) is likely as some of the capital improvements are not critical in the WTP's operation. However, additional capital improvements are needed if the WTP is utilized as part of DWSD's most cost effective blending option (see Item #1).
7. Page 18 of the TYJT report offers a second pipeline to Flint for redundancy along with sharing the capital cost of the new pipeline by all DWSD customers. How well will other DWSD customers accept this proposition?
8. The DWSD also offers to sell the existing transmission line to Flint for \$4.7 million. What are the O&M costs of the transmission main? These costs do not appear to be included in the cost analysis. Will Flint be able to charge (sell) water to the Lapeer county customers that would then be purchasing water from Flint's pipeline? Finally, the pipeline is 50 year old, what is the remaining life expectancy of the pipeline and is this the best long-term investment for Flint?
9. Page 2 states that the 18 miles of pipeline from KWA to the Flint WTP is a 30-inch diameter main. The KWA Appendix 20 – October 2012 document states the pipeline is a 36-inch diameter main. The city of Flint is also investigating the proper size needed for this pipeline to meet their WTP's rated capacity and will be addressed in the final design.

10. Page 20 states that due to Flint's high water loss that the KWA pipeline

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, September 25, 2014 10:31 AM
To: Mike Glasgow
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: lead copper monitoring

Morning Mike, have you collected any lead/copper samples yet? If so please forward results. If you haven't sampled yet, please let us know what your plan is for the 1st 6 month round of monitoring due between 7/1 – 12/31/14.

thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Wednesday, March 18, 2015 11:38 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel; Harris, Kimberly
Subject: Lead levels still high at Ms. Walters' home

I just received a call from LeeAnn Walters' home in Flint. She had her water tested again—this time the lead levels came back at 397 ppb. I will ask her to fax me the official lab results she has. Are you aware if the City flushed her system after the last test? Any thoughts on how to respond to her? I'm running out of ideas.
Jennifer

Rennaker, Joanne (DEQ)

From: Robinson, Mikelle (DCH)
Sent: Wednesday, September 23, 2015 11:13 AM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Cc: Rockefeller, Cheryl (DCH); Anderson, Paula (DCH)
Subject: legislative inquiry on Flint water situation - request for a call
Importance: High

Hello,

Geralyn Lasher and Elizabeth Hertel have requested a call today if possible to discuss the Flint water situation. I know you had a call yesterday with Linda Dykema and some other staff so I apologize if this is redundant. Hopefully it will only take a few minutes to help us get on the same page about an appropriate response and any potential action steps. Is there a time today that will work for you? Please let me know and we will make it work on our end.

I can be reached at 517 335-8701 if you have questions.

Thank you!

Mikelle

Director, Bureau of Local Health and Administrative Services
Population Health and Community Services Administration
Department of Health and Human Services
Robinsonm18@michigan.gov

Rennaker, Joanne (DEQ)

From: Sygo, Jim (DEQ)
Sent: Thursday, October 29, 2015 1:38 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Krisztian, George (DEQ)
Subject: Letter and Pemrit

When you sent the letter to Flint. Please send me an electronic copy and an electronic copy of the Permit as well.

Thanks

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Monday, February 09, 2015 1:33 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Poy, Thomas
Subject: Letter from the White House-Flint

Steve/Mike: I'm responding to the earlier email from a citizen in Flint; but now I have a Letter from the White House that I'm responding to. I'll send you a draft tomorrow afternoon or Wednesday, when I get language from Kim Harris on TTHM health effects, and I asked Richard for some info on water rates oversight in MI.

Question for you: As of January, the Flint drinking water was meeting all State/Federal health standards except for TTHMs. I think that TTHMs will continue to be out of compliance for the next couple of quarters. Do recent analytical results show that all other contaminants are meeting State/Federal health standards? Steve, you said on our call this morning that you would track down these results today. Steve, in response to Tom Poy's question about the chlorine residuals in the past Flint/Detroit drinking water vs. current Flint drinking water, you said you would track down this information too.

On another related note, Tom Poy and I have had a number of discussions this morning about Flint. He called our contact at ATSDR/CDC, this morning to discuss the large number of complaints we're getting about rashes. He said he would like to see the most recent analytical results from Flint. So, I will be able to give him the information you're sending me, Steve.

Thank you all for being so responsive; this one is a tough one.

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: The Office of Senator Ananich <SenJAnanich@senate.michigan.gov>
Sent: Tuesday, October 20, 2015 12:38 PM
To: Miller, Kelly C. (OAG); Ringler, Doug (OAG)
Cc: Jordan.Dickinson@mail.house.gov; mayor@cityofflint.com; HCroft@cityofflint.com; hedman.susan@epa.gov; poy.thomas@epa.gov; Schock.michael@epa.gov; Lytle.darren@epa.gov; fortin.denise@epa.gov; Cook, Pat (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Edwardsm@vt.edu; Wyant, Dan (DEQ); Sygo, Jim (DEQ)
Subject: Letter Regarding ODWMA Audit
Attachments: 10.20.2015-Letter-Ananich-AG-Ringler-FINAL.PDF

Auditor General Ringler,

Please see the attached letter regarding an audit of the Office of Drinking Water and Municipal Assistance (ODWMA).

Please do not hesitate to contact my office if you have any questions. Thank you for your time and attention.

Sincerely,

The Office of State Senator Jim Ananich
Senate Minority Leader
District 27

SENATE MINORITY LEADER
JIM ANANICH

☎ 517.373.0142
✉ senjananich@senate.michigan.gov
🌐 senatedems.com/ananich

October 20, 2015

Doug Ringler, CPA, CIA
Auditor General
201 North Washington Square, 6th Floor
Lansing, MI 48913

Auditor General Ringler,

It has come to my attention that the Office of the Auditor General is conducting an audit of the Office of Drinking Water and Municipal Assistance (ODWMA). This audit will assess the sufficiency of ODWMA's oversight of the State's drinking water and environmental health programs. As you may know, recently independent research by physicians and water quality experts verified that the City of Flint's drinking water contains hazardous levels of lead. This lead contamination is dangerous for all Flint's residents, but it is especially dangerous for the young children who live there.

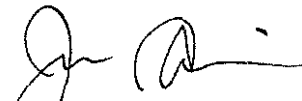
I'm hoping the audit of ODWMA will answer the following questions:

- How does ODWMA ensure the data they receive is accurate?
- What accountability measures are in place for ODWMA staff who fail to follow data verification protocols?
- What accountability measures are in place for ODWMA staff who lie or misrepresent information to the Environmental Protection Agency?
- What policies do ODWMA and the Michigan Department of Environmental Quality (MDEQ) have in place to escalate major infractions up the chain of command?

Please ensure that these questions are answered by this audit so I can determine what legislative steps may be necessary to strengthen transparency and accountability within ODWMA.

Thank you for your consideration of this matter.

Sincerely,



Jim Ananich
Senate Democratic Leader
District 27

SENATE MINORITY LEADER
JIM ANANICH

☎ 517.373.0142
✉ senjananich@senate.michigan.gov
🌐 senatedems.com/ananich

cc:

U.S. Representative Dan Kildee
Mayor Dayne Walling, City of Flint
Howard Croft, City of Flint
Susan Hedman, EPA
Thomas Poy, EPA
Michael Schock, EPA-ORD
Darren Lytle, EPA-ORD
Denise Fortin, EPA
Dan Wyant, EPA
Jim Sygo, MDEQ
Pat Cook, MDEQ
Stephen Busch, MDEQ
Brad Wurfel, MDEQ
Marc Edwards, Virginia Tech

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Thursday, April 02, 2015 2:04 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: LT2 letter for Flint
Attachments: Cover letter 2nd round Sch 2 plants.docx; Schedule 2 LT2 Sampling Plan Template.docx; Round 2 Sched 2 Calendar.xlsx; Crypto Certified labs April 2015.pdf

Hi Mike,

Attached is the information that you will have to mail to the Flint WTP ASAP pertaining to the 2nd round of source water monitoring as required by the LT2 Rule. The first attachment is a letter that you will have to place on Lansing District letterhead with an appropriate signature block. The next 3 attachments are documents that you will need to print out and include with the letter.

You should also consider emailing the sampling plan template, calendar and example schematics to them so they can complete those forms electronically if they choose to do so. I'll email you the example schematics in a separate email.

If you have any questions, please give me a call.

Patrick Cook, P.E.
Community Drinking Water Unit
Office of Drinking Water & Municipal Assistance
Michigan Department of Environmental Quality
Phone: (517) 284-6514
cookp@michigan.gov

Date:

To: Schedule 2 Plants

Address:

Dear :

SUBJECT: Long Term 2 Enhanced Surface Water Treatment Rule
2nd Round of Source Water Monitoring Requirements

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) was promulgated by the U.S. Environmental Protection Agency on January 5, 2006. The Michigan Department of Environmental Quality adopted this rule into the Michigan Administrative Rules in December, 2009. All public water systems that are supplied by a surface water source and systems supplied by a ground water source under the direct influence of surface water (GWUDI) are subject to this rule.

According to the LT2 Rule, systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. Please keep in mind that Grandfathering data will not be accepted for the second round of monitoring. This monitoring includes at least one source water *Cryptosporidium*, *E. coli*, and turbidity sample per month for a period of 24 months for systems serving populations greater than 10,000 people. Systems will be assigned to a "treatment bin" based on the results of source water monitoring. The treatment bin specifies the level of *Cryptosporidium* removal and/or inactivation that the system must achieve.

Our records indicate that your system is required to comply with the source water monitoring requirements on **Schedule 2** as stated below in Table 1. Therefore, your system is required to submit to the DEQ a source water monitoring plan for each plant by July 1, 2015, and start the 2nd round of monitoring in October, 2015.

Table 1 – LT2 Milestone Dates for 2nd Round of Source Water Sampling

System Population	Schedule	Must submit Source Water Sampling Plan by...	Must begin second round of source water monitoring...
At least 100,000	1	January 1, 2015	April 1, 2015
50,000 – 99,999	2	July 1, 2015	October 1, 2015
10,000 – 49,999	3	July 1, 2016	October 1, 2016
<10,000	4	July 1, 2017	October 1, 2017

Enclosed with this letter is a Source Water Sampling Plan template that you can complete and submit to this office to comply with the July 1, 2015 deadline. The template includes instructions and a worksheet that will assist the DEQ in determining if your plan meets the requirements of the LT2 Rule.

If you have any questions about this subject, please contact this office.



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE**

**LONG TERM 2 (LT2) SOURCE WATER SAMPLING PLAN TEMPLATE
Round 2 Sampling – Schedule 2 Systems**

A responsible official for the water system should submit the following information for DEQ review and approval.

A sampling plan packet consisting of:

1. The name of the Michigan Accredited Lab that will be performing the *Cryptosporidium* analysis. A list of approved labs can be obtained at <http://www.michigan.gov/deqlaboratoryservices>, click on Certifications, click on Drinking Water Analysis Laboratory, click on Cryptosporidium Laboratories.
2. The name of the Michigan Accredited Lab that will be performing the *E.coli* analysis. The laboratory that you select must be certified for *E.coli* enumeration (counting) using an U.S. EPA Approved Analytical Method.
3. Use the enclosed calendars for 2015 - 2017 to select or highlight the days between October 1, 2015, and September 30, 2017, on which you will be collecting your samples. You may also submit a one-page summary of the dates when samples will be collected in mm/dd/yy format. Samples must be collected within a five day window (the date you select, plus or minus 2 days).
4. A schematic indicating all raw water sources, chemical feed points and recycle locations along with an arrow indicating the exact sample location.
5. Completed Source Water Sampling Location Worksheet (provided on the following pages with instructions). Completed worksheets must be submitted to your DEQ Drinking Water District Engineer at least 3 months prior to the start of your system's required sampling period (7-1-15).
6. Signature of the responsible official for the water system acknowledging that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

LT2 SOURCE WATER SAMPLING LOCATION WORKSHEET INSTRUCTIONS:

If your treatment plant uses surface or GWUDI (groundwater under direct influence of surface water) sources, the LT2 rule requires that you monitor each source for *Cryptosporidium*, *E.coli* and turbidity once a month over a 2 year period. Please complete one column of this worksheet for each source.

<u>Source Name</u> - List all sources that will be monitored for <i>Cryptosporidium</i>, <i>E.coli</i> and turbidity. Blending of two or more sources is permitted as long as it is prior to any chemical addition and the blended portions are representative of normal operations. Next to each source, indicate if it is "Blended" or "Not Blended". <i>Please list information for each source in a separate column.</i>
<u>Source Type</u> – For each source, state if it's a Flowing Stream, Lake/Reservoir or GWUDI.
<u>Source Identification Number</u> - Be sure to list a source identification number for each source. Contact your local DEQ District office if you are uncertain of the source identification number for your source(s).
<u>Source Water Sampling Location</u> - Please describe, in detail, the specific location where you will be collecting your samples. If your system has more than one source, you should collect your samples after the raw water from all sources is combined. Your sampling point(s) should be representative of water entering the treatment plant. If you have a raw water off-stream reservoir or storage, samples should be collected after the raw water storage/reservoir. If the raw water is not combined prior to treatment, you may need to composite samples from each source (recommended), or analyze separate samples from each source and calculate a weighted average. <u>Include a plant schematic with an arrow indicating your proposed LT2 sampling location.</u> Example plant schematics are available upon request.
<u>Usage</u> - Please describe, in detail, the specific usage practices for each source – "All year" or "Part-Year/Seasonal"- for your source in recent years and describe the anticipated use in future years. For Part-Year/Seasonal sources, include the months of operation.
<u>Proportion of Flow</u> - Provide the most accurate information available regarding the % of average yearly flow that each source contributes. After providing information for all sources, please clearly indicate which source is your primary. Your primary source is the source that clearly provides the majority of water on a yearly basis to the treatment plant.
<u>Presedimentation, Bank Filtration, or Off-Stream Storage (if applicable)</u> - If you utilize any of these practices, please include them in your plant schematic and indicate if your samples will be collected before or after these practices.
<u>Recycling Practices (if applicable)</u> - If your plant recycles filter backwash water or other waste streams, you must indicate the point where the recycled backwash re-enters the treatment process. Your sampling point should be prior to the location where recycled streams come back into the treatment process. If you do not recycle, please state "Do not recycle" on your plant schematic. Samples collected after recycling will be invalidated; re-sampling will be required.
<u>Chemical Pretreatment</u> - On the plant schematic, indicate chemical feed locations from the intake to the plant. Your sampling point must be prior to any chemical treatment. If you feed any chemical(s) prior to your sampling point, you need to include this information in your sampling worksheet. Samples containing treatment chemicals will be invalidated; re-sampling will be required.
<u>Sample Compositing Procedure</u> - If a blended sample location prior to chemical addition is available, you should collect one blended sample from this location. If such a sample location is not available, plants may choose to sample each blended source separately. In this case, a composite sample representing % contribution of each source is needed. Describe Compositing in detail. A system may request to evaluate blended sources separately in order to provide additional information on <i>Cryptosporidium</i> loading for each source.

Note: Collection of at least one matrix spike sample for every 20 *Cryptosporidium* samples is required and should be documented in the sampling plan schedule (i.e. at least two matrix spike samples are needed for 24 *Cryptosporidium* samples).

Long Term 2 Enhanced Surface Water Treatment Rule Source Water Sampling Location Worksheet

Public Water System (PWS) Name: _____ WSSN: _____

Water Treatment Plant Name: _____

Water Treatment Plant ID: _____

Name and Phone Number of Person completing this Form: _____

Source Name		
Source Type Flowing Stream Lake/Reservoir GWUDI - Ground Water Under the Influence of Surface Water		
Source Identification Number		
Source Water Sampling Location (Raw water tap or sampled at source, indicate location on schematic)		
Usage Operational – almost all the time Demand – a few times a year Emergency – fewer than once per year		
Proportion of Typical Average Daily Flow (if only 1 source, 100%)	_____ %	_____ %
Pretreatment Practices (if applicable) None Presedimentation Bank filtration Other – write in		
Recycling Practices (yes or no) (If yes, describe and indicate location on schematic)		
Chemical Pretreatment (yes or no) (If yes, describe and indicate location on schematic)		
Compositing Procedure (yes or no) (If yes, state if using blended sample tap, composite sample, or weighted)		

Use additional sheets to provide more information.

I acknowledge that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

Signature

Date

LT2 SOURCE WATER MONITORING SAMPLING CALENDAR

PWS NAME:

PWSID:

2015

October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

2016

January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2		1	2	3	4	5	6			1	2	3	4	5
3	4	5	6	7	8	9	7	8	9	10	11	12	13	6	7	8	9	10	11	12
10	11	12	13	14	15	16	14	15	16	17	18	19	20	13	14	15	16	17	18	19
17	18	19	20	21	22	23	21	22	23	24	25	26	27	20	21	22	23	24	25	26
24	25	26	27	28	29	30	28	29						27	28	29	30	31		
31																				

April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	7				1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30		

July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2		1	2	3	4	5	6					1	2	3
3	4	5	6	7	8	9	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	29	30	31				25	26	27	28	29	30	
31																				

October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1			1	2	3	4	5					1	2	3
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31
30	31																			

Michigan Certified Laboratories for Cryptosporidium Analysis
Michigan Department of Environmental Quality
Remediation and Redevelopment Division
Laboratory Services Section
Laboratory Certification Officer: Gregg A Lundy
Chief of Laboratory Services: George L. Krisztian
Date of Report: July 15, 2014

Phone: (517) 335-9800 Fax: (517) 335-9600
Phone: (517) 335-9219
Phone: (517) 335-8812

Michigan DEQ Certified In State Laboratories

Laboratory Name / Address /Contact Information	Michigan Laboratory ID #
Michigan State University Environmental and Molecular Microbiology Laboratory 480 Wilson Road, 3 Natural Resources Building East Lansing, MI 48824	9982
Contact: Rebecca Ives Phone: (517) 432-8185 Fax: (517) 432-1699 Email: ivesrebe@msu.edu	

Michigan DEQ Certified Out of State Laboratories

Laboratory Name / Address /Contact Information	Michigan Laboratory ID #
EMSL Analytical, Inc. Cinnaminson, New Jersey Laboratory 200 Route 130 North Cinnaminson, NJ 08077	9970
Contact: Helen MacMinn Phone: (856) 303-2584 Fax: (856) 786-5971 Email: hmacminn@emsl.com	
Eurofins Eaton Analytical, Inc. South Bend, Indiana Laboratory 110 South Hill Street South Bend, IN 46617	9926
Contact: Dale Piechocki Phone: (574) 472 5523 Fax: (574) 233-8207 Email: dalepiechocki@eurofinsus.com	

Laboratory Name / Address /Contact Information**Michigan Laboratory ID #**

Scientific Methods Inc.
12441 Beckley Street
Granger, IN 46530

9984

Contact: Matt Hayes
Phone: (574) 277-4078
Fax: (574) 968-0269
Email: matt@scientificmethods.com

Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Tuesday, November 03, 2015 8:09 AM
To: Natasha Henderson
Cc: Sean Kammer; Warren Green; Samir Matta; Lytle, Darren; Schock, Michael; Busch, Stephen (DEQ); Prysby, Mike (DEQ); rosejo@msu.edu; Michael Glasgow
Subject: Lunch Meeting Prior to Technical Advisory Mtg.

I am writing to confirm a lunch meeting invitation next **Monday November 9th at noon** which will be immediately prior to our technical advisory committee meeting. We would like to have a candid discussion about data and messaging with this select group. At the meeting we intend to have representatives from LAN, DEQ, EPA, along with City Officials. I am reserving seating at the White Horse Tavern located at **621 W Court St, Flint, MI 48503** located approximately 1.5 miles due west of City Hall on the same road - Court St.

Please email me if you have any questions.

Thank you,

--

Howard Croft
Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Daugherty Johnson <djohnson@cityofflint.com>
Sent: Wednesday, October 15, 2014 3:06 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Brent Wright; Robert Bincsik
Subject: Main Break and Valve replacement

Hello Steve and Mike. The City is planning on repairing a break on a 16" line on Saturday. The shutdown area will also allow us to replace a 24" valve, 18" valve and two 12" valves. We are planning to issue a Boil Notice for the affected areas. Could you please get back with me so we can coordinate what we've got going with your office. You can call me at (810) 577-8906 to set up a conference call.

Thanks
Daugherty 'Duffy' Johnson
Utilities Administrator
City of Flint

Rennaker, Joanne (DEQ)

From: Pallone, Maggie (DEQ)
Sent: Thursday, October 08, 2015 3:10 PM
To: Sitko, Anthony M; Tawwab, Bilal
Cc: Wurfel, Brad (DEQ); Busch, Stephen (DEQ); Henry, James; Krisztian, George (DEQ); Wyant, Dan (DEQ)
Subject: MDEQ Water Testing for Flint Community Schools
Attachments: Flint Community Schools Testing Results Initial Screen.pdf

Mr. Tawwab and Mr. Sitko,

Attached are the initial sampling results from 13 schools that were tested last week. I apologize that we didn't get these to you earlier today. George Krisztian from our office has been named the Flint Water Action Coordinator and will be reaching out tomorrow to discuss next steps for the lead exposure testing. This will involve inspecting all of the plumbing in each of the schools and drawing samples from each of the faucets.

If you have any questions, George is cc'd on this email.

Thank you,

Maggie Pallone

Maggie Pallone
Deputy Director
Policy and Legislative Affairs
Department of Environmental Quality
517-599-6190 (cell)
PalloneM@michigan.gov

Flint Community Schools Testing Results - Initial Screen October 2, 2015

ANALYTE	RESULT (mg/L)	Address	Sample Description	Collection Date
Lead	0.004	1040 N SAGINAW ST	3RD FLOOR CAFETERIA	02-Oct-15
Lead	0.007	1040 N SAGINAW ST	1ST FLOOR FTN	02-Oct-15
Lead	0.009	1040 N SAGINAW ST	2ND FLOOR LOWER FTN	02-Oct-15
Lead	0.001	1101 W VERNON DR PIERCE ELEMENTARY	CUSTODIAN OFFICE DRINKING FOUNTAIN	02-Oct-15
Lead	0.003	1101 W VERNON DR PIERCE ELEMENTARY	None Provided	02-Oct-15
Lead	0.008	1101 W VERNON DR PIERCE ELEMENTARY	DRINKING FOUNTAIN MAIN HALL	02-Oct-15
Lead	0.009	1420 W TWELFTH	DRINKING FOUNTAIN	02-Oct-15
Lead	0.015	1420 W TWELFTH	DRINKING FTN BY RM 3	02-Oct-15
Lead	0.007	1420 W TWELFTH ST	ACROSS FROM CAFETERIA DRINKING FTN	02-Oct-15
Lead	0.005	1518 UNIVERISTY AVE	GYM/POOL DRINKING FTN	02-Oct-15
Lead	0.001	1518 UNIVERSITY AVE	3RD FLOOR FOUNTAIN	02-Oct-15
Lead	0.002	1518 UNIVERSITY AVE	2ND FLOOR FOUNTAIN	02-Oct-15
Lead	0.001	2010 CRESTBROOK SCHOOL	LOWER DRINK FTN	02-Oct-15
Lead	0.002	2010 CRESTBROOK SCHOOL	HIGH DRINK FTN	02-Oct-15
Lead	0.001	2500 N AVERILL SCHOOL	HIGH DRINK FTN SO ENTRANCE	02-Oct-15
Lead	Not detected	2500 N AVERILL SCHOOL	HIGH DRINK FTN ACROSS FRM TEACH	02-Oct-15
Lead	0.004	305 WALNUT ST	KITCHEN FOOD PREP SINK	02-Oct-15
Lead	0.006	305 WALNUT ST	DRINKING FTN	02-Oct-15
Lead	0.009	305 WALNUT ST CENTRAL KITCHEN	KITCHEN FOOD PREP	02-Oct-15
Lead	0.002	923 E KEARSLEY	1ST FL DRINK FTN	02-Oct-15
Lead	0.005	923 E KEARSLEY	2ND FL BTN 207 & WMS RSTRM	02-Oct-15
Lead	0.003	923 E KEASLEY ADMIN	BASEMENT ADMIN	02-Oct-15
Lead	0.002	BROWNELL S T E M ACADEMY	DRINK FOUNTAIN ROOM 12	02-Oct-15
Lead	0.005	BROWNELL S T E M ACADEMY	DRINK FTN GYM BATHRM	02-Oct-15
Lead	0.031	BROWNELL S T E M ACADEMY	DRINK FOUNTAIN RM 6 & 7	02-Oct-15
Lead	0.003	EISENHOWER ELEMENTARY	FOUNTAIN GYM	02-Oct-15
Lead	0.016	EISENHOWER ELEMENTARY	FOUNTAIN ROOM 209	02-Oct-15
Lead	0.028	EISENHOWER ELEMENTARY	FOUNTAIN ROOM 102	02-Oct-15
Lead	0.003	FREEMAN ELEMENTARY	FOUNTAIN NORTH END OF BLDG	02-Oct-15
Lead	0.008	FREEMAN ELEMENTARY	FOUNTAIN MIDDLE AT SCHOOL	02-Oct-15
Lead	0.101	FREEMAN ELEMENTARY	FOUNTAIN SO END OF BLDG	02-Oct-15
Lead	0.002	HOLMES S T E M ACADEMY	DRINK FOUNTAIN D114	02-Oct-15
Lead	Not detected	HOLMES S T E M ACADEMY	DRINK FOUNTAIN BLUE HALLWAY C109	02-Oct-15
Lead	Not detected	HOLMES S T E M ACADEMY	DRINKING FOUNTAIN OFFICE	02-Oct-15
Lead	0.002	NORTHWESTERN HIGH SCHOOL	DRINKING FTN LIBRARY NORTH	02-Oct-15
Lead	0.004	NORTHWESTERN HIGH SCHOOL	DRINK FOUNTAIN CAFE WEST	02-Oct-15
Lead	0.010	NORTHWESTERN HIGH SCHOOL	DRINK FTN LIBRARY SOUTH	02-Oct-15

Rennaker, Joanne (DEQ)

From: Arduin, Jim (DEQ)
Sent: Monday, March 31, 2014 10:53 AM
To: Wurfel, Brad (DEQ); Feighner, Bryce (DEQ); Willard, Veronica (DEQ); Lee, Lonnie (DEQ); Bean, Lawrence (DEQ)
Cc: McClellan, Michael (DEQ); Shirey, Kathleen (DEQ); Busch, Stephen (DEQ); Rennaker, Joanne (DEQ); Innes, Jim (DEQ)
Subject: Media Contact regarding Bray Road

All,

I talked to Mr. Fonger (MLive Media Group Reporter) about the Bray Road Site. The following highlights the type of information that was provided to Mr. Fonger during our conversation.

- Site was originally used as a sedimentation area for materials from the drinking water plant.
- Over time the City dumped street sweeping materials and concrete and asphalt debris at the site.
- OWMRP has been engaged with the City of Flint for a number of years (10+) to try to get the site evaluated.
- There is another Bray Road site that is across the Road that is overseen by Remediation Division.
- OWMRP entered into a Consent Order regarding the evaluation of site conditions and potential cleanup of the site.
- Site Conditions are unknown at this time, the city will evaluate this summer. Preliminary water data indicate no impact.
- Summarized the compliance program in the order. (Directed Mr. Fonger to JoAnne Rennaker to FOIA a copy of the order)
- The City wants to use the Site for a sedimentation area again.
- The City is in the permitting process for the Drinking Water Plant. (Directed Mr. Fonger to talk to Steve Busch regarding Drinking water questions)
- Provided Steve Busch's contact information for questions related to the drinking water end of things.
- Provided JoAnne Rennaker's contact information to request a copy of the order through the FOIA process.

If anybody has questions, let me know.

James Arduin
 Senior Geologist
 Michigan Department of Environmental Quality
 Office of Waste Management and Radiological Protection
 (517) 284-6652

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, January 05, 2015 4:47 PM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Willard, Veronica (DEQ)
Subject: Media Inquiry - City of Flint
Attachments: TTHM Media Inquirey Jan 5, 2015.doc

Ron Fonger from the Flint Journal contacted me today with questions pertaining to the Flint TTHM violation notice. Attached is a summary of the inquiry.

I will also provide a write-up tomorrow morning concerning the phone interview with NBC 25...

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

**TTHM Media Inquiry
January 5, 2015**

I received a media inquiry from Ron Fonger of the Flint Journal concerning the TTHM MCL violation in the city of Flint. Ron was provided with a copy of our December 16, 2014 Violation Notice letter to the city of Flint concerning the TTHM violation. Ron was also provided with a draft press release on Jan 4th concerning measures being taken by the city to address the TTHM violation. Below is a summary of the questions asked by Ron and my response.

- How common are TTHMS in Michigan and are there other systems in violation?**

TTHMs are found in systems that disinfect with CL2 due to the reaction between CL2 and naturally occurring organic compounds (total organic carbon - TOC) in the raw water. There is one other system (customer supply of Saginaw) that has exceeded the TTHM standard. Since this is outside of my district, I do not know the details of the violation.

- How widespread are the high TTHM levels in Flint?**

TTHM is monitored at 8 locations throughout the city. Compliance is based on a Locational Running Annual Average (LRAA) meaning that any one location will put the city out of compliance with the TTHM standard if that location fails to meet the standard based on the running annual average (RAA) of 4 quarters of monitoring. The LRAA was exceeded in just 3 quarters at two of the eight locations due to high TTHM concentrations at these locations(May and August quarters).

- What level of concern should city residents have?**

TTHMs are a health concern associated with long-term (chronic) exposure as opposed to other contaminants such as pathogenic organisms (fecal coliform, giardia, crypto, etc.) which are short-term concerns...ie...immediate impact to public health. The potential health effects provided in the notice are possible with

long term exposure over a significant portion of the person's lifespan. Consumption of drinking water with TTHMs at this concentration does not pose an immediate threat to public health.

- The most recent test results (November) appear much better; what do residents need to know for the future?

The decline in TTHMS is two-fold. First, the decline is the result of the city taking pro-active measures in collaboration with the DEQ to address the TTHM concentrations that includes: optimizing current treatment, shortening residence time in water storage reservoirs, optimizing ozone treatment, and improving operation of the distribution system (flushing, repairing valves, and opening valves to eliminate areas of stagnation).

Next, seasonal variation also contributed to the reduction in TTHM levels as the TOC loading from the Flint River watershed diminishes during the winter months. T

The city is also pursuing additional treatment options (enhanced coagulation) to help remove TOC and filter cleaning to reduce CL2 demand. Hydraulic modeling of the distribution system will also be performed to further optimize operation of the system reservoirs and pumping stations aimed at reducing stagnation. These efforts combined with steps already taken are expected to dampen higher TTHM levels during the 2015 summer months.

- There has been some criticism regarding the timing of the notice...ie...why weren't residents notified during earlier when high TTHM results were being obtained?

The city was not in the position to provide a notice since the results obtained last summer did not place the city into a violation status. Also, since TTHMs pose a health concern with term-term exposureand in anticipation of exceeding the standard by the end of 2014, the city elected to pursue a proactive approach towards reducing TTHMs (treatment & distribution operation). The city also worked with the DEQ in this effort along with preparation and distribution of the mandatory public notice within 30 days of the start of the violation (December 1, 2014). I

also explained how the LRAA is calculated and why the first two quarters did not constitute a violation.

- **What triggers the TTHM violation?**

As mentioned above, if exceedance of the LRAA (based on 4 quarters of results) occurs at ANY of the eight sampling locations the city is in violation. The LRAA can also be exceeded in less than four quarters (based on a 4-quarter calculation) if the concentration is high enough.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, October 13, 2014 3:48 PM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Willard, Veronica (DEQ); Benzie, Richard (DEQ)
Subject: Media Inquiry

Ron Fonger from the Flint Journal called me today concerning the GM Engine manufacturing plant in Flint and their intent to temporarily terminate water service from Flint and purchase water from Genesee County (via Flint Twp) until Flint is either treating water from KWA or reducing their chloride concentration from their treated water that meets GM's limit for manufacturing. Ron asked if elevated chlorides are a health concern in Flint. I looked up Flint's MOR and noted that the treated water chloride concentration leaving the WTP ranges between 55 and 65 mg/l which, although not optimal (optimal being <20 mg/l), is satisfactory. Concentrations > 250 mg/l become objectionable due to taste & corrosion issues; however, based on the concentration leaving the WTP, we did not have any health-effect concerns. Ron was not able to recall the maximum chloride level acceptable to GM; however, I stressed the importance of not branding Flint's water as "corrosive" from a public health standpoint simply because it does not meet a manufacturing facility's limit for production. Ron also asked if the treatment process adds chloride. I explained that their primary coagulant is ferric chloride and this does add some chloride to the finished water; however, raw water chloride concentration is generally in the mid 40s mg/l; thus, the contribution from ferric chloride is not significant.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Tommasulo, Karen (DEQ)
Sent: Wednesday, September 30, 2015 5:24 PM
To: Wyant, Dan (DEQ); Pallone, Maggie (DEQ); Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Subject: media Qs
Attachments: Media Q&A.docx

Karen Tommasulo
Public Information Officer
Michigan Department of Environmental Quality
517-284-6716 | 517-599-5733
tommasulok@michigan.gov

Flint Drinking Water Media Q&A

Is the city going back to DWSD?

That's something we're leaving open. It's certainly an option, but there are no moves at this time to do so. If it becomes something city leadership is interested in doing, the state is willing to act as a facilitator between Flint and DWSD to help come to conclusion that's best for the residents of Flint.

How did the state not see this problem sooner?

Right now, we're focusing on addressing the problem at hand. Every household in the city of Flint is going to receive a water filter. The Flint Water Treatment Plant is going to fully optimize its corrosion controls by Nov. 1. And we're going to accelerate water system improvements to address the replacement of lead service lines.

In the long term, we will work with the U.S. EPA to look at water testing protocol.

Is the water safe?

The water leaving the Flint Water Treatment Plant is safe to drink and meets federal guidelines for lead. However, we recognize some residents experience higher levels of lead in the water that comes out of their faucets because of lead plumbing in the home. We will expand water testing to better determine which areas have a problem; however, in the meantime, every home will receive a filter to ensure their drinking water is safe.

Does this mean Marc Edwards was right?

We aren't familiar with his testing protocol and have not seen his data. All we know is the state's data and the data Hurley Medical Center provided indicate a need to take action.

Why didn't you require corrosion controls from day one?

When the city switched water sources, they did begin using lime softening as a corrosion control. DWSD used phosphates, which is another form of corrosion control, but far from the only one. Flint was within federal protocols when it chose to use lime, and this is consistent with what every other community was required to do.

With more data in hand, the city can now work to optimize their corrosion control system, and has pledged to do so by Nov. 1.

How do you feel about the state and federal testing protocols now that you know there was a problem?

We're going to be taking a look at that, and that's why Susan Hedman is here today. What we're seeing is concerning. But in the meantime, we're going to...

Why are you requiring optimization now?

What will you do if the schools you are testing come back with lead?

Is the Governor going to give the city the \$30 million it asked for? Or the \$13 million state Sen. Ananich wants to include in the budget?

Why did the state ignore city residents who have been saying there's a problem for six months?

Why did the Governor hide the fact that he was involved in distributing filters previously?

Will you meet with Marc Edwards?

Do you trust the city's data?

Why did the state allow the city to switch away from DWSD initially?

Has the city put residents at risk?

What will the state do about my children? Lead poisoning causes irreversible damage.

Is lead just a problem in Flint?

Why isn't the Governor here today?

Does the Flint River have lead? Is it more corrosive than the water from DWSD?

If the lead is in individual homes' plumbing, how long will it take to fix this problem? Will the move to KWA fix it, or will we still see lead?

Will testing start over when we move to KWA?

Why aren't Kildee and Ananich here?

How much are we paying all these new consultants – Dr. Wells and the EPA expert?

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, January 07, 2015 11:02 AM
To: Datema, Maggie (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Shekter Smith, Liane (DEQ); Willard, Veronica (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Cc: Howes, Sarah (DEQ); Benzie, Richard (DEQ)
Subject: Meeting w Legislator
Attachments: TTHM Rep. Neeley Interview Jan 6, 2015.doc

Richard Benzie, Sarah Howes, and I met with State Representatives Sheldon Neeley, 34th District and Phil Phelps, 48th District to discuss the TTHM violation in the city of Flint late yesterday afternoon . Attached is a summary of our discussion.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

**Meeting with Rep. Neeley and Rep. Phelps
Flint TTHMs
January 6, 2015**

Richard Benzie, Sarah Howes, and I met with State Representatives Sheldon Neeley, 34th District and Phil Phelps 49th District to discuss the TTHM violation in Flint's drinking water. Several follow-up questions were asked during and after our discussion. Information provided to Mr. Neeley and Mr. Phelps was in a format similar to that provided in the NBC-25 News interview. We focused on:

What does the TTHM violation mean for Flint residents?

The violation does not pose an immediate public health threat since the health-effects requires long-term exposure to TTHMs (over a significant portion of an individual's lifespan).

TTHMs commonly occur in public water systems that disinfect with chorine due to the reaction between chlorine and naturally occurring organic compounds (total organic carbon) in the source water.

Reason(s) for the violation:

The Flint River source is more difficult to treat since it requires more disinfection to maintain bacteriological integrity; however, this leads to more TTHM formation.

Flint did not immediately change their mode of distribution system operation after switching sources to account for higher TTHM formation potential of treated water from Flint's WTP. Historically, their mode of operation created areas of stagnation in the distribution system which then contributed to the higher levels of TTHMs.

Ongoing Efforts:

The city is working in collaboration with the DEQ towards identifying improvements in treatment to remove TTHM precursors and optimize distribution system operation. The city has already taken action on some of these measures including: complete softening to reduce chlorine dosage and increased turnover of water in the distribution system storage reservoirs to

reduce stagnation. The city is also correcting valving deficiencies to further reduce stagnation.

The city has received scrutiny on the perceived delay to inform residents of the high TTHM levels; however, we stressed that the city has met the state and federal requirements for public notification of this particular contaminant. We explained the rationale for determining compliance with the TTHM standard and how this correlates to the public notification requirements. We also informed Mr. Neeley and Mr. Phelps, that TTHM compliance is determined on a RAA (based on 4 quarters); thus, the city will likely remain in violation even with one or two subsequent quarters producing results that are below the MCL.

We also suggested, in addition to meeting our public notification requirements, it may be helpful for the city to explain to their residents how compliance with TTHMS is determined and, more importantly, keep them informed (snapshot in time) of each quarter's results (regardless of compliance status).

Result of On-going Efforts

Efforts taken by the city resulted in a significant reduction of TTHMs in the November 2014 quarter. Seasonal fluctuation of organic loading in the Flint River watershed (less loading in the winter months) also contributed to lower TTHMs.

Questions that were asked:

Can the State become involved with additional TTHM monitoring (third party monitoring)? How would the cost be covered?

The city may elect to conduct additional TTHM monitoring; however, this would be at the city's expense. DEQ staff, depending on availability, may be able to assist in the monitoring. Additional monitoring could be eligible as part of future compliance calculations; however, the monitoring protocol must be approved by the DEQ.

Are the operators at the Flint WTP properly certified?

Yes. The city has an F-1 operator, Mike Glasgow who oversees treatment

operation and is the designated OIC. There are also several F-2 operators including Brent Wright (WTP Supt.). The city has also hired additional operators for full-time plant operation. Many of these operators acquired their F-4 certification last fall.

Rennaker, Joanne (DEQ)

From: Thelen, Mary Beth (DEQ)
Sent: Monday, October 20, 2014 12:59 PM
To: em@cityofflint.com
Cc: Thelen, Mary Beth (DEQ); Wyant, Dan (DEQ)
Subject: Meeting with Director Dan Wyant of DEQ on Flint's Drinking Water

Importance: High

Dear Darrell,

Director Dan Wyant of the Department of Environmental Quality would like to request a meeting with you next week. Director Wyant can be available next Wednesday, October 29, morning or anytime on Thursday, October 30. He can meet you in Flint or you may come to Lansing.

Please let me know if we can work out a date/time for next week. This is regarding the City of Flint drinking water and he indicated this is a high priority meeting.

Thank you.

Mary Beth

Mary Beth Thelen
Management Assistant to Director Dan Wyant
Department of Environmental Quality
Constitution Hall, 6th Floor South
Phone: 517-284-6712 or 284-6700 (new numbers)
Fax: 517-241-7401
Thelenm2@michigan.gov

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, October 07, 2015 3:22 PM
To: Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Meeting

City currently making their case to the TAC on Detroit water....no Pros revealed yet for staying with the river. pass on to Dir ... He tried to call me

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, June 04, 2015 4:06 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Deltoral, Miguel; Poy, Thomas
Subject: more customer lead samples over the AL?

I talked with Miguel this week; he learned that there have been 2 more customer-requested lead samples that have come back over the AL: 22ppb and 40 ppb. These were customer-requested samples taken by Mike Glasgow and analyzed at the Flint lab. When I receive the lab reports, I'll email them to you—or Mike Glasgow should have copies of all the customer-requested lead sample results he's taken. Greg Waldorf, the contractor that replaced Ms. Walters' service line on Wed May 6, said that many of the customer services are galvanized from the customer to the water main, but they also have a lead line that connects the shut-off valve with the water main—which would make the lead piping City-owned.

Jennifer

Rennaker, Joanne (DEQ)

From: Miller, Mark (DCH)
Sent: Wednesday, January 28, 2015 12:41 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Cc: Anderson, Paula (DCH); Robinson, Mikelle (DCH)
Subject: Need for information on the municipal water situation in Flint.....Urgent

Importance: High

Mike,

As discussed my Director of Community Health, Nick Lyon, asked for a quick briefing on the Municipal Water situation in Flint, at 2 PM today (Wednesday January 28th). I realize this is really short notice, but I'd like us all to be on the same page, especially if Nick get questions about it. At this point, I only have what I've heard in the media.

Can you give me a phone number of somebody that would be available at 2 PM today to answer Nick's questions? Please send it to Paula Anderson (cc:ed on this email).

Appreciate your assistance.

Mark Miller

Director, Local Health Services
Michigan Dept. of Community Health
201 Townsend, 6th Floor
Lansing MI 48913
(517) 335-8032
millerm1@michigan.gov

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Friday, July 24, 2015 12:09 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ); Wyant, Dan (DEQ); Pallone, Maggie (DEQ)
Subject: Need upate on lead / copper tests for Flint

Guys, the Flint Ministers met with the Governor's office again last week. They also brought along some folks from the community – a college prof and a GM engineer – who imparted that 80 water tests in Flint have shown high lead levels.

Could use an upate on the January / june testing results, as well as recap of the December testing numbers, and any overview you can offer to edify this conversation.

Call me or email today if possible. Thanks!

b

Brad Wurfel
Communications Director
Michigan Department of Environmental Quality
517-284-6713
517-230-8006 cell

Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Wednesday, October 28, 2015 11:54 PM
To: Amy Hovey; Andy Leavitt; Anthony Chubb; Brent Wright; Darren Lytle; Dayne Walling; donna.cole; Dykema, Linda D. (DHHS); Wells, Eden (DHHS); edwardsm; Krisztian, George (DEQ); Gerald (Jed) Natzke; Howard Croft; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kevin J. Keane; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Schock, Michael; Michael Wright; Mike Lane; Prysby, Mike (DEQ); MVALACAK@gchd.us; Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Shawn Patrick McElmurry; Busch, Stephen (DEQ); Thompson, Sheryl D. (DHHS); Warren Green
Subject: NOTICE_November Meeting Adjustment

Technical Advisory Team,

We have a request to reschedule the next meeting for **Monday November 9th at 2:00 pm**. This would allow our EPA representatives their best opportunity to be present at the meeting and I believe that would be a significant benefit to the team especially considering the technical nature of the next meeting.

I know this is short notice but please check your schedules to see if you can attend and plan for this final adjustment. We will still hold the meeting at Flint City Hall at 2:00 pm in the same location as the last meeting and I will have an agenda ready as part of next weeks update.

I will also check on the link to our test map and will make sure that it is working on Thursday.

Thank you,

--

Howard Croft
 Public Works Director
 City of Flint
 1101 S. Saginaw Street
 Flint, MI 48502
 PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Hansen, Jeff <jrhansen@lan-inc.com>
Sent: Friday, May 29, 2015 10:05 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Brent Wright (bwright@cityofflint.com);
 mglasgow@cityofflint.com; Matta, Samir; Green, Warren
Subject: OER
Attachments: Flint-TTHM-OER-FINAL-3-01.pdf; March 1st, 2015 OEL Report - DEQ Comments.doc

Hi Mike,

You will be receiving hard copies of the attached OER today. I also wanted to respond to the written comments you provided on the last OER submitted. The following correspond to your numbered comments which I have also attached:

1. All tables in the report have been revised to correlate the TTHM results to the sample site numbers matching MDEQ records. References to the number of exceedences have also been revised accordingly.
2. The average ozone dosage for April 2015 was 2.4 mg/l. The system is capable of much more than that, but higher dosages are not necessary and bromate formation is a concern.
3. The current model is adequate to evaluate the transmission main size along Dupont and Bishop from a conservative standpoint. Although all model domestic demands have not been revised yet, the fire flow demand is much larger and dictates the main size. Additionally, domestic demands will be decreasing.
4. Veolia provided recommendations in a Technical Memo dated 3/30/15. In that memo Veolia recommended a permanganate dosage of about 1.0 mg/l and referred to 10% TOC removal improvement. Pages 4 and 17 of the report have been revised accordingly.
5. Comment noted – no changes to report needed.
6. City staff are investigating the existence of valves shown on the system map for the pressure zone.
7. Comment noted – no changes to report needed.
8. Agree. Options in the report to reduce storage used have been revised so as not to limit the volume of Reservoir #3.
9. Comment noted – no changes to report needed.

Jeffrey R. Hansen
 Senior Project Manager

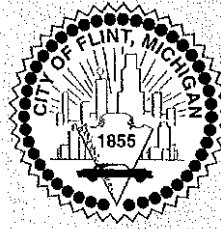


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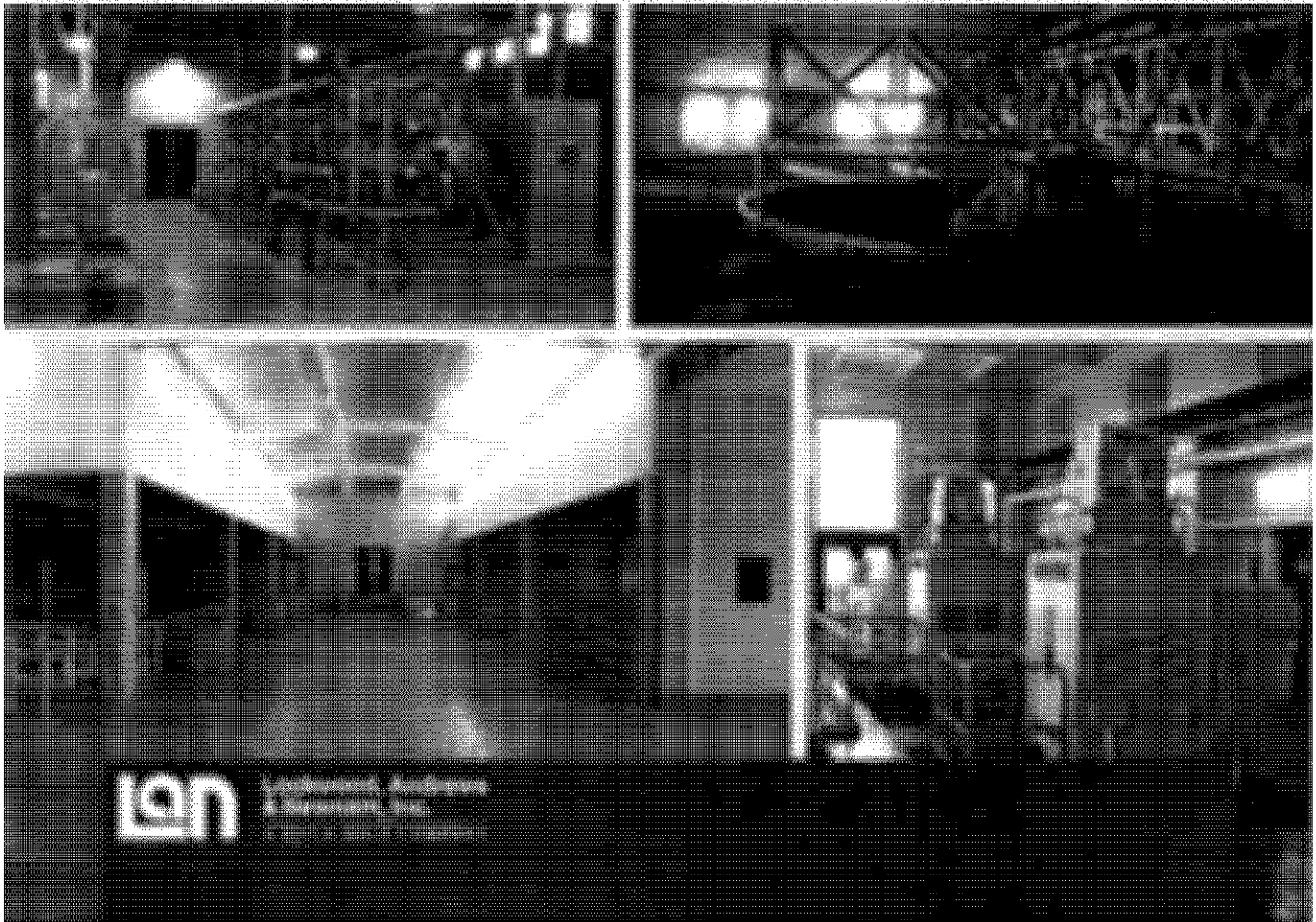
Operational Evaluation Report City of Flint



Trihalomethane Formation Concern

May 29, 2015

In Response to February 2015 Sample Results



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EXECUTIVE SUMMARY

Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) regulations require that public water suppliers test drinking water quarterly throughout the distribution system for disinfectant by-products (DBP's). Two categories of DBP's, tri-halomethanes (THM) and halo-acetic acids (HAA5), are regulated and must be tested for. The City of Flint began operation of their water treatment plant (WTP) full time with the Flint River as the source on April 25, 2014. Since that time, five quarters of samples taken have resulted in annual average violations for total THM. Prior to the first violation (Nov. 2014), the City hired Lockwood, Andrews & Newnam, Inc. (LAN) to complete this Operational Evaluation Report (OER) in conformance with EPA guidelines with the goal to determine the cause(s) of high levels of THM and evaluate possible solutions.

The EPA promulgated the Stage 2 Disinfectants and Disinfection By-Products Rule (DBPR) in January 2006 which set maximum contaminant levels (MCLs) for total trihalomethanes (TTHM) and HAA5 based on an annual running average, tested quarterly, for a given sampling location. The City of Flint reports levels from 8 sampling test locations. Of the five quarterly sampling cycles since Flint began operating the WTP full time, HAA5 levels have been acceptable but TTHM levels have exceeded the MCL. Four sampling sites were in violation following the third sampling cycle and those sites in violation have been reduced to a single site for the most recent cycle.

A number of issues were identified as possibly contributing to the high THM levels measured.

1. Inefficient ozone system functionality which led to increased chlorine feed.
2. Upstream source influences in terms of increased chlorine demand.
3. Bypass stream around softening contributed to chlorine demand and increased total organic carbon (TOC) levels in the effluent.
4. Unlined cast iron pipes in the distribution system contributing to chlorine demand.
5. High water age in the distribution system due to:
 - a. Broken valves causing less than ideal flow patterns
 - b. Inefficient pump station pressure zones
 - c. Water storage volumes in excess of that needed for today's demands
 - d. Oversized water mains
 - e. Low water demands
6. High chlorine demand in filters.
7. High THM formation potential (THMFP) in source water.
8. Less than optimal removal of THM precursors.

A graphical representation of how the factors above relate to the timing of THM compliance sampling is shown as Table 1. Compliance sampling dates are hatched. Each row in Table 1 describes a factor that can lead to increased THM levels and the table defines when each of those factors applied. Note the convergence of nearly all factors around the second sampling period on August 21, 2014 to create what appears to be a worst case scenario. The table also shows that the factors listed as those that the City can control have been addressed prior to 2015 sampling periods. Monthly operating report data up to May 1, 2015 is depicted on the Table.



TABLE 1 - SUMMARY OF NEGATIVE INFLUENCES ON THM COMPLIANCE SAMPLING

FACTOR	2014								2015				
	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Softening bypass stream over 20% of plant flow													
Ozone system not feeding optimally													
Using full water storage capacity of WSR & CSR													
Chlorine feed at WTP 7.0 mg/l or more													
Ferric chloride feed rate less than 10 mg/l Fe3+													
Raw water temp 23 degrees C or more													
Raw water TOC levels above 8.0 mg/l													
Raw water coliform over 5000 counts/day													
Positive bacteria test in dist. system (boil water notice)													
Water demand less than 15 mgd													

- Dates of occurrence
- Dates of occurrence and expected to repeat in future years
- Compliance sampling date
- Factors under Flint staff control
- Flint River characteristics
- System factors



ACTION PLAN

The City of Flint has signed an agreement with the Karegnondi Water Authority (KWA) to purchase raw water drawn from Lake Huron. The KWA system is currently under construction and expected to be operational by late 2016. The water supply from Lake Huron will have entirely different water quality characteristics from the Flint River and those characteristics are expected to yield drastically reduced DPB formation. With that, non-structural options to help reduce THM levels are much preferred over solutions requiring new construction. Therefore, two categories of actions have been devised: Stage 1 being actions that can be completed relatively quickly without major construction and Stage 2 consisting of either long term actions or solutions requiring major construction. The City is actively working to complete Stage 1 actions as soon as possible. Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is contingent upon the outcome of Stage 1. As of the date of this report, status updates for action items are shown in red.

Stage 1 – Immediate Actions

- Hire third party water quality expert to complete independent 'water audit'
 - The City hired Veolia Water to review all water quality related operations, procedures, actions taken and planned responses. Recommendations from Veolia were provided in a report and technical memo dated 3/12/15 and 3/30/15 respectively.
- Obtain an in house THM analyzer to allow regular operational monitoring of THM levels
 - THM analyzer was installed 2/17/15.
- Hire ozone system manufacturer to troubleshoot ozone system
 - Manufacturer and controls programmers performed on site evaluations followed by corrective modifications in January 2015.
- Bench scale jar testing
 - Match existing process and assess possible areas of improvement
 - Existing process was simulated and an evaluation of existing chemical feed dosages has been completed by LAN.
 - Existing process TOC profile was developed by Veolia.
 - Simulate potential modifications to treatment process
 - Soda ash softening evaluation completed and PAC feed testing completed by LAN.
 - Evaluate coagulation and flocculation polymer aid feeds to assist with TOC removal
 - Evaluations of polymer aids completed by LAN and PVS Technologies.
- WTP operational changes
 - Discontinue softening bypass stream to reduce chlorine demand
 - Operational directive has been set to soften no less than 80% of flow.
 - Disinfection of filter beds to reduce chlorine demand
 - Utility Service Group contracted by City and condition assessment completed. Controls improvements have been completed.
 - Begin coagulation and flocculation polymer aid feeds to assist with TOC removal if bench scale test results are positive
 - Jar testing completed to date has not indicated a meaningful benefit to feeding coagulation/flocculation polymer aids. Increased ferric doses have been implemented at the WTP based on positive jar test results.



- Increase water main flushing efforts to minimize stagnant water
 - Flushing efforts are ongoing as needed based on chlorine residual levels measured in the system.
- Water system modeling to identify areas with high water age and potential solutions
 - The water model has been improved and preliminary results, including system wide water age, have been produced. Water demand updates and reconciliation with operator's data are underway with expected completion in mid June, 2015.
 - Cedar Street Pump Station potential recirculation
 - Water model analysis to be completed in June 2015.
 - West Side Pump Station potential recirculation
 - Water model analysis to be completed in June 2015.
 - Storage tank volume use
 - Operating levels of West Side and Cedar Street reservoirs have been lowered to reduce water age
 - Possible broken closed valve locations
 - Model has been updated with known broken valve locations. Model results are being evaluated for indications of other possible broken valves. City has also initiated valve assessment program.
 - Locations in need of flushing
 - High water age areas have been identified in the water model. Further evaluation is expected to be done by July 1, 2015 to determine most effective flushing points.

Stage 2 – Contingent Actions

- Fix ozone system
 - Repairs have been made to gauges and programming and the system is producing proper ozone and functioning under manual operation. Further minor repairs are planned for the 1st quarter 2015 to allow automatic operation.
- Start feeding coagulation and flocculation polymer aids to lower TOC, if not completed in Stage 1
 - Polymers evaluated by LAN did not demonstrate notable benefit.
 - PVS Technologies evaluated a proprietary polymer that showed little benefit.
- Convert to lime and soda ash softening
 - Cost effective analysis to be developed, if necessary, based on effectiveness of new GAC filter media.
- Change disinfectant to chloramine or chlorine dioxide until KWA
 - Cost effective analysis to be developed, if necessary, based on effectiveness of new GAC filter media.
- Install pre-oxidant feed at intake to optimize ozone disinfection
 - Permanganate feed at intake was evaluated and recommended by Veolia to help with TOC removal.
- Replace filter media with granular activated carbon (GAC) media
 - Design of filter anthracite media replacement with GAC media is in progress. GAC media is expected to be installed by mid July 2015.
- Implement advanced treatment for THM precursor removal
 - Cost effective analysis to be developed, if necessary, based on effectiveness of new GAC filter media.

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- Increased main flushing based on water modeling results
 - o Water model analysis to be completed in June 2015.
- Continue valve replacements with water model assistance
 - o Water model analysis to be completed in June 2015.
- Emphasize cast iron pipes on water main replacement priority list
 - o Flint has bid replacement of over 2 miles of 24" steel pipe along Dupont and Bishop Streets to be completed this coming construction season if the City can allocate funds. The water main section is considered a critical transmission main, and is expected to contribute to decreases in water age when complete.

THM samples have been taken and tested 5 times for regulatory reporting since the City began using the Flint River for supply. Numerous additional sets of samples have been taken by the City for internal operational monitoring. Compliance samples were taken in May 2014, August 2014, November 2014, January 2015, February 2015, and May 2015. The average of all eight sample sites in May 2014 was 100.2 ug/l and the most recent average of samples taken in May 2015 was 56.7 ug/l. The MCL defined by the EPA is 80 ug/l.



I. BACKGROUND

The City of Detroit Water and Sewer Department (DWSD) has historically provided drinking water for the City of Flint and Genesee County. In the late 1990's growing concern regarding the reliability of the DWSD supply prompted the City of Flint to upgrade their existing water treatment plant (WTP). Those improvements, defined as Phase I, were completed in 2005 and were intended to allow the Flint WTP to operate, using the Flint River as the source, for an extended period of time in the event that supply from the DWSD was temporarily interrupted. Additionally, the Phase I improvements set the stage for Flint to break free from dependence on the DWSD supply and water charges over which they had no control.

A. WATER SUPPLY TRANSITION

1. Detroit Water and Sewer Department (DWSD)

Until recently the Genesee County and Flint region had been provided drinking water by the DWSD. However, due to excessive cost increases and reliability issues with the DWSD system other options had to be explored.

2. Karegnondi Water Authority (KWA)

In 2010 the Karegnondi Water Authority (KWA) was formed for the purpose of developing a new water supply from Lake Huron to serve the region in lieu of the DWSD supply and the City of Flint elected to join. The KWA expects the new system which is currently being constructed to become operational by the fall of 2016.

3. Flint River – Interim Period

With a renewing water supply agreement between Flint and the DWSD being terminated by the DWSD (effective April 30, 2014) and the KWA system not expected to be operational until late 2016, the City of Flint decided to initiate operation of the existing WTP full time utilizing the Flint River as the interim water source. A variety of WTP improvements were necessary for the Flint plant to become a full time plant. For purposes of this report, Phase II improvements to the Flint WTP are improvements intended to allow the plant to operate full time with either the Flint River as the source or the KWA supply as the source.

B. TTHM VIOLATIONS

The EPA and MDEQ method of determining if TTHM sample results exceed the MCL uses a locational running annual average (LRAA). Flint's first TTHM violation was cited by the MDEQ following the third cycle of sampling completed in November 2014. Of the 8 sampling sites, 4 were in violation. At that time the MDEQ used the following calculation for determining if the MCL had been violated:

$$(2 \times \text{current quarter value} + \text{previous 2 quarter values}) / 4 = \text{Operational Evaluation Value}$$

Flint has now completed tests for 5 quarters and a straight annual running average applies. Based on samples taken on May 18, 2015 the number of sites in violation of the TTHM MCL limit has decreased to one. The May 2014 average across all test sites was 100.2 ug/l and the May 2015 average is 56.7 ug/l with the highest individual site result of 72.4 ug/l. Test results are tabulated in Table 2. HAA5 sample results are shown in Table 3, of which Flint has had no violations.

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TABLE 2 – TTHM TEST RESULTS (ug/L)

Sample Location	5/21/14	8/21/14	11/21/14	2/17/15	5/18/15	Feb/15 LRAA	May/15 LRAA
WTP Tap	56	86	33	-	~35	n/a	n/a
1) 3719 Davison McDonalds	162.4	145.3	58.6	16.2	51.4	95.6	67.9
2) 822 S. Dort Hwy BP Gas Sta.	75.1	112.0	36.2	19.9	46.1	60.8	53.6
3) 3302 S. Dort Hwy Liquor Palace	111.6	127.2	33.3	16.8	63.5	72.2	60.2
4) 3606 Corunna Taco Bell	79.2	181.3	33.9	18.1	54.7	78.1	72.0
5) 2501 Flushing Univ. Market	106.4	196.2	93.6	24.5	59.8	105.2	93.5
6) 3216 MLK Salem Housing	82.2	112.4	50.1	28.5	72.7	68.3	65.9
7) 5018 Clio Rite Aid	88.2	144.4	53.6	19.2	60.5	76.4	69.4
8) 6204 N. Saginaw N. Flint Auto	96.5	118.3	41.1	14.9	45.2	67.7	54.9

TTHM MCL = 80 ug/l

TABLE 3 – HAA5 TEST RESULTS (ug/L)

Sample Location	5/21/14	8/21/14	11/21/14	2/17/15	5/18/15	Feb/15 LRAA	May/15 LRAA
WTP Tap	36 (taken June 14, 2014)					n/a	n/a
1) 3719 Davison McDonalds	64	43	16	9.0	16	33.0	21.0
2) 822 S. Dort Hwy BP Gas Sta.	38	40	21	9.0	16	27.0	21.5
3) 3302 S. Dort Hwy Liquor Palace	52	31	15	9.0	17	26.8	18.0
4) 3606 Corunna Taco Bell	50	24	15	9.0	16	24.5	16.0
5) 2501 Flushing Univ. Market	55	17	24	9.0	15	26.3	16.3
6) 3216 MLK Salem Housing	41	25	5	2.0	10	18.3	10.5
7) 5018 Clio Rite Aid	49	30	17	9.0	22	26.3	19.5
8) 6204 N. Saginaw N. Flint Auto	48	37	18	9.0	17	28.0	20.3

HAA5 MCL = 60 ug/l

C. WATER TREATMENT PLANT RECENT IMPROVEMENTS & STATUS

1. Phase I WTP Improvements

Since 1965, the Flint WTP has remained a secondary or backup supply system to the DWSD primary supply. Typically the secondary supply for a public water system is expected to be needed only during emergency situations and normally is designed for short term operation such as providing the average daily demand for a few days. Conversely, Phase I improvements were designed with the intent to upgrade the Flint WTP in order to allow for an extended short term period (6 weeks) because of the perceived high risk that the DWSD supply would fail and remain out of service for an



extended duration. Regardless, the Flint WTP was still intended to serve as a standby plant and as such the Phase I improvements lacked redundancies that would be required for a primary supply WTP.

2. Past Pilot Study & Testing

During design of the Phase I improvements a treatability study was completed by Alvord, Burdick & Howson, LLC (AB&H) in 2002. The Treatability Study evaluated the current treatment processes that are in place at the Flint WTP today with the Flint River as the source. The report recommended the following:

TABLE 4 – 2002 WTP TREATMENT RECOMMENDATIONS

Treatment	Purpose	Point of Application	Dosage (mg/l)
Sodium permanganate	Zebra mussel control	Intake	0.3
Ozone	Taste & odor removal, disinfection	Diffusor basin	1.5
Ferric chloride	Coagulation	Rapid mix	40
Coag aid polymer	Turbidity & TOC removal	Rapid mix	2.0
Floc aid polymer	Turbidity & TOC removal	Floc basin	0.05
Lime	Softening	Softening basin	175
Soda ash	Softening	Softening basin	52
Carbon dioxide	pH adjustment	Recarb basin	37
Media filters	Filtration	N/A	Na
Chlorine	Disinfection	Filter effluent	1.0

Of the recommended items, zebra mussel control, coagulant and flocculation polymer aids, and soda ash feed have not been incorporated into the treatment process.

3. Phase II WTP Improvements for Full Time Operation

Phase II WTP improvements are those needed to convert the Flint WTP from a back-up supply to a primary supply plant. A number of improvements have already been constructed as they were necessary to operate full time when treating water from the Flint River. The improvements under the title of Phase II that have been completed or are nearly complete include installation of the future raw water feed connection point and valving for the KWA supply, upgrades to the lime sludge lagoon, the lime sludge lagoon decant and disposal system, decant pump station and force main, installation of mid-point chlorination before filtration, and upgrade of the electric feed substation.

Additional improvements to the Flint WTP that are to be completed to become part of the normal treatment process using water supplied by the KWA are:

- New oxygen and nitrogen storage facilities for the ozone system (under construction)
- New coagulant feed system
- Electrical
 - Pump Station #4 upgrades (under construction)
 - SCADA and controls upgrades
 - Filter transfer pump station feeders
- Pump replacements and VFD installation in the low and high service pump station (under construction)
- Filter transfer pump station to Dort Reservoir
- Facility security improvements



II. SOURCE WATER EVALUATION

A. DATA ANALYSIS

Based on past data collected and the 2002 Treatability Study by AB&H, the Flint River water quality varies seasonally with higher hardness and alkalinity experienced in the winter. Higher magnesium concentrations are also experienced in the winter, adding difficulty to the settling process due to neutrally buoyant floc. General water quality average characteristics recorded for the 2002 Treatability Study as compared with average characteristics recorded in 2014 are shown in Table 5 below.

TABLE 5 – FLINT RIVER WATER QUALITY CHARACTERISTICS							
Period	Turbidity NTU	TOC Mg/l	Alk. Mg/l	Hardness Mg/l as CaCO ₃	pH	Total Col. Count/day	THMFP Mg/l
2001 Apr–Oct	7.9	9.4	215	272	8.1	870-1230 (7300 max)	410
2014 May–Oct	8.3	10.3 5/22/14	207	252	8.2	1900-9000 (48,300 max)	187

The Flint River characteristics do not appear to have changed significantly over the past 10+ years. Note that near the time Flint initiated withdrawal from the Flint River investigation by City staff revealed a sewer leak upstream of the plant that may have contributed to the total Coliform count. The leak was subsequently repaired.

B. CONCLUSIONS

Considering the minor changes in Flint River water quality, much of the information contained in the 2002 Treatability Study by AB&H remains relevant today. Data from that report assumed to be consistent today include the following:

- Flint River is influenced by groundwater from a dolomitic aquifer
- Hardness varies seasonally with higher hardness and alkalinity in the winter
- Hardness, alkalinity, magnesium concentrations tend to be reduced by run-off

In development of the 2002 Treatability Study, processes were simulated which resulted in low THM levels. Therefore, information contained in that report was used to assist with establishing a baseline jar testing procedure as discussed further in Section III.



III. TREATMENT PROCESS EVALUATION

A. EXISTING PROCESS DESCRIPTION

The existing WTP consists of an intake with screening from the Flint River, low lift pumping, ozonation, rapid mix, flocculation, settling, softening, recarbonation, filtration, storage and high service pumping. A process diagram is shown as Figure 1.

1. Intake

A 72" diameter pipe draws water from the Flint River through 2 traveling screens to the low lift pump structure. No chemicals are currently fed for Zebra mussel control or pre-oxidation as recommended by the 2002 Treatability Study. Manual removal of zebra mussels is more economical than installation of chemical feed equipment considering the short term need.

2. Ozone

There are 2 ozone generators designed to provide adequate ozone for a WTP flow of up to 36 mgd. There are 3 ozone contact basins. The ozone generators were designed to produce 900 lbs/day at 10% concentration and up to 1300 lbs/day at 6% concentration each. Prior to recent repairs, readings indicated a production rate of approximately 700 lbs/day at 4% concentration. It is possible that before the recent improvements the ozone feed might not have been optimized. In fact, it is known that less than optimal ozonation previously led to increased chlorine feed which would have contributed to THM formation.

3. Rapid Mix

East and West rapid mix chambers allow chemical feed prior to the flocculation basins. Each rapid mix chamber is equipped with a 5 hp mixer.

4. Coagulation / Flocculation

The WTP contains two equally sized flocculation basins, east and west, and each basin provides tapered or gradually slowed mixing from inlet to outlet. There are fifteen 2 hp mixers for each basin with VFDs to control mixing speed. The 2002 Treatability Study recommended feeding both coagulation and flocculation polymer aids. Neither polymer aid is being used today because turbidity and TOC removals have been sufficient to meet regulatory requirements.

5. Settling

Primary clarification takes place within 3 basins containing plate settlers. The settlers are operating as designed but are due for cleaning.

6. Softening

Again, there are two basins for softening: east and west. Each basin is 120' in diameter and contains a solids contact softening unit. Each softening basin/unit has a design capacity of 18 mgd. The east clarifier has an effluent weir imbalance that the City intends to fix when low demands allow for construction. Low lift pumping limitations, flow control to the basins, malfunctioning polymer feed pumps, control restrictions on residuals removal, and fluctuating demands have made it difficult for WTP staff to stabilize the softening process. Softening is accomplished by feeding lime. The decision was made by the City not to feed soda ash in order to remove non-carbonate hardness because acceptable hardness levels could be achieved with lime feed only and softening is short term until Lake Huron water becomes available. Lime and soda ash softening is a possible consideration to assist with TOC removal and thus reduce THM formation.



7. Recarbonation

Recarbonation for pH adjustment is accomplished in east and west recarbonation basins between and to the north of the softening basins. Carbon dioxide storage and feed equipment is located west of the recarbonation basins.

8. Filtration

Filtration is accomplished with 12 dual media filters, equally sized and designed to filter 3.0 mgd each. Media consists of 12" of sand and 18" of anthracite. The filters have been operated intermittently over the years due to the standby nature of the WTP and until recently, chlorine injection took place downstream of the filters. It is possible some microbial growth had developed in the filters leading to increased chlorine demand. Late 2014, the City recently hired a contractor to upgrade the electrical controls for the filters and that work has been completed.

9. Disinfection

Disinfection is provided by ozonation and by feeding chlorine. Ozonation occurs at the front end of the WTP. Chlorine is fed prior to filtration and prior to finish water storage / high service pumping. The intermediate chlorine injection location was recently constructed under the Phase II, Segment 1 contract.

10. Clear Well & Pumping

The pump building sits adjacent to a 3 MG clear well and contains both low and high service pumps.

B. JAR TESTS / EXPERIMENTS

1. Approach

There are several well practiced methods by which DBPs can be reduced. First, the disinfectant can be changed to an alternate that has a lower tendency to form DBPs. Second, additional treatment systems such as activated carbon or air stripping (depending on the nature of the precursors) can be added to remove DBP precursors. Lastly, the existing treatment processes can be optimized to remove as much DBP precursor as possible. Of these options, optimizing existing treatment processes is the only strategy that does not require the construction of new and expensive facilities. It is anticipated that Flint will be receiving Lake Huron water by late 2016 and this water will have a completely different chemistry from the Flint River. Major process changes instituted to address THM levels using Flint River water are likely to be unnecessary for Lake Huron water and may even be inappropriate. Therefore, those options which require addition of new treatment processes are undesirable at this time. In recognition of this upcoming change in water source, efforts for this study have concentrated on improving the existing processes, rather than adding new ones. New treatment processes will only be recommended if operational changes to the existing treatment train prove ineffective.

Recent sample test results suggest that most of the DBPs are formed in the distribution system rather than within the treatment plant. Therefore, the most logical approach is to reduce the DBP formation potential (DBFPF) rather than simply lowering the levels of DBPs leaving the plant. During bench scale testing, formation potential (FP) levels were the primary indicator of success or failure of proposed process modifications.

2. Protocol

Bench scale pilot testing is intended to reflect actual plant operating and hydraulic conditions so the bench scale treatment units were sized based on various



dimensionless factors to ensure the pilot treatment matched the actual system. Bench scale ozonation was not practical due to time and cost limitations. Therefore, water samples were withdrawn from the plant ozone basin effluent. These samples were transported to the laboratory and dispensed into square testing jars. The jars were used to simulate rapid mix, three-stage flocculation, and settling. Rapid mix and flocculation conditions were matched to the plant based on "Gt" values. The "G" value is a measure of the mixing intensity and is a function of mix time, viscosity of the liquid, and mixing power applied to the water. "Gt" then, is a size scaling factor where time has been accounted for. Settling time was scaled to match the shorter settling depth of the testing jars. After settling, samples were decanted from the test jars. The decanted samples were then lime softened; softening conditions were similarly matched on the basis of "Gt". Carbon dioxide was sparged into the samples to reduce the pH. The water was then vacuum filtered through filter paper, sized to simulate the plant's dual media filters. The samples were dosed with excess chlorine and allowed to react for seven days at 25° C before testing for DBPs to determine the formation potential.

The following conditions were applied during testing to properly match small scale testing to actual plant processes.

TABLE 6 – BENCH SCALE TEST MIXING INTENSITIES

Process	G	Duration	Mix RPM
Ozonation	Plant	-	-
Rapid Mix	200	44 sec	160
Flocculation, Stage 1	50	9 min	55
Flocculation, Stage 1	25	9 min	30
Flocculation, Stage 1	12	9 min	19
Settling	N/A	10 min	-
Softening	TBD	10 min	-
Recarbonation	N/A	N/A	-

The primary variables during testing were chemical additions and chemical dosages. Specific chemicals and dosages used for initial testing conditions were selected to reflect current plant usage and the recommendations of the 2002 Treatability Study:

TABLE 7 – BENCH SCALE TEST CHEMICAL FEED RATES

Chemical	Current Usage	2002 Study	Test Values
Ozonation	4.66 mg/l	1.5 mg/l	
Ferric Chloride	7.7 mg/l Fe3+	40 mg/l Fe3+	7.7 – 80 mg/l Fe3+
Coagulant Aid Polymer	Not used	2.0 mg/l	1 – 2 mg/l
Flocculation Aid Polymer	Not used	0.05 mg/l	0 – 0.05 mg/l
Powdered Activated Carbon	Not used	N/A	20 – 100 mg/l
Lime	120 mg/l	175 mg/l	120 – 175 mg/l
Soda Ash	Not used	52 mg/l	0 – 52 mg/l
Cationic Softening Polymer	3.13 mg/l	Not used	3.13 mg/l
Anionic Softening Polymer	0.88 mg/l	Not used	0.88 mg/l
Fluoride	0.45 mg/l	1 mg/l	Not used
Carbon Dioxide	32 mg/l	37 mg/l	Fed to reach pH of 7.5 +/- 0.3
Chlorine	6.3 mg/l	1 mg/l	10 mg/l



3. Considerations

The 2002 Treatability Study did not note significant formation of DBPs. This may be a function of different Flint River water chemistry at that time. However, recognizing the considerable differences in chemical usage and dosages between that study and current operations, those differences in chemical use and dosage are an obvious starting point for optimizing treatment to prevent DBP limit exceedance.

Although it is believed that optimization of current treatment can correct the DBP issue, should optimization of present treatment prove insufficient, alternate residual disinfectants (chloramines and chlorine dioxide) will be investigated as additional treatment measures.

4. LAN Test Results

Two rounds of jar testing were completed by LAN during the weeks of December 15, 2014 and January 26, 2015. Detailed test data is included in Appendix A. Testing results can be summarized as follows:

- Increased dosages of ferric chloride resulted in higher reduction of THMFP.
- The currently utilized feed rate of lime at 120 mg/l is appropriate
- Softening with soda ash in addition to lime resulted in minor additional THMFP reduction – in the range of 0% - 10%.
- The benefits of using a cationic polymer during softening at a dosage range of 0.31 - 3.13 mg/l to help reduce THM's are unclear
- The benefits of using an anionic polymer during softening at a dosage range of 0.09 – 0.88 mg/l to help reduce THM's are unclear
- Feeding PAC was ineffective in reducing THMFP within the dosage range of 20 – 100 mg/l.

5. Testing by Others

In addition to jar testing completed by LAN, the chemical supplier who provides ferric chloride for the City, PVS Technologies, ran tests using their recommended flocculant polymer aid. Plus, Veolia Water completed jars testing of their own the week of February 16th to analyze other process details and current WTP parameters. Experiments completed by PVS Technologies showed very little TOC removal beyond that obtained with straight ferric chloride feed.

6. Conclusions

Increasing the dose rate of ferric chloride is an operational change that can easily be implemented without the need for any additional equipment. Test results show that over 40% THMFP removal can be obtained with a dosage of 60 mg/l Fe³⁺ or higher. Increased dosing of ferric chloride would be most ideal coupled with regular raw water TOC monitoring so that TOC levels would dictate the appropriate ferric chloride feed rate.

Softening with soda ash in addition to lime is another option the City should consider if increased ferric chloride doses are not adequate to maintain THM levels under the MCL, particularly during warmer months. Again, monitoring of TOC in the raw water could provide useful information of when lime/soda ash softening is necessary.



IV. DISTRIBUTION SYSTEM EVALUATION

EPA guidance for the distribution evaluation portion of an OER is focused on identification and isolation of a specific portion of the distribution system that led to the exceedance. The circumstances of Flint's apparent pending TTHM exceedances are unusual in that a new supply has been implemented which clearly corresponds to the high TTHM sample results. Although the new source is one element in increased TTHM levels, value remains in evaluating the distribution system since water age is also a critical factor. Additionally, there may be distribution improvements that can be made to help alleviate the problem.

A. INFRASTRUCTURE

1. Piping

According to the most recent MDEQ Sanitary Survey, the distribution system is estimated to contain 70% cast iron, 20% ductile iron, 2% concrete and 8% steel water mains. Based on discussions with City staff, the percentage of cast iron pipe may be higher than that stated in the MDEQ Sanitary Survey. Unlined cast iron pipe can become pitted, allowing colonization sites for microorganisms leading to chlorine demand. Additionally, much of the piping in the system is aged and in poor condition. Increased chlorine demand could be resulting from biofilm in older pipes and from main breaks/repairs. The extent of contribution is not known but any water main replacement project will decrease chlorine demand somewhat if constructed properly. Unfortunately, water main breaks may also assist with decreasing water age by providing unintentional flushing. All things considered, it is impossible to quantify the impact existing piping has on THM formation.

The City utilizes City Point software and GPS equipment to document main breaks and prioritize replacements. However, main break information is more pertinent to rusty water complaints and has little relevance to THM levels. Areas that have been targeted for main replacements include the transmission main from the WTP west to Dupont and south to the West Side reservoir, Fenton Road, Atherton Road, Dort Highway, Averil Street, and Boulevard Drive.

2. Storage

There are 4 finish water storage tanks and 1 raw water tank as tabulated below:

TABLE 8 – STORAGE TANKS							
Name	Type	Water	Volume (MG)	Operating		Absolute	
				LWL	HWL	Bottom	OF
Dort Reservoir	Ground	Raw	20	-	-	730	750
WTP Tank	Elevated	Finished	2	883.0	896.0	863.0	898.0
WTP Clear Well – PS #4	Ground	Finished	3	11'	15'	708.5	726.0
Cedar Street Reservoir	Ground	Finished	20	-	11'	737.2	757.2
Westside Reservoir	Ground	Finished	12	-	12'	761.8	779.0

The MDEQ typically recommends providing a minimum finish water storage volume of 1/3 the maximum daily demand (MDD). According to the 2013 MDEQ Sanitary Survey, the 5 and 10 year MDDs are 21.57 mgd and 30.05 mgd respectively. A common rule of thumb for clear well storage volume at a WTP is 10% of the design flow rate. Another general guideline for reliability is to provide total storage to allow for 2 X the average daily demand plus fire flow demand. For this analysis, fire flow is assumed to be 2,500 gpm for either one industrial fire (2,500 gpm) or a combination of one residential (1,000 gpm) and one commercial (1,500 gpm) fire at a 4 hour duration which results in a total volume of 600,000 gallons. These go-by



approximations are summarized below with the applicable flow rates and are compared to the existing storage volumes currently being utilized.

<u>Common Practice</u>	<u>Flow Rate</u>	<u>Recommended Volume by ROT</u>	<u>Volume In Use</u>
Clear well 10% of Design Flow	18 MGD	1.8 MG	3.0 MG
Finish Storage = 1/3 MDD	30.05 MGD	10.0 MG	37 MG
Total Storage = 2 * ADD + FFD	13.87 MGD	28.3 MG	57 MG

Based on the values above, it appears the storage volume used in the Flint system could be decreased without negatively effecting reliability. The appropriate volumes of individual tanks will be further evaluated using the water system model and discussed in Section V (C).

All reservoirs have baffling to minimize stagnant water. Also, all tanks have been maintained and are in reasonable condition. The Westside reservoir has an exposed roof that is in need of rehabilitation, but its current condition has no influence on THM formation.

3. Pump Stations

All pump stations are in good condition but pumps are generally oversized. As an independent consideration, oversized pumps are not a contributing factor to high THM levels. Control of pumps and pressure zones are discussed in detail below.

B. OPERATIONS AND MAINTENANCE

1. Pump Station & Storage Operations

Pump stations and storage tank levels are controlled as shown in Table 9.

TABLE 9 – PUMP STATION CONTROLS

PS Name	Control Point	On Point	Off Point
PS No. 4 Raw	Operator	-	-
PS No. 4 Finish	Match plant flow	-	-
Westside	System pressure (elevated tank)	22.5'	33'
Cedar Street	System pressure (elevated tank)	22.5'	33'
Torrey Road	Distr. – Brown/Bradley	< 45 psi	> 45 psi

Cedar Street and Westside pump stations are operated as needed and they are alternated. Typically, Cedar Street is run in the morning and Westside is run in the evening and reservoirs for each are filled during low demand periods at night.

Westside, Cedar Street and Torrey Road pump stations are used to boost system pressure when high demands warrant it, but there are not well defined pressure zones within the system. Therefore, the possibility exists that water is being recirculated allowing for increased water age.

2. Booster Disinfection Practices

Booster disinfection is provided at the Cedar Street and Westside pump stations. When sustained residuals are not provided by chlorine feed at the WTP, sodium hypochlorite is applied at the reservoirs while being filled.



3. Changes in System Demands

Water demands in the City have been declining since the 1960's as the population has dropped. As a result, many of the water system components are oversized including storage tanks and water mains which both increase the time for water to reach the user.

From a short term perspective, Flint demands tend to increase in summer as is ordinarily expected but also in the winter due to water main breaks. The MDD for Flint often occurs in winter. Regarding THM formation, with lower temperatures and higher flows in the winter, THM levels taken at the distribution sample points are expected to be lowest for February sampling quarters than all others.

C. WATER SYSTEM HYDRAULIC MODELING

As part of this report, the City provided a hydraulic water model, originally developed by Potter Consulting, for LAN to update. Thus far, LAN has modified the model to be capable of extended period simulations, modified controls to reflect current operations, revised the piping to include known broken valve locations, updated pump curves, checked pipe diameters, and developed preliminary water age results throughout the entire system. Water age shown in the revised model corresponds for the most part to TTHM levels at the sampling sites. However, LAN has also identified several deficiencies within the model that require further adjustments to allow for usable and reliable results. Those model deficiencies include outdated demands, improperly located appurtenances, and incorrect flow patterns. Preliminary water age results are presented in Table 10. Revised results will be provided when the hydraulic model has been fully updated.

TABLE 10 – PRELIMINARY WATER AGE FROM WATER MODEL

Sample Point	Location	Address	Water Age (Hrs)	May/15 LRAA THM (ug/l)
1	McDonalds	3719 Davison	23	68
2	BP Gas Station	822 S. Dort Hwy	18	54
3	Liquor Palace	3302 S. Dort Hwy	15	60
4	Taco Bell	3606 Corunna	128	72
5	Univ. Market	2501 Flushing	178	94
6	Salem Housing	3216 MLK	50	66
7	Rite Aid	5018 Clio	78	69
8	N. Flint Auto	6204 N. Saginaw	71	55

It is anticipated that topics shown below in italicized font will be detailed after the model is updated in March 2015.

1. *Simulation of Existing System*

Match existing conditions. Chlorine and THM data may be used to verify model results. We have chlorine feed data at plant and residuals at 10 locations in each MOR, May 2014 – April 2015.

2. *Identification of Water System Deficiencies*

Specific issues to look at:

Worst case at minimum daily demands

Water age in entire system

Possible recirculating water through pump stations

Use of storage tanks – volumes in particular

Indications of broken valves

Effectiveness of booster disinfection



V. RECOMMENDATIONS TO MINIMIZE FUTURE OEL EXCEEDANCES

A. SOURCE

The City of Flint has already committed to the change from the Flint River as the water source to Lake Huron under the KWA system, planned for late 2016. The risk of future TTHM limit violations will decline substantially with the use of water from Lake Huron due to much lower DBP precursors. It is important to recognize that the Flint River will become strictly an emergency supply when the KWA supply becomes available and any investments toward the Flint River should be contemplated accordingly. Recommendations discussed below in this section apply to the Flint River as the source.

Reverting to supply from the DWSD until the KWA supply is available as an option. However, based on information provided by the City of Flint, the annual cost to receive water from the DWSD would be at least \$16,000,000/year or \$1,333,000/month. Therefore, utilizing the DWSD for interim supply is cost prohibitive under the terms defined by the DWSD.

1. Watershed Management

A volunteer group entitled the Watershed Coalition performs various tasks related to managing the Flint River watershed such as spring cleanups and annual benthic studies to evaluate the river 'health'. No additional action is recommended at this time.

2. Monitoring

The City documents daily raw water flow, pH, alkalinity, carbonate and non-carbonate hardness, chloride, temperature, turbidity and coliform count as part of standard preparation of Monthly Operating Reports (MOR). WTP staff have obtained and installed TOC and THM analyzers. The THM analyzer is set up as an on-line plant tap monitor and operations personnel have begun taking samples most days to track TOC levels throughout the treatment process. It is recommended to implement TOC tracking as a strict daily procedure which would provide staff the data needed to establish correlations to predict distribution system THM formation.

3. Intake Operations

The 2002 Treatability Study recommended pre-oxidation in the form of sodium permanganate as a feed at the intake. It is possible the addition of a pre-oxidant such as hydrogen peroxide or some type of permanganate could enhance the ozone process. Veolia evaluated permanganate demand during jar testing the week of February 16th, 2014 and recommended implementation at a dosage of 0.5 mg/l – 1.2 mg/l to achieve 10% additional TOC removal.

4. Seasonal Strategies

Past data indicates the Flint River is influenced by groundwater and in particular, dolomitic spring water. The result is hard water with high concentrations of magnesium and sulfate. Also, hardness and alkalinity are higher during the winter. Upon initiation of supply from the Flint River, the City made the decision to soften with just lime to focus on removal of carbonate hardness. One potential modification that could assist with TOC removal and thus decrease THMFP would be lime and soda ash softening. A temporary caustic soda feed system is recommended to be put in place in case the need for optimized softening arises.



5. Upstream Contamination Issues

Upstream contamination issues are extremely difficult to prevent and even if detected are difficult to locate. Evaluation of raw water data collected for MORs is the easiest manner in which to detect upstream contamination issues because the data is already collected for treatment purposes. In fact, high total Coliform readings in the past have signaled potential issues that the City was able to identify and remove.

An upstream monitoring and warning system could be established to attempt to detect water quality issues or spill event type contamination early enough to adjust treatment procedures or cease intake prior to the contamination reaching the WTP. However, given the imminent conversion to the KWA supply, the period of full time use would likely be far too short to achieve payback on the capital expenditures.

B. TREATMENT PROCESS

1. Operational Recommendations

- Increase ferric chloride dosage: Previous testing in the 2002 Treatability Study, jar testing completed by LAN, and a review of 2014 ferric chloride dosages compared to THM levels leaving the WTP support that increasing the ferric chloride dosage would help reduce THM formation.
- Increased monitoring: Currently, the MDEQ does not require daily reporting of raw water TOC or finished water TTHM levels. However, daily tracking of such levels would allow the City to develop a correlation between the two, thus providing a predictive tool to help manage TTHM levels.
- Coagulation and flocculation polymer aids: The 2002 Treatability Study suggested the use of coagulation and flocculation polymer aids. These polymer aids were shown in the 2002 Treatability Study to increase TOC removal and thereby reduce THMFP but jar testing by LAN and PVS Technologies did not indicate clearly defined benefits. Addition of coagulation and flocculation polymer aids should be categorized as a future consideration that would require further evaluation.
- Discontinue softening bypass: In early summer of 2014 the City was bypassing a portion of flow around the softening basins because hardness levels did not warrant softening of the full stream. However, this practice was discontinued because it was believed the bypass stream was contributing to chlorine demand and preliminary data has supported that belief. Chlorine demand dropped 0.5 – 1.0 mg/l following elimination of the bypass stream in early November 2014.
- Soften with lime and soda ash: Research has shown that enhanced softening with both lime and soda ash may provide additional TOC removal. Veolia did not recommend this option after conducting jar tests.
- Disinfection of filter beds: In case there has been microbial growth it is recommended the filters be 'shock' treated with chlorine and rinsed. A chlorine injection point was added upstream of the filters during the first segment of Phase II so future growth in the filters should not be an issue.
- Optimization of all existing treatment processes: Depending on bench scale testing conditions and results, slight modifications to all treatment processes might in order to replicate lower DPBFP.
- Discontinue or adjust softening anionic polymer feed: Some anionic polymers have been found to increase TOC. However, Veolia provided no recommendation to change polymers following their evaluation.



2. Infrastructure Change Recommendations

- Fix and/or replace faulty ozone equipment: Since the ozone equipment was installed it had not been used extensively on a full time basis. Following minor complications, the City hired the equipment manufacturer and a programmer to troubleshoot the system. Replacement of faulty gauges and redesign of the control program have allowed the system to operate properly since January 2015.
- Replace filter media with GAC media: GAC media could help reduce THM levels by reducing both TOC and chlorine demand. For this consideration, the intermediate chlorine feed location should be relocated to a point downstream of the filters. The City has elected to pursue this option and design is currently underway by LAN with installation expected in mid July 2015. Provisions are also being considered for adding more GAC media and/or regeneration of media next summer.
- Change disinfectant to chloramine or chlorine dioxide: If other options prove to be ineffective, conversion to another disinfectant should be fully evaluated. Various characteristics of chloramination indicate an advantage over chlorine dioxide, but a full analysis would provide clarity as to which would be preferred.
- Install pre-oxidant chemical feed: Hydrogen peroxide or a form of permanganate as a pre-oxidant can enhance the activity of the ozone. Chemical feed could be installed at the intake structure or low service pump station, depending on the reaction time required. Use of a pre-oxidant at the intake might also provide the additional benefit of disinfection credit for ozonation with the MDEQ if an ozone residual can be obtained at the ozone process effluent as a result.
- Repair upstream sewer leak: a sewer leak upstream of the WTP intake was discovered in early summer 2014 and has been repaired by the City.

C. DISTRIBUTION SYSTEM

Potential distribution issues related to water quality issues discussed in Section IV included old cast iron pipe, oversized infrastructure, and remote storage/pump station locations and operations that might be less than ideal. Recommendations to address those issues are offered in this section.

1. Manage Water Age

a) Storage Tanks

Considering the excess storage capacity discussed in Section IV, in the short term it is recommended that operational changes be implemented immediately to reduce the overall volume of water stored to decrease water age. Immediate operational recommendations include lowering high water levels of reservoirs other than the elevated tank, to reduce the total system wide usable storage volume to 30-37 MG.

In the long term, LAN recommends development of the most ideal options for water model evaluation. Excess storage volume and tank locations within the water system afford Flint numerous options to reduce the amount of storage volume utilized. As a starting point, two recommendations are presented below.



Option 1

- Take West Side reservoir and pump station out of service
- Cut storage volume used in half at Cedar Street reservoir
- Adjusted system wide storage volume would be 35 MG

Option 2

- Take Cedar Street reservoir and pump station out of service
- Adjusted system wide storage volume would be 37 MG

b) Residence Time in Pipes

Completely redesigning and replacing the water system to match today's demands is not feasible financially and would be a waste of infrastructure with remaining useful life. Going forward, it is recommended that any future main replacement projects be evaluated for possible downsizing. When the water model is fully updated, it will provide a valuable tool in determining which mains can be downsized and to what extent. Replacement of broken valves and valve exercising are also recommended, which are programs that have already been implemented into Flint's regular operations.

Operationally, hydrant flushing is recommended as needed to minimize water age in low flow areas. Again, the updated water model should be used to locate high water age areas and optimal flushing points.

2. Reduce Disinfectant Demand

Recommendations to reduce disinfectant demand are similar to those described above to reduce water age. Replacement of old cast iron pipes would lead to a reduction of disinfectant demand on the distribution side, but realistically can only be accomplished over a prolonged period of time. In the meantime, hydrant flushing is the most viable means of reducing disinfectant demand in piping. From a storage standpoint, all reservoirs and tanks should be regularly inspected and maintained to prevent entrance of any outside contamination that would contribute to disinfectant demand. Cleaning of all tanks is recommended as well as investigation into stagnant water prevention options.

3. Water Modeling of Recommendations [yet to be completed]

Determine best flushing locations to reduce water age

Evaluate changes in storage tank operations to reduce water age

Valves to close/add to improve pressure zones, reduce recirculation

Optimization of pump station use – smaller pumps? Shut down?

Evaluate booster disinfection

D. BOOSTER DISINFECTION

Decreasing chlorine feed at the WTP and adding booster disinfection in the distribution system is an alternative intended to reduce the reaction time at higher concentrations of chlorine to reduce DPB formation. Extensive looping and branching within the existing system complicate how to best implement and utilize booster disinfection. Water system modeling is recommended to gauge the effectiveness of existing feed point locations and dosages. Further discussion and details will be provided when the distribution evaluation results are available.

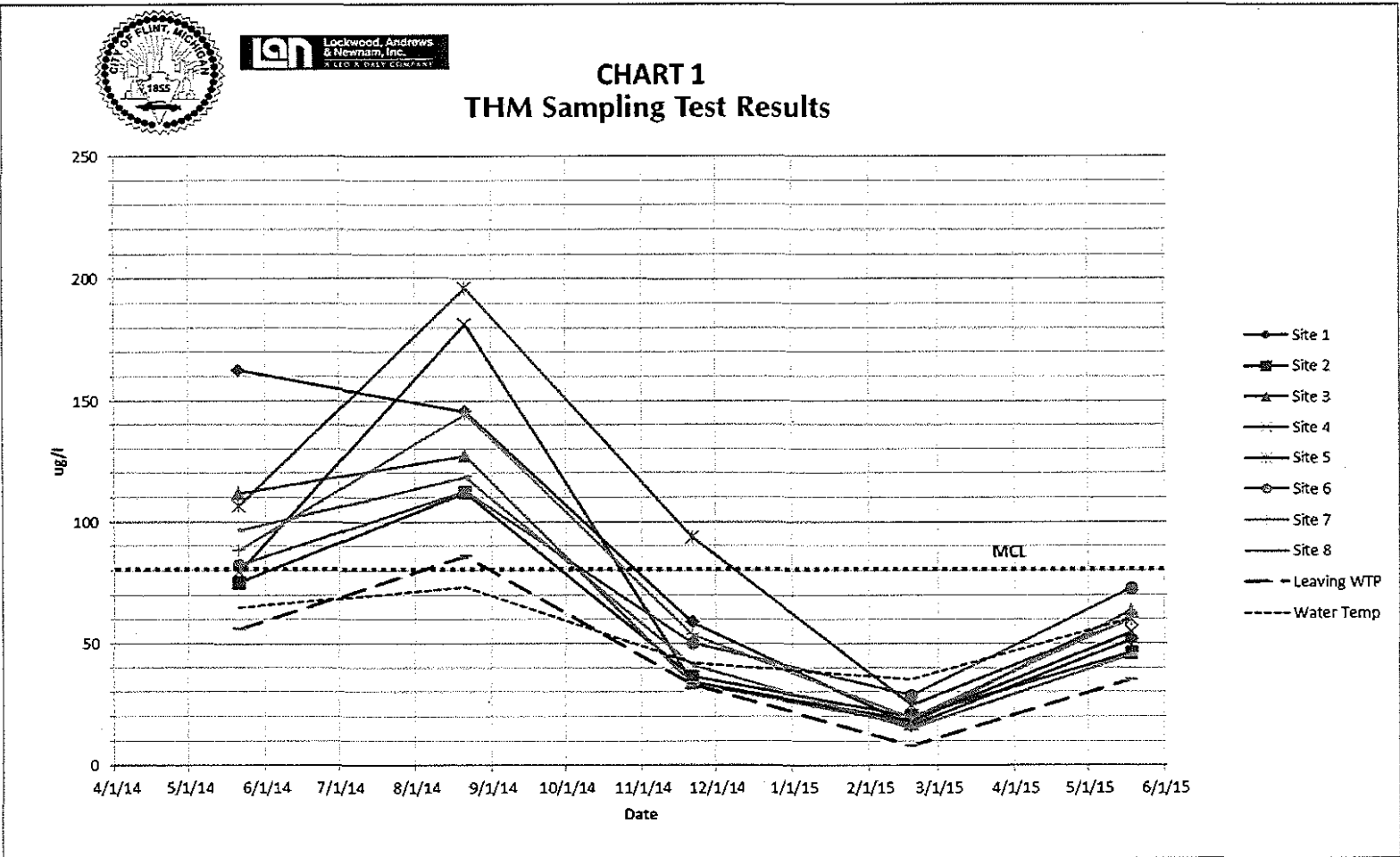


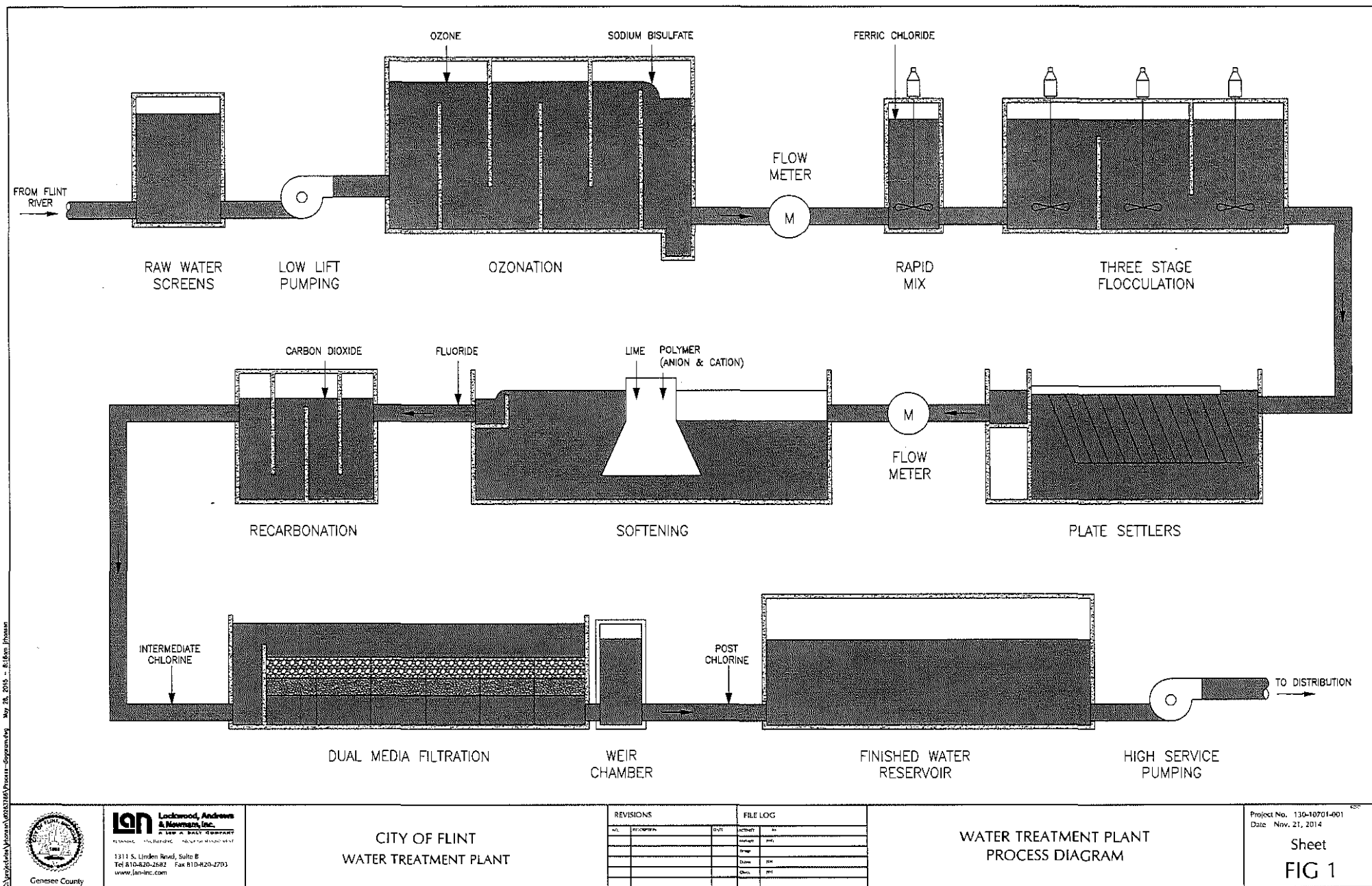
E. CATEGORIZATION OF ACTIONS

Considering that the Flint River is being used as the water source only until the KWA supply is available (expected late 2016), options to address high THM formation that require new construction or extensive time to implement are not preferred. On the other hand, the City understands THM sample results to date dictate that some action is necessary. Two categories have been developed to assist the City in prioritizing actions to take. Stage 1 consists of actions that can be completed relatively quickly without major construction and Stage 2 actions are either long term actions or solutions requiring major construction. Stage 1 actions are to be completed first followed by evaluation of the results prior to consideration of Stage 2 actions. Grouping of actions are shown in the table below.

TABLE 11 – ACTION PLAN			
	Action	Purpose	Status
Stage 1	Hire water consultant to complete 'water audit'	Third party review of actions and operations to make sure no options are being missed	Complete
	Increased water quality monitoring – obtain THM and TOC analyzers	Provide information needed to adjust WTP operations to match changing raw water quality	Complete
	Troubleshoot ozone feed system	Reduce chlorine feed and increase TOC removal	Complete
	Bench scale jar testing	Optimize treatment process and evaluate possible modifications	Complete
	Discontinue softening bypass	Reduce chlorine demand	Complete
	Disinfect filters	Reduce chlorine demand	Incomplete
	Increased water main flushing	Reduce water age / stagnant water	Ongoing
	Water system modeling evaluation	Determine areas with high water age and reasons	Partially complete
Stage 2	Modify booster disinfection feeds, if appropriate	Decrease water age	Not yet evaluated
	Repair ozone system	Reduce chlorine feed and increase TOC removal	Complete
	Continue increased water main flushing	Reduce water age / stagnant water	Ongoing
	Convert to lime and soda ash softening	Increase TOC removal	Future consideration
	Continue valve replacements based on water model	Reduce water age / stagnant water	Ongoing
	Replace filter media with GAC	Reduce TOC and chlorine demand	Design underway
	Change disinfectant to chlorine dioxide	Reduce THMFP	Future consideration
	Install pre-oxidant feed at intake	Optimize ozone disinfection, reduce chlorine	Future consideration
	Implement coag. & floc. polymer aids, if appropriate	Increase TOC removal	Future consideration
	Place priority on replacing cast iron water mains	Reduce chlorine demand	Ongoing

Samples were taken May 18th, 2015 for the latest round of quarterly testing. The City has implemented many of the Stage 1 actions and THM test results have significantly improved (decreased) since May and August 2014. All sampling results are shown on Chart 1.





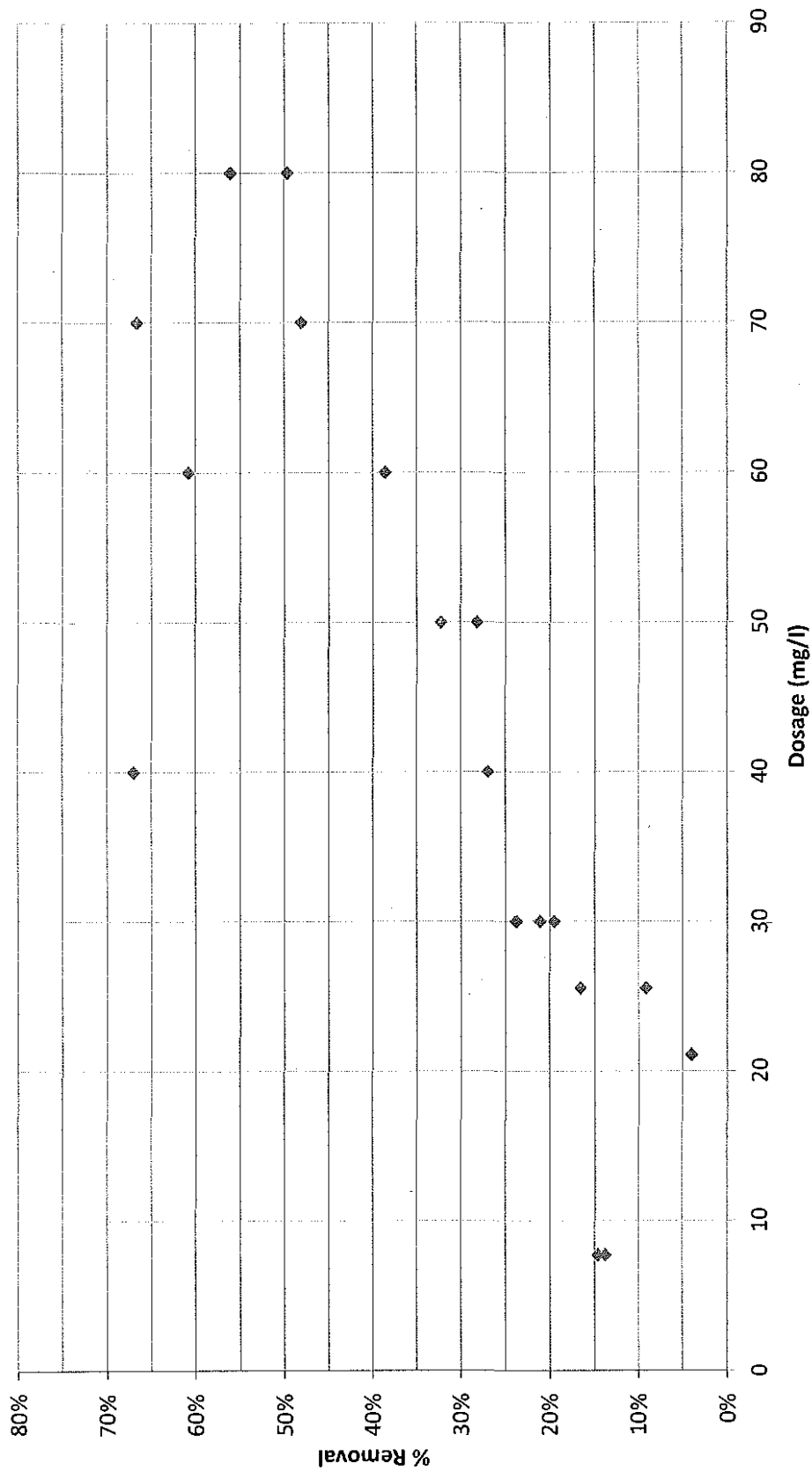


APPENDIX A JAR TEST DATA



Ferric Chloride Feed THM Removal

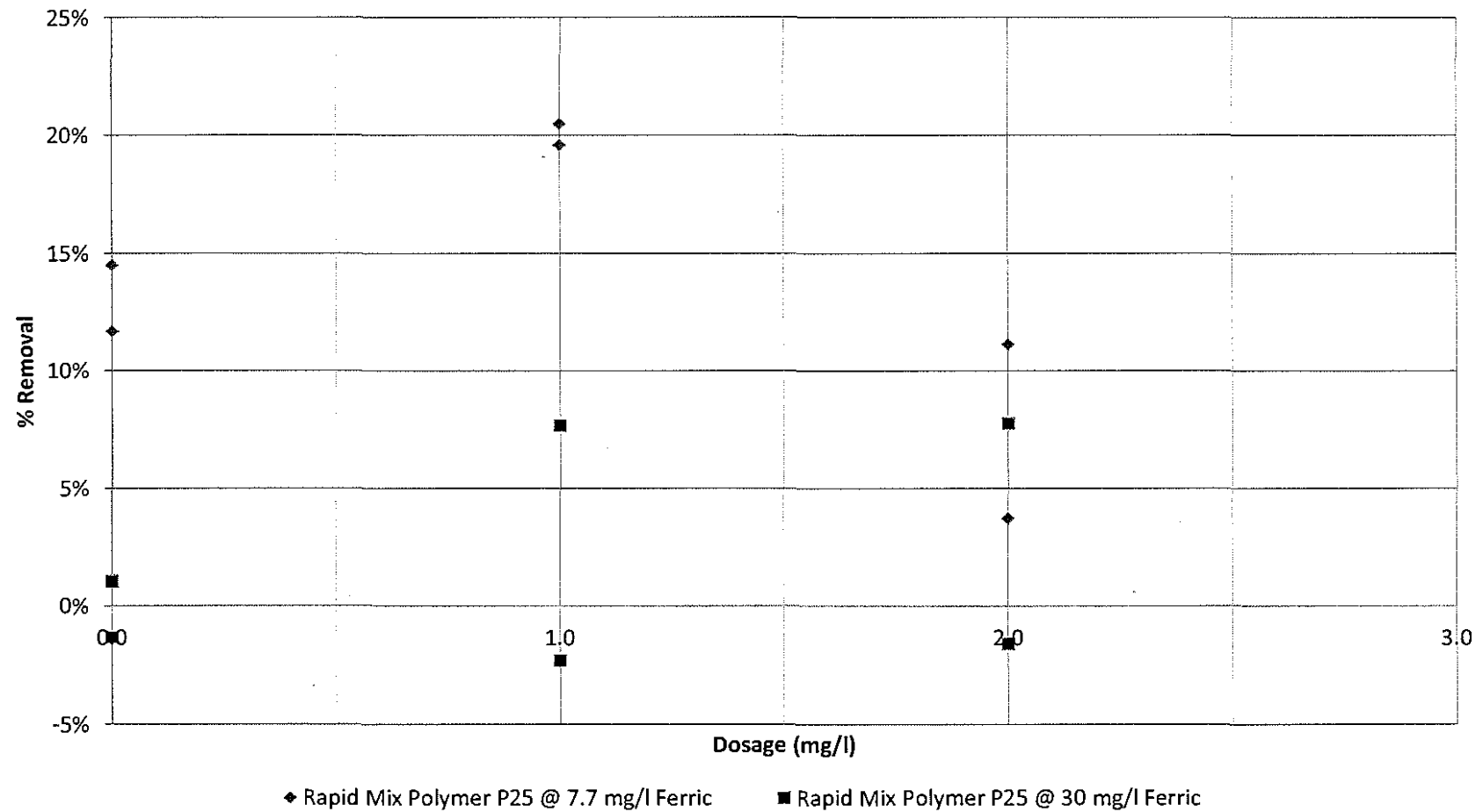
Charles F. Lawrence, P.E.





Charles F. Lawrence, P.E.

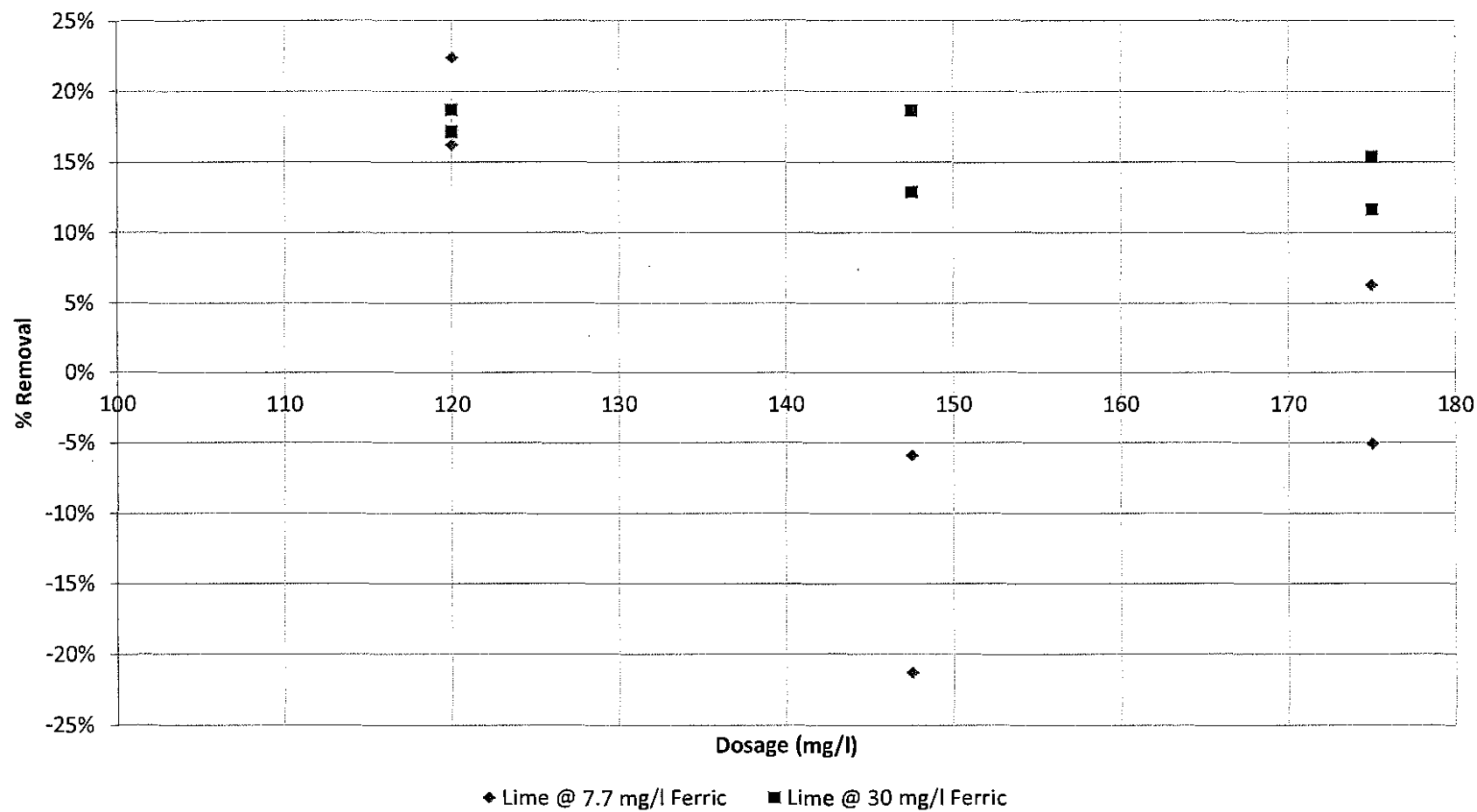
Coag/Floc Polymer Aid THM Removal





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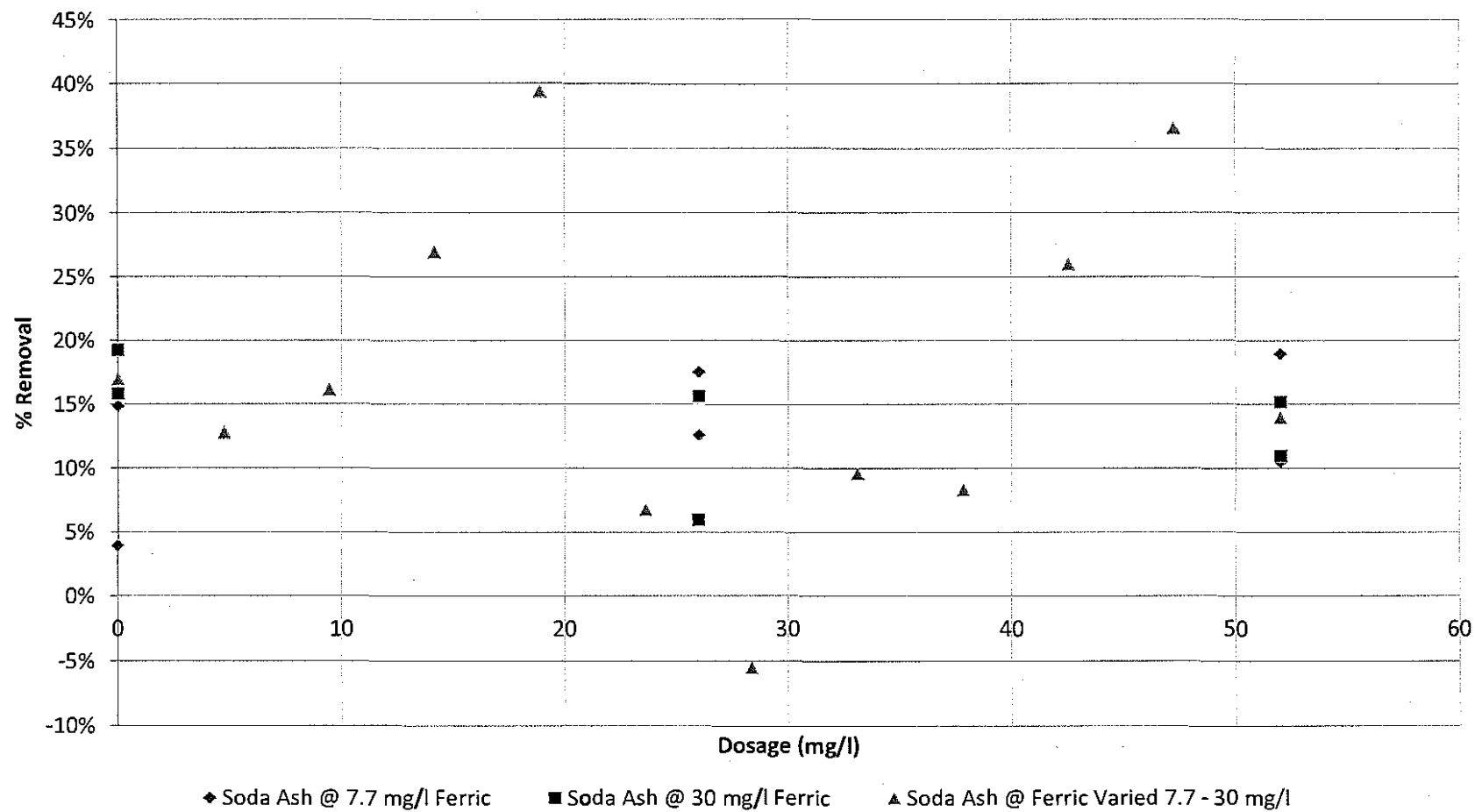
Lime Feed THM Removal





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Soda Ash Feed THM Removal



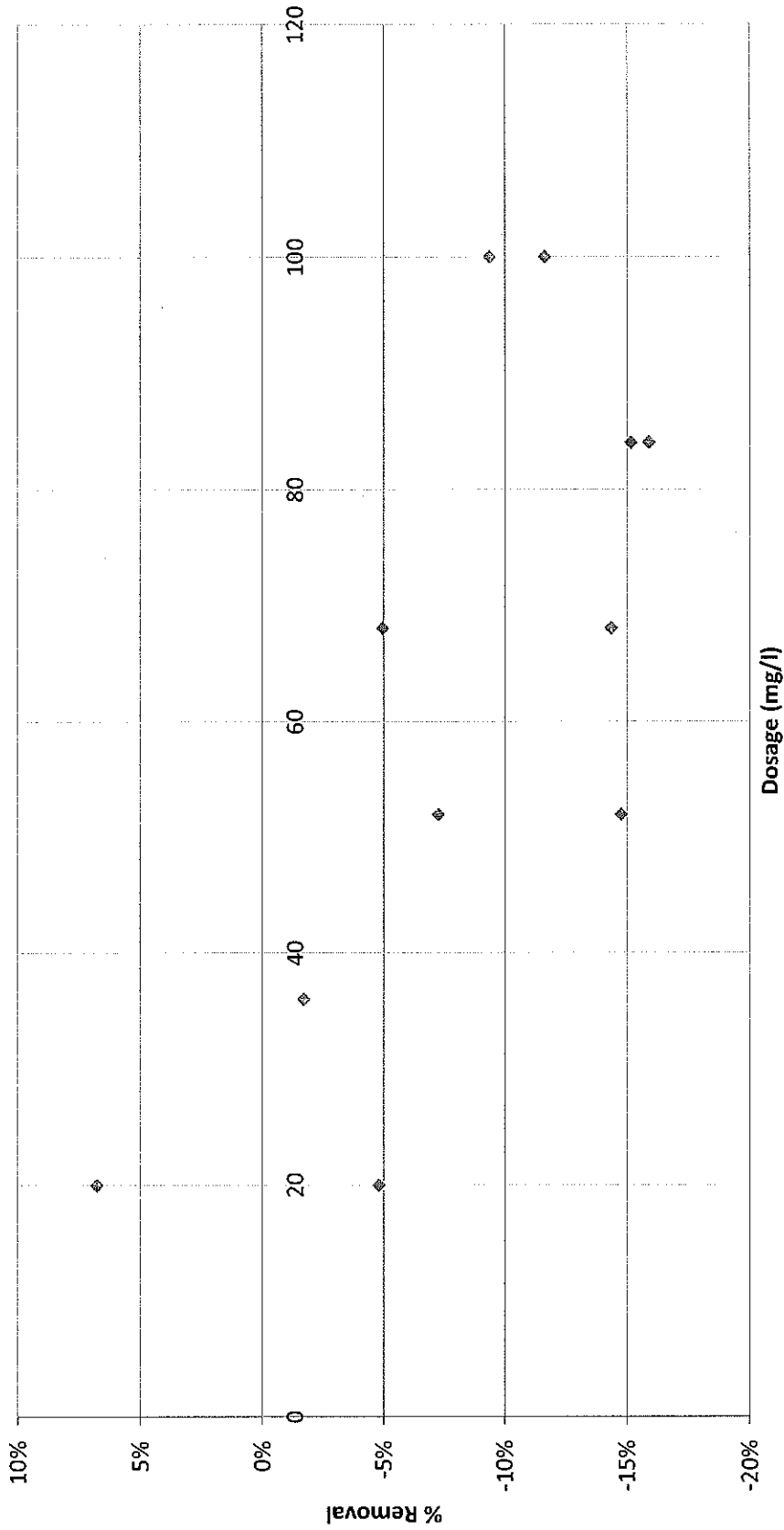


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& NEWMAN, INC.
A LEO A DALY COMPANY



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PAC Feed THM Removal



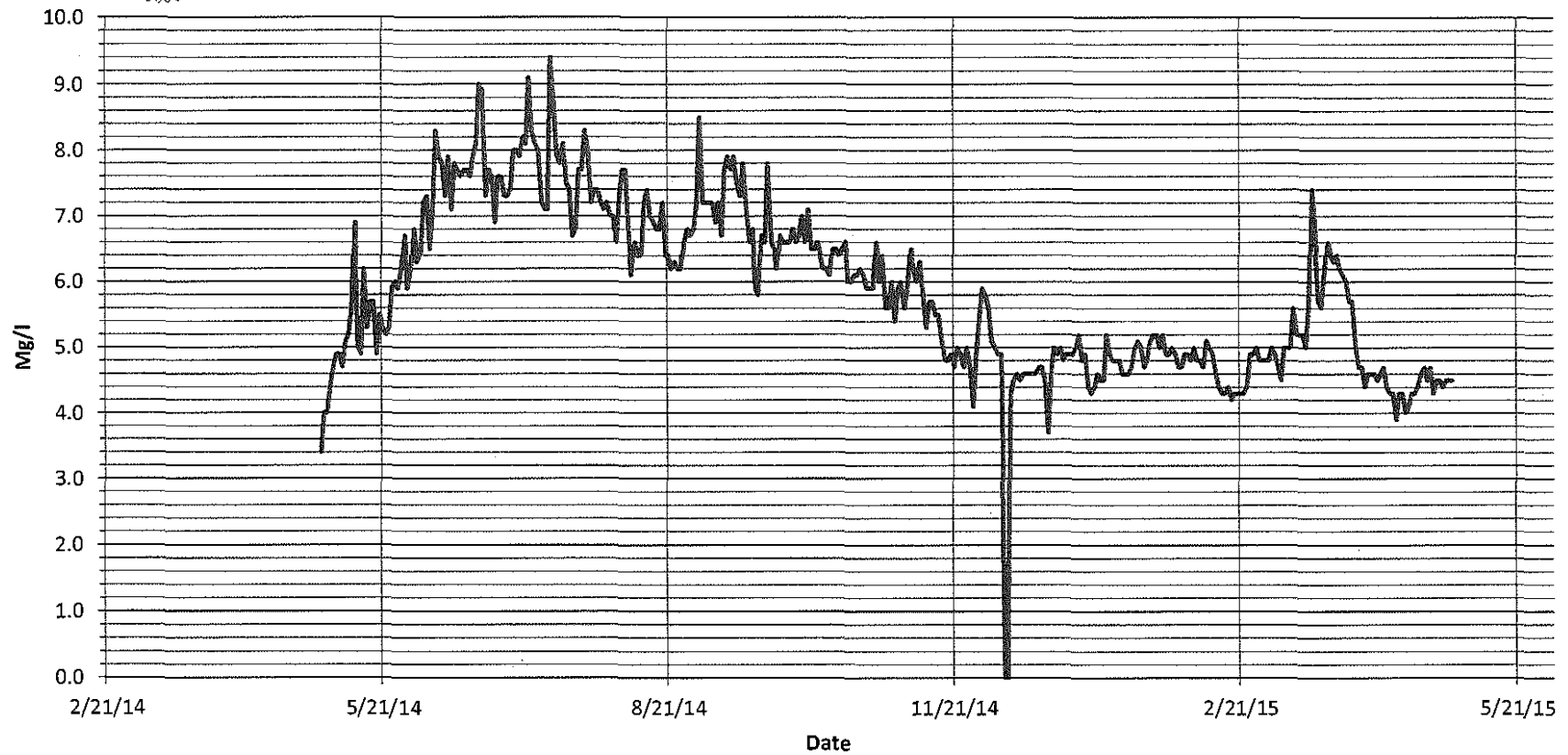
CITY OF FLINT
Operational Evaluation Report



APPENDIX B
WTP DATA

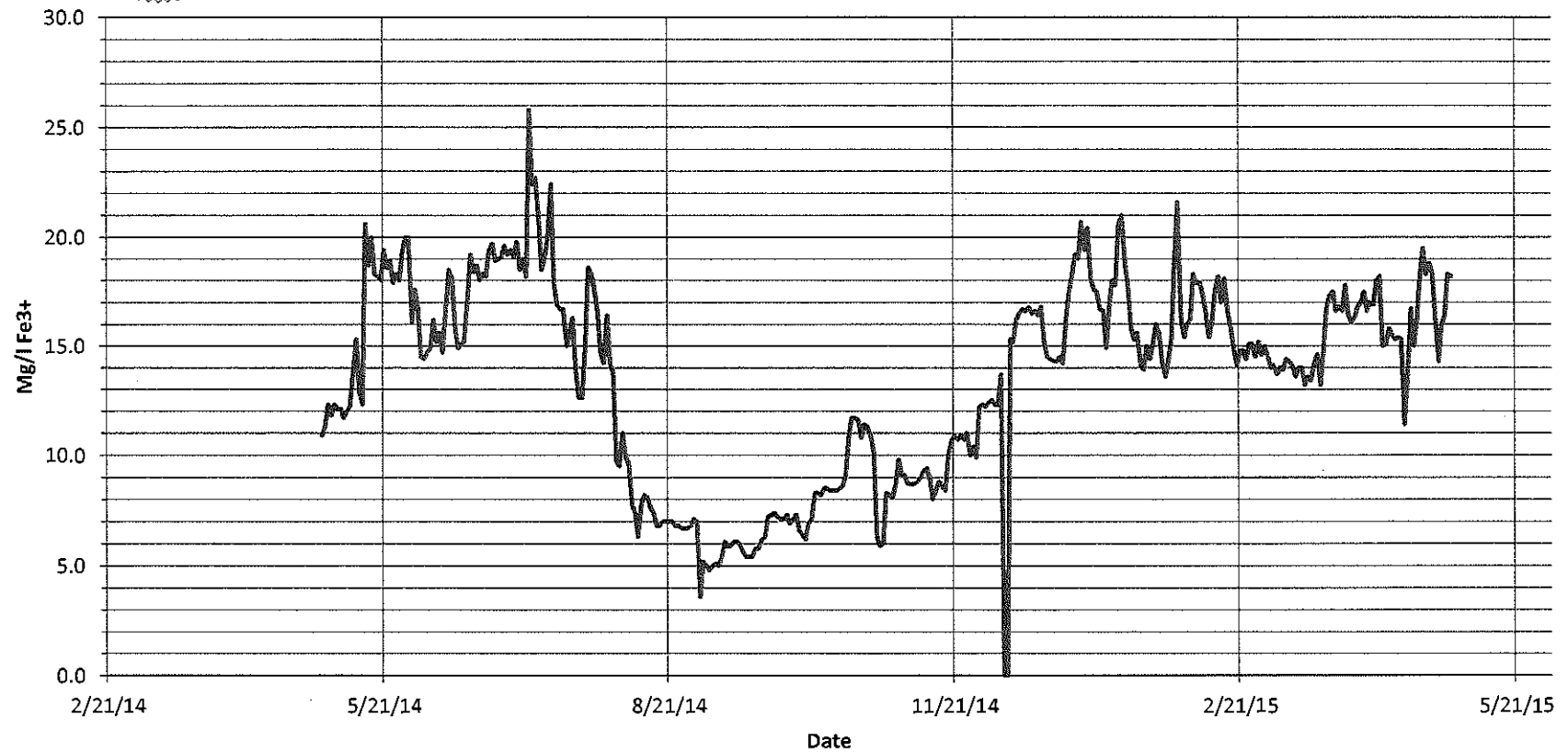


2014 Chlorine Feed



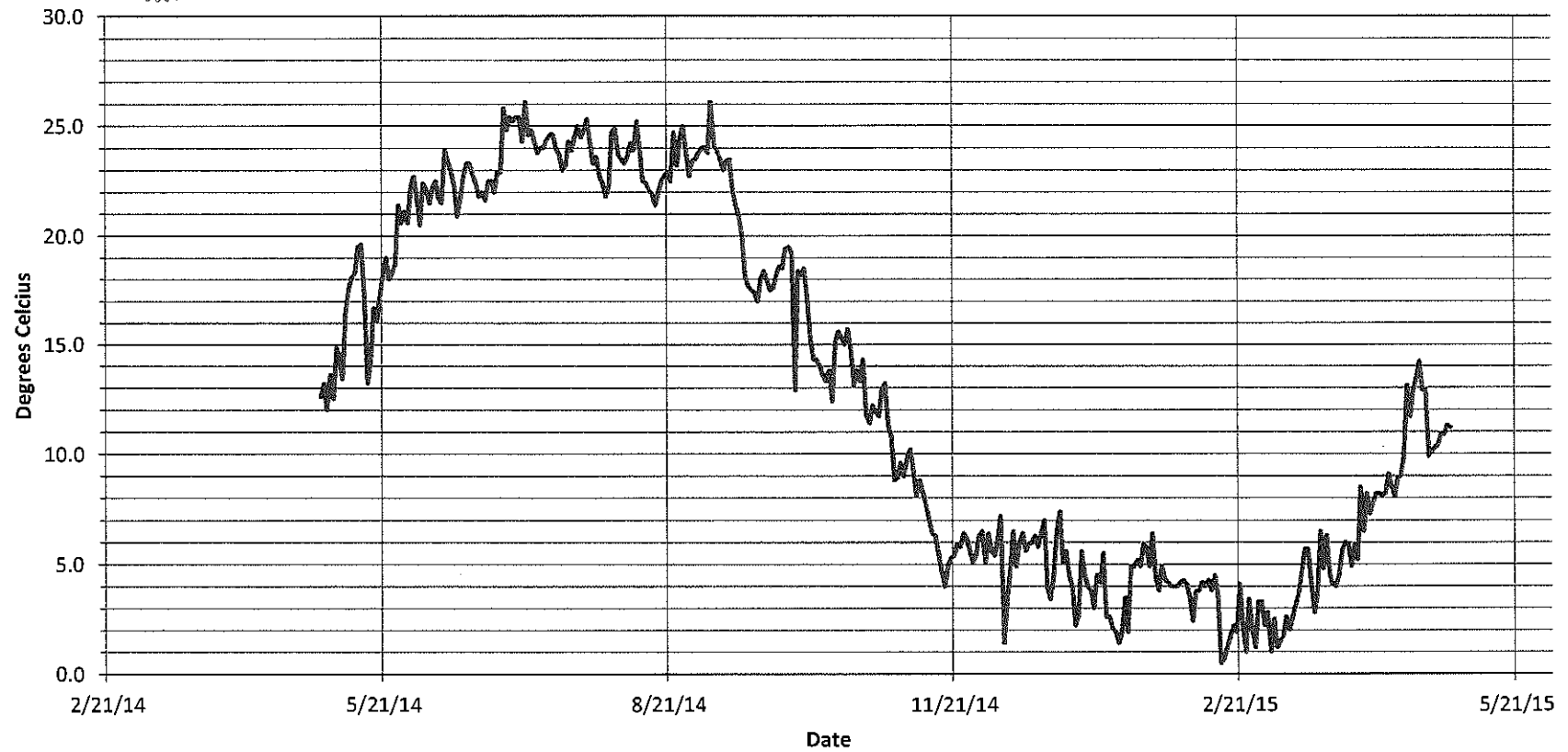


2014 Ferric Chloride Dosage



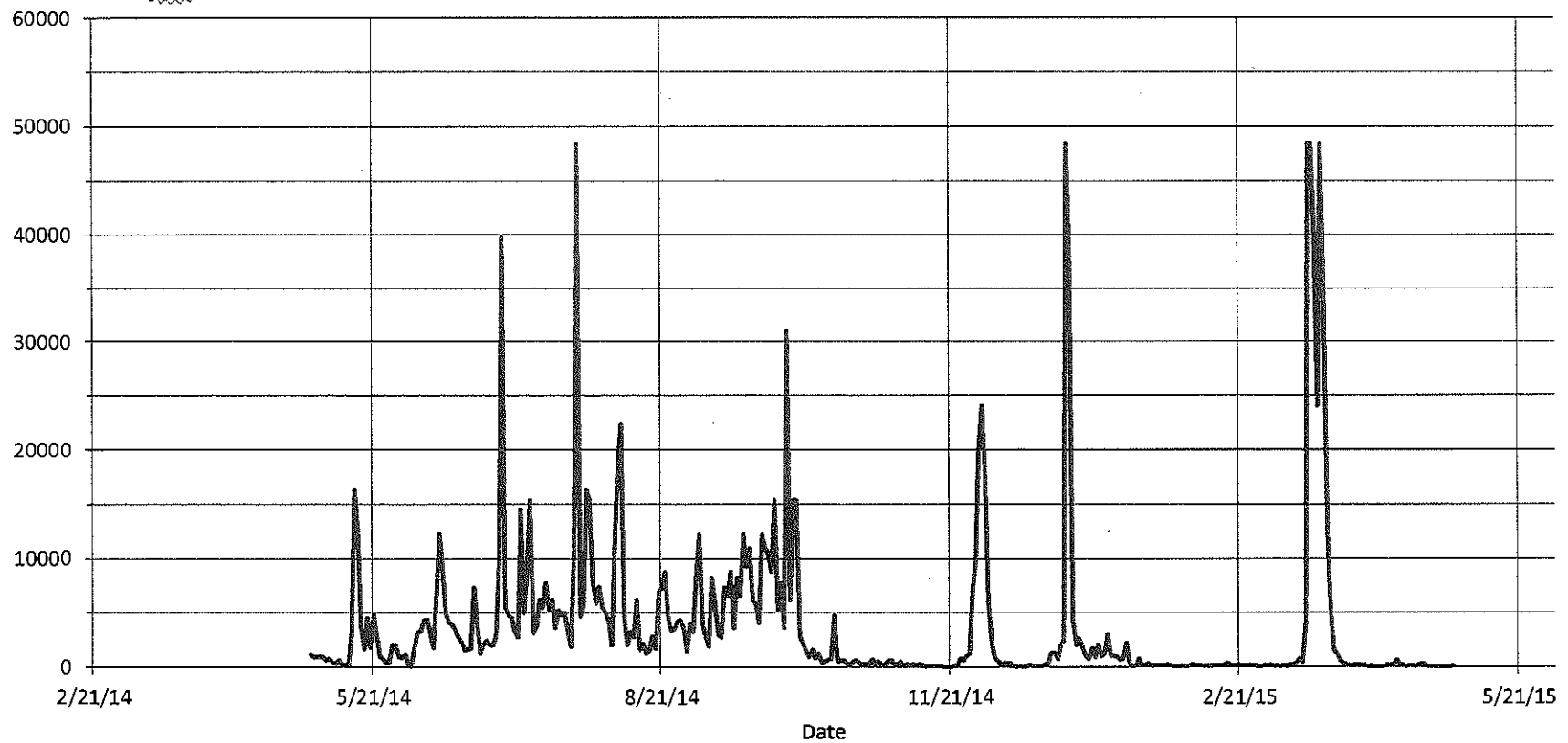


2014 Raw Water Temperature



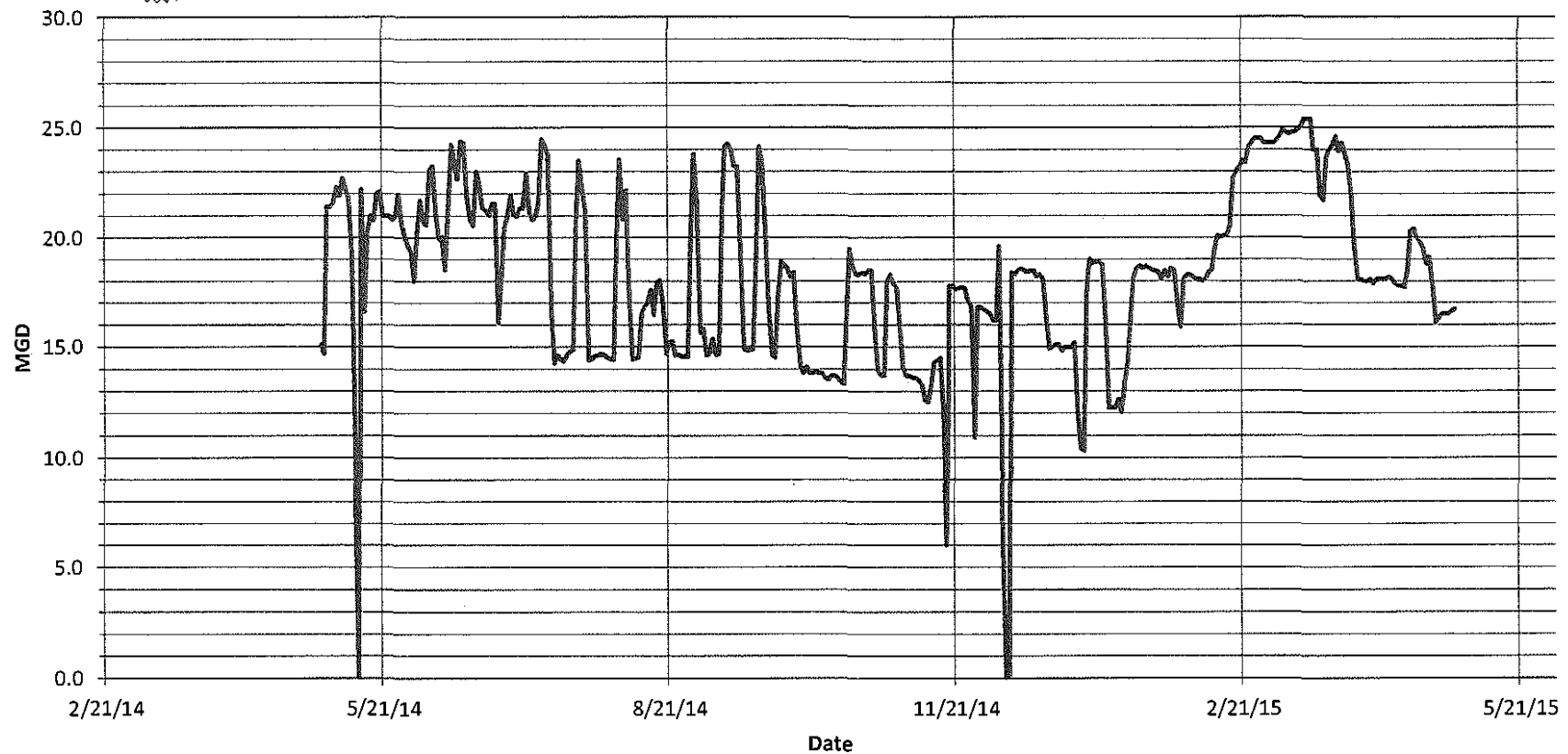


2014 Raw Water Coliform Count





2014 Daily Water Treated



**City of Flint
Operational Evaluation Report
March 1, 2015
MDEQ Comments**

1. **Revise Tables 2 and 3 on Page 7 to account for proper alignment of DDBP samples (results, location, site code). Also, revise statement on Page 1 regarding the number of sites exceeding the TTHM MCL following the 4th quarter sample cycle.**
2. **The ozone system was recently repaired. (Page 10 & 19). What is the ozone system's current production rate?**
3. **The city's hydraulic model (prepared by Potter Consulting) is being updated (Page 16). Is the model currently sufficient in determining proper sizing for the transmission main replacement in DuPont & Bishop Street corridor? (currently sized at 24-inch) (Pages 5, 16, and 20)**
4. **Are the potassium permanganate results & conclusions available? (Pages 4 and 17)**
5. **We agree that some reduction in storage volume could be achieved without compromising reliability; however given high usage, main breaks, and "let runs" during the winter, storage volume remains important. We agree with the need to determine adequate storage volume which will likely differ between summer and winter. (Page 15)**
6. **We agree with the concern of re-circulation of water pumped from the booster pump stations; however, we were recently informed of existing distribution system check valves to prevent recirculation. These appurtenances and their condition need to be confirmed. The hydraulic model may also need to be updated to include these valves. (Page 15)**
7. **We concur with the recommendation to provide the ability to monitor raw water TOC and PTAP TTHM. (Pages 17 & 18)**
8. **Page 20 provides 2 options to manage water age and each option includes reducing the utilized storage volume of the 3 MGAL well to 2 MGAL. The reduction in storage volume limits the WTP's ability to meet CT under worst case conditions (low temp, high pH, 30 MGD pumping rate from reservoir).**
9. **Table 11 on Page 21 outlines an Action Plan for Stage 1 and Stage 2 actions. Several actions listed in Stage 2 including; repair of ozone system, continued valve replacement, and replacement of deteriorated watermains are longer term solutions; however, they need to proceed regardless of the outcome of TTHM reduction.**

Rennaker, Joanne (DEQ)

From: Dayne Walling <dwalling@cityofflint.com>
Sent: Friday, October 16, 2015 10:21 AM
To: Natasha Henderson
Cc: Thelen, Mary Beth (DEQ); Sean Kammer; Krisztian, George (DEQ); Tommasulo, Karen (DEQ); Shekter Smith, Liane (DEQ); Lyon, Nick (DHHS); Prysby, Mike (DEQ); Wurfel, Brad (DEQ); Edgerton, Shelly (LARA); Busch, Stephen (DEQ); Wyant, Dan (DEQ); Howard Croft (hcroft@cityofflint.com); Shaler, Karen (DEQ); Pallone, Maggie (DEQ); Dykema, Linda D. (DHHS); Sygo, Jim (DEQ)
Subject: pathogens

----- Forwarded message -----

From: Jason Lorenz <jlorenz@cityofflint.com>
Date: Fri, Oct 16, 2015 at 9:59 AM
Subject: Fwd: FW: Flint Water Opportunistic Pathogens
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>

----- Forwarded message -----

From: "Matthew Bleicher" <mbleicher@sbgvtv.com>
Date: Oct 16, 2015 9:32 AM
Subject: FW: Flint Water Opportunistic Pathogens
To: "Jason Lorenz" <jlorenz@cityofflint.com>
Cc:

From: ZIGMOND KOZICKI [mailto:zigpsych@sbcglobal.net]
Sent: Thursday, October 15, 2015 11:36 AM
To: newstips
Cc: Stephanie Baiyasi
Subject: Flint Water Opportunistic Pathogens

Please join the press briefing regarding opportunistic pathogens (OPs)

Facilitated by:

Dr. Zigmond A. Kozicki DHA, MSA, MA

Dr. Stephanie J.S. Baiyasi, DVM, HSAC

Friday 10/16/15 in Flint, Michigan, at the:
Holiday Inn Express, 1150 Robert T. Longway, Meeting Room 106, Flint,
Michigan 48503 ph.810-238-7744

Primary Purpose: to raise awareness and alert the public about the threat of
opportunistic pathogens (OPs) in Flint drinking water.

Ziggy Kozicki, DHA, MSA, MA, LLP

989-450-1451

zigpsych@sbcglobal.net
kozickza@udmercy.edu
Kozic1za@cmich.edu

"You must be the change you wish to see in the world."
- Mohandas K. Gandhi



Think Green! Before printing this e-mail ask the question, is it necessary?

On Thu, Oct 15, 2015 at 7:10 AM, Natasha Henderson <nhenderson@cityofflint.com> wrote:

Hello All:

I look forward to the meeting in Friday.

Thanks,

Natasha L. Henderson, City Administrator
City of Flint, Michigan
@Samsung Galaxy Note 4

On Oct 14, 2015 6:59 PM, "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov> wrote:

This is to confirm that the first meeting has been scheduled for Friday, October 16, 10:00 a.m. in
Natasha Henderson's office.

The following from the state will be in attendance in person or by telephone:

George Krisztian, City of Flint Plan Coordinator and Laboratory Director, Department of Environmental Quality (in person)

Shelly Edgerton, Deputy Director, Department of Licensing and Regulatory Affairs (in person)

Dr. Linda Dykema, Department of Health and Human Services (in person OR by telephone)

Dr. Eden Wells, Chief Medical Executive, Department of Health and Human Services (by telephone)

I have been working with Sean on these arrangements.

Thanks.

Mary Beth

Mary Beth Thelen

Management Assistant to Director Dan Wyant

Department of Environmental Quality

Constitution Hall, 6th Floor South

Phone: 517-284-6712 or 284-6700 (new numbers)

Fax: 517-241-7401

Thelenm2@michigan.gov

From: Krisztian, George (DEQ)

Sent: Tuesday, October 13, 2015 4:38 PM

To: Natasha Henderson; Sean Kammer

Cc: Dayne Walling; Howard Croft (hcroft@cityofflint.com); Wyant, Dan (DEQ); Sygo, Jim (DEQ); Thelen, Mary Beth (DEQ); Shaler, Karen (DEQ); Wurfel, Brad (DEQ); Pallone, Maggie (DEQ); Tommasulo, Karen (DEQ); Dykema, Linda D. (DHHS); Edgerton, Shelly (LARA); Lyon, Nick (DHHS); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)

Subject: RE: Preliminary and Deliberative: Not subject to FOIA Weekly meetings

Hi Natasha,

I look forward to working with everyone there. Can you please work with Mary Beth to get the first meeting Scheduled? If possible, I would like the first meeting to take place this week. A lot of things are happening and I want to make sure that we are all coordinated in this effort.

Thank you!

George

George L. Krisztian

Flint Action Plan Coordinator

Laboratory Director

Michigan Department of Environmental Quality

Desk ph (517) 284-6719

Cell ph (517) 204-0381

From: Natasha Henderson [<mailto:nhenderson@cityofflint.com>]

Sent: Tuesday, October 13, 2015 3:14 PM

To: Krisztian, George (DEQ); Sean Kammer

Cc: Dayne Walling; Howard Croft (hcroft@cityofflint.com); Wyant, Dan (DEQ); Sygo, Jim (DEQ); Thelen, Mary Beth (DEQ); Shaler, Karen (DEQ); Wurfel, Brad (DEQ); Pallone, Maggie (DEQ); Tommasulo, Karen (DEQ); Dykema, Linda D. (DHHS); Edgerton, Shelly (LARA); Lyon, Nick (DHHS); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)

Subject: Re: Preliminary and Deliberative: Not subject to FOIA Weekly meetings

Hello George,

I will serve as the point of contact for the City to schedule on-going meetings. Also, I have included my Assistant, Sean Kammer in this email.

Thanks,

Natasha L. Henderson, City Administrator

City of Flint, Michigan

1101 S. Saginaw St.

Flint, MI 48502

Email: nhenderson@cityofflint.com

Phone: (810) 237-2057

www.cityofflint.com

On Mon, Oct 12, 2015 at 11:36 AM, Krisztian, George (DEQ) <krisztiang@michigan.gov> wrote:

Mr. Mayor,

I would like to schedule weekly meetings with you and your key staff so that we can ensure that we have a coordinated effort in resolving the water issue. I would like for the initial meetings to be face to face and I, along with others, will come to Flint for these.

If possible I would like the first meeting to be either Tuesday or Wednesday of this week (10/13 or 10/14) and I would also like to ask for a tour of the Flint Water Treatment Plant.

Mary Beth Thelen will serve as the DEQ's point on coordinating these meetings. Can you please let us know who would be the appropriate contact on your end?

Thank you very much!

George

George L. Krisztian

Flint Action Plan Coordinator

Laboratory Director

Michigan Department of Environmental Quality

Desk ph (517) 284-6719

Cell ph (517) 204-0381

--

Dayne Walling

Mayor, City of Flint

City Hall, 1101 S. Saginaw St.

Flint, MI 48502

810-766-7346

mayor@cityofflint.com

www.cityofflint.com

follow me on twitter at <http://twitter.com/mayorwalling>

Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Friday, January 16, 2015 5:03 PM
To: jimananich@house.mi.gov; repphelps@house.mi.gov; Sheldon Neeley; Hovey, Amy
Cc: Tom Lenard; Bryanna McGarry; Sean Walser; Dickinson, Jordan; Flint Mayor; Prysby, Mike (DEQ); Busch, Stephen (DEQ); John O'Brien; djansen@gcdcwws.com; Green, Warren; Matta, Samir; Elizabeth Murphy; Gerald Ambrose; Brian Larkin
Subject: Public Forum
Attachments: Public Water Presentation 1.21.2015.pdf; Addressing Flint's Water Concerns.pdf

All,

The City of Flint is hosting a public forum next Wednesday January 21st in the dome at City Hall at 7:00 pm. The focus will be a presentation followed by a question and answer session about water. The panel will consist of two of our DEQ representatives, the lead engineer from LAN, the Genesee County Drain Commissioner Jeff Wright, and myself.

Please feel free to attend or recommend your constituency to attend, I am forwarding a copy of the press release along with our most recent communication's about the City of Flint water system.

I am looking to build a better communication network for sending out information from the City of Flint DPW Department to interested parties on a more frequent basis. I will inform everyone when that is formally established.

Please call me if you have any questions,

Thank you,

--

Howard Croft
Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7346 Ext.2043
hcroft@cityofflint.com

Gerald Ambrose
Emergency Manager



Dayne Walling
Mayor

Jason Lorenz
Public Information Officer
(810) 237-2039
jlorenz@cityofflint.com

For Immediate Release

City of Flint Will Hold Public Water Presentation Wednesday, January 21, 2015 at 7:00pm in the City Hall Dome

Flint, Michigan – January 16, 2015 — The City of Flint will be hosting a water presentation on Wednesday, January 21, 2015 at 7pm. That presentation will be held in the City Hall Dome and will feature information detailing water treatment, water distribution and the steps being taken to ensure that citizens get water that meets all regulatory safety and quality standards. "We want the residents, businesses and visitors of Flint to know that the water in Flint is safe and that we are working every day to make improvements to our system to ensure that," said City DPW Director Howard Croft. "Our goal is make sure we get people the information on our efforts and assure them that we are on the right track with them."

DPW Director Croft and Utilities Administrator Daugherty Johnson will be joined on a panel by representatives from the Genesee County Drain Commissioner's office, the Michigan Department of Environmental Quality and LAN engineering. Written questions from the audience will be collected during the presentation and answered by the panel after the presentation.

—END—

City Hall
1101 S. Saginaw Street - Flint, Michigan 48502
810-766-7346 FAX: 810-766-7218 www.cityofflint.com

Addressing Flint's Water Concerns

Recent events have raised concerns among many as to the safety and quality of the water provided by the City's utility system. The City is and continues to be committed to assuring that residents and visitors know that the water is safe and that those responsible for providing water are working every day to improve the quality of the water. The quality of the water does need improvement, but that is not to be confused with safety of the water. The recent notice by MDEQ clearly stated that the water provided by the utility system is safe to drink, but cautioned that some vulnerable groups may want to consult with their health care provider if they have concerns. The City remains committed to their efforts to assure that the water is safe for everyone and that quality is both improved and improving.

To date, the City has taken the following actions:

- As an integral part of the transition to the Flint River on a temporary basis, the MDEQ was consulted about the City's plans, and ultimately issued necessary permits to proceed. The City also engaged the services of the LAN engineering firm to guide the city in installing the necessary equipment to treat the water on an ongoing basis. This resulted in the development of a comprehensive drinking water plan.
- The City monitors its water quality on a daily basis to assure that water quality remains within established guidelines. With the variances in water temperature and the leakage and infiltration problems arising as the result of failure of parts of the distribution system, water quality did exceed, for a time, some of the established guidelines. This resulted in the issuance of the recent notices to the public. Upon receipt of information that some guidelines were exceeded, the City's priority focus was to bring water quality back within guidelines. Efforts taken to address non-compliance included increasing water flow through valve replacements and hydrant flushing and optimizing treatment processes.
- The City has committed to increasing communication with the public in order to inform water users factually of the issues which have arisen, to alleviate unnecessary concern and to identify the steps being taken to address the issues. This is being implemented through detailed and easy to understand educational materials being made available both online and at City Hall, as well as through ongoing public informational meetings.
- Most recently, in light of recent concerns raised by resident groups over the quality and safety of water, Department of Public Works Director Howard Croft and his staff collected questions from citizens during a recent public meeting. After reviewing these questions, DPW Director Croft and his staff set out to answer them in concise detail; the result of that work is a full Water System Questions and Answers document is available online. Along with the detailed information within, the document also contains links to other source documents and regulatory statutes found online which were used as reference. **"We want the residents, businesses and visitors of Flint to know that the water in Flint is safe**

and that we are working every day to make improvements to our system to ensure that," said Croft. "Our goal is make sure we get people the information on our efforts and assure them that we are on the right track with them." More documentation, including regular water quality monitoring reports, will be made available.

- Additionally, a number of public meetings have and will continue to take place. Two of the most recent of these took place at the Antioch Baptist Church and the Mott Community College Regional Technology Center. These meetings were held by concerned neighborhood groups and were attended by Mayor Walling and DPW Director Croft. At both meetings, citizens voiced their concerns and asked questions about water quality and the recent violation notice. Director Croft offered detailed answers to common questions, but also offered to investigate specific water issues raised by residents in which the City could offer assistance. Those in attendance came away with a better understanding of the issues surrounding the drinking water in their community.
- The City of Flint will be hosting a water presentation on **Wednesday, January 21, 2015 at 7pm. That presentation will be held in the City Hall Dome**, and will feature information detailing water treatment, water distribution and the steps being taken to ensure that citizens get water that meets all regulatory safety and quality standards. City DPW Director Howard Croft and Daugherty Johnson, Utilities Administrator, will be joined on a panel by representatives from the Genesee County Drain Commissioner's office, the Michigan Department of Environmental Quality and LAN engineering. Written questions from the audience will be collected during the presentation and answered by the panel after the presentation.
- The City of Flint has also determined that in light of the serious concerns raised, it will secure the services of an external firm with expertise in managing drinking water quality to assess the steps that the city has taken, to make recommendations as to other steps to be taken, to oversee their implementation, and to monitor operations until the City's water source becomes the KWA. A Request for Proposal was issued on January 15, 2015, with proposals due back on January 26.

The DWSD Question:

As a result of the concerns raised, several community members have suggested that the City reconnect to the Detroit Water and Sewer Department (DWSD). DWSD has advised that they would be willing to allow such a reconnection without a hook-up fee. However, the City would be obligated to pay a fixed monthly charge of \$846,700 plus the \$14.92/Mcf cost of water itself and agree to a long term arrangement. The City's analysis of the DWSD proposal concludes that the City's cost would increase by more than \$12 million per year at the proposed rates, and could increase even more as proposed rates are subject to change after July 1, 2015. This increase in costs would not be in the best interests of the City or its water users, as the City is committed to assuring safety and improving water quality by following its current plan, and reconnecting to DWSD would likely require deferment of existing capital improvements or an additional increase in rates.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, January 07, 2015 2:18 PM
To: Howard Croft (hcroft@cityofflint.com)
Cc: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ)
Subject: Public Works Meeting

Howard,

This note confirms my telephone discussion with you today. The city has scheduled a Public Works Committee at 5pm today and the TTHM violation is on the agenda. The meeting will be open to the public and will also have media coverage. Given the timing of the meeting (today at 5pm) the DEQ will not be able to participate. The DEQ is willing to participate in a future public meeting (in the next one to two weeks). Please notify us of the next planned meeting(s) and request the department's participation to help answer questions and/or to speak on specific items pertaining to this issue. Please send the request to me so I can organize our participation. If you have any further questions, please call me at your earliest convenience.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Monday, October 19, 2015 7:06 PM
To: Amy Hovey; Andy Leavitt; Anthony Chubb; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; Dykema, Linda D. (DHHS); Wells, Eden (DHHS); edwardsm; Krisztian, George (DEQ); Gerald (Jed) Natzke; Howard Croft; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kevin J. Keane; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Schock, Michael; Michael Wright; Mike Lane; Prysby, Mike (DEQ); MVALACAK@gchd.us; Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Busch, Stephen (DEQ); Thompson, Sheryl D. (DHHS); Warren Green
Subject: Quarterly Report Review
Attachments: 3rd Quarter CoF Water Quality Report (2).pdf

All,

I am circulating a final version of our first quarterly water report that is ready to go to the printer. We modified it due to the fact that the switch has occurred in order to reflect a more timely report.

Please feel free to take a final look and return any comments as we can still make adjustments if needed. We decided to direct residents to the website to review the timeline and keep the focus on the most recent quarterly news.

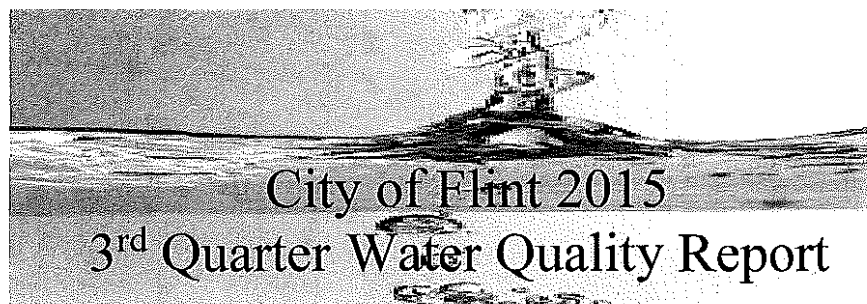
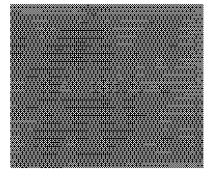
After a final review we intend to release this to the City Council at the next DPW Committee meeting which is this Wednesday. That version will also go to the printer.

Thank you,

--

Howard Croft
 Public Works Director
 City of Flint
 1101 S. Saginaw Street
 Flint, MI 48502
 PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Customer Service Center
City Hall
1101 S. Saginaw St.
Flint, MI 48501



The Quarterly Water Quality Report provides important information about your drinking water. This report includes information about the water source, current drinking water issues, lead information, water filters, 3rd quarter work accomplished, and a water timeline of events. The City of Flint Department of Utilities is dedicated to providing quality drinking water to the residents of the community. The Flint Water Plant operates and maintains a certified drinking water laboratory to assure compliance with all state and federal regulations, and is committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water. Information about your drinking water is available on the City of Flint web page at www.cityofflint.com or by calling the City of Flint Water Plant at **(810) 787-6537**. The Safe Drinking Water Hotline at **(800) 426-4791** is a resource for health related questions and water quality issues. General drinking water information can also be found on the U.S. Environmental Protection Agency (EPA) web site at www.epa.gov/safewater/.

Water Source

The City of Flint began using the Flint River as a water source in May of 2014. After 16 months of treating water from the Flint River, the City became aware that the level of corrosiveness found in Flint River water could result in more lead leaching from service lines and household plumbing. Reports of elevated blood lead levels in children and expert analysis resulted in the City's Technical Advisory Committee making a recommendation to return to the previous source of water while waiting for the KWA to provide water from Lake Huron.

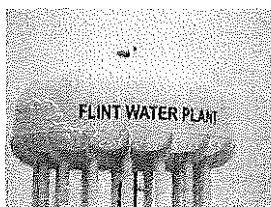
On Friday October 16th, 2015, with the consent of Governor Snyder, the City returned to Detroit as the primary source of drinking water. The decision, along with the Technical Advisory Committee's recommendation followed two consecutive lead and copper test periods that exceeded 5ug/L which calls for additional action. In addition to the switch, the City has submitted a final corrosion control design to the DEQ for comments and approval. The City has requested to use the corrosion control as an additive to treated water it will be required when the city begins treating raw water from the Karegnondi Water Authority which is anticipated to begin in the summer of 2016.

In order to make the transition possible, the City contributed \$2 Million dollars, the Mott Foundation contributed \$4 Million dollars, and the State of Michigan contributed \$ 6 Million dollars.

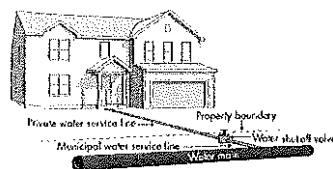
Current Drinking Water Issues & Lead Information

There has been a heightened awareness of lead leaching into drinking water through service lines and household plumbing. The City's Technical Advisory Committee has enlisted the support of EPA lead experts and is working with State of Michigan representatives to increase testing, rebuild public confidence, and implement long-term solutions to lead. It is recommended that everyone get their water tested, obtain a water filter, and check with a plumber to evaluate the type and condition of your household plumbing. The City is currently mapping all of its lead service lines and working to develop a program to get lines changed over time.

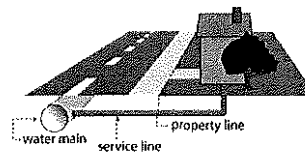
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint is responsible for providing high quality drinking 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 5 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 or at <http://www.epa.gov/safewater/lead>.



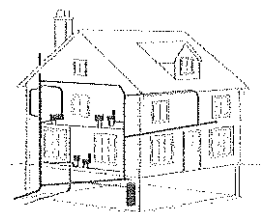
No lead in water leaving the Treatment Plant.



Little or no lead in water in the transmission mains.



Lead can leach into water through service lines.



Lead can leach into water through household plumbing.

Water Filters & Testing

Free water filters have been made available to current Flint residents at several locations. The MDHHS and the Genesee County Community Action Resource Department (GCCARD) are providing Free National Sanitation Foundation certified water filters at the following locations.

Residents receiving MDHHS assistance are encouraged to visit either the **125 E. Union St.** or **4809 Clio Rd.** MDHHS office location to obtain a free, certified home water filter. Residents who are not currently enrolled in MDHHS assistance programs should visit the (GCCARD) offices located at **2727 Lippincott** and **601 N. Saginaw** in Flint.

Staff will be onsite at all four locations from **9 a.m. to 4 p.m., Monday through Friday**, to distribute filters and assist residents who have questions about proper installation.

If you want more information on obtaining a water filter, please call 211.

Other suggestions related to water safety and testing:

- We recommend that everyone get their water tested. Call us at (810)-787-6537.
- Contact the Health Department about having your child's blood tested (810)-257-3612.
- It is advisable to have a plumber check your household plumbing.
- Check your faucet aerator (large lead solder particles can occasionally get lodged in here).

Temporary issues to be aware of when Changing Water Sources

Changing water sources back to Detroit will not fully eliminate the lead concerns. The potential for lead to leach off of certain water service lines or household plumbing will continue to exist regardless of the water source. The City is committed to increased testing, better communication, and developing a lead service line map to identify all of the City owned lead service lines.

As the city changes water sources you can expect the following:

- It could take up to three weeks for the switch in water source to reach all taps in the City.
- Over the next several weeks, we will be winterizing our hydrants which will result in discoloration of the water but will also help accelerate the water flowing through the system.
- Lead will continue to leach off of certain service lines and household plumbing.
- Main breaks could result as a change in source water occurs.
- Water could have discoloration or cloudiness, if this happens, run your faucet until the water clears, if this lasts longer than 20 minutes please report it to our water service center at (810)-766-7202.

Water Timeline

A timeline of events, beginning with signing the KWA contract leading up to the current status of switching back to our previous source of water is available on the City website and can be found by visiting the “water” page located under “residents”. Please email flintwater@cityofflint.com with your questions or to request a water test or, call the Water Plant at (810)-787-6537.

3rd Quarter Events

July

- Completed the evaluation of over 8000 valves in the system and identified over 2300 that are currently inoperable. The repair of these valves will be budgeted and worked into our multi-year Capital Improvement Plan.

August

- Successfully completed the installation of Granulated Activated Carbon at the water treatment plant which reduced the TTHM level in the water and helped bring the City back into compliance with the Safe Drinking Water Act.

September

- Leak Detection on all 600 miles of the distribution system has started and is over halfway complete. Several dozen leaks have been identified and repairs continue as more leaks are found. This has decreased the amount of water loss existing in the system.
- Construction of a load out facility at our wastewater plant is on target for completion by November and will allow the City to eliminate the use of the incinerator resulting in significant annual savings.
- Over 3500 new water meters have been installed this year creating better accuracy, accountability, and decreasing the number of estimated reads on water & sewer bills.

Contact Information

Water Treatment Plant - (810)-787-6537

Request a water test.

Request a tour of the Plant.

Ask questions about water quality.

Water Service Center - (810)-766-7202

Report a water leak or other system issues.

Water Pollution Control - (810)-766-7210

Inquiries related to wastewater treatment.

Inquiries related to converting methane gas into energy.

Customer Service – (810)-766-7015

Questions about your water & sewer bill.

Water Filters – 211

Questions about water filters.

2015 3rd Quarter Regulated Detected Contaminants – Flint River as Source

Inorganic & Organic Chemicals, Metals, and Pesticides – Monitored at treatment plant						
Regulated Contaminant	Unit of Measure	MCLG	MCL	Highest Level Detected	Range of Detection	Violation
Inorganic Chemicals						
Fluoride	mg/L	4	4	0.84	0.64 – 0.84	No
Nitrate	mg/L	10	10	N.D.	N/A	No
Metals						
Barium	mg/L	2	2	0.02	N/A	No

More than 100 other chemicals were monitored from July through September that were not detected.

The various classification groups of these chemicals include metals, carbamates, herbicides, pesticides, organics, and radiologicals.

Total Organic Carbon, TOC - Monitored at treatment plant			
Regulated Contaminant	Required Monthly % Removal	Minimum Monthly % Removal	Monthly % Removal Ranges
Total Organic Carbon	50	60	60 - 87

Turbidity - Monitored at treatment plant		
Highest Single Measurement (Cannot exceed 1NTU)	Lowest Monthly % of Samples Meeting Turbidity Limit (0.3 NTU in 95% of samples)	Violation
0.18	100 %	No

Disinfectant Residuals – Monitored in the distribution system						
Regulated Contaminant	Unit of Measure	MCLG	MCL	Highest Level Detected	Range of Detection	Violation
Total Chlorine Residual	mg/L	4.0	4.0	4.0	0.2 – 4.0	No

Microbiological Contaminants - Monitored in the distribution system				
Regulated Contaminant	MCLG	MCL	Highest Number detected (in 1 month)	Violation
Total Coliform bacteria	0	The presence of coliform bacteria in > 5% of monthly samples	1	No
<i>E. coli</i> Bacteria	0	0	0	No

Lead & Copper – Monitored from consumers tap					
Regulated Contaminant	Unit of Measure	MCLG	Action Level AL	Number of samples over AL	Total # of Samples Tested from January - September
Lead	ug/L	0	15	16	189
Copper	mg/L	1.3	1.3	0	189

Disinfection By-Products - Monitored in the distribution system and from treatment plant						
Regulated Contaminant	Unit of Measure	MCLG	MCL	Highest Level Detected	Range of Detection	Violation
Total Trihalomethanes (TTHM)	ug/L	n/a	80	90.3	42.6 – 90.3	N/A*
Haloacetic Acids (HAA)	ug/L	n/a	60	15.0	2.0 – 15.0	N/A*
Bromate	ug/L	10	10	N.D.	N/A	N/A*

*Violation based on locational running annual average for TTHM & HAA5, violation for bromate based on yearly average.

Key to the Detected Contaminant Tables		
Symbol	Abbreviation for	Definition/Explanation
>	Greater than	
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in water. MCLs are set as close to the MCLG's as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
mg/L	Milligrams per Liter	A milligram = 1/1000 gram 1 milligram per liter is equal to 1ppm
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on total.
ug/L	Micrograms per Liter	A microgram = 1/1,000,000 gram 1 microgram per liter is equal to 1ppb

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, September 03, 2015 3:45 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: question: Ms Walters' home

See my question below and Miguel's response—I guess if the Walters are still using bottled water for drinking and cooking, then they probably wouldn't have any type of GAC filter or RO unit on their house, but we don't know. If the Walters still have their iron filter at the entry point to their home, I wonder if the chlorine could be oxidizing iron.
 Jennifer

From: Deltoral, Miguel
Sent: Wednesday, September 02, 2015 8:23 AM
To: Crooks, Jennifer; Poy, Thomas; Porter, Andrea
Subject: Re: question: Ms Walters' home

I haven't spoken to her so I don't know, but information on the Flint Water Update website, which is recent, says that the Walters are still using bottled water for drinking/cooking.

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, September 1, 2015 02:09 PM
To: Deltoral, Miguel; Poy, Thomas; Porter, Andrea
Subject: question: Ms Walters' home

Hi, Miguel. We had a call yesterday with MDEQ and were discussing Marc Edwards' website. MDEQ thought that Ms Walters' home has a whole house filter that would remove chlorine in addition to lead and other contaminants, such as a GAC filter. I said that when you and I were out there in late April/May, that there was no whole house GAC filter or other tap or under-sink filter; she had an iron filter at the entry point to her home—but an iron filter wouldn't remove chlorine, though chlorine could oxidize the iron. Do you know if Ms Walters' has installed a whole house GAC filter, or tap GAC filter or under-sink GAC filter since May?

Jennifer

Rennaker, Joanne (DEQ)

From: Yanna Lambrinidou <pnalternatives@yahoo.com>
Sent: Thursday, September 10, 2015 11:11 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Subject: question about optimal WQP ranges for Flint's water

Good morning Mr. Wurfel and Mr. Busch,

As a member of the EPA National Drinking Water Advisory Council (NDWAC) Lead and Copper Rule (LCR) workgroup that just completed its recommendations to EPA about the agency's upcoming revisions to the LCR, I am watching with great interest and concern the developments in Flint in relation to lead. I am looking for information on the optimal water quality parameter (WQP) ranges that MDEQ has set for Flint's water. Are those posted online? If so, could you send me the link? If not, could you let me know what they are?

Thank you kindly,

Yanna Lambrinidou PhD
Parents for Nontoxic Alternatives
PO Box 6283
Washington DC 20015
P 202.997.1834
B www.dccwasawatch.blogspot.com

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Wednesday, September 30, 2015 12:51 PM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ); Philip, Kris (DEQ); Poy, Thomas
Subject: question for ORD/Mike Schock

Importance: High

Tom P told me that your Director, Dan Wyatt, asked that his staff work with ORD/Mike Schock and Darren Lytle. Mike and Darren are both working on getting up to speed on the basics of the Flint water treatment scheme. I had a request from Mike Schock this morning about information about treatment and various sample results for Flint. So, I sent them the final OEL report from Flint that is on their website, as well as the 5 MORs that are also on Flint's website.

Mike had an additional question; he's looking for a schematic of the Flint treatment process to help him evaluate the possible successfulness of phosphate treatment at Flint. See Mike's brief explanation below.

I don't want to make this a big project if it's not handy; would Mike Glasgow have this schematic?

Thank you all! I know your time is very valuable right now.

Jennifer

From: Schock, Michael
Sent: Wednesday, September 30, 2015 10:57 AM
To: Crooks, Jennifer
Cc: Lytle, Darren
Subject: RE: more pdfs

Jennifer;

Thank you so much!

Would you happen to know if any other report has, or that you might have somewhere, a currently-valid process schematic for the entire set of treatments done at the Flint plant? It would be helpful to have a better picture of where things like softening, type of coagulant and GAC fit into the picture. There are several potential interrelationships that would affect the successfulness of the phosphate treatment proposed and dosage, and the instability caused by the major chemistry change from Detroit finished water (which I understand was from their Lake Huron-fed plant).

--Mike

From: Crooks, Jennifer
Sent: Wednesday, September 30, 2015 9:29 AM
To: Schock, Michael; Lytle, Darren
Subject: more pdfs

April 2015 MOR is not on the website.

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Monday, February 09, 2015 12:12 PM
To: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: question on flushing/water rates in MI

Richard—I have a couple of questions for you regarding the citizen complaint on Flint, that I'm responding to.

Regarding the water rates part of this email, "Flint river. runs right through the city of flint. they have been opening the hydrants and letting water pour out of them to "purge" the system, **then charging consumers double for their mistake**"

I was going to remind the citizen that they are only charged based upon what the water meter reads at individual connection (home). The citizens aren't directly paying for what is being flushed. I was going to say that the flushing program removes stagnant water in the system, which can increase levels of trihalomethanes and increase bacteria growth, among other activities.

Also, who regulates water rates in Michigan? I don't think MI has a rate commission, right? Any oversight on individual water supply rates?

Jennifer

From: Crooks, Jennifer
Sent: Monday, February 09, 2015 8:22 AM
To: Richard Benzie; Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: FYI: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Forgot to cc you all. Jen

From: Crooks, Jennifer
Sent: Monday, February 09, 2015 8:09 AM
To: Dee, Rhiannon
Cc: Poy, Thomas
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Rhiannon—Let me tell you, this Flint situation is a nasty issue—I've had people call me 4 letter words over the phone, yell at me, and call me a crook—yes, the last one was a play on my last name—I didn't think it was funny, though I'm developing a thick skin ☺.

I can respond to the Flint drinking water issue, and the water rate issue, and refer them back to the State if they have further questions. But I cannot respond to the sewerage dump (who receives the report when there is a sewer overflow?) or the chemical—though Richard is probably right—the 'toxic chemical' is probably chlorine—and that's what I'll say in my response. One citizen was confused about 'chlorides' being 'chlorine'....

Let me know if you would like me to respond to this citizen complaint as I explained above.

Jennifer

From: Dee, Rhiannon
Sent: Friday, February 06, 2015 10:50 AM

To: Benzie, Richard (DEQ)

Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas; Vantil, Barbara

Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Richard,

While I understand this complaint conflates various issues, my intention of forwarding it on to Pete and Barry was to relay the potential NPDES impacts of the complainants allegations.

Best,

Rhiannon Dee
Program Analyst
U.S. Environmental Protection Agency
Water Division, WC-15J
(312) 886-4882
dee.rhiannon@epa.gov

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]

Sent: Friday, February 06, 2015 9:38 AM

To: Dee, Rhiannon

Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas

Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

I'm not sure what this complainant is alleging. Do you want Michigan to respond to the allegation that a "company or individual dumped millions of gallons of raw sewage into the city of Flint drinking water" or the allegation that "they(?) have dumped a potential cancer causing chemical into the city's drinking water" or the allegation that the city of Flint is flushing hydrants and charging customers double? The Office of Drinking Water and Municipal Assistance cannot address the issue surrounding the dumping of raw sewage and we don't interfere with water rates, but maybe an explanation of the issues that have confronted the city of Flint and their public water supply will help you understand the overall problem.

Last spring, the city of Flint decided to begin relying upon the Flint River as their source of drinking water using a treatment plant that was designed to do so. Last summer, they experienced difficulties with stagnation in some areas of the distribution system due to significantly reduced demands as a result of the loss of a significant percentage of their residential and industrial demands that accelerated over the last decade. During the summer of 2014, they also had a couple of monitoring periods where they detected total coliform at monitoring sites in these stagnant areas, and one time they detected E.coli present. The ensuing boil water advisories and public notification heightened customer concern about the quality of drinking water as a result of the switch from Detroit to the Flint River. Detroit supplied Flint with drinking water from Lake Huron, a much higher quality source than the Flint River. However, monitoring of the Flint water treatment plant tap has never indicated unacceptable water entering the distribution system. In response to these coliform detections and in an effort to prevent a recurrence, the city also increased flushing water mains in low flow areas and they have attempted to ensure the presence of a chlorine residual throughout the distribution system (is this the "potential cancer causing chemical" the complainant mentions?).

Compounding the problem of customer confidence was the initial monitoring for disinfection byproducts conducted by Flint under the Stage 2 DBR after their switch to the Flint River. The initial monitoring reported significantly elevated levels of total trihalomethane (TTHM) compounds throughout the city's distribution system. Our district office advised the city that they needed to immediately implement operational techniques at the treatment plant and in the distribution system to reduce the formation of these compounds. The steps the city of Flint has taken have been successful and have reduced TTHM concentrations to the point where the latest results are below the drinking water standard. However, the standard is calculated on a running annual average and it is likely to be another 3 to 6 months before the annual average at each monitoring station will

(hopefully) meet the standard. Until then, the city has to continue to provide quarterly public notification, which will continue to concern residents despite the latest TTHM results.

The switch to the Flint River, the microbiological problems and the elevated TTHM concentrations experienced last year in Flint have caused a high level of customer dissatisfaction and distrust. The city is working diligently to restore that confidence, but it will not be accomplished easily or overnight. You should also know that the switch to the Flint River is an interim measure intended to last only until a 72-inch pipeline from Lake Huron to the Flint water treatment plant is completed. It is currently under construction and expected to be in operation in mid-2016. At that point, the city's drinking water should again be very similar in quality to what they were receiving from Detroit.

Although the subject(s) of this complaint are not clear to me, I suspect it is a result of the media coverage of the recent problems with the city's water supply. However, the information from your initial contact indicates a Grand Blanc, Michigan address, which is not in the city of Flint service area. As I mentioned, our Lansing district office has been dealing with city representatives on this issue. If you have further questions, feel free to contact either Michael Prysby or Steve Busch. They are receiving this message so you have their contact information. You may also wish to communicate with your Region 5 counterparts in the Office of Drinking Water & Ground Water, Jennifer Crooks or Tom Poy, who have received similar complaints and with whom we have communicated regularly on these issues.

Please let us know if someone from EPA will respond to the complainant, or if you expect Michigan DEQ to do so.

Richard Benzie, P.E., Chief
Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 6:55 AM
To: Dee, Rhiannon
Cc: Selden, Barry (DEQ); Benzie, Richard (DEQ); Bartley, Cheryl (DEQ)
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Rhiannon, this is a drinking water complaint, not an NPDES compliant. Flint does have SSOs, and reports those. That's not the cause of this complaint.

There are public concerns with Flint's drinking water system, which switch from the city of Detroit supply to their own supply. Detroit's source water is much better, so the public may be noticing some changes.

I've copied Richard Benzie, how is the Field Operations Chief in our division that handles drinking water. If you need more follow up, he can provide it.

Thanks, Pete

Peter Ostlund
Field Operations Section Chief
Water Resources Division
Michigan Dept. of Environmental Quality
P.O. Box 30458
Lansing, Michigan 48909-7958
517-898-5128 (iPhone)
ostlundp@michigan.gov

From: Dee, Rhiannon [<mailto:dee.Rhiannon@epa.gov>]
Sent: Thursday, February 05, 2015 5:11 PM
To: Ostlund, Peter (DEQ); Selden, Barry (DEQ)
Subject: FW: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Hi there,

Hope all is well. We received this complaint a while back. Complainant is alleging discharges into Flint River.

Let me know if you have any questions or if I should forward this on to someone else.

Best,

Rhiannon Dee
Program Analyst
U.S. Environmental Protection Agency
Water Division, WC-15J
(312) 886-4882
dee.rhiannon@epa.gov

From: howard.donna@epa.gov [<mailto:howard.donna@epa.gov>]
Sent: Monday, January 12, 2015 11:21 AM
To: Dee, Rhiannon
Cc: Beese, Jennifer
Subject: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

01/12/2015

SUBJECT: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan
FROM: howard.donna@epa.gov
TO: Dee.Rhiannon@epa.gov
CC: Beese.Jennifer@epa.gov

-----Original Message-----

1/11/2015 10:55 AM

HQ LEAD NUMBER: FY15-124819-3709-CV

SUBJECT: Referred to Region - Michigan

FROM: sargent

TO:

Name: marcia

Address: po box 277

City: grand blanc

State: Michigan

Zip: 48480

Phone: 8103368486

Alleged Violator's Name: city of flint michigan

Alleged Violator's Address: water department

Alleged Violator's City: flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48503

Tip or Complaint: an individual or company dumped several million gallons of raw sewage into the city of flint Michigan drinking water and now they have dumped a potential cancer causing chemical into the water to cover up their negligent act. people are getting sick and skin rashes are becoming apparent, especially in the young and elderly. we will keep going until something is done to correct this "mistake"

Specific Directions: Flint river. runs right through the city of flint. they have been opening the hydrants and letting water pour out of them to "purge" the system, then charging consumers double for their mistake.

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Adams, Dominic <DADAMS5@mlive.com>
Sent: Tuesday, March 25, 2014 12:20 PM
To: Busch, Stephen (DEQ)
Subject: questions about Flint River

Steve:

My name is Dominic Adams and I am a reporter with The Flint Journal. We spoke in July about the city using the Flint River as a primary drinking water source until the Karegnondi Water Authority is complete. Here is a link to that story: http://www.mlive.com/news/flint/index.ssf/2013/07/flint_to_spend_171000_for_engi.html

The city says it is going to start using the Flint River and cut off from Detroit by April 17. I'd like to speak to you about the technical aspect about what that means. I tried leaving you a voicemail, but it says your voicemail is full.

Please give me a call at 810-241-8803 as soon as possible so we can discuss this.

If you are not the person I need to speak to about this, please give the name and contact information for the person I should talk to.

Thanks a lot and have a great day.

Dominic Adams | metro reporter | [The Flint Journal](#) | 810-241-8803 | dadams5@mlive.com | [On Twitter](#) | [On Facebook](#) |

Rennaker, Joanne (DEQ)

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 11:52 AM
To: Dee, Rhiannon; Benzie, Richard (DEQ)
Cc: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas; Vantil, Barbara
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

I think we're done with this. We just usually follow up with what we've found or know about the complaint. I think Richard summarized the issues with the Flint Water system, which has received a lot of press lately.

-Pete

Peter Ostlund
 Field Operations Section Chief
 Water Resources Division
 Michigan Dept. of Environmental Quality
 P.O. Box 30458
 Lansing, Michigan 48909-7958
 517-898-5128 (iPhone)
ostlundp@michigan.gov

From: Dee, Rhiannon [mailto:dee.Rhiannon@epa.gov]
Sent: Friday, February 06, 2015 11:50 AM
To: Benzie, Richard (DEQ)
Cc: Ostlund, Peter (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas; Vantil, Barbara
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 U.S. Environmental Protection Agency
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 (312) 886-4882
dee.rhiannon@epa.gov

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Sent: Friday, February 06, 2015 9:38 AM
To: Dee, Rhiannon
Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas
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Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 6:55 AM
To: Dee, Rhiannon
Cc: Selden, Barry (DEQ); Benzie, Richard (DEQ); Bartley, Cheryl (DEQ)
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

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 Field Operations Section Chief
 Water Resources Division
 Michigan Dept. of Environmental Quality
 P.O. Box 30458
 Lansing, Michigan 48909-7958
 517-898-5128 (iPhone)
ostlundp@michigan.gov

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Sent: Thursday, February 05, 2015 5:11 PM
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Subject: FW: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

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Rhiannon Dee
 Program Analyst
 U.S. Environmental Protection Agency
 Water Division, WC-15J
 (312) 886-4882
dee.rhiannon@epa.gov

From: howard.donna@epa.gov [<mailto:howard.donna@epa.gov>]
Sent: Monday, January 12, 2015 11:21 AM
To: Dee, Rhiannon

Cc: Beese, Jennifer

Subject: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

01/12/2015

SUBJECT: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

FROM: howard.donna@epa.gov

TO: Dee.Rhiannon@epa.gov

CC: Beese.Jennifer@epa.gov

-----Original Message-----

1/11/2015 10:55 AM

HQ LEAD NUMBER: FY15-124819-3709-CV

SUBJECT: Referred to Region - Michigan

FROM: sargent

TO:

Name: marcia

Address: po box 277

City: grand blanc

State: Michigan

Zip: 48480

Phone: 8103368486

Alleged Violator's Name: city of flint michigan

Alleged Violator's Address: water department

Alleged Violator's City: flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48503

Tip or Complaint: an individual or company dumped several million gallons of raw sewage into the city of flint Michigan drinking water and now they have dumped a potential cancer causing chemical into the water to cover up their negligent act. people are getting sick and skin rashes are becoming apparent, especially in the young and elderly. we will keep going until something is done to correct this "mistake"

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Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Friday, February 06, 2015 10:38 AM
To: Dee, Rhiannon
Cc: Ostlund, Peter (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

I'm not sure what this complainant is alleging. Do you want Michigan to respond to the allegation that a "company or individual dumped millions of gallons of raw sewage into the city of Flint drinking water" or the allegation that "they(?) have dumped a potential cancer causing chemical into the city's drinking water" or the allegation that the city of Flint is flushing hydrants and charging customers double? The Office of Drinking Water and Municipal Assistance cannot address the issue surrounding the dumping of raw sewage and we don't interfere with water rates, but maybe an explanation of the issues that have confronted the city of Flint and their public water supply will help you understand the overall problem.

Last spring, the city of Flint decided to begin relying upon the Flint River as their source of drinking water using a treatment plant that was designed to do so. Last summer, they experienced difficulties with stagnation in some areas of the distribution system due to significantly reduced demands as a result of the loss of a significant percentage of their residential and industrial demands that accelerated over the last decade. During the summer of 2014, they also had a couple of monitoring periods where they detected total coliform at monitoring sites in these stagnant areas, and one time they detected E.coli present. The ensuing boil water advisories and public notification heightened customer concern about the quality of drinking water as a result of the switch from Detroit to the Flint River. Detroit supplied Flint with drinking water from Lake Huron, a much higher quality source than the Flint River. However, monitoring of the Flint water treatment plant tap has never indicated unacceptable water entering the distribution system. In response to these coliform detections and in an effort to prevent a recurrence, the city also increased flushing water mains in low flow areas and they have attempted to ensure the presence of a chlorine residual throughout the distribution system (is this the "potential cancer causing chemical" the complainant mentions?).

Compounding the problem of customer confidence was the initial monitoring for disinfection byproducts conducted by Flint under the Stage 2 DBR after their switch to the Flint River. The initial monitoring reported significantly elevated levels of total trihalomethane (TTHM) compounds throughout the city's distribution system. Our district office advised the city that they needed to immediately implement operational techniques at the treatment plant and in the distribution system to reduce the formation of these compounds. The steps the city of Flint has taken have been successful and have reduced TTHM concentrations to the point where the latest results are below the drinking water standard. However, the standard is calculated on a running annual average and it is likely to be another 3 to 6 months before the annual average at each monitoring station will (hopefully) meet the standard. Until then, the city has to continue to provide quarterly public notification, which will continue to concern residents despite the latest TTHM results.

The switch to the Flint River, the microbiological problems and the elevated TTHM concentrations experienced last year in Flint have caused a high level of customer dissatisfaction and distrust. The city is working diligently to restore that confidence, but it will not be accomplished easily or overnight. You should also know that the switch to the Flint River is an interim measure intended to last only until a 72-inch pipeline from Lake Huron to the Flint water treatment plant is completed. It is currently under construction and expected to be in operation in mid-2016. At that point, the city's drinking water should again be very similar in quality to what they were receiving from Detroit.

Although the subject(s) of this complaint are not clear to me, I suspect it is a result of the media coverage of the recent problems with the city's water supply. However, the information from your initial contact indicates a Grand Blanc, Michigan address, which is not in the city of Flint service area. As I mentioned, our Lansing

district office has been dealing with city representatives on this issue. If you have further questions, feel free to contact either Michael Prysby or Steve Busch. They are receiving this message so you have their contact information. You may also wish to communicate with your Region 5 counterparts in the Office of Drinking Water & Ground Water, Jennifer Crooks or Tom Poy, who have received similar complaints and with whom we have communicated regularly on these issues.

Please let us know if someone from EPA will respond to the complainant, or if you expect Michigan DEQ to do so.

Richard Benzie, P.E., Chief
Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 6:55 AM
To: Dee, Rhiannon
Cc: Selden, Barry (DEQ); Benzie, Richard (DEQ); Bartley, Cheryl (DEQ)
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Rhiannon, this is a drinking water complaint, not an NPDES compliant. Flint does have SSOs, and reports those. That's not the cause of this complaint.

There are public concerns with Flint's drinking water system, which switch from the city of Detroit supply to their own supply. Detroit's source water is much better, so the public may be noticing some changes.

I've copied Richard Benzie, how is the Field Operations Chief in our division that handles drinking water. If you need more follow up, he can provide it.

Thanks, Pete

Peter Ostlund
Field Operations Section Chief
Water Resources Division
Michigan Dept. of Environmental Quality
P.O. Box 30458
Lansing, Michigan 48909-7958
517-898-5128 (iPhone)
ostlundp@michigan.gov

From: Dee, Rhiannon [<mailto:dee.Rhiannon@epa.gov>]
Sent: Thursday, February 05, 2015 5:11 PM
To: Ostlund, Peter (DEQ); Selden, Barry (DEQ)
Subject: FW: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Hi there,

Hope all is well. We received this complaint a while back. Complainant is alleging discharges into Flint River.

Let me know if you have any questions or if I should forward this on to someone else.

Best,

Rhiannon Dee
Program Analyst
U.S. Environmental Protection Agency
Water Division, WC-15J
(312) 886-4882
dee.rhiannon@epa.gov

From: howard.donna@epa.gov [mailto:howard.donna@epa.gov]
Sent: Monday, January 12, 2015 11:21 AM
To: Dee, Rhiannon
Cc: Beese, Jennifer
Subject: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

01/12/2015

SUBJECT: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan
FROM: howard.donna@epa.gov
TO: Dee.Rhiannon@epa.gov
CC: Beese.Jennifer@epa.gov

-----Original Message-----

1/11/2015 10:55 AM

HQ LEAD NUMBER: FY15-124819-3709-CV

SUBJECT: Referred to Region - Michigan

FROM: sargent

TO:

Name: marcia

Address: po box 277

City: grand blanc

State: Michigan

Zip: 48480

Phone: 8103368486

Alleged Violator's Name: city of flint michigan

Alleged Violator's Address: water department

Alleged Violator's City: flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48503

Tip or Complaint: an individual or company dumped several million gallons of raw sewage into the city of flint Michigan drinking water and now they have dumped a potential cancer causing chemical into the water to cover up their negligent act. people are getting sick and skin rashes are becoming apparent, especially in the young and elderly. we will keep going until something is done to correct this "mistake"

Specific Directions: Flint river. runs right through the city of flint. they have been opening the hydrants and letting water pour out of them to "purge" the system, then charging consumers double for their mistake.

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Dee, Rhiannon <dee.Rhiannon@epa.gov>
Sent: Friday, February 06, 2015 11:50 AM
To: Benzie, Richard (DEQ)
Cc: Ostlund, Peter (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas; Vantil, Barbara
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Richard,

While I understand this complaint conflates various issues, my intention of forwarding it on to Pete and Barry was to relay the potential NPDES impacts of the complainants allegations.

Best,

Rhiannon Dee
 Program Analyst
 U.S. Environmental Protection Agency
 Water Division, WC-15J
 (312) 886-4882
 dee.rhiannon@epa.gov

From: Benzie, Richard (DEQ) [mailto:BENZIER@michigan.gov]
Sent: Friday, February 06, 2015 9:38 AM
To: Dee, Rhiannon
Cc: ostlundp@michigan.gov; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Crooks, Jennifer; Poy, Thomas
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

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Please let us know if someone from EPA will respond to the complainant, or if you expect Michigan DEQ to do so.

Richard Benzie, P.E., Chief
Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

From: Ostlund, Peter (DEQ)
Sent: Friday, February 06, 2015 6:55 AM
To: Dee, Rhiannon
Cc: Selden, Barry (DEQ); Benzie, Richard (DEQ); Bartley, Cheryl (DEQ)
Subject: RE: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

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I've copied Richard Benzie, how is the Field Operations Chief in our division that handles drinking water. If you need more follow up, he can provide it.

Thanks, Pete

Peter Ostlund
 Field Operations Section Chief
 Water Resources Division
 Michigan Dept. of Environmental Quality
 P.O. Box 30458
 Lansing, Michigan 48909-7958
 517-898-5128 (iPhone)
ostlundp@michigan.gov

From: Dee, Rhiannon [<mailto:dee.Rhiannon@epa.gov>]
Sent: Thursday, February 05, 2015 5:11 PM
To: Ostlund, Peter (DEQ); Selden, Barry (DEQ)
Subject: FW: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

Hi there,

Hope all is well. We received this complaint a while back. Complainant is alleging discharges into Flint River.

Let me know if you have any questions or if I should forward this on to someone else.

Best,

Rhiannon Dee
 Program Analyst
 U.S. Environmental Protection Agency
 Water Division, WC-15J
 (312) 886-4882
dee.rhiannon@epa.gov

From: howard.donna@epa.gov [<mailto:howard.donna@epa.gov>]
Sent: Monday, January 12, 2015 11:21 AM
To: Dee, Rhiannon
Cc: Beese, Jennifer
Subject: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan

01/12/2015

SUBJECT: FWD: (CWA - FY15-124819-3709-CV) Referred to Region - Michigan
 FROM: howard.donna@epa.gov
 TO: Dee.Rhiannon@epa.gov
 CC: Beese.Jennifer@epa.gov

-----Original Message-----

1/11/2015 10:55 AM

HQ LEAD NUMBER: FY15-124819-3709-CV

SUBJECT: Referred to Region - Michigan

FROM: sargent

TO:

Name: marcia

Address: po box 277

City: grand blanc

State: Michigan

Zip: 48480

Phone: 8103368486

Alleged Violator's Name: city of flint michigan

Alleged Violator's Address: water department

Alleged Violator's City: flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48503

Tip or Complaint: an individual or company dumped several million gallons of raw sewage into the city of flint Michigan drinking water and now they have dumped a potential cancer causing chemical into the water to cover up their negligent act. people are getting sick and skin rashes are becoming apparent, especially in the young and elderly. we will keep going until something is done to correct this "mistake"

Specific Directions: Flint river. runs right through the city of flint. they have been opening the hydrants and letting water pour out of them to "purge" the system, then charging consumers double for their mistake.

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, September 17, 2014 11:19 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ)
Subject: RE: (SDWA - FY14-121728-3715-CV) Referred to Region - Michigan

Jennifer,

I forwarded your e-mail to the Flint water utility staff (WTP and WSC) and requested a summary of any action and/or communication taken by the city to address this complaint. I will keep you updated as soon as I receive a response from the city.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Wednesday, September 17, 2014 11:04 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: FW: (SDWA - FY14-121728-3715-CV) Referred to Region - Michigan

Hi, Steve and Mike. Yep, have another Flint complaint. See below. Her water at the tap is brown as of this past Sunday. I thought Flint was flushing in the areas where the valves were closed? Not sure if this woman's address is close to that area. Have there been other complaints of brown water?

I plan to call her this morning and explain the valve issue. Could you also look into her complaint?

Jennifer

From: Poy, Thomas
Sent: Tuesday, September 16, 2014 5:20 PM
To: Crooks, Jennifer
Subject: Fwd: (SDWA - FY14-121728-3715-CV) Referred to Region - Michigan

Jen: Can you please provide a response to this person? Inform her of the valve issue and that the water flow should improve. Was Flint flushing too?

T

Tom Poy
 Chief, Ground and Drinking Water Branch
 USEPA - Region 5

(312) 886-5991

Begin forwarded message:

From: <howard.donna@epa.gov>
Date: September 16, 2014 at 3:01:05 PM CDT
To: <poy.thomas@epa.gov>
Subject: **FWD: (SDWA - FY14-121728-3715-CV) Referred to Region - Michigan**

09/16/2014

SUBJECT: FWD: (SDWA - FY14-121728-3715-CV) Referred to Region - Michigan
FROM: howard.donna@epa.gov
TO: poy.thomas@epa.gov
CC:

-----Original Message-----

9/14/2014 4:15 PM

HQ LEAD NUMBER: FY14-121728-3715-CV

SUBJECT: Referred to Region - Michigan

FROM: young.vannah@gmail.com

TO:

Name: Savannah Young

Address: 1423 Irene Ave

City: Flint

State: Michigan

Zip: 48503

Phone: 8108776343

Alleged Violator's Name: City of Flint, Water Dept.

Alleged Violator's Address: 1001 S. Saginaw St.

Alleged Violator's City: Flint

Alleged Violator's State: Michigan

Alleged Violator's Zip: 48502

Tip or Complaint: My Flint City tap water is brown. It cannot possibly be safe to drink. No person is available to discuss this issue with me, even after already having three boil water advisories in less than two months time. There has been no announcement made of this current issue, nor has there been any advisory to not drink the water. This has not been addressed or even acknowledged by the city. My neighbor has been having the same issue, and she has also not received any answers, acknowledgement, or regard for her lack of safe drinking water. I have bottled some of the tap water and plan on contacting the local college to request an analysis. I will provide a photo at your request. It is disgusting and they are not even informing the citizens that it is happening.

Specific Directions: The 1400 block of Irene Ave, off off of Miller rd.

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? Yes

Rennaker, Joanne (DEQ)

From: Marc Edwards <edwardsm@vt.edu>
Sent: Thursday, October 15, 2015 7:29 PM
To: 'Howard Croft'; 'Laura Sullivan'
Cc: 'Gerald (Jed) Natzke'; 'Andy Leavitt'; 'Amy Hovey'; 'Brent Wright'; 'Lytle, Darren'; 'Flint Mayor'; 'donna.cole'; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); 'Henry, James'; 'James Gaskin'; 'Jason Lorenz'; 'jmikewright'; 'JoAnne Herman'; 'John O'Brien'; 'Kirk Smith'; larry.koehler@mcc.edu; 'Lawrence Reynolds'; 'Lawrence Reynolds'; 'Michael Glasgow'; 'Wright, Michael'; 'Lane, Mike'; Prysby, Mike (DEQ); 'Natasha Henderson'; 'Norb Birchmeier'; 'Pete Levine'; 'Robert Bincsik'; rosejo@msu.edu; 'Russell Hudson'; 'Samir Matta'; schock.michael@epa.gov; 'Sean Kammer'; Busch, Stephen (DEQ); 'Warren Green'; Wurfel, Brad (DEQ); 'Anthony Chubb'; 'Kevin Keane'
Subject: RE: 3rd Quarter Water Report

I have gotten a lot of questions about this., so figured I would answer in one e-mail.

The city is still using the MDEQ sampling approach. That method takes the EPA sampling method, and adds two modifications, both of which are technically legal, but "miss" lead in water that is normally present when people use it. I have been trying to get these modifications banned since 2007, because they give a false low measurement of lead in water risks on the day you sample. As a result, a city can be meeting the EPA rule, technically, and still have a huge problem with elevated blood lead in children.

The two modifications are:

- 1) **Using a sample bottle with a tiny opening.** This forces consumers to fill the bottles at a very low flow rate. The net effect of this, is that particulate Pb that would normally flow into a consumers water glass at a normal flow rate, stays on the pipe when you sample for lead. When a consumer fills a glass or collects water for drinking, the particles fall off.
- 2) **Pre-cleaning the pipes the night before sampling (aka. Pre-flush).** This basically remediates and sweeps the pipe clean of lead the night before sampling, so that the next morning when you sample, you get unusually low lead. The sampling protocol used by MDEQ requires a **5 minute pre-cleaning**.

When Virginia Tech sampled in Flint, we used the EPA protocol, without the modifications that miss lead in water problems.

I hope this explains the discrepancy. The MDEQ approach could give people a result for 0 ppb lead in water, and when they collect a sample for cooking or drinking it can be 100 ppb. I have seen it happen. **No one who is getting a low result using the MDEQ approach, should be told their water is safe to drink.** The result is meaningless. If it is high with the MDEQ approach, you have a very, very serious problem. MDEQ is also not the only primacy agency in the country using these methods that miss lead, so **I am not blaming anyone, I am just stating the facts.**

Miguel Del Toral of EPA warned MDEQ to stop using this method back in April-May in writing, because it would hide a lead problem if they existed, and they basically told him to mind his own business. I also asserted that Miguel was right, in the ACLU report in June. <http://www.deadlinedetroit.com/articles/12697/scary-leaded-water-and-one-flint-family-s-toxic-nightmare#.ViA1Zn7nviU>

Best Regards, Marc

Rennaker, Joanne (DEQ)

From: Marc Edwards <edwardsm@vt.edu>
Sent: Saturday, October 10, 2015 11:48 AM
To: 'Howard Croft'; 'Amy Hovey'; 'Andy Leavitt'; 'Brent Wright'; 'Darren Lytle'; 'Dayne Walling'; 'donna. cole'; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); 'Gerald (Jed) Natzke'; 'James Henry'; 'Jamie Gaskin'; 'Jason Lorenz'; 'jmikewright'; 'JoAnne Herman'; 'John O'Brien'; 'Kirk Smith'; larry.koehler@mcc.edu; 'Laura Sullivan'; 'Lawrence Reynolds'; 'Lawrence Reynolds'; 'Michael Glasgow'; 'Michael Wright'; 'Mike Lane'; Prysby, Mike (DEQ); 'Natasha Henderson'; 'Norb Birchmeier'; 'Pete Levine'; 'Robert Bincsik'; rosejo@msu.edu; 'Russell Hudson'; 'Samir Matta'; schock.michael@epa.gov; 'Sean Kammer'; Busch, Stephen (DEQ); 'Warren Green'; Wurfel, Brad (DEQ); 'Anthony Chubb'; 'Kevin Keane'
Subject: RE: 3rd Quarter Water Report

Hi Howard,

I think it is universally acknowledged now, that 30 seconds to 2 minutes flushing are not adequate, and **all public education should say 5 minutes flushing.**

I also think that given results of our team sampling 277 homes, the high levels of lead MDEQ detected in the Flint schools (a 90%ile over 15 ppb..which is horrible because they are not tier 1 plumbing sites), and the problems in the official LCR sampling conducted in late 2014-2015, that the following statement (in bold) is not really helpful in getting the message out about the current health risks. The bold statement seems more like wishful thinking or a legal position, and detracts from the goal of telling the public about the known problems.

*After 16 months of treating water from the Flint River, the City became aware that the while **still meeting all Safe Drinking Water Standards**, the level of corrosiveness could result in more lead leaching from service lines and household plumbing.*

That is my input. I am available at 540 231-7236 or 540 320-8740, if anyone should have questions about this.

Best Regards,
 Marc Edwards

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Saturday, October 10, 2015 8:33 AM
To: Amy Hovey; Andy Leavitt; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; dykemal; edwardsm; George Krisztian (DEQ); Gerald (Jed) Natzke; Howard Croft; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Michael Wright; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine;

Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: 3rd Quarter Water Report

Team,

Included in this email is a copy of the first quarter water quality report that has been developed by the Utilities Division. Please take a look and offer any comments that you may have regarding content. There will be an additional one page insert containing three months test data inserted prior to distribution.

The purpose of the quarterly mailer is to increase communication, provide more transparency, and put more information into the hands of the public about what's occurring within the water system and with the infrastructure.

I will be putting together a separate weekly report for this Committee.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Andy Leavitt <aleavitt@senatedems.org>
Sent: Saturday, October 10, 2015 12:03 PM
To: Marc Edwards; Howard Croft; Amy Hovey; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Michael Wright; Mike Lane; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
Subject: Re: 3rd Quarter Water Report

I would echo Marc's sentiment on the bold language agreeing with his points but I would also add that trust needs to be rebuilt and the public simply will not believe anything in the document if you start by telling them it still meets standards. They do not differentiate between regs and rules but they know the water does not meet the standard of the physician community.

I would also recommend opening with timeline of going back to Detroit and what steps people can take to mitigate lead issues. Preferably with an excerpt from a physician.

The technical information matters for transparency but the trust gap is so wide that most people will be skeptical of all of it.

On Sat, Oct 10, 2015 at 11:48 AM Marc Edwards <edwardsm@vt.edu> wrote:

Hi Howard,

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Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Sunday, October 11, 2015 7:29 AM
To: Andy Leavitt
Cc: Marc Edwards; Amy Hovey; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Michael Wright; Mike Lane; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
Subject: Re: 3rd Quarter Water Report
Attachments: 3rd Quarter Water Quality Report (2).docx

All,

The comments were very helpful and I have made several revisions to the report that was sent yesterday, please review the amendments and forward any additional recommendations. I would like to solicit comments from anyone in the medical community that is willing to be quoted.

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Sent: Sat, Oct 10, 2015 12:09 pm
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Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Monday, October 12, 2015 8:39 AM
To: Gerald (Jed) Natzke
Cc: Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Lytle, Darren; Flint Mayor; donna.cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Henry, James; James Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Lane, Mike; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
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Attachments: Quarterly CCR -Test Results.docx

All,

In addition to the text, here is the single page of data that will accompany the mailer. We can add any specific information that is requested.

We will be tracking all of the Flint River testing data prior to the switch and it will be available to this group. We will work with Genesee County to obtain any water data that they have as well.

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From: Lytle, Darren <Lytle.Darren@epa.gov>
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Darren A. Lytle, Ph.D., P.E.
 Branch Chief (Acting)
 U.S. Environmental Protection Agency
 26 West Martin Luther King Dr.
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 Phone: (513) 569-7432
 Fax: (513) 487-2543
 email: lytle.darren@epa.gov

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Howard,

I agree with Darren that it may be a good idea to let the community know and prepare them that while switching back to Detroit water in the near future they will likely see discolored water, particulates, etc. during the transition.

Also, providing specific details on how to sample water in their homes would be helpful... the first draw, how long to flush before taking the second sample, how long water should sit in pipes before the first draw, etc.

It would further help to rebuild trust with the community to share the City's plan/timeline of more aggressive water quality sampling, specifically as it relates to lead exposure in homes and schools. Is there a timeline that can be shared which the City is working with to identify homes with lead service lines, and how can the City and State work together to assist those homeowners with mitigation. Perhaps indicating that the issue of lead is and will remain a high priority for the City until all households, schools, etc. have reliable/safe water quality regardless of whether the source of lead is from city transmission lines or a property owner's service line and home fixtures would also be helpful.

Mike

*** **

Michael Lane
 Director, Environment, Health and Safety
 The University of Michigan-Flint
 810-766-6763
 810-919-1709 cell
mjlane@umflint.edu

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Branch Chief (Acting)
U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, Ohio 45268
Phone: (513) 569-7432
Fax: (513) 487-2543
email: lytle.darren@epa.gov

From: Howard Croft [<mailto:hcroft@cityofflint.com>]

Sent: Sunday, October 11, 2015 7:29 AM

To: Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Lytle, Darren; Dayne Walling; donna. cole; dykema; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

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Rennaker, Joanne (DEQ)

From: Reynolds, Lawrence <LawrenceR@mottchc.org>
Sent: Tuesday, October 13, 2015 10:39 AM
To: Lane, Mike; Lytle, Darren; Howard Croft; Andy Leavitt
Cc: Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Wright, Michael; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
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 810-919-1709 cell

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Subject: Re: 3rd Quarter Water Report

All,

The comments continue to be helpful and I am making adjustments as we go. I spent two hours at the Health Department today at their board meeting and we have greatly enhanced the communication between the City and the GCHD. I will be attending their future board meetings and will keep Mark and Jim not just appraised but involved in directional decisions as we continue to craft short and long term plans.

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Subject: Re: 3rd Quarter Water Report

Howard,

Am I reading this correctly? Does this say that only 16 of 189 water test samples collected between January and September had lead levels exceeding 15 ppb?

What was the 90th percentile value?

Could you provide the committee with the sample collection date, lead level, and address for these 189 residences? If not that, then the zip codes and collection dates for each?

Laura Sullivan

On Monday, October 12, 2015, Howard Croft <hcroft@cityofflint.com> wrote:
 All,

In addition to the text, here is the single page of data that will accompany the mailer.
 We can add any specific information that is requested.

We will be tracking all of the Flint River testing data prior to the switch and it will be available to this group.
 We will work with Genesee County to obtain any water data that they have as well.

On Sun, Oct 11, 2015 at 5:57 PM, <gdn2@aol.com> wrote:

Hi Howard,

The thoughts that both Andy and Marc shared sound wise. I'm curious though as to whether the TAC could be privy to the actual results of the Flint City water testing prior to the switch and this years values? Also, it would seem prudent to obtain the present Detroit Water System testing if available as well?

Thank you,
 Gerald Natzke DO

-----Original Message-----

From: Andy Leavitt <aleavitt@senatedems.org>
 To: Marc Edwards <edwardsm@vt.edu>; Howard Croft <hcroft@cityofflint.com>; Amy Hovey <Amy.Hovey@mail.house.gov>; Brent Wright <bwright@cityofflint.com>; Darren Lytle <lytle.darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; donna.cole <donna.cole@genesys.org>; dykema <dykema@mich.gov>; George

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 Sent: Sat, Oct 10, 2015 12:09 pm
 Subject: Re: 3rd Quarter Water Report

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That is my input. I am available at 540 231-7236 or 540 320-8740, if anyone should have questions about this.

Best Regards,
 Marc Edwards

From: Howard Croft [mailto:hcroft@cityofflint.com]

Sent: Saturday, October 10, 2015 8:33 AM

To: Amy Hovey; Andy Leavitt; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; dykemal; edwardsm; George Krisztian (DEQ); Gerald (Jed) Natzke; Howard Croft; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Michael Wright; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: 3rd Quarter Water Report

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--

Laura L. Sullivan, Ph. D.

3101 Hawthorne Drive

Flint, Michigan 48503

dr.laura2@gmail.com

Human(kind). Be both.

Rennaker, Joanne (DEQ)

From: Marc Edwards <edwardsm@vt.edu>
Sent: Wednesday, October 14, 2015 1:08 PM
To: 'Henry, James'; 'Howard Croft'; 'Reynolds, Lawrence'
Cc: 'Lane, Mike'; 'Lytle, Darren'; 'Andy Leavitt'; 'Amy Hovey'; 'Brent Wright'; 'Dayne Walling'; 'donna. cole'; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); 'Gerald (Jed) Natzke'; 'Jamie Gaskin'; 'Jason Lorenz'; 'jmikewright'; 'JoAnne Herman'; 'John O'Brien'; 'Kirk Smith'; larry.koehler@mcc.edu; 'Laura Sullivan'; 'Michael Glasgow'; 'Wright, Michael'; Prysby, Mike (DEQ); 'Natasha Henderson'; 'Norb Birchmeier'; 'Pete Levine'; 'Robert Bincsik'; rosejo@msu.edu; 'Russell Hudson'; 'Samir Matta'; 'Schock, Michael'; 'Sean Kammer'; Busch, Stephen (DEQ); 'Warren Green'; Wurfel, Brad (DEQ); 'Anthony Chubb'; 'Kevin Keane'; 'Valacak, Mark'
Subject: RE: 3rd Quarter Water Report

I agree that with one or two rare exceptions, it is ok to do all of the activities below. We did measure an average of 2000 ppb lead in one Flint home, over a flushing period of 25 minutes, in which case we redid the exposure calculations and showed that it could be significant.

That was a very exceptional case based on our sampling. I hope that this helps. So I agree with Dr. Arias.

Marc

From: Henry, James [mailto:jhenry@gchd.us]
Sent: Wednesday, October 14, 2015 12:55 PM
To: Howard Croft; Reynolds, Lawrence
Cc: Lane, Mike; Lytle, Darren; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykema, George; Krisztian (DEQ); Gerald (Jed) Natzke; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Wright, Michael; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane; Valacak, Mark
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Thanks Jim

Jim Henry RS, MBA
 Environmental Health Supervisor
 Genesee County Health Department www.gchd.us
 630 S. Saginaw St., Suite 4
 Flint, MI 48502-1540
 Phone (810) 257-3618 Fax (810) 257-3125
 E-mail jhenry@gchd.us



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Subject: RE: 3rd Quarter Water Report

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** ** ** ** **

Michael Lane

Director, Environment, Health and Safety

The University of Michigan-Flint

810-766-6763

810-919-1709 cell

mjlane@umflint.edu

From: Lytle, Darren [<mailto:Lytle.Darren@epa.gov>]

Sent: Tuesday, October 13, 2015 7:40 AM

To: Howard Croft; Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Lane, Mike; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

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U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Howard Croft [<mailto:hcroft@cityofflint.com>]

Sent: Sunday, October 11, 2015 7:29 AM

To: Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Lytle, Darren; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: Re: 3rd Quarter Water Report

All,

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Rennaker, Joanne (DEQ)

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Sent: Wednesday, October 14, 2015 1:30 PM
To: Henry, James; Howard Croft; Reynolds, Lawrence
Cc: Lane, Mike; Lytle, Darren; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; Krisztian, George (DEQ); Gerald (Jed) Natzke; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Groetsch, Kory J. (DHHS); Laura Sullivan; Michael Glasgow; Wright, Michael; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane; Valacak, Mark; Groetsch, Kory J. (DHHS); Bruneau, Michelle (DHHS); Wells, Eden (DHHS); Moran, Susan (DHHS); Lasher, GERALYN (DHHS); Miller, Corinne (DHHS)
Subject: RE: 3rd Quarter Water Report
Importance: High

Jim,

We've prepared 2 documents for you: one a fact sheet regarding lead in Flint water the other a more general infographic regarding the health effects of lead. We will send these to you for review as soon as we receive approval from the MDHHS communications office, hopefully today.

Earlier today, Kory Groetsch provided information we received from CDC regarding the 3 questions from Hamilton Health Center.

Linda D. Dykema, Ph.D.

Environmental Public Health Director
 Division of Environmental Health
 Michigan Department of Health & Human Services
 517.335.8566
dykemal@michigan.gov

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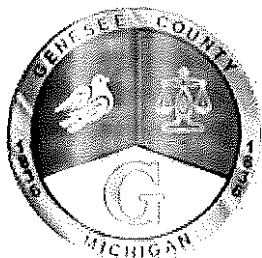
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Sent: Sunday, October 11, 2015 7:29 AM

To: Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Lytle, Darren; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
Subject: Re: 3rd Quarter Water Report

All,

The comments were very helpful and I have made several revisions to the report that was sent yesterday, please review the amendments and forward any additional recommendations. I would like to solicit comments from anyone in the medical community that is willing to be quoted.

On Sat, Oct 10, 2015 at 12:03 PM, Andy Leavitt <aleavitt@senatedems.org> wrote:

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*After 16 months of treating water from the Flint River, the City became aware that the while **still meeting all Safe Drinking Water Standards**, the level of corrosiveness could result in more lead leaching from service lines and household plumbing.*

That is my input. I am available at 540 231-7236 or 540 320-8740, if anyone should have questions about this.

Best Regards,

Marc Edwards

From: Howard Croft [mailto:hcroft@cityofflint.com]

Sent: Saturday, October 10, 2015 8:33 AM

To: Amy Hovey; Andy Leavitt; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; dykema; edwardsm; George Krisztian (DEQ); Gerald (Jed) Natzke; Howard Croft; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Michael Wright; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: 3rd Quarter Water Report

Team,

Included in this email is a copy of the first quarter water quality report that has been developed by the Utilities Division. Please take a look and offer any comments that you may have regarding content. There will be an additional one page insert containing three months test data inserted prior to distribution.

The purpose of the quarterly mailer is to increase communication, provide more transparency, and put more information into the hands of the public about what's occurring within the water system and with the infrastructure.

I will be putting together a separate weekly report for this Committee.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

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Flint, MI 48502

PH# 810.766.7135 Ext.2043

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heroff@cityofflint.com

Rennaker, Joanne (DEQ)

From: Schock, Michael <Schock.Michael@epa.gov>
Sent: Wednesday, October 14, 2015 2:42 PM
To: Henry, James; Howard Croft; Reynolds, Lawrence
Cc: Lane, Mike; Lytle, Darren; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna.cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Gerald (Jed) Natzke; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Wright, Michael; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane; Valacak, Mark
Subject: RE: 3rd Quarter Water Report

Hi, All;

I inquired of one of the national facility engineering managers for VA, with whom I've been working on some building corrosion issues in another state. Here is our input for two of the Health Center questions, which is more oriented towards how water quality (aside from specifically lead) will impact the operation of certain critical equipment. Studies would be suggested on the impact of the upcoming two water quality changes, as to how they would impact the operation of medical and other facilities. Local in-facility pretreatment of water for some uses may be necessary, whether or not it has any lead in it, to prevent scaling or attack on the instruments being washed/sterilized. Stainless steels and other metallic surfaces are not "inert." There are probably process water consultants available, perhaps through contacting the Water Quality Association, who could advise on instrument-specific water pretreatment needs.

Spotting on instruments has been noticed in some applications of boiler steam (likely due to phosphates), as well as staining from corrosion (often from steel plumbing). If any water contains appreciable minerals or substances that can react with scale-forming minerals (like phosphate and carbonate), it will tend to leave deposits, we see this in the sterilizers themselves. The VA medical facility strives to achieve "lead-free," the influent water may have lead in it and there are so many components in the whole plumbing and sterilizer/autoclave systems, that totally lead free is really not achievable. Currently an RO system for sterilizer influent water is being tested, but different equipment manufacturers may have their own specifications for water composition that is compatible with the specific metals and alloys in the plumbing and at the water contact surfaces of their products, which should be consulted.

For what it's worth, I would also add an observation that though I don't know of specific studies, but under the new the Reduction of Lead in Drinking Water Act, new household dishwashers are required to be "lead free" by the definition of the Act.

--Mike

Hamilton Health Center Questions w/ CDC response below:

2. Is it ok to utilize the water for cleaning of instruments?

3. Is it ok to use the water in autoclaving?

Michael R. Schock

U.S. Environmental Protection Agency
 ORD, NRMRL, WSWRD, TTEB
 26 West Martin Luther King Drive
 Cincinnati, OH 45220

Phone: 513.569.7412
schock.michael@epa.gov

From: Henry, James [mailto:jhenry@gchd.us]
Sent: Wednesday, October 14, 2015 12:55 PM
To: Howard Croft; Reynolds, Lawrence
Cc: Lane, Mike; Lytle, Darren; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Wright, Michael; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane; Valacak, Mark
Subject: RE: 3rd Quarter Water Report

Hello everyone,

Similar to many of your organizations the Genesee County Health Department has been receiving many specific questions regarding risks from lead. We have partnered with MDEQ's Toxicology Division to try to get some answers. Our research has provided only limited information. Attached are EPA, CDC and a few other documents that have been extremely helpful, but they do not address many of the specific questions. Also, copied below is a CDC response to some of the questions.

Please feel free to comment and add to the list below. If anyone has official, scientific or generally accepted guidance, please share it. I'll compile a comprehensive FAQ document and share it back with the group.

Public FAQ's

- Is it ok to wash fruits and vegetables?
- Is it ok to wash dishes?
- Is it ok to wash hands and then handle or eat food?
- Is it ok to wash clothes? (skin irritations)
- What are risks to pets (any particular pet that may be more susceptible) i.e. canary?

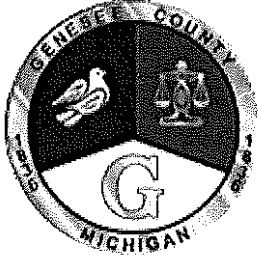
Hamilton Health Center Questions w/ CDC response below:

1. Can Flint River water be used to wipe down surfaces, counter tops?
2. Is it ok to utilize the water for cleaning of instruments?
3. Is it ok to use the water in autoclaving?

Dr. Arias wrote: We know of no formal guidance on this issue. However, lead in water is measured in parts per billion. Ambient contamination of surfaces and metals in general is much higher. Lead is also not well absorbed through skin. Our SMEs would not expect any problems with this practice unless the water is ingested. I'm copying Mary Jean Brown here who would be available if you have additional questions or need some other follow up.

Thanks Jim

Jim Henry RS, MBA
 Environmental Health Supervisor
 Genesee County Health Department www.gchd.us
 630 S. Saginaw St., Suite 4
 Flint, MI 48502-1540
 Phone (810) 257-3618 Fax (810) 257-3125
 E-mail jhenry@gchd.us



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For a copy of the Health Department's Notice of Information Practices, contact the Health Department or visit the Health Department's website at <http://www.gchd.us/>

From: Howard Croft [<mailto:hcroft@cityofflint.com>]

Sent: Tuesday, October 13, 2015 5:59 PM

To: Reynolds, Lawrence

Cc: Lane, Mike; Lytle, Darren; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; Henry, James; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Wright, Michael; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane; Valacak, Mark

Subject: Re: 3rd Quarter Water Report

All,

The comments continue to be helpful and I am making adjustments as we go. I spent two hours at the Health Department today at their board meeting and we have greatly enhanced the communication between the City and the GCHD. I will be attending their future board meetings and will keep Mark and Jim not just appraised but involved in directional decisions as we continue to craft short and long term plans.

On Tue, Oct 13, 2015 at 10:39 AM, Reynolds, Lawrence <LawrenceR@mottchc.org> wrote:

Thank you Mr. Lane. These points will help medical providers stay on message with information our families can act on .

From: Lane, Mike [<mailto:mjlane@umflint.edu>]

Sent: Tuesday, October 13, 2015 9:53 AM

To: 'Lytle, Darren'; Howard Croft; Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykema; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Reynolds, Lawrence; Reynolds, Lawrence; Michael Glasgow; Wright, Michael; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: RE: 3rd Quarter Water Report

Howard,

I agree with Darren that it may be a good idea to let the community know and prepare them that while switching back to Detroit water in the near future they will likely see discolored water, particulates, etc. during the transition.

Also, providing specific details on how to sample water in their homes would be helpful... the first draw, how long to flush before taking the second sample, how long water should sit in pipes before the first draw, etc.

It would further help to rebuild trust with the community to share the City's plan/timeline of more aggressive water quality sampling, specifically as it relates to lead exposure in homes and schools. Is there a timeline that can be shared which the City is working with to identify homes with lead service lines, and how can the City and State work together to assist those homeowners with mitigation. Perhaps indicating that the issue of lead is and will remain a high priority for the City until all households, schools, etc. have reliable/safe water quality regardless of whether the source of lead is from city transmission lines or a property owner's service line and home fixtures would also be helpful.

Mike

** ** *

Michael Lane

Director, Environment, Health and Safety

The University of Michigan-Flint

810-766-6763

810-919-1709 cell

mjlane@umflint.edu

From: Lytle, Darren [<mailto:Lytle.Darren@epa.gov>]

Sent: Tuesday, October 13, 2015 7:40 AM

To: Howard Croft; Andy Leavitt

Cc: Marc Edwards; Amy Hovey; Brent Wright; Dayne Walling; donna. cole; dykemal; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Lane, Mike; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Stephen Busch (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane

Subject: RE: 3rd Quarter Water Report

Howard,

I am in agreement with past comments and suggestions. Is this the time to let the public know your future plans? Are you expecting to be back to Detroit water next quarter? If so, that does not necessarily come without issues. It is a change and the potential for a brief upset (e.g., "red" water, particles, etc) exists. Would it be worth letting the public know in advance? Under "current drinking water issues", do you want to let residents know how and where to take samples here? A sampling plan (beyond LCR compliance sampling) is very important to understand the relative lead source (brass, solder and service lines) contributions, assess the current situation and the effectiveness of the return to Detroit water to reduce lead. You could state that one is being developed.

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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Marc Edwards

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Sent: Saturday, October 10, 2015 8:33 AM

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Rennaker, Joanne (DEQ)

From: Howard Croft <hcroft@cityofflint.com>
Sent: Thursday, October 15, 2015 8:21 AM
To: Laura Sullivan
Cc: Gerald (Jed) Natzke; Andy Leavitt; Marc Edwards; Amy Hovey; Brent Wright; Lytle, Darren; Flint Mayor; donna.cole; Dykema, Linda D. (DHHS); Krisztian, George (DEQ); Henry, James; James Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Wright, Michael; Lane, Mike; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; schock.michael@epa.gov; Sean Kammer; Busch, Stephen (DEQ); Warren Green; Wurfel, Brad (DEQ); Anthony Chubb; Kevin Keane
Subject: Re: 3rd Quarter Water Report

Laura,

Yes that is correct, I will have the lab convey the additional data regarding the 90th percentile. We are also testing at a rate of almost 20 people a day and we are GIS mapping all of the data as it comes in. For this group only, I am providing a link to our test data. You can click on each location to see the lab results. This is 2015 data only and we will be updating it continually.

<http://flint.maps.arcgis.com/home/webmap/viewer.html?webmap=786d8418d42341f4ab6bc894ec24bbfc>

The following is our current mapping of service lines, as you zoom in, you can click on each location and get the information, we are working with U of M Flint to complete this.

<http://flint.maps.arcgis.com/home/webmap/viewer.html?webmap=51d7a0319bac452bafd827ecfaef2016>

We are using the information here to try and test some of the clusters of lead service line areas. Please let me know if you cannot access this information.

On Tue, Oct 13, 2015 at 7:00 PM, Laura Sullivan <dr.laura2@gmail.com> wrote:
Howard,

Am I reading this correctly? Does this say that only 16 of 189 water test samples collected between January and September had lead levels exceeding 15 ppb?

What was the 90th percentile value?

Could you provide the committee with the sample collection date, lead level, and address for these 189 residences? If not that, then the zip codes and collection dates for each?

Laura Sullivan

On Monday, October 12, 2015, Howard Croft <hcroft@cityofflint.com> wrote:
All,

In addition to the text, here is the single page of data that will accompany the mailer.
We can add any specific information that is requested.

We will be tracking all of the Flint River testing data prior to the switch and it will be available to this group.
We will work with Genesee County to obtain any water data that they have as well.

On Sun, Oct 11, 2015 at 5:57 PM, <gdn2@aol.com> wrote:

Hi Howard,

The thoughts that both Andy and Marc shared sound wise. I'm curious though as to whether the TAC could be privy to the actual results of the Flint City water testing prior to the switch and this years values? Also, it would seem prudent to obtain the present Detroit Water System testing if available as well?

Thank you,

Gerald Natzke DO

-----Original Message-----

From: Andy Leavitt <aleavitt@senatedems.org>

To: Marc Edwards <edwardsm@vt.edu>; Howard Croft <hcroft@cityofflint.com>; Amy Hovey <Amy.Hovey@mail.house.gov>; Brent Wright <bwright@cityofflint.com>; Darren Lytle <lytle.darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; donna.cole <donna.cole@genesys.org>; dykemal <dykemal@mich.gov>; George Krisztian (DEQ) <krisztian@michigan.gov>; Gerald (Jed) Natzke <gdn2@aol.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesee.org>; Jason Lorenz <jlorenz@cityofflint.com>; jmikewright <jmikewright@yahoo.com>; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kirk Smith <ksmith@flint.org>; larry.koehler <larry.koehler@mcc.edu>; Laura Sullivan <dr.laura2@gmail.com>; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Michael Wright <Wright.Michael@epa.gov>; Mike Lane <mjlane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Pete Levine <plevine@gcms.org>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo <rosejo@msu.edu>; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; schock.michael <schock.michael@epa.gov>; Sean Kammer <skammer@cityofflint.com>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; Warren Green <jwgreen@lan-inc.com>; Wurfel, Brad (DEQ) (DEQ) <WurfelB@michigan.gov>; Anthony Chubb <achubb@cityofflint.com>; Kevin Keane <KEVIN.KEANE@cmsenergy.com>

Sent: Sat, Oct 10, 2015 12:09 pm

Subject: Re: 3rd Quarter Water Report

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Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Howard Croft

Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Laura L. Sullivan, Ph. D.
3101 Hawthorne Drive
Flint, Michigan 48503
dr.laura2@gmail.com

Human(kind). Be both.

--

Howard Croft

Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Brent Wright <bwright@cityofflint.com>
Sent: Friday, June 26, 2015 12:00 PM
To: Rosenthal, Adam (DEQ)
Cc: Mike Glasgow; Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Re: 6/30 & 7/1/15 deadlines

Adam,

- 1- We have more than 100 sample bottles out but are only seeing a couple returned daily.
- 2-Mike is working LT2 Source Water Monitoring Plan and should have it to you before the 1st.
- 3-Both the Lake Huron water source and Flint River water source along with the violation letter CCR's are at the printers, I will send you a copy of each one as soon as they drop the extras off to me. This is usually a day after they mail them out.

Thank you

On Thu, Jun 25, 2015 at 10:47 AM, Rosenthal, Adam (DEQ) <ROSENTHALA@michigan.gov> wrote:

Morning Mike & Brent, just wanted to remind you/confirm that Flint is on track for a few items.

- 1 – We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be below the AL for lead. As of now with 39 results, Flint's 90th percentile is over the AL for lead.
- 2 – LT2 source water monitoring plan, reminder that it is due to our office for review by 7/1/15 per Mike's 4/3/15 letter, (attached).
- 3 – Consumer Confidence Report, (CCR), has not been received yet – due to our office, Gen. Co. LHD & your customers by 7/1/15.

Please provide an update for the above items.

thanks,

Adam Rosenthal, EQA

MDEQ – Office of Drinking Water and Municipal Assistance

Lansing District – Constitution Hall 1SW

PO Box 30242

Lansing, MI 48909

517-284-6644

fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:

DEQ-DWMA-Lansing@michigan.gov

--
Brent Wright
Water Plant Supervisor
City of Flint
4500 N. Dort Hwy.
Flint, MI. 48505
Ph: 810.787.6537 ext. 3510
Fx: 810.787.3710

Rennaker, Joanne (DEQ)

From: Dykema, Linda D. (DHHS)
Sent: Friday, October 09, 2015 10:22 AM
To: Busch, Stephen (DEQ); Howard Croft (hcroft@cityofflint.com)
Cc: Krisztian, George (DEQ)
Subject: RE: 11:00 School Sampling Priority Call

Ok, Kory Groetsch, Toxicology and Response Section Manager will join me.

Linda D. Dykema, Ph.D.

Environmental Public Health Director
 Division of Environmental Health
 Michigan Department of Health & Human Services
 517.335.8566
dykemal@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Friday, October 09, 2015 10:07 AM
To: Dykema, Linda D. (DHHS); Howard Croft (hcroft@cityofflint.com)
Cc: Krisztian, George (DEQ)
Subject: 11:00 School Sampling Priority Call

We will conference call at 11:00. Need to ensure we have the correct "universe" of facilities identified, and prioritize a list of those who have requested the detailed testing. As it will take time to get through each facility we don't need to have all of them in order at this time, but at least know which types should get higher priority.

Conference Call #
 1-888-251-2909.
 Code 1196738#

Attached is a spreadsheet with the universe of "school" facilities we have identified in Flint. It is broken into down into 5 categories (see the tabs on the spreadsheet).

- PreK and Daycares
- K-5
- 6-12
- Universities
- Others (boy scouts, transportations centers, etc.)

There are also a few that need to be checked on regarding to what category they belong in.

I also attached the list of Flint Schools that were screen tested with a few samples each, this past week. These will be the first priority.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Wednesday, January 21, 2015 4:37 PM
To: Fonger, Ronald
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: RE: a question about flint

The water is still pre-treated. I think you mean when the water was coming from DWSD, and the city was just in the water transmission business instead of the water treatment business. I believe the answer is no, they didn't have many violations, but I'd encourage you to put the question to Mike Prysby, who will be at the meeting. Understand that dozens and dozens of 'boil water' advisories are issued by municipalities around the state every year for various reasons – anything from an abnormal coliform count to broken water mains that expose water to outside influence ... and the advisory is not by itself a warning that folks drinking the water will become ill. It's representative of a comprehensive, conservative protection standard with ample public notification measures to ensure that water customers can make informed decisions.

All of that said, the two guys most likely to know the answer to your specific question will be in the room tonight. And I've copied them here to make them aware you've got questions.

b

From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]
Sent: Wednesday, January 21, 2015 4:08 PM
To: Wurfel, Brad (DEQ)
Subject: a question about flint

Brad:
 One thing I'd like to know is whether Flint has ever been in violation of the Safe Drinking Water Act previously – at least as far back as your records go.
 I'm guessing we didn't have too many when the water was pre-treated.
 Thanks,

Ron Fonger
 MLive Media Group
 Reporter

mobile 810.347.9963
 email rfonger1@mlive.com
 address 540 S. Saginaw St. #101, Flint MI 48502

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, January 27, 2015 10:00 AM
To: Elliott, Larry F.
Cc: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: ABC12 News Flint water test results comment?

Larry,

We are willing to review the TTHM results of all samples collected within the Flint water system for a limited assessment of the data. Please include the following information with the sample results:

1. Sampling location /time – was Flint's Stage 2 DDBP monitoring plan sites used?
2. Who collected the samples? Did city certified operators collect the samples or oversee the sample collection?
3. Sampling protocol (method)
4. Certified lab used
5. Lab method used & proper sampling unit

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Elliott, Larry F. [<mailto:larry.f.elliott@abc12.com>]
Sent: Tuesday, January 27, 2015 7:48 AM
To: Prysby, Mike (DEQ)
Subject: ABC12 News Flint water test results comment?

Mike,
 We have just completed our own independent testing of multiple sites within the Flint water system and wonder if you'd be willing to look them over and give us your professional opinion.
 I could email you the reports from the testing lab we used.
 Larry Elliott
 ABC12 News
 (810)257-2805 office
 (810)877-5378 cell

Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, January 27, 2015 9:20 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Subject: RE: ABC12 News Flint water test results comment?

Do we know whether they were collected at any of the same locations that Flint uses for compliance?

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 27, 2015 9:18 AM
To: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: ABC12 News Flint water test results comment?

I would be sure to look into:
 Who collected the samples
 What sampling protocols were used
 Is the lab certified to run this analysis
 What lab method was used

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Tuesday, January 27, 2015 8:55 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: FW: ABC12 News Flint water test results comment?

I am in the position to look at these results; however, the validity of the samples may be questionable given they were most likely not collected by Flint operators or in accordance to Flint's Stage 2 DDBP plan. Any professional opinion may need to be carefully worded....

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Elliott, Larry F. [<mailto:larry.f.elliott@abc12.com>]
Sent: Tuesday, January 27, 2015 7:48 AM
To: Prysby, Mike (DEQ)
Subject: ABC12 News Flint water test results comment?

Mike,

We have just completed our own independent testing of multiple sites within the Flint water system and wonder if you'd be willing to look them over and give us your professional opinion.

I could email you the reports from the testing lab we used.

Larry Elliott

ABC12 News

(810)257-2805 office

(810)877-5378 cell

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, January 27, 2015 9:20 AM
To: Busch, Stephen (DEQ)
Subject: Re: ABC12 News Flint water test results comment?

Absolutelyand ...is the city aware of the sampling and/or have they had an opportunity to look at the results?

Sent from my iPhone

On Jan 27, 2015, at 9:17 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

I would be sure to look into:
 Who collected the samples
 What sampling protocols were used
 Is the lab certified to run this analysis
 What lab method was used

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Tuesday, January 27, 2015 8:55 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: FW: ABC12 News Flint water test results comment?

I am in the position to look at these results; however, the validity of the samples may be questionable given they were most likely not collected by Flint operators or in accordance to Flint's Stage 2 DDBP plan. Any professional opinion may need to be carefully worded....

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Elliott, Larry F. [<mailto:larry.f.elliott@abc12.com>]
Sent: Tuesday, January 27, 2015 7:48 AM
To: Prysby, Mike (DEQ)
Subject: ABC12 News Flint water test results comment?

Mike,

We have just completed our own independent testing of multiple sites within the Flint water system and wonder if you'd be willing to look them over and give us your professional opinion.

I could email you the reports from the testing lab we used.

Larry Elliott

ABC12 News

(810)257-2805 office

(810)877-5378 cell

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Thursday, July 09, 2015 3:08 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Tommasulo, Karen (DEQ); Sygo, Jim (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: ACLU mini-documentary

Steve, I just got a call from Mi Public Radio about an EPA notice to Flint about elevated lead levels in the water. Apparently, you were cc'd on EPA's note. Can you call me asap? Thanks!
b

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, July 09, 2015 11:51 AM
To: Busch, Stephen (DEQ); Tommasulo, Karen (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: ACLU mini-documentary

FYI – the video is lower on the page. It's just under 6 minutes.

http://www.mlive.com/news/flint/index.ssf/2015/06/aclu_video_details_flints_hard.html#incart_story_package

Rennaker, Joanne (DEQ)

From: Robinson, Michael <MRobinson@wnj.com>
Sent: Wednesday, February 12, 2014 10:53 AM
To: Busch, Stephen (DEQ)
Subject: RE: ACO

Ok, thanks

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Wednesday, February 12, 2014 9:45 AM
To: Robinson, Michael
Cc: Daugherty Johnson
Subject: RE: ACO

I am running this up the chain and will let you know ASAP.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Robinson, Michael [<mailto:MRobinson@wnj.com>]
Sent: Monday, February 10, 2014 5:44 PM
To: Busch, Stephen (DEQ)
Cc: Daugherty Johnson
Subject: ACO

Steve, I checked with the City's bond counsel, and here is language that we MUST include in the consent order so that the City can move forward on this. Please let me know immediately if this language is or is not acceptable. If you would like to discuss it, please let me know.

Thanks,
Mike

"The respondent plans to use the Flint River as its temporary source of untreated water supply until KWA water is available. The respondent must undertake the KWA public improvement project or undertake other public improvement projects to continue to use the Flint River, such as additional water treatment plant public improvements, source water protection public improvements and public improvements to obtain back-up water supply, in order to comply with Act 399."

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Friday, October 16, 2015 10:02 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Action Steps for the week of October 19th

Mike – I'm currently reviewing Flint's CC plan and so far it looks good to me. I'll send my comments to you soon.

Steve and Mike – when Steve returns from his 10:00 HAB meeting, please come up to Liane's office so we can have a quick brainstorming session for our 15 additional Action Steps for next week.

pat

From: Shekter Smith, Liane (DEQ)
Sent: Friday, October 16, 2015 9:13 AM
To: Busch, Stephen (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ); Benzie, Richard (DEQ); Butler, Sonya (DEQ)
Cc: Devereaux, Tracy Jo (DEQ)
Subject: FW: Action Steps for the week of October 19th
Importance: High

Need help on this one. You don't want me doing this alone ☺.

From: Krisztian, George (DEQ)
Sent: Friday, October 16, 2015 8:50 AM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Wurfel, Brad (DEQ); Pallone, Maggie (DEQ); Tommasulo, Karen (DEQ)
Cc: Shaler, Karen (DEQ); Thelen, Mary Beth (DEQ); Wyant, Dan (DEQ); Sygo, Jim (DEQ)
Subject: Action Steps for the week of October 19th
Importance: High

I need to have 25 additional action steps for the week of October 19th. I would like at least 15 steps from Liane's group and 10 from exec. Please submit your steps to the whole group by 4:00 PM today.

Given how tight everyone's schedule is we will try to do this electronically. If it works, then we will make this a weekly deadline. If it doesn't work then we will have weekly meetings.

Thank you!
 George

George L. Krisztian
 Flint Action Plan Coordinator
 Laboratory Director

Michigan Department of Environmental Quality
Desk ph (517) 284-6719
Cell ph (517) 204-0381

Rennaker, Joanne (DEQ)

From: Sygo, Jim (DEQ)
Sent: Wednesday, October 28, 2015 3:03 PM
To: Kaplan, Robert; Shekter Smith, Liane (DEQ); Krisztian, George (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Shaler, Karen (DEQ); Henry, Timothy; Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Lytle, Darren
Cc: Shaler, Karen (DEQ)
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call 1-877-226-9607 Conf Code: 683 384 4346

Pursuant to our meeting today, you requested contact information regarding the modeling that was done for lead exposure by Michigan's Department of Human Health and Services. Below please find the contact information for Linda Dykema and Eden Wells. I would start with Linda Dykema, with any questions that you have.

Linda D. Dykema, Ph.D.
 Environmental Public Health Director
 Division of Environmental Health
 Michigan Department of Health & Human Services
 517.335.8566
dykemal@michigan.gov

Eden V. Wells, MD, MPH, FACPM
 Chief Medical Executive
 Michigan Department of Health and Human Services
 201 Townsend Street, 5th Floor CVB
 Lansing, MI 48913
 Phone: 517-335-8011
wellse3@michigan.gov

-----Original Appointment-----

From: Kaplan, Robert [<mailto:kaplan.robert@epa.gov>]
Sent: Friday, October 23, 2015 1:58 PM
To: Kaplan, Robert; Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ); Krisztian, George (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Shaler, Karen (DEQ); Henry, Timothy; Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Lytle, Darren
Cc: Cook, Pat (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: FW: After Action - Flint Task Force Discussion of School Sampling Event - Please call 1-877-226-9607 Conf Code: 683 384 4346
When: Wednesday, October 28, 2015 1:30 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Region 5 - Robert Kaplan's Office

Forwarding this meeting notice to place it on your calendars as Jim Sygo would like you to participate with him. Jim also wanted Pat Cook to participate, but he's unavailable. I've reserved the Great Lakes Conference Room for this call. Thanks.

Karen Shaler

-----Original Appointment-----

From: Kaplan, Robert [<mailto:kaplan.robert@epa.gov>]

Sent: Friday, October 23, 2015 1:58 PM

To: Kaplan, Robert; Sygo, Jim (DEQ); Shaler, Karen (DEQ); Henry, Timothy; Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Lytle, Darren

Subject: After Action - Flint Task Force Discussion of School Sampling Event - Please call 1-877-226-9607 Conf Code: 683 384 4346

When: Wednesday, October 28, 2015 12:30 PM-1:30 PM (UTC-06:00) Central Time (US & Canada).

Where: Region 5 - Robert Kaplan's Office

Attendees:

Robert Kaplan
Timothy Henry
Miguel Deltoral
Thomas Poy
Michael Schock
Jeffrey Kempic
Darren Lytle
Jim Sygo
George Krisztian
Liane Shekter Smith
Steve Busch
Mike Prysby

Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, July 21, 2015 10:52 AM
To: Hyde, Tinka
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Busch, Stephen (DEQ); Cook, Pat (DEQ); Benzie, Richard (DEQ)
Subject: RE: AGENDA for Today's Call on Flint

Thanks Tinka.

During discussion issue #1, we would like to discuss our (hopefully, mutual) understanding of the timeline for next steps.

Also, while we understand your concerns with the overall implementation of the lead and copper rule(s); we think it is appropriate for EPA to indicate in writing (an e-mail would be sufficient) your concurrence that the city is in compliance with the lead and copper rule as implemented in Michigan. This would help distinguish between our goals to address important public health issues separately from the compliance requirements of the actual rule which we believe have been and continue to be met in the city of Flint.

And finally, we would also like to discuss our concern that the draft report was released by EPA and that we (DEQ) obtained a copy of the report from an outside (ACLU) website.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Hyde, Tinka [<mailto:hyde.tinka@epa.gov>]
Sent: Tuesday, July 21, 2015 9:07 AM
To: Shekter Smith, Liane (DEQ)
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas
Subject: AGENDA for Today's Call on Flint

Hi Liane – In preparation for our call today we've prepared an agenda (attached) with some background and discussion points. Please let me know if you have other items you wish to discuss. Thanks

Tinka G. Hyde
 Water Division Director
 USEPA W-15J
 77 W. Jackson Blvd
 Chicago, IL 60604

Office: 312-886-9296
 Cell: 312-735-9428

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, September 17, 2014 3:35 PM
To: Howard Croft
Cc: Busch, Stephen (DEQ)
Subject: RE: Boil Water Advisory Report

Howard,

A few changes.....

Overview – 3rd bulleted item - Change date of expanded advisory to Sat. Sept 6th

Background – 3rd bulleted item - two consecutive tests taken 24 hrs apart with negative results are required to lift the boil notice.....not three

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Wednesday, September 17, 2014 2:53 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Boil Water Advisory Report

Mike,

I wanted you to have a copy of the report I sent to the Mayor and EM today as an overview of the recent boil water advisory. Please let me know if anything here appears amiss.

Thanks,

--

Howard Croft
Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7346 Ext.2043
hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Matta, Samir <SFMatta@lan-inc.com>
Sent: Tuesday, March 25, 2014 11:17 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Arduin, Jim (DEQ)
Subject: RE: Bray Road Lagoon Improvements - MDEQ Comments
Attachments: Bray Road Basis of Design.pdf

Hi Mike,

I thought we shared the basis of design information with you but it seems I did not so here it is.

The City would like to have a sit down meeting tomorrow or Thursday afternoon either at your place or City Hall. Are you guys available?

Please let me know.

Thanks.

Samir F. Matta
 Senior Project Manager

 **Lockwood, Andrews
& Newnam, Inc.**
 A LEO A DALY COMPANY
 D 517.819.2367 C 517.819.2367
www.lan-inc.com • sfmatta@lan-inc.com

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Friday, March 21, 2014 2:33 PM
To: Matta, Samir
Cc: Busch, Stephen (DEQ); Arduin, Jim (DEQ)
Subject: Bray Road Lagoon Improvements - MDEQ Comments

Samir,

Attached are MDEQ's comments regarding the proposed work at the Bray Road site to allow re-use of the site for the disposal of WTP lime sludge. Please contact me at your earliest convenience if you have questions regarding our comments or wish to schedule a meeting.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

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BASIS OF DESIGN
BRAY ROAD LIME SLUDGE DECANT WATER TREATMENT SYSTEM
CITY OF FLINT

1. GENERAL DATA

The City of Flint (City) proposes to use the existing lime sludge storage lagoon facility at Bray Road for the next 2.5 years on a continuous basis while the Karegnondi Water Authority (KWA) water system is being constructed. After which, the facility will only be used should the Flint WTP have to treat Flint River water on an emergency basis. In order to maximize storage volume of the facility, the City proposes to construct a decant tower structure, pump station and forcemain to transport the decanted water from the lagoon to a nearby sanitary sewer for final disposal. A CO₂ feed system is also proposed to neutralize the high pH decant waste stream prior to pumping to the sanitary sewer.

The existing lime sludge storage lagoon facility at Bray Road does not have multiple cells; therefore, the sludge will be continuously wetted and will only consolidate to approximately 25% solids. The lime sludge and decant waste stream flows are summarized in the table below:

Lime Sludge Quantities Summary

	WTP Flow [MGD]	Sludge Produced (3% Solids) [gpd]	Sludge Stored (25% Solids) [cy/day]	Decant Waste to Sewer [gpd]	Decant Waste to Sewer [gpm]
Average Day	10	92,000	55	80,700	56
Current Max Day	18	165,000	98	145,200	100
Prop. Max Day	24	220,000	131	193,600	135

2. CO₂ FEED SYSTEM

a. Process Description

A gaseous carbon dioxide feed system will be installed on the Bray Road site near the decant pump station. The system will include a liquid storage tank, vaporizer, vapor heater, pressure regulator, pH control panel and a gas diffuser. Liquid CO₂ will be stored in a 6-ton tank and regulated through a vaporizer. The gaseous CO₂ will be sent through diffuser piping and released into the decant tower through two (2) 7" diameter disk ceramic diffusers. A pH probe will be located in the decant tower to monitor pH downstream of the CO₂ injection point. The pH probe will transmit the pH reading to the pH control panel, which will regulate the CO₂ feed rate for set point control of the pH in the decant water waste stream.

b. Design Criteria

- Max CO₂ feed – 200 mg/L
- Max decant flow rate – 140 gpm

- CO₂ feed system capacity @ Max Day (140 gpm)

$$\frac{140 \text{ gpm}}{694.4 \frac{\text{gpm}}{\text{MGD}}} * 200 \text{ ppm CO}_2 * \frac{8.34 \text{ lb}}{\text{gal}} = 336 \text{ lb/day}$$

- CO₂ feed system capacity @ Average Day (60 gpm)

$$\frac{60 \text{ gpm}}{694.4 \frac{\text{gpm}}{\text{MGD}}} * 200 \text{ ppm CO}_2 * \frac{8.34 \text{ lb}}{\text{gal}} = 144 \text{ lb/day}$$

- CO₂ storage for minimum 30 days at Average Day per 10 States Standards

$$144 \frac{\text{lb}}{\text{day}} * 30 \text{ days} = 4,320 \text{ lbs} = 2.16 \text{ tons}$$

c. Equipment

- One (1) 6 ton capacity Liquid Carbon Dioxide storage tank system complete with refrigeration unit (6 ton is minimum for CO₂ delivery by tanker truck)
- One (1) 12 kW electric vaporizer
- One (1) vapor heater
- One (1) First stage CO₂ pressure regulator
- One (1) Carbon Dioxide pH control panel
- One (1) Carbon Dioxide gas diffuser assembly
- One (1) pH Transducer
- Two (2) 7" Diameter Ceramic Disk-type diffusers

3. DECANT TOWER

a. Process Description

The decant tower is a 6'x6' precast manhole with three (3) 12"W x 36"H staggered openings that will provide 9' of total operating depth for decanting. Each opening has an interior wall-mounted inverted slide gate with a manual operator and an external stoplog channel to allow maintenance on the slide gate when necessary. An under-flow baffle wall will be installed to promote CO₂ transfer into the decant waste stream and prevent short circuiting. A pH probe will be installed just below the invert of the 8" gravity pipe to the decant pump station.

b. Design Criteria

- Average day flow rate = 60 gpm
- Peak day flow rate = 140 gpm

- Minimum detention time = 20 min

$$\text{Min Detention Volume Required} = 20 \text{ min} * 140 \text{ gpm} * \frac{0.1337 \text{ ft}^3}{\text{gal}} = 374.3 \text{ ft}^3$$

- Minimum liquid level above diffuser = 10' per manufacturer

c. Equipment

- One (1) 6'x6'x25' precast manhole
 - Top of structure elevation = 744.00'
 - Top of baffle wall elevation = 742.00'
 - Maximum lagoon operating level elevation = 739.60'
 - Slide gate 1 invert elevation = 736.60'
 - Slide gate 2 invert elevation = 733.60'
 - Slide gate 3 invert elevation = 730.60'
 - 8" gravity line invert elevation = 730.33'
 - Lagoon bottom elevation = 730.00'
 - Bottom of baffle wall elevation = 722.00'
 - Diffuser centerline elevation = 720.25'
 - Bottom of decant tower elevation = 719.00'

- Detention Time:

$$\text{@ Max Day} \frac{[(730.33 - 719.00) * 6 * 6 * \frac{7.48 \text{ gal}}{\text{CF}}]}{140 \text{ gpm}} = 21.8 \text{ min}$$

$$\text{@ Average Day} \frac{[(730.33 - 719.00) * 6 * 6 * \frac{7.48 \text{ gal}}{\text{CF}}]}{60 \text{ gpm}} = 50.8 \text{ min}$$

- Minimum Operating Depth Over Diffusers: 730.33' - 720.25' = 10.08'
- Three (3) 12"W x 36"H inverted slide gates, 304SS
- Three (3) 20"W Stoplogs and channels, 304SS
- One (1) 6'W x 20'H Baffle Wall, FRP
- 8" Diameter Gravity line to Decant P.S., DIP or PVC

4. DECANT PUMP STATION DESIGN AND FORCEMAIN

a. Process Description

The decant pump station will be a 6' diameter precast concrete manhole. It will be fed through an 8" gravity line from the decant tower. Two (2) 140-gpm submersible solids handling pumps will be installed with quick discharge connections and guide rails for lifting and lowering the pumps for maintenance. The pumps will be controlled by a float switch assembly consisting of four (4) switches: pumps off; pump 1 on; pump 2 on; high water alarm. The pump

discharge piping will connect to a 4" diameter forcemain that will transport the waste stream to a nearby sanitary sewer.

b. Design Criteria

- Max Day flow rate, $Q_{max} = 140 \text{ gpm}$
- Average Day flow rate, $Q_{ave} = 60 \text{ gpm}$
- Maximum pump starts per hour = 10

$$\text{Cycle time } (\theta) = \frac{60 \text{ min}}{10 \text{ cycles}} = 6 \text{ min}$$

$$\text{Minimum sump volume} = \frac{Q_{\text{pump}} \cdot \theta}{4} = \frac{140 \cdot 6}{4} = 210 \text{ gal}$$

- Minimum forcemain velocity of 2 ft/s

c. Equipment

- One (1) 6' Diameter x 18'H precast manhole
 - Top of structure elevation = 744.00'
 - High Water Alarm elevation = 731.25'
 - Gravity line invert elevation = 730.25'
 - Pump 2 On elevation = 729.75'
 - Pump 1 On elevation = 728.75'
 - Pumps Off elevation = 727.50'
 - Bottom of pump station elevation = 726.00'

$$\text{Wetwell volume} = \frac{\pi D^2}{4} = \frac{\pi 6^2}{4} = 28.27 \frac{\text{ft}^3}{\text{ft}} * 7.48 \frac{\text{gal}}{\text{ft}^3} = 211.5 \frac{\text{gal}}{\text{ft}}$$

$$\text{Pump Run Time} = \frac{(728.75' - 727.50') * 211.5 \frac{\text{gal}}{\text{ft}}}{(140 \text{ gpm} - 60 \text{ gpm})} = 3.3 \text{ min}$$

$$\text{Fill Time} = \frac{(728.75' - 727.50') * 211.5 \frac{\text{gal}}{\text{ft}}}{(60 \text{ gpm})} = 4.4 \text{ min}$$

- Two (2) 140-gpm pumps
- One (1) 4-float switch assembly
- 4" Diameter Forcemain, DIP or PVC

$$\text{Forcemain Velocity @ } Q_{max} = \frac{\frac{140 \text{ gal}}{\text{min}} * \frac{1 \text{ min}}{60 \text{ s}} * \frac{1 \text{ CP}}{7.48 \text{ gal}}}{\pi \left(\frac{2}{12}\right)^2} = 3.6 \text{ fps}$$

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Thursday, May 15, 2014 2:02 PM
To: Crooks, Jennifer; Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Call from MI citizen in Flint

I suspect there may have been excessive runoff and storm water discharges with the weather we have been experiencing, but you will have to ask the Water Resources Division for details. If a release or overflow is unusual or not expected, both we and the systems should get contacted through the PEAS contact lists.

We expect surface water treatment plants to be capable of treating their source adequately from a microbial standpoint regardless of deteriorating source water quality.

One answer to his question is that any time a system is unable to meet drinking water standards or suspects there may be a water quality problem as a result of an unexpected event (spill, pressure loss, etc.), they are required to notify the consumers and provide appropriate precautionary advice. So no news should be considered good news.

We can talk more next week.

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, May 15, 2014 11:16 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ); Benzie, Richard (DEQ)
Subject: FW: Call from MI citizen in Flint

The citizen, Mr. Lathan Jefferson, contacted Mindy Eisenberg at Headquarters. I will follow up with you all next week at her request. Mike, if I could get copies of the lab analyses for regulated contaminants and their MOR for the new Flint water, I'd appreciate it. Richard and Mike, Mindy is wondering if there were any contaminant releases recently into the Flint River? See my response below.

Jennifer

From: Crooks, Jennifer
Sent: Thursday, May 15, 2014 9:57 AM
To: Eisenberg, Mindy
Cc: Poy, Thomas
Subject: RE: Call from MI citizen in Flint to you

I will talk with Mike, Pat and Richard next Monday and get the analyses from Mike, and send to you next week. Thank you again, Mindy.

Jennifer

From: Eisenberg, Mindy
Sent: Thursday, May 15, 2014 9:55 AM
To: Crooks, Jennifer
Cc: Poy, Thomas
Subject: RE: Call from MI citizen in Flint to you

Thanks Jennifer,

I told him that I would make some calls to find out what is going on and then would get back to him. He mentioned that he was on his way to talk with the Flint treatment plant, so we'll see how that goes.

Mindy

Mindy Eisenberg
 Chief, Protection Branch
 Office of Ground Water and Drinking Water
 U.S. Environmental Protection Agency
 1200 Pennsylvania Ave., NW, mailcode 4606M
 Washington, DC 20460
 (202) 566-1290
eisenberg.mindy@epa.gov

From: Crooks, Jennifer
Sent: Thursday, May 15, 2014 10:52 AM
To: Eisenberg, Mindy
Cc: Poy, Thomas
Subject: RE: Call from MI citizen in Flint to you

Hi, Mindy. Thank you for listening to him. Mike Prysby, the DEQ district engineer who oversees Flint water treatment and distribution, doesn't have Flint's Monthly Operating Report yet, but he has results from Phase 2/5 and other required contaminant analyses (required to meet so the plant could be put on-line), and health standards are being met, he said. I will ask Mike to send me copies of their Phase 2/5 results and the MOR, and his analysis. I didn't specifically ask about any contaminant releases, but DEQ has historically been consistently reliable in reporting to us any contaminant releases—but I will ask Mike that also. Richard Benzie is out of the office til Friday or Monday, but I will be in Lansing auditing set-asides next Monday, so I will touch base with him also.

Pat Cook is the DEQ drinking water treatment expert, who Lathan Jefferson talked to at MI DEQ this week. Pat Cook was out of the office at training so I was unable to find out what he told Mr. Jefferson. Mr. Jefferson refused to take Mike Prysby's phone number, which is why he didn't mention Mike's name to you.

Jennifer

From: Eisenberg, Mindy
Sent: Thursday, May 15, 2014 9:36 AM
To: Crooks, Jennifer
Cc: Poy, Thomas; Hyde, Tinka
Subject: RE: Call from MI citizen in Flint to you

Hi Jennifer,
 Yes, I just spoke with him and he explained the situation. He didn't mention Mike Prysby but did mention a Pat Cook from DEQ who he has spoken with about the health issues. What analyses is Flint doing? Do they have any analyses for the Phase 2/5 rules? He expressed concern about closed GM plants along the river. Could there be releases? Have you spoken with Richard Benzie?

Thanks

Mindy Eisenberg
 Chief, Protection Branch

Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW, mailcode 4606M
Washington, DC 20460
(202) 566-1290
eisenberg.mindy@epa.gov

From: Crooks, Jennifer
Sent: Thursday, May 15, 2014 9:57 AM
To: Eisenberg, Mindy
Cc: Poy, Thomas; Hyde, Tinka
Subject: Call from MI citizen in Flint to you

Mindy—A Mr. Lathan Jefferson has talked with Tinka, and also with me just now about his drinking water quality. Flint has just switched from Detroit water (from Lake Huron) to Flint River water within the past couple of weeks. Flint River quality is not great, but there is a surface water treatment plant producing water that is currently meeting SDWA standards, according to the MI DEQ district engineer, Mike Prysby. The water has more hardness, and pH and alkalinity may be different from Detroit water. Mike will have more information on the difference in water quality when he receives Flint's first monthly operation report this week. Mr. Jefferson said he and many people have rashes from the new water. He said his doctor says the rash is from the new drinking water, and I told him to have his doctor document this and he can bring to the attention of the MI DEQ, since lab analyses to date show that the drinking water is meeting all health-based standards. He has no interest in speaking with Mike Prysby; he doesn't trust anyone in MI government. He asked me for free drinking water lab analyses, which I was unable to provide. He only wants to speak with someone from EPA Headquarters.

Jennifer

Jennifer Kurtz Crooks
Michigan Program Manager/Set-Aside Coordinator
Ground Water and Drinking Water Branch
U.S. EPA, Region 5
77 West Jackson Blvd., WG-15J
Chicago, Illinois 60604
(312) 886-0244
(312) 582-5853 (fax)
crooks.jennifer@epa.gov

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, September 09, 2014 3:28 PM
To: Busch, Stephen (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

Thank you, Steve!

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Tuesday, September 09, 2014 2:17 PM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

Jennifer

All of the sample results today were non-detect so the boil water advisory has been lifted. In addition chlorine residuals are beginning to show improvement in the area.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Tuesday, September 09, 2014 11:03 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

Thank you, Steve, for your prompt response. We appreciate your update in locating the source of contamination, and the results of your ongoing TC sampling. Please let us know when you lift the BWA—when you get a minute—we know you've got your hands full; we've been keeping our management informed.

Jennifer

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Tuesday, September 09, 2014 9:19 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

Jennifer,

The City has found two transmission valves that were closed (36 inch and 24 inch) which transport water to that section of the system. This likely contributed to more stagnant water conditions and lower chlorine residuals in that area. The 36 inch valve has been opened but the 24 inch is inoperable and will need to be repaired or replaced.

Given these valve issues, I have inquired whether low pressure conditions less than 35 psi, would be present in this portion of the system? If low pressure conditions exist, a cross connection or siphon condition where leaks or breaks are present may be occurring. While longer transmission times may contribute to lower chlorine residual, the presence of coliform bacteria suggests contaminants have entered the system and their regrowth and resurgence could be assisted by the presence of a biofilm or tuberculation on the pipe walls.

They are continuing to investigate to identify and address any such issues.

All 6 samples collected Saturday came back ND on Sunday, but we had 1 of 6 sites come back TC positive yesterday (collected Sunday) and they collected the normal full distribution set (10+1 samples) Monday which we expect results early this afternoon. If all results are ND today the BWA could be lifted.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Tuesday, September 09, 2014 10:00 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: Citizen complaint call from man who lives in Flint, MI

Hi, Steve and Mike. We heard about the boil water advisory for Flint for 9/3 last week. Tom Poy also had several calls from Lathan Jefferson yesterday, re-iterating his past calls/claims that the Flint water is unfit to drink.

Any update as to the source of positive bacti? I heard no E.coli, which is good.

Thank you for your time

From: Murphy, Thomas
Sent: Monday, September 08, 2014 1:48 PM
To: Poy, Thomas
Cc: Shoven, Heather; Crooks, Jennifer
Subject: Citizen complaint call from man who lives in Flint, MI

I checked Flint's website and found the attached 9/3/2014 Boil Water Notice (affected area expanded on 9/5/2014) for an apparent monthly total coliform bacteria MCL violation.

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, September 09, 2014 11:03 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

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Jennifer

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To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: RE: Citizen complaint call from man who lives in Flint, MI

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Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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Sent: Tuesday, September 09, 2014 10:00 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Poy, Thomas; Benzie, Richard (DEQ)
Subject: Citizen complaint call from man who lives in Flint, MI

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Sent: Monday, September 08, 2014 1:48 PM
To: Poy, Thomas
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I checked Flint's website and found the attached 9/3/2014 Boil Water Notice (affected area expanded on 9/5/2014) for an apparent monthly total coliform bacteria MCL violation.

Rennaker, Joanne (DEQ)

From: Thelen, Mary Beth (DEQ)
Sent: Tuesday, March 17, 2015 5:12 PM
To: Busch, Stephen (DEQ)
Subject: RE: City of Flint Information - Consultants

Thanks.

Mary Beth

Mary Beth Thelen
 Management Assistant to Director Dan Wyant
 Department of Environmental Quality
 Constitution Hall, 6th Floor South
 Phone: 517-284-6712 or 284-6700 (new numbers)
 Fax: 517-241-7401
Thelenm2@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Tuesday, March 17, 2015 5:11 PM
To: Thelen, Mary Beth (DEQ)
Cc: Shekter Smith, Liane (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: City of Flint Information - Consultants

They do not know about the call. DEQ staff haven't spoken to them specifically about private filter units.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

Sent from my iPhone

On Mar 17, 2015, at 4:51 PM, Thelen, Mary Beth (DEQ) <THELENM2@michigan.gov> wrote:

Liane/Stephen, Please see below.
 Do you know? Thanks.

From: Hollins, Harvey (GOV)
Sent: Tuesday, March 17, 2015 4:47 PM
To: Thelen, Mary Beth (DEQ)
Cc: Wyant, Dan (DEQ); Wurfel, Brad (DEQ); Clayton, Stacie (GOV); Sygo, Jim (DEQ)
Subject: Re: City of Flint Information - Consultants

Thank you. Has anyone from DEQ talked with them? Do they know I will be calling?

Best,
 Harvey

On Mar 17, 2015, at 9:54 AM, Thelen, Mary Beth (DEQ) <THELENM2@michigan.gov> wrote:

Good Morning Harvey,

The consultants listed below are working with Flint and are in the best position to recommend a water filter system. The locals should be asked to use their consultants to recommend a technology.

Warren Green with Lockwood, Andrews & Newman, Inc.
630-918-2494

and

Marvin Gnagy with Veolia North America
419-450-2931

Thank you.

Dan Wyant
Director

Mary Beth

Mary Beth Thelen
Management Assistant to Director Dan Wyant
Department of Environmental Quality
Constitution Hall, 6th Floor South
Phone: 517-284-6712 or 284-6700 (new numbers)
Fax: 517-241-7401
Thelenm2@michigan.gov

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, November 04, 2013 8:33 AM
To: Daugherty Johnson
Cc: Busch, Stephen (DEQ)
Subject: RE: City of Flint meeting

Daugherty,

Steve Busch and I will meet with you tomorrow at noon...in addition to discussing specific WTP upgrades planned by the city, we wish to cover lime sludge disposal options and the status of the completion of the water distribution system reliability study (conclusion to either replace or abandon the 24-inch transmission main – west loop?).

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Daugherty Johnson [<mailto:djohnson@cityofflint.com>]
Sent: Monday, November 04, 2013 8:16 AM
To: Prysby, Mike (DEQ)
Subject: City of Flint meeting

Hello Mike. Just writing to verify our meeting on Tuesday November 5 at noon in the Mayor's conference room. The Emergency Manager, City staff and Warren Green from LAN will be in attendance as well. We'd like to discuss our planned upgrades to verify their conformance along with any topics you'd like to go over.

Thank you
Daugherty Duffy Johnson
Utilities Administrator
City of Flint

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Monday, April 06, 2015 9:35 AM
To: Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Butler, Sonya (DEQ); Schneider, Robert (DEQ)
Subject: Re: City of Flint Water

I too know nothing about the city's rate setting methodology. You should confirm again that the public water supply program and Act 399 do not regulate water rates.

For questions about the DWRF, direct inquiries to the SRF Section.

You could also say that spills of this nature are reported to a separate division (Water Resources). The Office of Drinking Water and Municipal Assistance gets notified of such events if WRD or the person receiving the notification believes there may be a public water supply downstream that may be impacted. You should also let her know that surface water treatment plants like Flint are designed to handle microbial contamination including spikes caused by runoff and overflows. It is one of the primary reasons we require a certified operator be present during all periods of operation so they can react appropriately to changing raw water quality.

I would stay away from providing dollar amounts for the loans. Let SRF staff answer that question.

I'm home today with a doctor appointment shortly so I'm copying others that may be of assistance to you.

Sent using OWA for iPhone

From: Prysby, Mike (DEQ)
Sent: Monday, April 6, 2015 9:06:59 AM
To: Benzie, Richard (DEQ)
Subject: FW: City of Flint Water

Richard,

I am not in the position to offer much detail into Flint's water rates and how they are established. Those type of complaints or inquiries are best answered by the city. I can inform Sheila about the city's DWRF loan (early 2000s) used to renovate the WTP and I will suggest that Sheila ask the city how the DWRF debt balance is factored into the water rate structure. I recall the original DWRF loan amount (approx \$35 million) for treatment plant upgrades and a current balance of approx \$20 million. If I am off on these numbers...let me know. Thanks...

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance

517 290-8817

From: Sheila Bailey-Waddell [<mailto:sheila.bw@hotmail.com>]
Sent: Friday, April 03, 2015 4:34 PM
To: Prysby, Mike (DEQ)
Subject: RE: City of Flint Water

Michael,

I refuse to believe that you were unaware of this incident. I have provided a link below for your reference and that you were informed. Although you have stated that you do not regulate the rates, there, perhaps, is an indirect relationship with Michigan DEQ components and rates charged (i.e revolving funds, loans, etc...). Somewhere in your agency's organization structure these two elements must cross.

http://www.mlive.com/news/flint/index.ssf/2015/04/flushing_discharges_nearly_100.html

Thank you,
Sheila

From: PRYSBYM@michigan.gov
To: sheila.bw@hotmail.com
Subject: City of Flint Water
Date: Fri, 3 Apr 2015 19:57:28 +0000

Sheila,

To better help address your first concern pertaining to the spill of sewage into the Flint, I will need to know the location of the spill and when it occurred. Your second concern, pertaining to the high cost of water cannot be answered by our department since we do not regulate how a water utility charges its customers. It is the city's obligation, as part of building good public relations and perception, to provide an informative response to customers concerned over high water rates.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
MDEQ

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, February 17, 2015 4:03 PM
To: Howard Croft
Cc: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: RE: City Water Tech Team

Howard,

After further discussion with ODWMA staff, I am available to participate in the TAC. My main role will be review water system reports and provide comments and/or guidance primarily from a regulatory standpoint. Please keep me informed as to when the first meeting will be held. Finally, I wish to extend my thanks for the invitation to participate in the TAC.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Saturday, February 14, 2015 8:45 AM
To: Prysby, Mike (DEQ)
Subject: City Water Tech Team

Mike,

The City of Flint has contracted with Veolia North America in order to have an additional review of the water system. As part of this review, we are working to develop a Technical Advisory Committee (TAC) that will that will receive reports and interact with the technical staff from Veolia. The City has identified 8 - 12 entities or individuals that we are extending an invitation to participate on this committee.

I would like to extend this invitation to you or your designee to be a representative on the TAC team which we hope to have established by early next week.

I understand that this is short notice but if you would consider the offer and confirm or deny your participation I would greatly appreciate it. We are hoping to announce the names of this team at a Public Works Committee meeting Wednesday February 18th. The details of the first meeting and the ongoing agenda which is anticipated to extend through the implementation of the Karegnondi Water Authority as a water source will also be unveiled next week..

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Tuesday, February 17, 2015 10:12 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: City Water Tech Team

Mike,

I think the invitation for your participation on this committee is an indication of the relationship we have established with the public water supply industry where they recognize and appreciate our technical expertise. I have no problem with your participation on this advisory committee. I assume both you and Flint realize it will in no way compromise your ability to provide regulatory oversight should it become necessary.

If you were not participating on this committee, you would likely be providing comments on its work product at various stages. As a member, you may do so internally and provide that input before a final product is completed.

Richard

From: Prysby, Mike (DEQ)
Sent: Tuesday, February 17, 2015 8:35 AM
To: Benzie, Richard (DEQ)
Subject: FW: City Water Tech Team

Richard,

This may be worth my involvement....not sure if I can become part of an out of office committee....I will also consult with Steve on this...

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Saturday, February 14, 2015 8:45 AM
To: Prysby, Mike (DEQ)
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Thank you,

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Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, October 13, 2015 2:35 PM
To: Krisztian, George (DEQ); Sygo, Jim (DEQ); Wyant, Dan (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Confirmation experiments.

I think it makes for an interesting classroom project.

A study such as this, however, will not help or change our actions going forward.

From: Krisztian, George (DEQ)
Sent: Tuesday, October 13, 2015 2:26 PM
To: Sygo, Jim (DEQ); Wyant, Dan (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Confirmation experiments.

I agree with Jim, all of our efforts moving forward need to be focused on getting Flint switched over.

George L. Krisztian
 Flint Action Plan Coordinator
 Laboratory Director
 Michigan Department of Environmental Quality
 Desk ph (517) 284-6719
 Cell ph (517) 204-0381

From: Sygo, Jim (DEQ)
Sent: Tuesday, October 13, 2015 1:51 PM
To: Wyant, Dan (DEQ); Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Confirmation experiments.

My view on this is that it does not provide any scientific information relative to the individual residents. It appears to be a qualitative process to demonstrate the water is corrosive. We now know that. WE should be more concerned with individual follow ups rather than demonstrations.

From: Wyant, Dan (DEQ)
Sent: Tuesday, October 13, 2015 12:08 PM
To: Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Sygo, Jim (DEQ); Wurfel, Brad (DEQ)
Subject: FW: Confirmation experiments.

Thoughts?

Dan Wyant, Director
 Department of Environmental Quality
 517-284-6700 (New Number)

From: Marc Edwards [<mailto:edwardsm@vt.edu>]

Sent: Tuesday, October 13, 2015 11:53 AM

To: vweiss@grandblancschools.org; emily.cizmas@wayne.edu; Wurfel, Brad (DEQ); Wyant, Dan (DEQ)

Subject: Confirmation experiments.

Vicky, Emily, Brad and Dan

Attached are the instructions for the simple experiments, that we sent out a week ago to illustrate the dramatically higher corrosivity of Flint water versus Detroit water.

Vicky and Emily's classrooms will be tracking the corrosivity of the water before, during and after the switch is made in the Flint water.

We will be posting the results with a week lag on our National Science Foundation webpage FLINTWATERSTUDY.org

I sent bottles to Brad at MDEQ, on the off chance MDEQ also wanted to do the test. I initially did this because there was some reluctance to admit that there was a corrosion problem, but I think that is behind us.

In any case, you might want to do it and see for yourself. This is a simple way to screen corrosivity and corrosion inhibitors, that we routinely do for water utilities in advance of treatment changes.

The results are very dramatic.

Best Regards,

Marc

Rennaker, Joanne (DEQ)

From: Sygo, Jim (DEQ)
Sent: Tuesday, October 13, 2015 1:51 PM
To: Wyant, Dan (DEQ); Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
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Best Regards,

Marc

Rennaker, Joanne (DEQ)

From: Krisztian, George (DEQ)
Sent: Tuesday, October 13, 2015 2:26 PM
To: Sygo, Jim (DEQ); Wyant, Dan (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Confirmation experiments.

I agree with Jim, all of our efforts moving forward need to be focused on getting Flint switched over.

George L. Krisztian
 Flint Action Plan Coordinator
 Laboratory Director
 Michigan Department of Environmental Quality
 Desk ph (517) 284-6719
 Cell ph (517) 204-0381

From: Sygo, Jim (DEQ)
Sent: Tuesday, October 13, 2015 1:51 PM
To: Wyant, Dan (DEQ); Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Confirmation experiments.

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From: Wyant, Dan (DEQ)
Sent: Tuesday, October 13, 2015 12:08 PM
To: Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Sygo, Jim (DEQ); Wurfel, Brad (DEQ)
Subject: FW: Confirmation experiments.

Thoughts?

Dan Wyant, Director
 Department of Environmental Quality
 517-284-6700 (New Number)

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Tuesday, October 13, 2015 11:53 AM
To: vweiss@grandblancschools.org; emily.cizmas@wayne.edu; Wurfel, Brad (DEQ); Wyant, Dan (DEQ)
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Vicky, Emily, Brad and Dan

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I sent bottles to Brad at MDEQ, on the off chance MDEQ also wanted to do the test. I initially did this because there was some reluctance to admit that there was a corrosion problem, but I think that is behind us. In any case, you might want to do it and see for yourself. This is a simple way to screen corrosivity and corrosion inhibitors, that we routinely do for water utilities in advance of treatment changes. The results are very dramatic.

Best Regards,

Marc

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, January 09, 2015 11:07 AM
To: Willard, Veronica (DEQ); Thelen, Mary Beth (DEQ)
Cc: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: RE: Constituent Inquiry

I will respond to this person. I'm am not aware (officially) of CDC involvement.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Willard, Veronica (DEQ)
Sent: Friday, January 09, 2015 10:54 AM
To: Thelen, Mary Beth (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Constituent Inquiry

Liane is going to be out, but I believe that Mike Prysby has been handling this issue. Mike – can you let me know if you are the one to handle this?

From: Thelen, Mary Beth (DEQ)
Sent: Friday, January 09, 2015 10:46 AM
To: Shekter Smith, Liane (DEQ)
Cc: Willard, Veronica (DEQ); Shaler, Karen (DEQ)
Subject: FW: Constituent Inquiry

Hi Liane, please scroll down to the bottom of this email. Could you please have the appropriate staff respond to this constituent as appropriate?

Please let me know if I need to make the Director aware of this particular note, or Brad.

Thank you.

Mary Beth

Mary Beth Thelen
 Management Assistant to Director Dan Wyant
 Department of Environmental Quality
 Constitution Hall, 6th Floor South
 Phone: 517-284-6712 or 284-6700 (new numbers)
 Fax: 517-241-7401
Thelenm2@michigan.gov

From: Danieli, Sharon (DCH)
Sent: Wednesday, January 07, 2015 9:15 AM

To: Thelen, Mary Beth (DEQ)
Subject: Constituent Inquiry

Hi Mary Beth,

This was forwarded to me by Nancy Grijalva in the DCH Director's Office. In checking with our Public Health Administration, they indicated this should be reviewed/responded to by DEQ. Could you please forward to the appropriate person in your Department?

Thanks for your help. If you have any questions, please let me know.

Sharon K. Danieli
Secretary
Director's Office
Michigan Department of Community Health
Phone: (517) 335-0633
Fax: (517) 373-4288
Email: danielis@michigan.gov

Confidentiality Notice: This message, including any attachments, is intended solely for the use of the named recipient(s) and may contain confidential and/or privileged information. Any unauthorized review, use, disclosure or distribution of this communication(s) is expressly prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy any and all copies of the original message.

From: stixdesign [<mailto:stixdesign@sbcglobal.net>]
Sent: Tuesday, January 06, 2015 11:09 AM
To: Grijalva, Nancy (DCH)
Subject: water toxins in Flint, MI

Greetings,

I wrote to the CDC regarding Flint's failure to meet safe quality standards. We were sent a notice on Friday warning of potential health risks. A second notice is forthcoming. Citizens are beyond angry and fearful and it's going viral. Articles can be found on Mlive. The CDC said they could investigate, but the request would have to come from the state. They urged me to contact you. I look forward to hearing from you. The reporter covering this story is Ron Fonger at rfonger@mlive.com

Thank you,
Patricia L. Warner
810 - 919 - 7487

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Wednesday, February 11, 2015 3:50 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Controlled Correspondence from citizen in Flint

Thank you, Richard, for your comments below. I changed to "District Supervisor". Regarding your second comment, I came to the same conclusion a bit ago, and tried to clarify this with a citizen caller—that the water leaving the plant was fine; it was the time in the distribution system that was causing problems. But, they didn't care—the bottom line was their water "was bad". So, I don't think I'll include that comment; but I did forward to Tom Poy for his weigh in.

Jen

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Wednesday, February 11, 2015 1:03 PM
To: Crooks, Jennifer; Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: shekterl@michigan.gov
Subject: RE: Controlled Correspondence from citizen in Flint

Jen,

I'm sure Steve will reply, but I know he has been conducting interviews today.

Most of the letter looks fine. However, the title of Supervising District Engineer has not been used since we merged with the Surface Water Quality Division in 2002. Steve is currently the ***District Supervisor*** for the Lansing (and Jackson) District. You use his title several times in your final draft.

Also, it may be appropriate or beneficial to point out that at no time has the drinking water leaving the water treatment plant since the switch to the Flint River exceeded a drinking water standard. The problems the city has encountered appear to be related to distribution system issues, such as an aging pipe network, reduced customer usage, and as a result, increased stagnation of drinking water within the distribution system.

That's my two cents.

Richard

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Wednesday, February 11, 2015 11:49 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Controlled Correspondence from citizen in Flint
Importance: High

Hi, Steve. As we discussed, I've drafted our response and included information you gave us on Monday. Tom Poy has reviewed, so this is our final draft. If you could get back to me this afternoon with any changes, I'd appreciate it. These things are like ticking time bombs around here.

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Wednesday, February 11, 2015 2:03 PM
To: Crooks, Jennifer; Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Controlled Correspondence from citizen in Flint

Jen,

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Most of the letter looks fine. However, the title of Supervising District Engineer has not been used since we merged with the Surface Water Quality Division in 2002. Steve is currently the ***District Supervisor*** for the Lansing (and Jackson) District. You use his title several times in your final draft.

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Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Wednesday, February 11, 2015 3:46 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Controlled Correspondence from citizen in Flint

Thank you for your comment, Steve; I included it as is in my letter. It's always good to provide another resource for people with questions.

Jen

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Wednesday, February 11, 2015 11:39 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); shekterl@michigan.gov
Subject: RE: Controlled Correspondence from citizen in Flint

Jennifer,

Regarding water rates and financial considerations, here is some additional information:

The Michigan Department of Treasury conducts annual financial audits of local units of government in accordance with US government auditing standards and Michigan Public Act 34 of 2001, the Municipal Finance Act. This includes the City of Flint and its proprietary utility funds. While these audits do not set the rate structure, they do ensure that funds generated through water rates are accounted and directed in accordance with applicable laws.

Copies of these audits can be obtained online at the following location:

<https://treas-secure.state.mi.us/LAFDocSearch/>

Everything else appears accurate.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Wednesday, February 11, 2015 11:49 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Controlled Correspondence from citizen in Flint
Importance: High

Hi, Steve. As we discussed, I've drafted our response and included information you gave us on Monday. Tom Poy has reviewed, so this is our final draft. If you could get back to me this afternoon with any changes, I'd appreciate it. These things are like ticking time bombs around here.

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, October 14, 2014 3:16 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Controlled Correspondence RE: Flint drinking water

Question—I was just talking with Tom Poy about this woman's complaint. He was wondering—has Flint changed their flushing routine? If the illegal use of the hydrants by contractors is what is stirring up the debris in the pipes/iron, how come this is now being complained about? Was this a problem when Flint was using Detroit water?
 Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Tuesday, October 14, 2014 1:00 PM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Subject: RE: Controlled Correspondence RE: Flint drinking water

Jennifer,

I have forwarded the address and complaint information to the City to confirm if they received any complaint and what follow up may have occurred.

I am not aware of any additional TC positive samples since the BWA at the beginning of September. In addition this address does not appear to be included in the BWA area from August or September.

I await any info from the City on flushing. You may want to ask whether there has been any building work (blight removal) in the area, as contractors have been problematic with hydrant use.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Tuesday, October 14, 2014 1:38 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Controlled Correspondence RE: Flint drinking water
Importance: High

Hi, Mike. Yep, another complaint about our favorite water supply ☺

Citizen lives at 324 West Jackson Avenue, Flint, 48505

She states, "Water quality is bad since switching to Flint River. My water stinks like sewage at times. I have developed a cough and rash, brown sediment in sink basins and kitchen sink stays backed up. I have written City Hall Water Dept and Council President for help, but no response."

I think the pos bacti/boil water advisory was in Sept, so can I say that bactis in the past few weeks have met State/Fed'l health standards? How's the TTHMs right now? Any other health standards close to being exceeded?

What do you attribute the sewer smell, and the brown sediment to? Has her area been flushed recently?

I will include the phone numbers of the Water Service Center and the Water Treatment plant that you gave me last time we spoke about Flint.

Can I include your phone number as a contact as well?

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, October 14, 2014 1:56 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: RE: Controlled Correspondence RE: Flint drinking water

Importance: High

Sorry, we did discuss the probably source of the brown sediment in the water (my memory should be better):

"... the cause of brown water (iron deposits and sediments from the very old cast iron pipes that make up the distribution system)..."

But I have a few more questions below.

Jennifer

From: Crooks, Jennifer
Sent: Tuesday, October 14, 2014 12:38 PM
To: 'Prysby, Mike (DEQ)'; Busch, Stephen (DEQ)
Subject: Controlled Correspondence RE: Flint drinking water
Importance: High

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What do you attribute the sewer smell? Has her area been flushed recently? Probably needs flushing?

I will include the phone numbers of the Water Service Center and the Water Treatment plant that you gave me last time we spoke about Flint.

Can I include your phone number as a contact as well?

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, October 14, 2014 2:05 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Controlled Correspondence RE: Flint drinking water

Hey, thank you, Steve. Yes, I did include some wording about the improper use of hydrants by local contractors, and the possible need to flush her lines. Let me know if the City will be flushing her lines, so I can include in this letter. I will forward my draft response/letter to both of you on Thursday, to make sure it is acceptable to you both.

Thanks!

Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Tuesday, October 14, 2014 1:00 PM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Subject: RE: Controlled Correspondence RE: Flint drinking water

Jennifer,

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 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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Can I include your phone number as a contact as well?

Thank you!

Jennifer

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, October 09, 2015 10:37 AM
To: Shekter Smith, Liane (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Daily updates

Lianne,

Flint and Genesee County are coordinating their efforts to have the unused portion of the 72-inch transmission main (pipeline) available for service. The city e-mailed me a draft procedure late afternoon yesterday. I commented back to the city and the county emphasizing the need to include the disinfection standard AWWA C651-14. I provided the city and the county with a copy of the standard. The draft procedure mentions that the pipeline would be re-filled overnight and chlorination was to begin at 8:30 am today.

My follow-up calls this morning with the city and the county confirmed that the main was being re-filled at this time. Once filled, the ability of the pipeline to hold pressure will be confirmed. Chlorination has not started yet.

I discussed, in more detail the need to send us an updated description of the procedure which needs to include adherence to the AWWA disinfection standard. Discussion of the sampling locations and the number of bacteriological samples to be collected also needs to be included. The city and the county are meeting this morning to review the procedures and to be certain that there is no confusion. I expect to receive an updated procedure later today in which the city and the county will ask for our concurrence. An Act 399 permit does not apply here; however, I plan to offer the DEQ's concurrence with their proposed procedure – provided that it references adherence to AWWA's disinfection standard and the sampling protocol that was discussed.

I leave at 11am today; however, I plan to respond to the city and the county anytime today to give them the go-ahead after I receive an acceptable procedure.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Shekter Smith, Liane (DEQ)
Sent: Friday, October 09, 2015 8:09 AM
To: Prysby, Mike (DEQ); Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Butler, Sonya (DEQ); Benzie, Richard (DEQ);

Busch, Stephen (DEQ); Cook, Pat (DEQ)

Cc: Devereaux, Tracy Jo (DEQ)

Subject: FW: Daily updates

Importance: High

FYI – I'll need a daily summary by 4:00pm (4:15pm at the latest) of all work efforts as described below.

Be sure to cc Tracy Jo so that one of us will be able to forward it to George by the 4:30pm deadline.

Thanks!

From: Krisztian, George (DEQ)

Sent: Friday, October 09, 2015 7:07 AM

To: Shekter Smith, Liane (DEQ)

Cc: Thelen, Mary Beth (DEQ); Shaler, Karen (DEQ); Wyant, Dan (DEQ); Sygo, Jim (DEQ)

Subject: Daily updates

Importance: High

Hi Liane,

The Governor wants daily updates regarding the progress we are making on the Flint issue. Can you please provide me with a summary of the action steps that we have taken on a daily basis? The summary should not contain excessive detail, it should be something like:

- Steve Busch contacted Natasha Henderson at the City of Flint to get details on supplemental Phosphate Dosing
- Pat Cook/Mike P Analyzed Plans for flushing and pressure testing lines to make the switch back to GLWA
- Met with city of Flint officials to review actions to date and to create a list of next steps

The above examples are for illustrative purposes only

I need to have this summary each day no later than 4:30 PM. This is a hard deadline as we need to get the summary to the Governor by 5:00 PM. Please make sure that you copy Mary Beth and Karen.

Thank you!

George

Rennaker, Joanne (DEQ)

From: Shaler, Karen (DEQ)
Sent: Wednesday, October 14, 2015 5:53 PM
To: Sygo, Jim (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Dykema, Linda D. (DHHS); Tommasulo, Karen (DEQ); Busch, Stephen (DEQ); Krisztian, George (DEQ)
Cc: Thelen, Mary Beth (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8
Attachments: Environmental Incident Report Form.pdf

FYI, Peter Manning hand carried to me this afternoon the attached Environmental Incident Report Form that was submitted online to, and subsequently faxed to, DAG's ENRA Division.

From: Shaler, Karen (DEQ)
Sent: Wednesday, October 14, 2015 11:32 AM
To: Sygo, Jim (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Dykema, Linda D. (DHHS); Tommasulo, Karen (DEQ); Busch, Stephen (DEQ); Krisztian, George (DEQ)
Cc: Thelen, Mary Beth (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

The mystery is solved!

I'm covering Executive Division's main phone line this morning, and I received a call from Wayne Koper (a citizen from the Thumb area) who said he faxed to 373-1610 an Environmental Incident Report Form (a DAG form) regarding "poisoning of children of Flint." He said the complaint number assigned to it is: 2015-ep10081942753-A. I checked online and found out that fax number is for the DAG's Environment, Natural Resources, and Agriculture Division.

I then spoke with Peter Manning's secretary, Nancy Hart, to see if they received his form and to let her know I'd be e-mailing her a phone message from Mr. Koper to return his call. She said they have the form, and she will ask Peter if it's OK to forward a copy to me to share with you. Stay tuned.....

From: Dykema, Linda D. (DHHS)
Sent: Wednesday, October 14, 2015 8:22 AM
To: Shekter Smith, Liane (DEQ)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

The number does not look familiar to me, but it could be related to 1 of 2 pending legal actions in Kalamazoo that HHS is involved in that are unrelated to drinking water issues. Both actions pertain to lead abatement activities and/or contractor compliance with the regulations.

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, October 13, 2015 5:16 PM
To: Dykema, Linda D. (DHHS)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

Linda – does this look familiar to you? We're having trouble figuring out what this is referring to.

If not – any suggestions on who else we should check with?

From: Shaler, Karen (DEQ)
Sent: Tuesday, October 13, 2015 4:48 PM
To: Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ)
Subject: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

Someone may want to check with Linda Dykema, DHHS, to see if this is their complaint number.

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, October 13, 2015 2:47 PM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ)
Subject: RE: environmental complaint filed on Oct. 8

Is this the complaint Karen Shaler was trying to track down earlier?

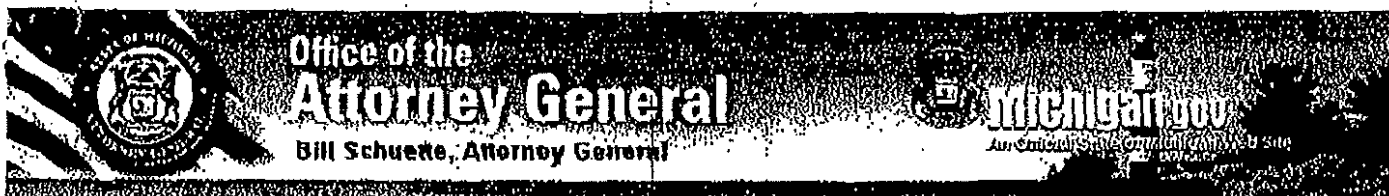
From: Wurfel, Brad (DEQ)
Sent: Tuesday, October 13, 2015 2:45 PM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ)
Subject: FW: environmental complaint filed on Oct. 8

An anonymous caller is hitting up all the media to look into this complaint.
Who can dig it out and get me a copy asap?
Thanks.
b

From: Lynch, James [<mailto:JLynch@detroitnews.com>]
Sent: Tuesday, October 13, 2015 1:21 PM
To: Wurfel, Brad (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: environmental complaint filed on Oct. 8

Complaint number is, supposedly.....

2015-ep10081942753-a



Michigan.gov Home

AG Home | Site Map

ENVIRONMENTAL INCIDENT REPORT FORM

Your complaint has been successfully submitted. Please print and/or save this confirmation for your records.

If you need to reference your complaint, or supply additional information and/or documents in support of your complaint by Email, facsimile or postal mail, refer to your complaint with the following Complaint Identification Number: 2016-ep10081942763-A

- Email:
- Fax: (517) 373-1610
- Mail: P.O. Box 30765, Lansing, MI 48909

Dept. of Attorney General
RECEIVED

OCT 14 2015

Web Complaint Number: 2016-ep10081942763-A

Submitted: 10/13/2015 7:42:07 PM

NATURAL RESOURCES
DIVISION

Complainant Information

☐ Check if you prefer to submit this complaint anonymously

Your Last Name: Koper
Your Street Address: 425 N. Graf Rd
Your State: MI
Your County: Tuscola
Your Home Phone: 9893268113
Fax Number:

First Name: Wayne
City: Caro
Zip Code: 48723

M.I.: A

Your Work Phone:
E-mail Address: wkoper@gmail.com

Ext.:

Information On Company Or Person Your Complaint Is About

Company or Person? Person
Complainee Last Name: Snyder
Company Name:
Street Address: P.O. Box 30013
State: MI
County: Eaton
Fax Number: 5173358883
Web Site Address:

Complainee First Name: Rick
City: Lansing
Zip Code: 48909
Phone: 5173733400
E-mail Address: rick.snyder@michigan.gov

Incident Information

Incident Date:
Incident Location: Flint, MI
City or Township: Flint
County: Genesee

Incident Time: 1:00:00 AM
Zip Code:
Lake/Stream:

Other Information

Is a court action pending?
Do you have an attorney representing you on this matter?
Are you willing to testify in court regarding this complaint?
Did you complain directly to the business?
What was the response from the business?
If no complaint was given to the business directly, why?

☐ Yes ☐ No

If so, who?

Yes ☐ No
Yes ☐ No
Yes ☐ No
Governor Snyder
Indignation

10/13/2015 10:45 9896734777

CARD LIBRARY

PAGE 02/02

Was this complaint filed with any other agencies?

Yes No

If so, who?

CPB

Incident Detail

Describe your problem, what attempts you have made to correct it, and how you would like to have the problem resolved. You have approximately 8-10 typed pages and you may paste text from word processing documents.

Governor Rick Snyder and other Michigan elected/appointed officials have undeniably poisoned the children of Flint MI with water containing unsafe levels of the heavy metal lead causing irreversible damage to the health of these children and must be held criminally responsible for the severe damage inflicted. Immediate abatement of any and all known threats should be of paramount importance, anything less fails the citizens facing this lifelong threat.

- ☐ Check if this referral is just to give us information and you do not need us to respond to you directly.
- ☐ Check if you want to send documentation. After you submit this form you will be provided with a postal mail address, and facsimile number, to which you may send documents.
- ☐ Check if you want to sign up for the Consumer Protection Listserv.
- ☐ Check if you want to sign up for the AG Press Release Listserv.
- ☐ Check if you want to sign up for the Attorney General Opinions Listserv.

☐ I certify that the information on this form is true and accurate to the best of my knowledge.

☐ I consent to releasing to the Michigan Attorney General any information or document relative to the investigation of this complaint. By checking this box, I also certify that I have had the opportunity to review the Michigan Attorney General Privacy Policy before submitting this complaint.

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[Privacy Policy](#) | [Link Policy](#) | [Accessibility Policy](#) | [Security Policy](#) | [AG Privacy Policy](#) | [AG Web Disclaimer](#) | [Michigan News](#) | [Michigan.gov Survey](#)

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Rennaker, Joanne (DEQ)

From: Shaler, Karen (DEQ)
Sent: Wednesday, October 14, 2015 11:32 AM
To: Sygo, Jim (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Dykema, Linda D. (DHHS); Tommasulo, Karen (DEQ); Busch, Stephen (DEQ); Krisztian, George (DEQ)
Cc: Thelen, Mary Beth (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

The mystery is solved!

I'm covering Executive Division's main phone line this morning, and I received a call from Wayne Koper (a citizen from the Thumb area) who said he faxed to 373-1610 an Environmental Incident Report Form (a DAG form) regarding "poisoning of children of Flint." He said the complaint number assigned to it is: 2015-ep10081942753-A. I checked online and found out that fax number is for the DAG's Environment, Natural Resources, and Agriculture Division.

I then spoke with Peter Manning's secretary, Nancy Hart, to see if they received his form and to let her know I'd be e-mailing her a phone message from Mr. Koper to return his call. She said they have the form, and she will ask Peter if it's OK to forward a copy to me to share with you. Stay tuned.....

From: Dykema, Linda D. (DHHS)
Sent: Wednesday, October 14, 2015 8:22 AM
To: Shekter Smith, Liane (DEQ)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

The number does not look familiar to me, but it could be related to 1 of 2 pending legal actions in Kalamazoo that HHS is involved in that are unrelated to drinking water issues. Both actions pertain to lead abatement activities and/or contractor compliance with the regulations.

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, October 13, 2015 5:16 PM
To: Dykema, Linda D. (DHHS)
Cc: Tommasulo, Karen (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: RE: DHHS Complaint Number? - RE: environmental complaint filed on Oct. 8

Linda – does this look familiar to you? We're having trouble figuring out what this is referring to.

If not – any suggestions on who else we should check with?

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To: Wurfel, Brad (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: environmental complaint filed on Oct. 8

Complaint number is, supposedly.....

2015-ep10081942753-a

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, January 09, 2015 3:25 PM
To: Willard, Veronica (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: RE: DIR00004 Warner / Water toxins in Flint MI

Veronica,

I contacted Ms. Patricia Warner and gave her the opportunity to ask me questions and/or voice concerns with the TTHM violation in Flint. Her main complaint, most common complaint across the board, is the high cost of water Flint residents are paying yet receiving water of poor quality. Another concern she voiced was the city's delay in notifying the public of increased TTHM levels. She and others feel the city should have notified residents last May when high TTHM levels were first detected.

I explained to Patricia some of the possible reasons for the increase in water rates included.... improvements needed at the WTP (necessary for full-time operation both for KWA and Flint River operation) and the cost of infrastructure to connect to KWA. The financial commitment to KWA may also be factored into increased costs; however, I stressed that the city needs to work harder at educating the public on why the water rates were increased. With regards to PN requirements, I explained how the TTHM exceedance for Flint is determined (running annual average) and the PN requirement. I stressed that...although the city has met all of the monitoring and PN requirements for this violation, it may be worthwhile for them to convey the status of TTHMs ahead of state and federal reporting deadlines as a means towards regaining public trust. I also provided technical information pertaining to TTHMs and discussed the health-effects in more detail. The duration of the call was a half hour and Patricia seemed satisfied with my response to her questions/concerns. I offered her the opportunity to call me again if she has any further questions.

If any further action is needed regarding this inquiry, please let me know.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Willard, Veronica (DEQ)
Sent: Friday, January 09, 2015 2:16 PM
To: Prysby, Mike (DEQ)

Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: FW: DIR00004 Warner / Water toxins in Flint MI

Mike – this is the official assignment.

From: DEQ-LogLetter
Sent: Friday, January 09, 2015 11:36 AM
To: Willard, Veronica (DEQ)
Cc: Thelen, Mary Beth (DEQ); Shaler, Karen (DEQ)
Subject: DIR00004 Warner / Water toxins in Flint MI

Assigned to ODWMA

Rennaker, Joanne (DEQ)

From: Shoven, Heather <shoven.heather@epa.gov>
Sent: Tuesday, January 06, 2015 11:44 AM
To: Busch, Stephen (DEQ); Crooks, Jennifer; Prysby, Mike (DEQ)
Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

Hi Steve,

Thank you for your quick response. I am relieved to see that the "water is safe to drink" is not in the notice.

Best wishes,
 Heather

Heather A. Shoven
 Compliance and Enforcement Team Leader
 Ground Water and Drinking Water Branch
 U.S. Environmental Protection Agency, Region 5
 77 W. Jackson Blvd (WG-15J), Chicago, IL 60604
 Phone: (312) 886-0153 / Email: shoven.heather@epa.gov

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Tuesday, January 06, 2015 10:40 AM
To: Shoven, Heather; Crooks, Jennifer; Prysby, Mike (DEQ)
Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

Here is the PN posting from the City's website:
<http://www.cityofflint.com/upload/TTHM%20Notification%20Final.PDF>

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shoven, Heather [mailto:shoven.heather@epa.gov]
Sent: Tuesday, January 06, 2015 11:35 AM
To: Crooks, Jennifer; Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation
Importance: High

Hi Steve and Mike,

I appreciate your work on this issue. Would you have a copy of the PN that was posted for the TTHM MCL? If they used the MDEQ template sent with the NOV, it should not include a line that the water is safe, which is quoted in the news article.

The notice from the city says Flint water is safe to drink but warns those with "a severely compromised immune system, (who) have an infant or are elderly" that they "may be at increased risk and should seek advice about drinking water from your health care provider."

http://www.mlive.com/news/flint/index.ssf/2015/01/flint_water_has_high_disinfect.html

I appreciate your time.

Best wishes,
Heather

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Compliance and Enforcement Team Leader
Ground Water and Drinking Water Branch
U.S. Environmental Protection Agency, Region 5
77 W. Jackson Blvd (WG-15J), Chicago, IL 60604
Phone: (312) 886-0153 / Email: shoven.heather@epa.gov

From: Crooks, Jennifer
Sent: Monday, January 05, 2015 2:13 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Shoven, Heather
Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

Steve and Mike: Thank you, Steve, for giving us the heads up on the TTHM violation in December. I guess the public notice went out recently; we've been inundated with calls from the SDWA hotline, as I'm sure you are too. One caller this morning wanted to know more about how EPA would get involved in the enforcement process, so I referred him to Heather Shoven, our Enforcement Chief. Below is her communication with Mr. Arthur Woodson, FYI.

I'm not sure if I asked you in December, Steve, but could you send me a copy of Flint's corrective action plan for the TTHM MCL violation when you receive it?

Thank you both for risking developing high blood pressure in dealing with Flint....

Jennifer

From: Shoven, Heather
Sent: Monday, January 05, 2015 1:53 PM
To: Crooks, Jennifer
Cc: Murphy, Thomas; Damato, Nicholas; Poy, Thomas; Bair, Rita; Deltoral, Miguel
Subject: FYI: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

Hi Jennifer,

I wanted to follow-up on our phone conversation by documenting my discussion with Mr. Arthur Woodson (810-288-1286) this morning regarding EPA enforcement and the recent TTHM MCL violation at the Flint PWS in Michigan (NOV that you provided is attached).

He was concerned about the contents of the news article at http://www.mlive.com/news/flint/index.ssf/2015/01/flint_water_has_high_disinfect.html. Specifically, his uncle has cancer and the doctor mentioned that the DBPs in the water may be contributing to his uncle's health problems. I explained the health effects of DBPs and it being a chronic contaminant.

Mr. Woodson stated that there is a Flint City Council Meeting this evening and he would like to talk about this issue during it. He wanted to know if EPA could take enforcement action if the state and the system are not doing anything to address the contamination. I explained the basics of primacy and SDWA enforcement and how EPA is able to issue a notice of violation to a public water system. I told him that we are aware of the violation and mentioned that the state NOV provides the opportunity for the PWS to develop a corrective action plan to address the MCL violation by March 1, 2015 and the next round of DBP samples will be collected in February.

I'll let you know if I hear anything else from Mr. Woodson. I appreciate you following up with MDEQ to request a copy of the PWS's corrective action plan for the TTHM MCL violation once it's received.

Best wishes,
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U.S. Environmental Protection Agency, Region 5
77 W. Jackson Blvd (WG-15J), Chicago, IL 60604
Phone: (312) 886-0153 / Email: shoven.heather@epa.gov

From: Crooks, Jennifer
Sent: Tuesday, December 16, 2014 10:09 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas
Cc: Kuefler, Janet; Deltoral, Miguel; Noureldin, Mostafa; Porter, Andrea
Subject: FW: Flint Drinking Water TTHM Standard Violation

Attached is the Notice of Violation letter sent to Flint TODAY RE: TTHM violation.
Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Tuesday, December 16, 2014 9:18 AM
To: Crooks, Jennifer
Subject: FW: Flint Drinking Water TTHM Standard Violation

Jennifer,

Our TTHM Violation Notice to Flint is attached in case you get any calls. If you have any questions give us a call.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 16, 2014 10:16 AM
To: Datema, Maggie (DEQ); 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: prysbym@michigan.gov; Richard Benzie P.E. (BENZIER@michigan.gov); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov); Adam Rosenthal (rosenthala@michigan.gov)
Subject: Flint Drinking Water TTHM Standard Violation

Attached is a copy of the Violation Notice and Public Notice Template being mailed to the City of Flint by the DEQ Office of Drinking Water and Municipal Assistance regarding an exceedance of the Maximum Contaminant Level standard for Total Trihalomethanes at certain locations within the City's drinking water distribution system.

You are being provided an electronic copy of this notice as exceedance of this drinking water standard is expected to generate inquiries from water system customers, news media, and the general public.

Maggie Datema will be informing members of the Michigan legislature.

If you have any questions or would like any additional information, you may contact Michael Prysby, District Engineer, DEQ-ODWMA at 517-290-8817, or you may contact me at the number below.

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Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

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Cc: Shoven, Heather
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Sent: Tuesday, December 16, 2014 10:09 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas
Cc: Kuefler, Janet; Deltoral, Miguel; Noureldin, Mostafa; Porter, Andrea
Subject: FW: Flint Drinking Water TTHM Standard Violation

Attached is the Notice of Violation letter sent to Flint TODAY RE: TTHM violation.
 Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Tuesday, December 16, 2014 9:18 AM
To: Crooks, Jennifer
Subject: FW: Flint Drinking Water TTHM Standard Violation

Jennifer,

Our TTHM Violation Notice to Flint is attached in case you get any calls. If you have any questions give us a call.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 16, 2014 10:16 AM
To: Datema, Maggie (DEQ); 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: prysbym@michigan.gov; Richard Benzie P.E. (BENZIER@michigan.gov); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov); Adam Rosenthal (rosenthala@michigan.gov)
Subject: Flint Drinking Water TTHM Standard Violation

Attached is a copy of the Violation Notice and Public Notice Template being mailed to the City of Flint by the DEQ Office of Drinking Water and Municipal Assistance regarding an exceedance of the Maximum Contaminant Level standard for Total Trihalomethanes at certain locations within the City's drinking water distribution system.

You are being provided an electronic copy of this notice as exceedance of this drinking water standard is expected to generate inquiries from water system customers, news media, and the general public.

Maggie Datema will be informing members of the Michigan legislature.

If you have any questions or would like any additional information, you may contact Michael Prysby, District Engineer, DEQ-ODWMA at 517-290-8817, or you may contact me at the number below.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Krisztian, George (DEQ)
Sent: Thursday, November 05, 2015 5:14 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Sygo, Jim (DEQ); Shaler, Karen (DEQ); Wyant, Dan (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: RE: Drinking Water Report
Importance: High

Please provide me with your information by COB on Friday (11/06/15). Please make sure you include the additional items as requested by the Governor.

Thank you!
 George

George L. Krisztian
 Flint Action Plan Coordinator
 Laboratory Director
 Michigan Department of Environmental Quality
 Desk ph (517) 284-6719
 Cell ph (517) 420-5897

From: Thelen, Mary Beth (DEQ)
Sent: Thursday, November 05, 2015 1:22 PM
To: Krisztian, George (DEQ)
Cc: Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ); Shaler, Karen (DEQ); Wyant, Dan (DEQ)
Subject: Drinking Water Report
Importance: High

George,

The Governor has asked for our Monday reports to include some additional information/format as described below for each Monday.

He asked that they include: key actions, positions, concerns, changes from previous report, and checklist on what is supposed to be done and when.

Thanks.

From: Bedan, Morgan (GOV)
Sent: Thursday, November 05, 2015 1:13 PM
To: Thelen, Mary Beth (DEQ)
Subject: RE: Water Update Today?

Hi, Mary Beth.
 Had some feedback from the Gov on the reports.

He asked that they include: key actions, positions, concerns, changes from previous report, and checklist on what is supposed to be done and when.

Thanks!

Thanks!

Rennaker, Joanne (DEQ)

From: Koryzno, Edward (Treasury)
Sent: Wednesday, May 29, 2013 7:52 AM
To: Shekter Smith, Liane (DEQ)
Cc: Sygo, Jim (DEQ); Busch, Stephen (DEQ)
Subject: RE: DWSD response on sunk costs and non-contracted rates

Liane,

I will share this information with the Treasurer and will let you know if we are able to help.

Ed



Edward B. Koryzno, Jr. | Administrator - Office of Fiscal Responsibility
 State of Michigan | 430 W. Allegan Street, 1st Floor | Lansing, MI 48922
 (517) 373-4415 | (517) 373-0633 (fax)
KoryznoE@michigan.gov



Think Green! Don't print this e-mail unless you need to.

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, is for the sole use of the intended recipient(s) and may contain information that is confidential and protected from disclosure under the law. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail, and delete/destroy all copies of the original message and attachments.
 Thank you

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, May 28, 2013 3:43 PM
To: Koryzno, Edward (Treasury)
Cc: Sygo, Jim (DEQ); Busch, Stephen (DEQ)
Subject: FW: DWSD response on sunk costs and non-contracted rates

Ed –

Please see the note below.

Staff have identified that delays regarding future cost estimates are impacting the city of Flint's ability to move forward with decisions regarding water treatment plant planning. Based on the attached letter from DWSD, it appears that a cost estimate may not be available for Flint until at least the end of the calendar year.

Does your office have the ability to intervene or persuade parties to cooperate? Is it possible to for your Office to prompt a quicker response?

Appreciate any assistance your Office can provide.

Regards,
 Liane

Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
517-373-9523

From: Busch, Stephen (DEQ)
Sent: Thursday, May 23, 2013 10:36 AM
To: Shekter Smith, Liane (DEQ)
Cc: Bloemker, Jon (DEQ); Benzie, Richard (DEQ); Donaldson, Kristina (DEQ); Prysby, Mike (DEQ)
Subject: DWSD response on sunk costs and non-contracted rates

Liane,

Attached is the letter from DWSD (Sue McCormick) to Treasurer Dillon regarding stranded or sunk costs and non-contracted water rates to the City of Flint and Genesee County water systems. These were requested by the Governor during the meeting I attended on April 20, though DWSD was supposed to provide actual figures by the April 24 response.

While the DEQ does not involve itself in rate negotiations between parties, continued delays in not having these costs and rates negotiated creates burdens on both sides which places the ability to complete other capital improvement and rehabilitation projects in limbo, creating the potential for compliance issues. Uncertainties regarding the future of the DWSD also add complexity to this situation.

As both the City of Flint and City of Detroit will continue to reside under auspices of emergency financial managers administered by the Treasury Department for the near future, it is hoped that resolutions to these issues can be reached in a timely manner.

We would greatly appreciate it if you and/or Director Wyant could relay these concerns as part of the DEQ's continued discussions with the Treasury Department and keep things moving forward. We of course, will continue to provide any technical assistance they might request.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, October 06, 2014 11:39 AM
To: Ladouceur, Anita (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Email Inquiry

Anita,

I called Ms. Dumas this morning and explained to her the factors contributing to the boil water advisory and the aesthetic water quality problems at her location (she resides in the BWA area). She was wondering if the State was overseeing the situation in Flint pertaining to the drinking water. I explained to her our role in the DEQ's oversight of the Flint city water supply. The call was productive and her concerns were addressed.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Ladouceur, Anita (DEQ)
Sent: Monday, October 06, 2014 9:18 AM
To: Prysby, Mike (DEQ)
Subject: FW: Email Inquiry

Hi Mike:

This looks like it is for you.

Anita

From: deq-assist
Sent: Monday, October 06, 2014 9:13 AM
To: Ladouceur, Anita (DEQ)
Subject: FW: Email Inquiry

Good morning Anita,
Please review the attached customer email and respond at your earliest convenience or if another staff member is a more appropriate responder, then please forward.
Thank you for your continued assistance.
I greatly appreciate your support.

Tonya

Tonya Schelter, Department Analyst
Michigan Department of Environmental Quality
Office of Environmental Assistance
Environmental Assistance Center 1-800-662-9278

517-284-6873
scheltert@michigan.gov
Deq-assist@michigan.gov

517-284-7272 SARA Title III Program Phone
Deq-sara@michigan.gov

Thanks for contacting our Department of Environmental Quality, Office of Environmental Assistance. To help us improve our services, we encourage you to complete our short customer service survey
<https://www.surveymonkey.com/s/oeacs>

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Monday, January 12, 2015 1:02 PM
To: Prysby, Mike (DEQ); Wolf, Jennifer (DEQ); Doll, Jeanette (DTMB); Busch, Stephen (DEQ)
Cc: VanOtteren, Bruce (DNR); Shekter Smith, Liane (DEQ)
Subject: RE: Facility Notification: Flint State Office Building

I have several questions about this matter. Why does "public traffic" deserve a higher consideration than concern for state workers? How does that reasoning appear to state employees? A visitor may take one drink of water from this site in their lifetime. State workers (like any employees) may get half of the water they consume each day at their place of employment. Which group faces the greater health risk from drinking water in state occupied premises? Are other state owned/occupied facilities in Flint being provided with the same service? How about a Secretary of State's offices or the DHS facilities? Are there any state correctional facilities that receive drinking water from Flint?

What would DTMB have done if the problem had occurred in Lansing? Would the state of Michigan be providing bottled water or an alternate supply of drinking water to all of the state owned or state employee locations that receive Lansing drinking water and allow public access? Who would make that decision? Why wouldn't that decision maker seek the advice of the Office of Drinking Water and Municipal Assistance before deciding? Would it be building by building or one decision be made for state facilities?

How does this action by DTMB impact the answer when ODWMA district staff are asked by others in the media or from the general public about whether Flint residents should continue to consume Flint's drinking water with elevated disinfection byproducts? No doubt it will make it more difficult from a perception standpoint for ODWMA staff.

If this matter were about an acute health threat, such as E.coli or nitrates, then I would applaud the decision. But when we are dealing with a chronic health threat in a community water system, I think the appropriate action is to ensure public awareness and education, establish a reasonable compliance schedule, and allow individuals to make personal choices if they wish. And if someone like GM or the State of Michigan decides to implement such measures as supplying an alternate water supply for a chronic health threat that should be of a limited duration, fine, but it should be uniformly implemented.

If DTMB would like to meet to discuss this issue and procedures for communication and possible actions in future, similar events, we would be willing to participate.

Richard Benzie, P.E., Chief
 Field Operations Section
 Office of Drinking Water and Municipal Assistance, MDEQ
 517-284-6512

From: Prysby, Mike (DEQ)
Sent: Monday, January 12, 2015 10:22 AM
To: Wolf, Jennifer (DEQ)
Cc: VanOtteren, Bruce (DNR); Doll, Jeanette (DTMB); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Facility Notification: Flint State Office Building

Jennifer,

I spoke with Jeanette this morning. She informed me....given that this state building has high public traffic (Flint citizens); it was felt prudent to offer an alternative supply of drinking water to citizens entering the building. Jeanette asked me what should be expected with the next round of samples (March time-frame). I explained to her how compliance with TTHMs is determined (based on a running annual average of 4 quarters) and the public notification requirements. The city's next round of samples will be collected around the 3rd week of Feb; however, regardless of sample results, compliance with the TTHM MCL will not be re-achieved due to the high levels detected last summer. Although the city will remain out of compliance, (primarily based on the previous results), the November sample results were substantially lower (7 of 8 locations below the MCL). We anticipate that most (if not all) locations will be in compliance with the February monitoring. The city; however, needs to make a diligent effort to convey TTHM status to their residents as soon as possible after new results become available (regardless of compliance status). Jeanette will pass this information on.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Wolf, Jennifer (DEQ)
Sent: Friday, January 09, 2015 10:42 AM
To: Prysby, Mike (DEQ)
Cc: VanOtteren, Bruce (DNR); Doll, Jeanette (DTMB)
Subject: FW: Facility Notification: Flint State Office Building

Hi Mike!

Are you handling this one? If so are you able to address Jeanette's below?

SGT. JEN WOLF
MI DEPT. OF ENVIRONMENTAL QUALITY
MI DEPT. OF NATURAL RESOURCES
LAW ENFORCEMENT DIVISION
EMERGENCY MANAGEMENT
DESK: 517-284-6231
CELL: 517-719-0028

From: Doll, Jeanette (DTMB)
Sent: Friday, January 09, 2015 7:33 AM
To: VanOtteren, Bruce (DNR); Wolf, Jennifer (DEQ)
Subject: FW: Facility Notification: Flint State Office Building

Good morning!

My phone call was referencing the advisory our Real Estate Division received from the City of Flint. Just wanted to know if we would know sooner than March 1 on the TTHM levels.

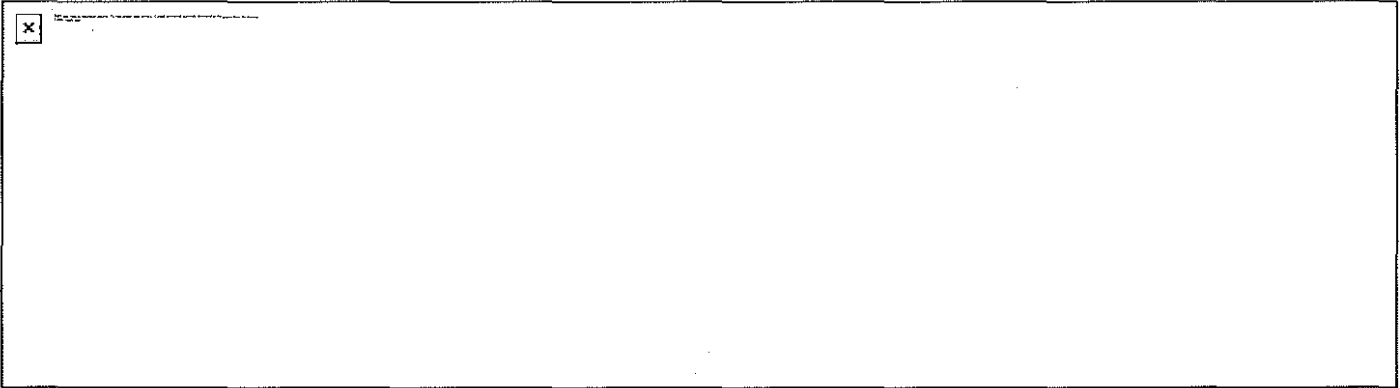
Jeanette

From: DTMB Facilities [<mailto:dtmb@govsubscriptions.michigan.gov>]

Sent: Wednesday, January 07, 2015 11:49 AM

To: Doll, Jeanette (DTMB)

Subject: Facility Notification: Flint State Office Building



Flint Water Advisory

Date/Time:

Effective Wednesday, January 7, 2015

Details:

The City of Flint recently sent out the attached notice regarding violations to the drinking water standards. While the City of Flint states that corrective actions are not necessary, DTMB is in the process of providing a water cooler on each occupied floor, positioned near the water fountain, so you can choose which water to drink. The coolers will arrive today and will be provided as long as the public water does not meet treatment requirements.

- [Flint Water.pdf](#)

Contact:

DTMB Customer Service Center, DTMB-Customerservice@michigan.gov or (517) 373-6227



Since we spend about 40 hours a week at our workplaces, isn't the office the best place to try out some new energy-saving tricks? The Energy Information Administration estimates that if commercial and industrial buildings improved their energy efficiency by 10 percent, our economy could see yearly savings of nearly \$20 billion.

This email was sent to dolj@michigan.gov using GovDelivery, on behalf of DTMB · Lewis Cass Building · 320 South Walnut Street · Lansing, MI 48933 (517) 373-1004

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, January 12, 2015 10:22 AM
To: Wolf, Jennifer (DEQ)
Cc: VanOtteren, Bruce (DNR); Doll, Jeanette (DTMB); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Facility Notification: Flint State Office Building

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Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Wolf, Jennifer (DEQ)
Sent: Friday, January 09, 2015 10:42 AM
To: Prysby, Mike (DEQ)
Cc: VanOtteren, Bruce (DNR); Doll, Jeanette (DTMB)
Subject: FW: Facility Notification: Flint State Office Building

Hi Mike!

Are you handling this one? If so are you able to address Jeanette's below?

SGT. JEN WOLF
 MI DEPT. OF ENVIRONMENTAL QUALITY
 MI DEPT. OF NATURAL RESOURCES
 LAW ENFORCEMENT DIVISION
 EMERGENCY MANAGEMENT

DESK: 517-284-6231

CELL: 517-719-0028

From: Doll, Jeanette (DTMB)

Sent: Friday, January 09, 2015 7:33 AM

To: VanOtteren, Bruce (DNR); Wolf, Jennifer (DEQ)

Subject: FW: Facility Notification: Flint State Office Building

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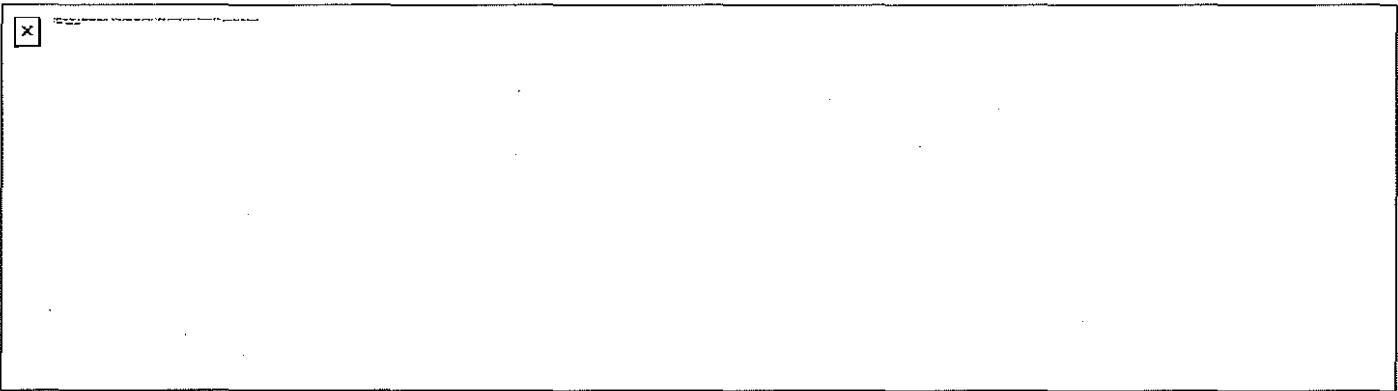
Jeanette

From: DTMB Facilities [<mailto:dtmb@govsubscriptions.michigan.gov>]

Sent: Wednesday, January 07, 2015 11:49 AM

To: Doll, Jeanette (DTMB)

Subject: Facility Notification: Flint State Office Building



Flint Water Advisory

Date/Time:

Effective Wednesday, January 7, 2015

Details:

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- [Flint Water.pdf](#)

Contact:

DTMB Customer Service Center, DTMB-Customerservice@michigan.gov or (517) 373-6227

	Since we spend about 40 hours a week at our workplaces, isn't the office the best place to try out some new energy-saving tricks? The Energy Information Administration estimates that if commercial and industrial buildings improved their energy efficiency by 10 percent, our economy could see yearly savings of nearly \$20 billion.
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This email was sent to dolli@michigan.gov using GovDelivery, on behalf of DTMB · Lewis Cass Building · 320 South Walnut Street · Lansing, MI 48933 (517) 373-1004

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Wednesday, August 20, 2014 3:39 PM
To: 'bwright@cityofflint.com'; Mike Glasgow; djohnson@cityofflint.com
Cc: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint - 02310 Fecal Positive / Boil order
Attachments: Boil PN Rescind Notice.doc

Attached is a rescind boil notice for you to use. Your public notice requirements include sending us signed and dated copies of the notices you issued within 10 days – we need copies by Monday, August 25, 2014. As a heads up, failure to do so would result in a violation with possible monetary penalties.

You also need to put the public notices (boil notice and lift notice) on your website – the media took liberties on what parts were published, and you need the whole notice available.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

From: Rosenthal, Adam (DEQ)
Sent: Friday, August 15, 2014 5:48 PM
To: 'bwright@cityofflint.com'; Mike Glasgow; 'djohnson@cityofflint.com'
Cc: Busch, Stephen (DEQ); Sygo, Jim (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Prysby, Mike (DEQ); Joseph, Mark (DEQ); Skinker, Bethel (DEQ); Cook, Pat (DEQ)
Subject: Flint - 02310 Fecal Positive / Boil order

Summary:

8/12/14 – 3 routine samples test positive for total coliform (TC), Cedar Reservoir, Site 4 & Site 5.

Free Chlorine was 0 and Total Cl around 0.1 ppm.

8/13/14 – 9 repeat samples collected, 7 TC positive & 1 fecal positive downstream of Site 4

Site 4 is a Taco Bell, downstream site is a repair shop with a questionable tap.

8/14/14 – 2nd set of 9 repeat samples collected, 8 repeats Non Detect and Site 4 TC positive (downstream site with the fecal positive was cleaned and is now non detect.) Chlorine has been increased and detected at 0.2 – 0.5 ppm Free Cl.

With the confirmed fecal positive, the MCL has been elevated to require a Tier 1 Public Notice to be issued within 24 hrs of notification. The DEQ is issuing a Boil Water Order to the affected area (Public Notice attached). A 2nd Tier 2 MCL PN may be necessary once the August monitoring period is complete and the situation is resolved.

The City of Flint has been instructed to issue the Tier 1 PN according to their Emergency Response Plan, flush the system, and collect 2 sets of 5 samples 24 hrs apart in the affected area before lifting the boil order.

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Wednesday, January 23, 2013 10:25 AM
To: Prysby, Mike (DEQ); Bloemker, Jon (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Cc: Butler, Sonya (DEQ)
Subject: RE: Flint - Dept of Treasury

Great answers, Mike. The only comments/clarifications I have are in regards to the question on the use of the DWRF to operate the treatment plant full time. The DWRF may be used to construct facilities necessary to make full time operation feasible. However, it should be clear that "operating costs" are not eligible.

Also, any application to the DWRF requires a comprehensive, 20-year project plan, not a one-time, project specific request. The fact that the city of Flint recently turned down a DWRF loan even with a significant portion of it to be "forgiven" that was intended to address high priority distribution system needs cannot be overlooked. The city would have to include these needs in any revised/new project plan and satisfactorily explain any decision to not include these distribution improvements in this new loan application.

From: Prysby, Mike (DEQ)
Sent: Wednesday, January 23, 2013 10:01 AM
To: Bloemker, Jon (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Flint - Dept of Treasury

I spoke with Mr. Randy Byrne from the Dept. Treasury – Office of Fiscal Resp. concerning the Flint WTP. Below is a brief summary of our discussion. I can fill you on more details this afternoon just prior or immediately after our KWA meeting.

Q1: The city of Flint has considered using the Flint River as a source of drinking water to be treated at their WTP; however,

The city may be somewhat reluctant to use the river as their source, what is your assessment of this issue?

A: The city could utilize the Flint River ranging from 100% utilization – to a certain percent blending (either Detroit or KWA) or

zero percent utilization of the river. I agree that the city should have concerns of fully utilizing the Flint River (100%) for the following; the need to soften, the potential for more advanced treatment after next round of crypto monitoring, available capacity in Flint River at 100-year low flow, residuals management (disposal of lime sludge). As the percent utilization of the river decreases (blending options), the need for softening, residuals disposal, capacity issues do not pose as much of a concern.

Q2: When comparing the treatment of Lake Huron water vs. Flint River water, are more treatment chemicals needed to effectively treat the water?

A2: Flint river water will require a larger amount of primary coagulant (Ferric) due to poorer raw water quality than Lake Huron water. Also, a different type of primary coagulant (Alum) may be more suitable for the treatment of Lake Huron water. I can confirm that based on what the Detroit Lake Huron WTP uses. Also, since softening would need to be employed, treatment compounds including lime, soda ash, and carbon dioxide would be necessary.

Q3: If the city needed to borrow money to be able to operate full time (KWA or blending), does the DEQ offer funding via the DWRF?

A3: The city could apply for DWRF funding and their eligibility would be based upon how well they score in the overall DWRF ranking process. Also, the total amount of the loan and their ability to repay the loan would be considered.

Q4: Flint has put forth a significant capital investment over the past 10 years to maintain their WTP, is the condition of the WTP sufficient for full time treatment of raw water from Lake Huron ? Are the operators qualified to operate the WTP?

A4: The Flint WTP has demonstrated its ability to treat raw water (Flint River) and meet the drinking water standards based on quarterly test runs since 2009 and two pipeline emergencies that occurred in 2009 where water from the WTP was distributed to the city. Successful operation of the WTP on an intermittent basis is difficult. WTP operators face the constant challenge of maintaining WTP components in good working order while the plant is normally out of service over 90% of the time. The reliability of WTP and its components are better maintained through continuous operation. The operating experience and knowledge of the operators is also better established with full-time operation. WTP operators have the required operator certification and are very familiar with the operation of the Flint WTP, meeting drinking water standards, and troubleshooting operational problems. The Flint WTP is capable of meeting the drinking water standard if the plant was utilized to treat raw water from Lake Huron.

Q5: Do you see any weak links in the WTP or significant improvements if the WTP were to be fully utilized?

A5: I would not see any major treatment changes or additions needed if Lake Huron water was utilized; however, in order for the city to fully utilize its storage capacity, a pumping station would need to be added immediately after the WTP such that treated water can be pumped into the city's 20-Mgal Dort reservoir. In the current configuration, water from Detroit flows by gravity through this reservoir and then into the WTP's 3 Mgal reservoir followed by pumping via Pump Station No. 4 into the city's distribution system. Improvement in stand-by power may also be necessary. Finally, if a component of Flint River water were to

be treated, then more advanced treatment based upon higher bin classification (UV disinfection, etc.) could be required based upon crypto. results.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 335-6122

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, March 20, 2013 8:45 AM
To: Busch, Stephen (DEQ); Bloemker, Jon (DEQ); Ashford, Stephen (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: Flint - KWA - Decision Delayed

As I am wrapping up Flint's Sanitary....15 MGD capacity from the pipeline seems a bit short....based on their 5 year ADD of 13.9 MGD and their 5-year MDD of 21.6 MGD.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 335-6122

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 20, 2013 8:41 AM
To: Prysby, Mike (DEQ); Bloemker, Jon (DEQ); Ashford, Stephen (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: Flint - KWA - Decision Delayed

The latest of the latest.

http://www.mlive.com/news/flint/index.ssf/2013/03/genesee_county_board_chairman_26.html

http://www.mlive.com/news/flint/index.ssf/2013/03/detroit_claims_karegnondi_wate.html

http://www.mlive.com/news/flint/index.ssf/2013/03/read_it_here_full_report_that.html

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 20, 2013 8:38 AM
To: prysbym@michigan.gov; 'Jon Bloemker P.E. (BLOEMKERJ@michigan.gov)'; 'Stephen Ashford P.E. (ASHFORDS@michigan.gov)'
Cc: 'Richard Benzie P.E. (BENZIER@michigan.gov)'
Subject: RE: Flint - KWA - Decision Delayed

The latest on Flint:

http://www.mlive.com/news/flint/index.ssf/2013/03/flint_city_council_modifies_wa.html

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Busch, Stephen (DEQ)
Sent: Friday, March 15, 2013 3:22 PM
To: prysbym@michigan.gov; 'Jon Bloemker P.E. (BLOEMKERJ@michigan.gov)'; 'Stephen Ashford P.E. (ASHFORDS@michigan.gov)'
Cc: 'Richard Benzie P.E. (BENZIER@michigan.gov)'
Subject: Flint - KWA - Decision Delayed

FYI.

http://www.mlive.com/news/flint/index.ssf/2013/03/flint_city_council_delays_deci.html

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, January 30, 2015 11:34 AM
To: Jeff Markstrom
Cc: Busch, Stephen (DEQ)
Subject: Re: Flint 24" Water Main Phase 1

Not in today ... And we can discuss further next week...proper sizing is important especially given the TTHM issue and stagnation contributing... I recall in our earlier discussion that the system model would be revisited to confirm whether this transmission main is properly sized or if a smaller sized main would be better suited given the decline in the city's customer base. I did not see any discussion of this in the submittal.

Sent from my iPhone

On Jan 30, 2015, at 9:10 AM, "Jeff Markstrom" <JMarkstrom@rowepsc.com> wrote:

Mike,

Good morning, hope all is well. I was following up with you to see if you had a chance to review the Phase 1 for the 24" WM project we submitted to you a few weeks back. The City just put this project out for bids this week and I wanted to make sure that we will have a permit soon.

Second thing is that the City is having us pull together a second project Phase 2 for the 24" WM project that we should be sending your way in the next couple weeks for review. The city wants to have a second project on the street in about a month so the construction is staggered a little this summer. Both projects are budgeted to get constructed this summer/fall.

I look forward to your response.

Jeff B. Markstrom, P.E., Senior Project Manager
ROWE Professional Services Company

<image001.jpg>

540 South Saginaw Street, Suite 200, P.O. Box 3748, Flint, MI 48502
tel: 810.341.7500 x232 / fax: 810.341.7573 / cell: 810.869.5398
JMarkstrom@rowepsc.com / www.rowepsc.com

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Wednesday, February 11, 2015 5:13 PM
To: Busch, Stephen (DEQ)
Subject: RE: Flint ABC 12 call

Interesting question.

Story is City of Flint's "franchise customers." They don't live in flint proper, but they do use flint water. Their water bill comes from Genesee County.

They apparently did not get the notice about the TTHM exceedance. The law says the city must notify its customers. Flint contends it notified the county and expected the county to notify the customers. County said it never got that notice ...

Not sure what was supposed to happen for 'franchise' customers or who was responsible for what. Are you familiar with how that was supposed to work? Important mostly going forward, as it is likely they'll be doing this show again in March...

She needs an answer sometime tomorrow morning. This story will air at their 11 a.m. show.

Thanks.

b

From: Busch, Stephen (DEQ)
Sent: Wednesday, February 11, 2015 4:08 PM
To: Wurfel, Brad (DEQ)
Subject: Flint ABC 12 call

Brad,

Jessica from ABC 12 in Flint left me a message. Can you please call her back. No specific reference to Flint water but I assume that's what her question is about.

Her number is 248-721-1301. Thanks.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, February 12, 2014 11:06 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Monosmith, Carrie (DEQ); Craig, John (DEQ)
Cc: Prysby, Mike (DEQ); Brim, Richard (DEQ)
Subject: RE: Flint ACO language

The language below in quotes is not what is included in the Order.

In general, I think what is provided below addresses our concern that we are not requiring them to use KWA as their source. It acknowledges that either scenario will require changes which must be permitted under Act 399. Not sure what is provided is the only or best way to say it; but I have no problem with it as written.

I do have a few other questions/comments on the Order in general that I will share with Rich.

From: Busch, Stephen (DEQ)
Sent: Wednesday, February 12, 2014 9:45 AM
To: Benzie, Richard (DEQ); Monosmith, Carrie (DEQ); Craig, John (DEQ); Shekter Smith, Liane (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: FW: Flint ACO language

We are still trying to negotiate language in ACO the "Statement of Purpose" section that will appease both parties. They would like us to use the language in quotations below. The revised language does not force connection to KWA, and instead allows other options. As we have stated in the past construction permits will be necessary for the connection to KWA and construction permits are also necessary to allow the Flint WTP to operate on a continuous (non-emergency basis) regardless of source.

If this language will not be acceptable I need to know and will need to discuss how what we would want to adjust. The last ACO draft is attached for reference.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Robinson, Michael [<mailto:MRobinson@wnj.com>]
Sent: Monday, February 10, 2014 5:44 PM
To: Busch, Stephen (DEQ)
Cc: Daugherty Johnson
Subject: ACO

Steve, I checked with the City's bond counsel, and here is language that we MUST include in the consent order so that the City can move forward on this. Please let me know immediately if this language is or is not acceptable. If you would like to discuss it, please let me know.

Thanks,
 Mike

“The respondent plans to use the Flint River as its temporary source of untreated water supply until KWA water is available. The respondent must undertake the KWA public improvement project or undertake other public improvement projects to continue to use the Flint River, such as additional water treatment plant public improvements, source water protection public improvements and public improvements to obtain back-up water supply, in order to comply with Act 399.”

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Wednesday, September 30, 2015 8:10 AM
To: Busch, Stephen (DEQ)
Cc: Philip, Kris (DEQ); Cook, Pat (DEQ); Shekter Smith, Liane (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Flint Briefing - Draft 9-29-15

I will read it this morning before it is final.

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 30, 2015 7:09:03 AM
To: Benzie, Richard (DEQ)
Cc: Philip, Kris (DEQ); Cook, Pat (DEQ); Shekter Smith, Liane (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: RE: Flint Briefing - Draft 9-29-15

I made edits last night to try and get closer to one page. The content was a bit heavy on regulations and I have reordered things to line up the regulatory aspect with what has occurred with the City.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

From: Benzie, Richard (DEQ)
Sent: Tuesday, September 29, 2015 6:29 PM
To: Busch, Stephen (DEQ)
Cc: Philip, Kris (DEQ); Cook, Pat (DEQ); Shekter Smith, Liane (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Flint Briefing - Draft 9-29-15

Steve,

Here's an updated version where I deleted some things, corrected others, changed the order of a couple of things and inserted the last section that I think is particularly applicable in Flint.

This is a draft. Please do not distribute or cite it elsewhere. If you see something that is wrong or you know something else should be included, let me or Steve know before 9 AM tomorrow.

Richard

Rennaker, Joanne (DEQ)

From: Benzie, Richard (DEQ)
Sent: Wednesday, September 30, 2015 3:07 PM
To: Busch, Stephen (DEQ); Rennaker, Joanne (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ); Skinker, Bethel (DEQ); Joseph, Mark (DEQ); Swendsen, Kurt (DEQ)
Cc: Shekter Smith, Liane (DEQ); Devereaux, Tracy Jo (DEQ); Philip, Kris (DEQ); Cook, Pat (DEQ); Howd, Pamela (DEQ)
Subject: RE: Flint calls

ODWMA is receiving a lot of calls with questions from Flint residents concerned about the safety of their drinking water. If you receive one of these calls, our message should be consistent – the drinking water distributed to city customers currently meets all drinking water standards and is considered safe. However, there is no safe level for lead. The fact that Flint meets the drinking water standard is based on an evaluation of the effectiveness of their treatment system to minimize lead leaching from plumbing materials. Compliance does not mean that under certain conditions that some homeowners may still have water in their domestic plumbing that has leached some lead from lead pipes or lead solder.

The only way for a resident to know if they may be exposed to lead leaching from their plumbing system is having a sample from that residence analyzed for lead at a certified laboratory. The DEQ laboratory is not providing that service at no cost. The city of Flint currently is accommodating requests from residents without charging them, but the residents have to go through the city to arrange that sampling, and the city may have a backlog right now.

If the caller has a result that indicates lead is present, or in the absence of a result, our advice should be to minimize any stagnation of the water before consumption, even without knowing if they have plumbing that contains lead. You could tell them they can do so by letting a faucet run for a few minutes or until the water is cooler (don't set a time – it can be so variable) and then use it for drinking or cooking.

Please be polite and empathetic if you receive one of these calls.

I also want to thank you for the effort you have made to respond to this issue. It is noticed and appreciated. In recognition of your performance, I have arranged for you to receive a 2 percent merit increase starting tomorrow.

Richard

Richard Benzie, P.E., Chief
 Field Operations Section
 Office of Drinking Water and Municipal Assistance, MDEQ
 517-284-6512

Rennaker, Joanne (DEQ)

From: Lutgarde Raskin <raskin@umich.edu>
Sent: Thursday, August 06, 2015 9:53 PM
To: Busch, Stephen (DEQ)
Cc: stuartb@umich.edu; Shekter Smith, Liane (DEQ); Krista Wigginton
Subject: Re: Flint Contacts

Liane and Steve,

Thanks very much for meeting with us on short notice and for a very helpful discussion. Thanks also for sending the contact information for the city people and consultants. We'll keep you posted.

Best regards,
 Lut

*Lutgarde Raskin, Ph.D., WEF Fellow, AAM Fellow
 Altarum/ERIM Russell O'Neal Professor of Engineering and Graduate Chair
 Dept. of Civil and Environmental Engineering
 University of Michigan
 1351 Beal Ave., 107 EWRE Bldg.
 Ann Arbor, MI 48109-2125
 734-647-6920; raskin@umich.edu; <http://envbiotech.engin.umich.edu/>*

Check out the new Royal Society of Chemistry Journal: Environmental Science: Water Research & Technology (ES:WRT). Publications in ES:WRT are available for free through a registered account. Call for papers: Drinking Water Exposome themed issue. Deadline for receipt of manuscripts is January 10, 2016.

On Thu, Aug 6, 2015 at 10:54 AM, Busch, Stephen (DEQ) <BUSCHS@michigan.gov> wrote:

Per our discussion yesterday here are the contacts you requested. I will contact Mike to let him know you will be in touch.

City contacts include:

Mike Glasgow, Utilities Administrator, City of Flint

mglasgow@cityofflint.com

[810-766-7135](tel:810-766-7135) Ext. 3512

Howard Croft, Public Works Director, City of Flint

hcroft@cityofflint.com

810-766-7135 Ext.2043

Natasha Henderson, City Administrator, City of Flint

nhenderson@cityofflint.com

810-766-7346

Consultant contacts for the City include the following (the consultants will likely need to get permission from their client, the City, prior to engaging with you on your proposals.)

J. Warren Green with Lockwood, Andrews & Newman, Inc.

JWGreen@lan-inc.com

630-918-2494

and

Marvin Gnagy with Veolia North America

419-450-2931

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Friday, May 01, 2015 11:38 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas; Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

Hi Miguel - sorry, I should have been more specific in my previous email. The rules you stated below allow large systems to be considered having optimal corrosion control if they have data from two consecutive 6 month monitoring periods that meet specific criteria. DEQ-ODWMA has not made a formal decision as to whether or not the City of Flint meets the exemption criteria or will be required to do a corrosion control study since Flint has only completed one round of 6 month monitoring. The City of Flint's second round of monitoring will be completed by June 30, 2015, and we will make a formal decision at that time. If my memory is correct, this is consistent with the process followed in the early 1990's for large systems when the Pb/Cu rule was first implemented. The Department waits until large systems complete both rounds of full scale, 6 month monitoring before making a decision about optimal corrosion control. If it is determined that Flint has to install corrosion control treatment, the rule allows up to 2 years to complete a study and 2 additional years to install the treatment unless we set a shorter time frame.

As Flint will be switching raw water sources in a just over one year from now, raw water quality will be completely different than what they currently use. Requiring a study at the current time will be of little to no value in the long term control of these chronic contaminants.

Finally, the City of Flint's sampling protocols for lead and copper monitoring comply will all current state and federal requirements. Any required modifications will be implemented at the time when such future regulatory requirements take effect.

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Saturday, April 25, 2015 10:11 AM
To: Cook, Pat (DEQ)
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTRC tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). $0.006 - 0 = 0.006$.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-S253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]

Sent: Thursday, April 23, 2015 12:33 PM

To: Cook, Pat (DEQ)

Cc: Poy, Thomas; Porter, Andrea

Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Kaplan, Robert <kaplan.robert@epa.gov>
Sent: Tuesday, October 20, 2015 3:17 PM
To: Busch, Stephen (DEQ)
Cc: Sygo, Jim (DEQ)
Subject: Re: Flint corrosion control submittal

Received, thank you very much.

Sent from my iPhone

On Oct 20, 2015, at 1:56 PM, Busch, Stephen (DEQ) <BUSCHS@michigan.gov> wrote:

Bob,

Forwarding Flint Corrosion Control proposal info per Jim's request (see the 3 attached emails).

We had a conference call with Darren Lytle and Mike Schock this morning to get some things clarified and will be summarizing that conversation. I will include you and Jim when that gets sent out. Let us know if you need anything else.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

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Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

As we discussed, Flint is not practicing corrosion control treatment at the WTP. They are conducting lead & copper monitoring at 100 locations. WQ monitoring is also being conducted. The first round of samples after switch-over (July 1, 2014 – Dec 31, 2014) had 90th percentile results as follows: Lead: 6 ppb, Copper 110 ppb

The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approx. 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 11:16 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

I agree. I'll forward this info to Miguel. However, don't be surprised if you get a call from him disagreeing with our position.

Thank you all for the quick replies.

pat

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 10:54 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring.

"The only provision of the Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead PQL for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. However States may consider the presence of copper in tap samples when determining whether the existing treatment is optimized."

I believe this condition has been met.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

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Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 11:16 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

I agree. I'll forward this info to Miguel. However, don't be surprised if you get a call from him disagreeing with our position.

Thank you all for the quick replies.

pat

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 10:54 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring.

"The only provision of the Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead PQL for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. However States may consider the presence of copper in tap samples when determining whether the existing treatment is optimized."

I believe this condition has been met.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

As we discussed, Flint is not practicing corrosion control treatment at the WTP. They are conducting lead & copper monitoring at 100 locations. WQ monitoring is also being conducted. The first round of samples after switch-over (July 1, 2014 – Dec 31, 2014) had 90th percentile results as follows: Lead: 6 ppb, Copper 110 ppb

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Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 11:56 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: Re: Flint Corrosion Control?

Pat,

You are correct, I received a call from Miguel regarding his concerns with the lead/copper sampling procedure from lead services and how he believes it is skewing down the lead level results from sites with lead services. I briefed Steve on the call and we can discuss in more detail next Tues.

Sent from my iPhone

On Apr 24, 2015, at 11:16 AM, Cook, Pat (DEQ) <COOKP@michigan.gov> wrote:

I agree. I'll forward this info to Miguel. However, don't be surprised if you get a call from him disagreeing with our position.

Thank you all for the quick replies.

pat

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 10:54 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring.

"The only provision of the Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead PQL for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. However States may consider the presence of copper in tap samples when determining whether the existing treatment is optimized."

I believe this condition has been met.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

As we discussed, Flint is not practicing corrosion control treatment at the WTP. They are conducting lead & copper monitoring at 100 locations. WQ monitoring is also being conducted. The first round of samples after switch-over (July 1, 2014 – Dec 31, 2014) had 90th percentile results as follows: Lead: 6 ppb, Copper 110 ppb

The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approx. 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:26 PM
To: Busch, Stephen (DEQ)
Cc: Cook, Pat (DEQ)
Subject: RE: Flint Corrosion Control?

Total Lead from the CMET2 on 5/22/14 was zero.

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 1:21 PM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Don't you have a plant tap metals result?

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:03 PM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

I can't find one. Since they weren't over on the 1st 6 month round after going on river water, we didn't require the monitoring.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 12:03 PM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Adam – can you please tell me Flints source water lead level? (I'm guessing 0, but need to confirm.)

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
Regulations Manager
Ground Water and Drinking Water Branch
77 West Jackson Blvd (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253