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Sent: Friday, February 06, 2015 1:48 PM
To: emurphy@cityofflint.com
Cc: 'bwright@cityofflint.com'
Subject: Flint River Source Water Assessment
Attachments: Flint River Source Water Assess..doc

Elizabeth,

Attached is a copy of the Flint River Source Water Assessment report for your information. Water treatment plant staff should have a copy of this report, if not, please provide them with a copy.

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

**Source Water Assessment Report for the
City of Flint Water Supply
Flint River Emergency Intake
February 2004**



*City of Flint Water Treatment Plant,
Flint, Michigan*

Prepared for:

City of Flint Water Supply; WSSN 2310

Prepared by:

U.S. Geological Survey, Water Resources Division, Michigan District
Michigan Department of Environmental Quality, Water Division
City of Flint Water Utilities Department

Michigan Source Water Assessment Report 54

Executive Summary

The purpose of the Source Water Assessment is to analyze the sensitivity and determine susceptibility of a community's source of drinking water to potential sources of contamination.

*Sensitivity is determined from the natural setting of the source water (raw water to the water treatment plant), and indicates natural protection afforded the source water. Using procedures established in the Great Lakes Protocol, Michigan Source Water Assessment Program, the **emergency** intake for the Flint Water Treatment Plant has a very high degree of sensitivity to potential contaminants. When the effects of agricultural and urban runoff in the Flint River watershed are considered, the Flint intake is categorized as very highly sensitive.*

*Susceptibility identifies factors within the community's source water area that may pose a risk to the water supply. The susceptibility determination provides information with respect to listed facilities and land areas within the source water area that should be given greater priority and oversight in implementing a source water protection program. The source water area for the Flint **emergency** intake includes 96 potential contaminant sources, 16 listed potential contaminant sources within the susceptible area, plus urban and agricultural runoff from the Flint River watershed into the Flint River. The potential contaminant sources, in combination with the very highly sensitive intake, indicate that the Flint **emergency** intake source water is very highly susceptible to potential contamination.*

*The Flint **emergency** intake source water is categorized as very highly susceptible, given land uses and potential contaminant sources within the source water area. However, it is noted that when operating, the City of Flint Water Treatment Plant has effectively treated this source water to meet drinking water standards. The City of Flint has instituted pollution prevention programs, but should be cognizant of additional potential threats to its source of drinking water that are identified in this report. This report explains the background and basis for these determinations.*

Using this Assessment

Clean, safe drinking water is fundamental to the viability of any community. Protecting the drinking water source is a wise and relatively inexpensive investment in your community's future. The overall intent of this assessment is to provide background information for your community to use in developing a local source water protection program. The assessment benefits your community by providing the following:

- *A basis for focusing limited resources within the community to protect the drinking water source(s).*

The assessment provides your community with information regarding activities within the **source water area (SWA)** that directly affect your water supply. It is within this SWA that a spill or improper use of **potential contaminants** may cause these contaminants to migrate toward the water intake. By examining where the source waters are most susceptible to contaminants, and where potential contaminants are located, the assessment clearly illustrates the potential risks that should be addressed.

- *A basis for informed decision-making regarding land use within the community.*

The assessment provides your community with a significant amount of information regarding where your drinking water comes from (the source) and what the risks are to the quality of that source. Knowing where the resource is allows your community planning authorities to

make informed decisions regarding proposed land uses within the SWA that are compatible with both your drinking water resource and the vision of growth embraced by your community.

- *A basis for dealing with future regulations.*

The assessment has been designed to functionally meet proposed requirements for surface-water supplies. Information needed to address regulatory needs and requirements has been collected and made available to your community through this report.

This source water assessment also provides the basis for a locally developed, voluntary source water protection program. Communities interested in voluntarily developing source water protection programs should contact the Michigan Department of Environmental Quality (MDEQ) or visit the Department web page at <http://www.deq.state.mi.us>.

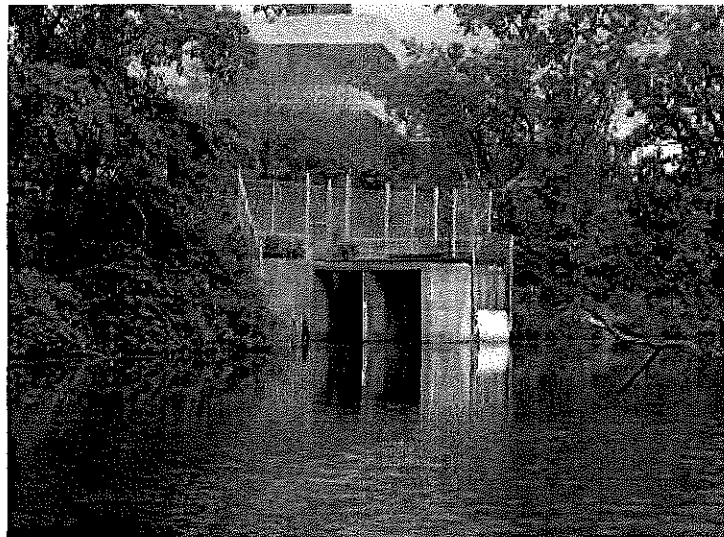
Introduction

In 1996, Congress amended the **Safe Drinking Water Act** and provided resources for state agencies to conduct source water assessments by identifying SWAs, analyzing the **sensitivity** of the source to natural conditions, conducting contaminant source inventories, and determining the **susceptibility** of the source to potential contamination. Delineations, sensitivity analyses, contaminant inventories, and susceptibility determinations comprise a "source water assessment." Assessments will be completed for every public water supply source in Michigan. To support this effort, the MDEQ Water Division established a partnership with the U.S. Geological Survey (USGS) to develop a method for conducting source water assessments for surface water supplies (Sweat and others, 2000; Sweat and others, 2001).

The requirements for public water supplies in Michigan to meet United States Environmental Protection Agency (USEPA) **maximum contaminant levels (MCLs)** provide some degree of assurance of safe drinking water; however, all systems are vulnerable to potential contamination. One of the best ways to ensure safe drinking water is to develop a local program designed to protect the source of drinking water against potential contamination. Not only does this add a margin of safety, but it also raises the awareness of consumers and/or the community of the risks of drinking water contamination. It is expected that source water assessment results will provide a basis for developing a source water protection program.

Background

Flint is located in Genesee County, about 55 miles northwest of Detroit, Michigan (fig. 1). The city of Flint water supply serves a population of 125,000. In 1967, the city connected to the Detroit Water and Sewage Department (DWSD) water supply and the Flint Water Treatment Plant (WTP) was placed on stand-by operation. The city is required by the MDEQ to maintain this treatment facility for reliability since the city obtains treated water through a single pipeline from the DWSD Lake Huron WTP which is subject to interruption of service. The present intake at the Flint WTP was constructed in 1948 and consists of a concrete box structure on the edge of the Flint River. The intake structure has a bottom elevation of 700.00 and connects through a 72-inch concrete pipe to the low service pump station. Low service pumps lift the river water through the WTP processes of conventional treatment and lime-soda softening.



*Flint WTP Emergency, Flint River Intake Structure
(Viewed from downstream)*

Treatment at the plant includes the addition ferric chloride as a coagulant, lime and soda ash for softening, chlorine for disinfection, and fluoride addition for dental health.

Water treatment plants are periodically inspected to identify construction, maintenance, operational or source defects that could make them vulnerable to contamination, particularly from contaminants that are microbial in nature, such as fecal coliforms. Water suppliers are provided a sanitary survey report that notes deficiencies in the system, and the State may direct the system to make necessary corrections. The sanitary survey is an important part of a safe drinking water program.

Climate

The Flint water supply is located in the central Lower Peninsula hydrologic province (Rheume, 1991), in the Flint River watershed (USGS, 1974, 1982). The region experiences temperate summers with moderate winters. The Flint Bishop International Airport Weather Bureau station reports that the average annual precipitation for the climatic years 1887-2001 was 30.28 inches and the average from the past 5 years is 31.42 inches (NOAA, 2001), with about 13 percent of that as snowfall between November and March. Annual average runoff for the Flint SWA, extrapolated from Miller and Twenter (1986, fig. 1) is 9 to 10 inches.

Source Water Area Geology and Hydrology

The study area for evaluating the extent of the Flint emergency intake SWA includes the upper reaches of the Flint River watershed (fig. 1). Flint is located roughly in the middle of the Flint River watershed. The



Flint River – Source Water for City of Flint WTP

SWA consists of lacustrine clays and silts; end moraines of coarse- and medium-textured till; fine-, medium-, and coarse-textured glacial tills; and postglacial alluvium. The SWA is underlain by Bayport Limestone, Marshall Sandstone and mixed shales, sandstones, and limestones of the Saginaw and Michigan Formations (Martin, 1955; Milstein, 1987). Soils underlying the Flint SWA are primarily associations of the Blount, Boyer,

Brookston, Capac, Ceresco, Celina,

Chelsea, Cohoctah, Conover, Del Ray, Kibbie, Lapeer, Lenawee, McBride, Metea, Miami, Montcalm, Sloan, Spinks series (U.S. Department of Agriculture, 1961; BASINS, 1998; MIRIS, 2000). They include loams, loamy sands, fine sandy loams, silty clay and muck.

Soil permeability is based on the calculated time of travel, in inches per hour (in/hr), for water to move vertically through a saturated soil zone. Soil thickness and permeability values are available in soil survey reports published by the National Cooperative Soil Survey and U.S. Department of Agriculture (1982, 1992, 1993, also 2 county reprints in press). Permeability ranges from less than 0.06 in/hr, rated as very slow, to more than 20 in/hr, rated as very rapid.

Source-water Area (SWA) for the City of Flint Emergency Water Supply

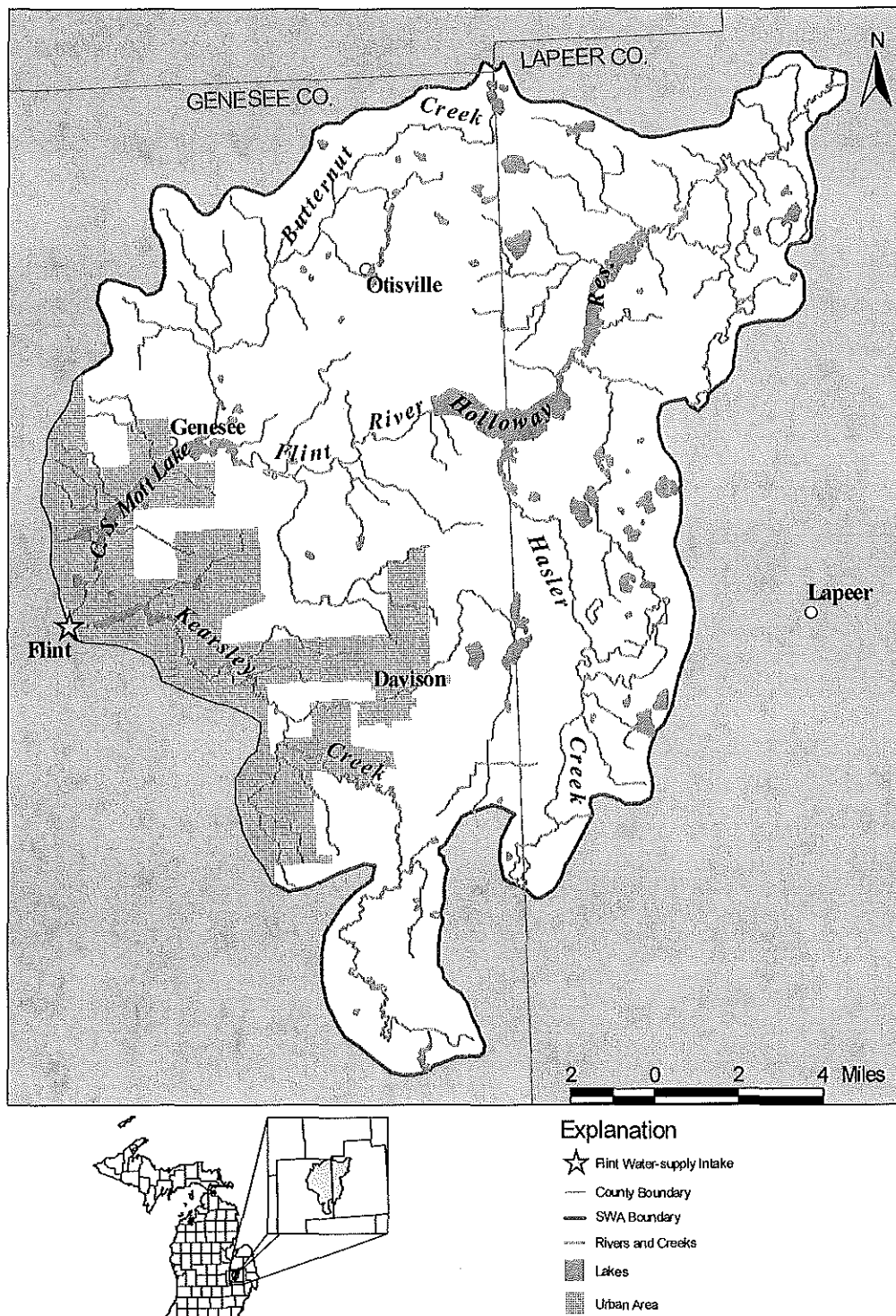
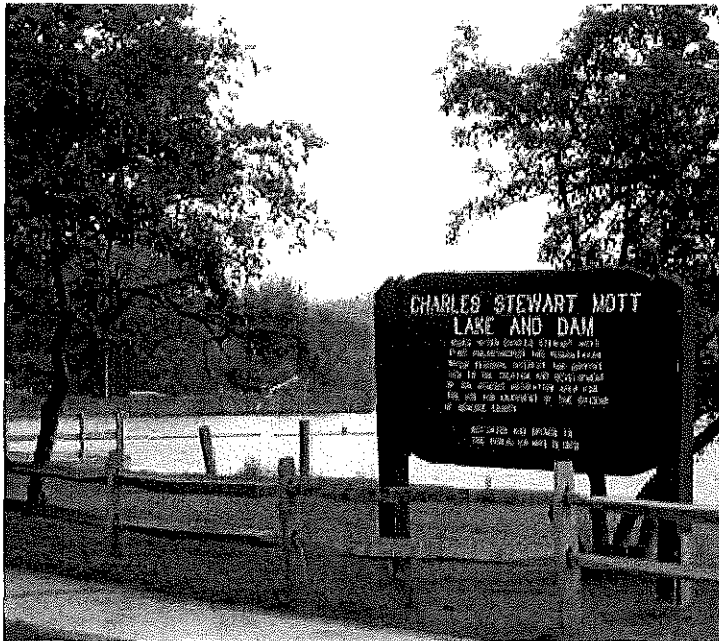


Figure 1. Source-water area (SWA) for the evaluation of the Flint emergency intake, Flint, MI.



Mott Lake and Dam on Flint River upstream of Flint WTP

3.1 in/hr (Schneider and Erickson, undated, series of 5 maps; BASINS, 1998; MIRIS, 2000). Soil permeability ranges from moderately slow in the northeastern portion of the SWA to moderate over the eastern portion of the SWA to moderately rapid throughout the central and western portions of the SWA, and rapid around the Flint River (fig. 2; U.S. Department of Agriculture, 1961; BASINS, 1998; MIRIS, 2000). Areas adjacent to the Flint River are underlain by highly sensitive drift lithologies, whereas the remainder of the SWA is underlain by least sensitive drift lithology (Lusch and others, 1992).

The Flint SWA contains an area of about 237 square miles (mi²). There are is one operable gage within the Flint SWA and a Flint River gage which operates approximately 9 miles downstream from the Flint Emergency Intake. Between 1932 and 2002 discharge has been recorded at this station by the USGS (Blumer and others, 2002). Annual mean discharge at the Flint River at Flint gauging station was 339 cubic feet per second (cfs) between 1932 and 2001, and ranged from 153 to 1258

cfs. Velocity measured at this stream gage was used to estimate the distance in which contaminants could travel within 24 hours, or the 24-hour time-of-travel (TOT) for this area on the Flint River. The distance calculated for the 24-hour TOT was approximately 27 miles.

Very slowly permeable soils significantly reduce the movement of water through the soil zone and, as a result, allow greater time for natural degradation of contaminants. However, such soils also provide for rapid overland transport of contaminants directly to receiving waters, which in turn may affect the water supply intake. Erosion and transport of soils by surface waters can cause an increase in turbidity. In contrast, very rapidly permeable soils allow for rapid infiltration and passage through the soil zone from the surface. Such soils potentially allow rapid transport of contaminants with minimal contact-time available for contaminant breakdown.

Mean, area-weighted, depth-integrated permeabilities for the Flint SWA range from 0.6 to as much as 7.8 in/hr. The mean permeability is



Kearsley Lake and Dam on Kearsley Creek Upstream of Discharge to Flint River and Flint WTP Emergency Intake

Soil Permeability for the Flint Source-water Area, Flint, MI

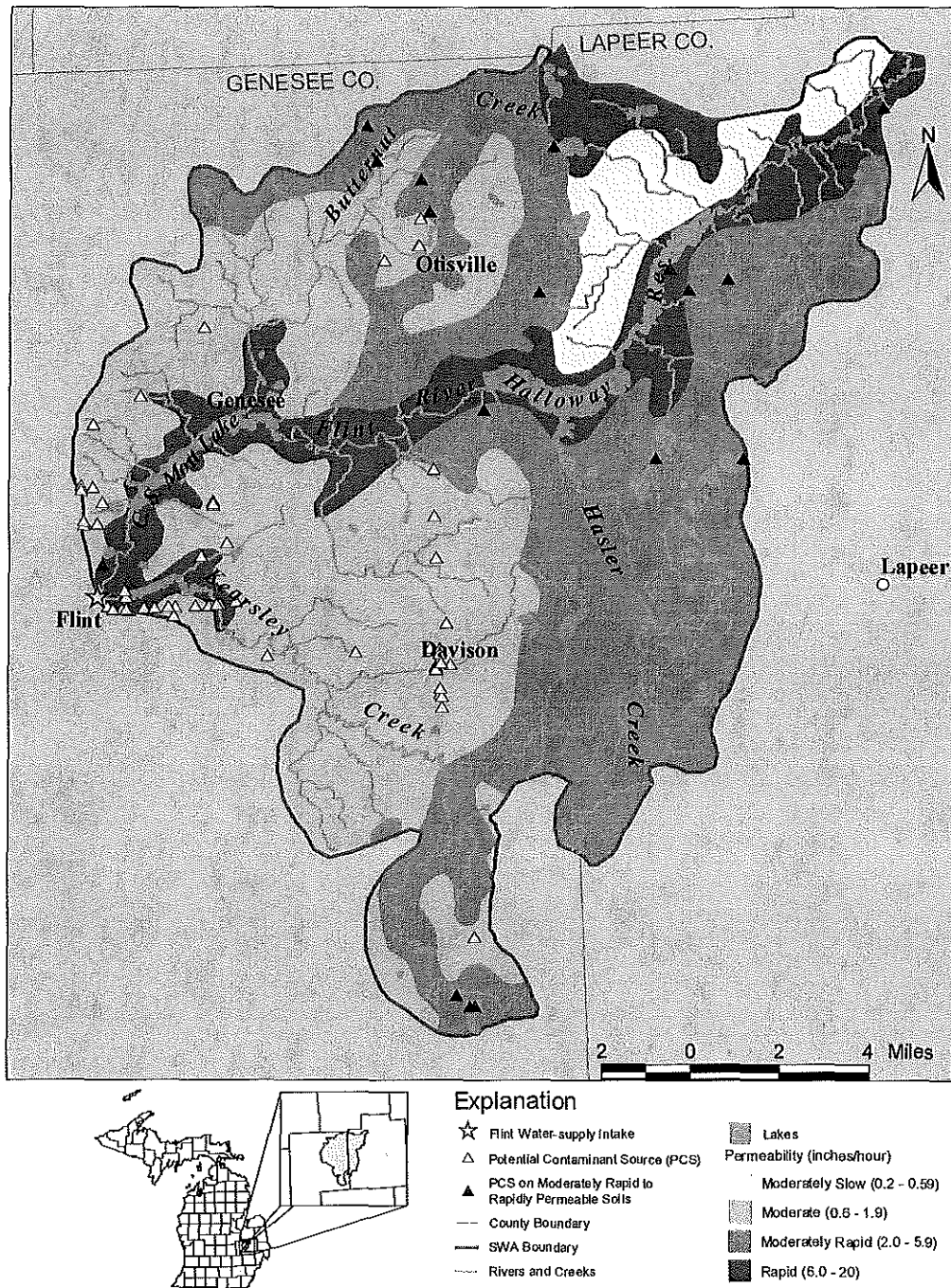


Figure 2. Soil permeability for the Flint emergency water-supply intake SWA. Flint, MI.

History of Raw Water Quality at the Source

Public water supplies are required to routinely monitor raw water quality for selected parameters to optimize treatment, and to monitor treated water quality for a list of contaminants that is determined by MDEQ and the Safe Drinking Water Act. A detection of any contaminant may indicate that a pathway exists for contaminants to reach the intake. It is important to realize that the results from a given sample only provide information regarding the water quality at the time the sample was collected. Water quality can change with time for a number of reasons. The fact that a water sample does not contain contaminants is no guarantee that contamination will not occur in the future. Conversely, the detection of a contaminant in the past does not indicate that it will occur in the future.

The Flint WTP records for the last 3 years of routine operation, 1965-1967 show that water use fluctuated between 34.4 and 46.5 million gallons per day (MGD), with an average daily use of 38.5 MGD. Raw water quality reported for these three years ranged from 5 to 183 nephelometric turbidity units (NTU) for turbidity, 203 to 375 mg/l total hardness as CaCO₃, 116 to 235 mg/l alkalinity as CaCO₃, 16 to 46 mg/l chlorides and 8.2 to 8.5 units for pH. Precipitation events were noted to increase turbidity and lower hardness. An analysis of flow duration for the Flint River and source water chemistry would probably indicate that there may be an indirect correlation between turbidity, suspended sediments, and coliforms and high flows associated with spring snowmelt and precipitation runoff events.

In recent years, the Flint WTP has undergone operational and process improvements for water treatment. Raw water quality during these testing periods when the WTP was operating but discharging to waste are noted in the table below.

Date of Tests	Turbidity (NTU)	Total Organic Carbon (mg/l)	pH (pH units)	Alkalinity (mg/l)	Hardness (mg/l)
12/5-7/2000	4.2	8.75	7.8	249	324
1/16-18/2001	2.4	8.5	7.7	275	363
3/20-21-2001	5.4	N/A	7.9	196	266
4/16-18/2001	7.6	8.6	8.2	213	284

Source Water Assessment Methodology

Technical guidelines for completing source water assessments are contained in the Michigan Source Water Assessment Program, Assessment Protocol for Great Lakes Sources (Protocol) (MDEQ, 1999, Appendix L) available at <http://www.deq.state.mi.us/dwr>. In general, an assessment is a process for evaluating a drinking water supply and the potential for its treated water to exceed an MCL due to raw water contamination. A source water assessment considers the SWA, potential sources of contamination within the SWA, conditions of the water supply intake, and susceptibility to contaminants in order to identify potential risks to drinking water quality. Although the Protocol provides the minimum requirements and instructions on how to conduct an assessment, each water supply is unique with respect to how the process is carried out, due to local conditions and information. Sweat and others (2000, 2001) have developed and documented the methodology used in the preparation of this assessment.

Delineating Source Water Areas

Delineation of the SWA is accomplished by using geographic information system (GIS) software to map the watershed(s) that have the potential to affect source water at the intake. Using information from the water supply, a critical assessment zone (CAZ) is defined for the intake (MDEQ, 1999, Appendix L). A buffer is then created along any shoreline intersected by the CAZ, and from the edge of the CAZ to the mouth of any river(s) that might influence the intake. Finally, the buffer is extended along the shoreline of any river(s) that might influence the intake, from the mouth of the river to its headwaters. The area defined by the CAZ, river and shoreline buffers is termed the susceptible area. The susceptible area within the SWA defines locations where a water supply should focus its management strategies and resources to benefit the drinking water resources.

Using the Great Lakes Protocol and the Flint water supply information:

- The CAZ for the Flint intake is assigned as 3,000 ft since the intake is located in an inland river (fig. 3).
- The susceptible area along the shoreline is determined to be: A distance of 300 ft inland along the banks of the Flint River and its tributaries (fig. 4).

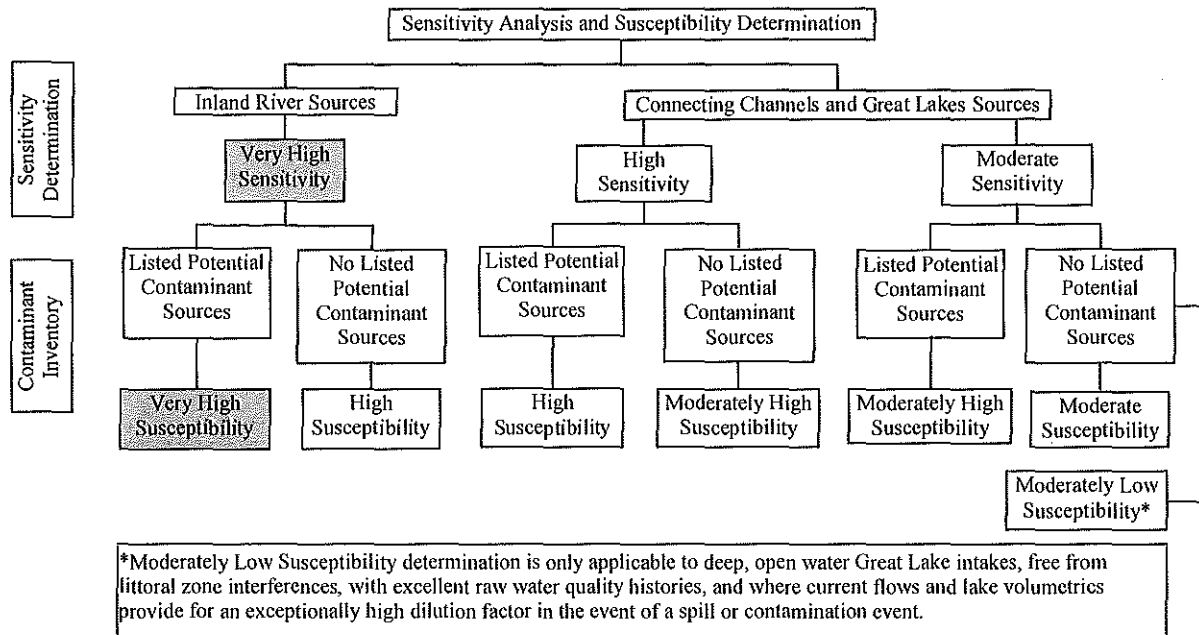


Figure 53. Surface-water Source Sensitivity Analyses and Susceptibility Determination for the Ann Arbor Flint emergency water-treatment-plant source-water areas.

Contaminant Source Inventory

Past, current, and potential future sources of contaminants were inventoried to identify several categories of potential sources of contaminants including microorganisms (bacteria, oocysts, and viruses), inorganic compounds (nitrates and metals), organic compounds (solvents, petroleum compounds, pesticides), and disinfection by-product precursors (trihalomethanes, haloacetic acids).

It is important to remember that sites and areas identified by this process are only potential contaminant sources used and managed properly. In addition, assumptions were made about particular types of land uses and risks associated with those land uses. Assumptions are discussed further in the results portion of this report.

The process for completing the inventory included several steps, which are summarized as follows:

1. Reviewed readily available land use maps and historical/current aerial photographs.
2. Plotted relevant information from applicable state and federal regulatory databases including the following lists:
 - MDEQ leaking underground storage tank (LUST) sites;
 - MDEQ registered underground storage tank (UST) sites;
 - MDEQ Environmental Cleanup Site Information System (ECSI) sites;

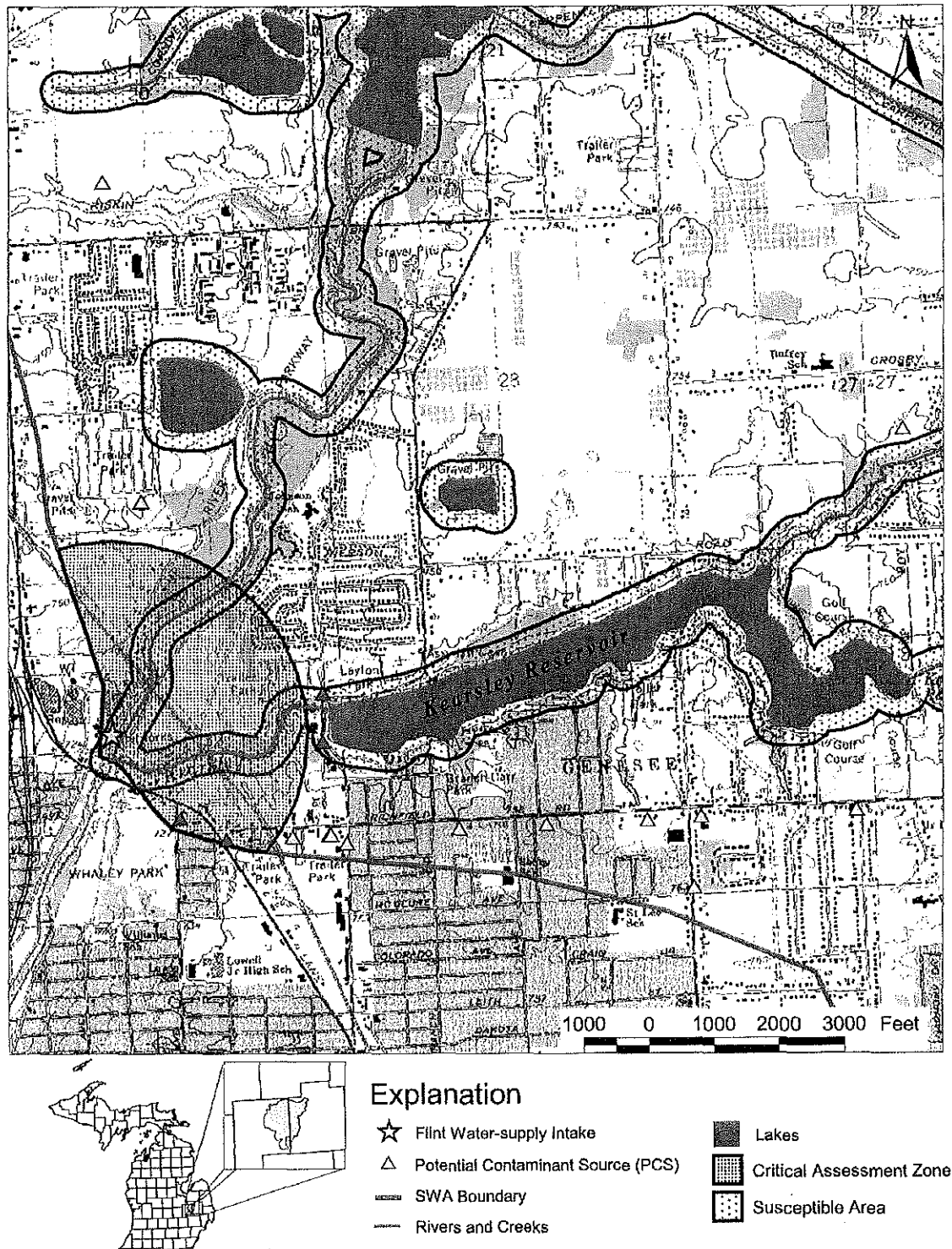


Figure 4. Critical Assessment Zone (CAZ) for the Flint emergency water-supply intake, Flint, MI.

- MDEQ Source Information System (for water discharge permit sites including National Pollutant Discharge Elimination System (NPDES) permits, Water Pollution Control Facility (WPCF) permits, storm water discharge permits, and on-site sewage (septic) system permits);
 - MDEQ Underground Injection Control (UIC) database;
 - MDEQ Active Solid Waste Disposal Permits list;
 - Michigan Department of Transportation (MDOT) - Hazardous Materials database;
 - State Fire Marshall registry of above-ground fuel storage tank sites;
 - State Fire Marshall Hazardous Material Handlers and Hazardous Material Incidents (HAZMAT) sites;
 - U.S. EPA BASINS software, version 2.1.
 - U.S. EPA Envirofacts database;
 - U.S. EPA Resource Conservation Recovery Act (RCRA) generators or notifiers list;
 - U.S. EPA RCRA Treatment, Storage, and Disposal Facility (TSDF) Permits list;
 - U.S. EPA National Priorities List (NPL);
 - U.S. EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLA) List;
 - U.S. EPA RCRA Corrective Action Activity List (CORRACTS);
 - U.S. Department of Transportation (DOT) Hazardous Materials Information Reporting System (HMIRS);
 - U.S. EPA Toxic Chemical Release Inventory System (TRIS); and
 - U.S. EPA Oil Pollution Act of 1990 Spill Response Atlas
3. Met with public water supply and community officials on June 11, 2003 to identify potential sources not listed elsewhere in databases or on maps and completed a preliminary inventory form to be used in completing the SWA base map. Subsequent contacts by email and telephone on numerous occasions to request additional data, clarify data, and discuss results.
 4. Land use and/or ownership (for example, residential/municipal; commercial/industrial; agricultural/forest; and other land uses) was mapped and evaluated in relation to PCS, soil characteristics, and proximity to the intake(s).
 5. Conducted an informal field inventory to locate additional PCS.
 6. Completed final inventory form of PCS and plotted locations of PCS on the base map.

The purpose of the inventory is three fold: first, to provide information on the location of PCS, especially those within the susceptible area; second, to provide an effective means of educating the public about PCS; and third, to provide a reliable basis for developing a management plan to reduce potential contaminant risks to the Flint water supply.

The inventory process attempts to identify potential point-source contaminants within the SWA. It does not include an attempt to identify specific potential contamination problems at specific sites, such as facilities that do not safely store potentially hazardous materials. However, assumptions were made about particular types of land use. For example, it is assumed that rural residences associated with farming operations have specific potential contamination sources such as fuel storage, chemical storage and mixing areas, and machinery repair shops. It should also be noted that although the inventory depicts existing agricultural uses (crops grown), these are likely to undergo continual change due to normal crop rotation practices. What is irrigated farmland now may be non-irrigated farmland next year, or vice versa.

The results of the inventory were analyzed in terms of current, past, and future land uses and their relationship to the susceptible area and the supply intake. In general, land uses and PCS that are closest to the supply intake pose the greatest threat to a safe drinking water supply. Inventory results are summarized in table 1, and are shown on figure 5.

Many PCS are readily identifiable because they have a single discharge point, and often a permit is required for these discharges. However, other PCS have diffused, poorly defined discharge locations. These are known as non-point discharges because they occur over large areas and may not be quantifiable by readily accepted methods. These non-point source discharges are difficult to identify and control, and consequently to quantify, yet they are a major source of water pollution (Carpenter and others, 1998). Non-point sources also include atmospheric deposition over water and land, and include urban, rural, and

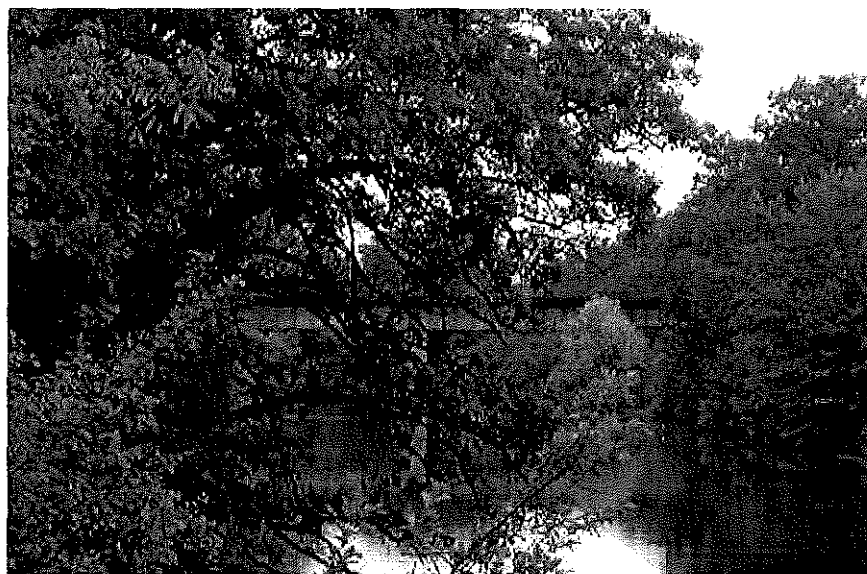
Table 1. Potential contaminant sources in the source water area

Type of Potential Contaminant Source (PCS)	Number of PCS	Number of PCS in Susceptible Area
Hazardous or solid waste site permits	71	11
Industrial facility discharge site permits	9	3
National priority list sites	1	0
Permit compliance system	12	2
Toxic release inventory permits	3	0
TOTALS	96	16

agricultural runoff from areas such as lawns, golf courses, farm fields, pastures, parking lots, and roadways. Runoff from these areas can contain many types of pollutants including sediments, metals, organic and inorganic chemicals, viral and bacterial pathogens, pharmaceuticals, and animal wastes. Transportation also represents a non-point source of contamination. Trucking and railroads transport potential contaminants through the SWA. An accident causing a spill could lead to potential contaminants entering a storm sewer, or in the case of boaters or rail transportation, directly to the Flint River. Petroleum pipeline crossing the upper reaches of the Flint River also pose contaminant threats.

Non-point sources of concern to the Flint water supply are primarily from storm sewers and from industrial, commercial, and residential sources in the SWA and communities upstream of the intake. A railroad bridge immediately upstream in the CAZ of the intake carries occasional train traffic described as hazardous. The West Boulevard storm sewer which discharges in the CAZ provides drainage to the Flint River from an industrialized area.

The Michigan Department of Agriculture is working to identify dairies and concentrated animal feedlots (greater than 1000 animal units) in the Flint River watershed upstream of the intake.



Railroad Trestle over Flint River Immediately Upstream of Flint WTP

The U.S. Environmental Protection Agency (USEPA) has identified one impaired water body in the Flint SWA on its Clean Water Act 303(d) list. The parameter of concern within the Holloway Reservoir is fish consumption advisories for PCBs. An additional impaired water body exists upstream of the SWA but not within the SWA itself. This water body is the collective of unnamed drains in Metamora, and the parameters of concern are untreated sewage discharge and pathogens (MDEQ, 2002).

In general, PCS within the susceptible area pose greater risks than those outside the susceptible area. The presence of PCS within the SWA indicates potential sources of chemicals that could, if improperly managed or released, impact the water quality at the intake. Small quantities of these chemicals, in some

Contaminant Source Inventory for the Flint Emergency Water-supply Intake, Flint, MI

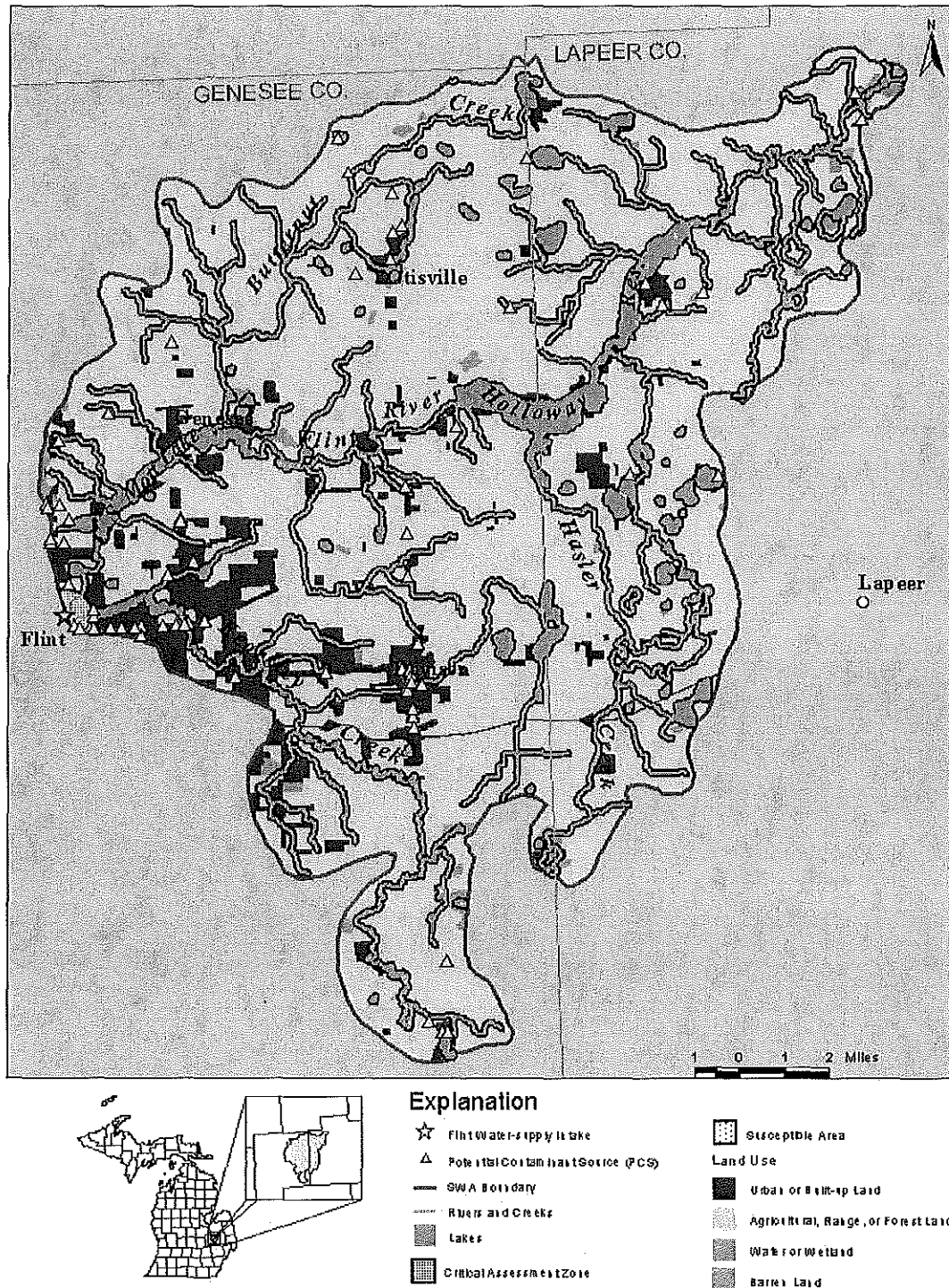


Figure 5. Potential Contaminant Sources in City of Flint Source Water Area, Flint, Michigan

cases less than a liter, can significantly affect the supply. Also of concern is the location and distribution of these sources with respect to highly permeable soils. The susceptible area consists of primarily agricultural and forested land with some urban areas. Overlaying the PCS locations and the moderately rapid to rapidly permeable soil map for the Flint SWA indicates that 21 of the located PCS are located on or very near to areas with moderately rapid to rapidly-permeable soils. All PCS within the SWA should be addressed; the susceptibility determination, however, provides the water supply with the tools to focus resources where the greatest risk occurs. The results of the PCS inventory performed for Flint water supply is shown on figure 5 and is summarized as a function of PCS locations relative to the susceptible area. The inventory results indicate that there are 7 PCS, holding 8 permits for discharge, within the susceptible area (table 2).

Table 2. Contaminant source inventory.

Site Name	Identification Number	Reason for Permit	Reason for Listing as Potential Contaminant Source
DAVISON OIL AND GAS BURTON STA 7	MI0000540310	On-Site Storage	Hazardous and Solid Waste Site
H AND M SVC	MID985612225		
KINNIES PARTY STORE	MID985597657		
ZACK CO	MID002975225		
EVERGREEN CLEANERS	MID981539711		
DORT HWY INC	MID985579945		
SUPER GO MARKETERS INC	MID985583053		
PIONEER CABINETRY INC	MID985605849		
DAVISON CITY OF	MID985625136		
MID MICHIGAN AUTO PARTS INC	MID985654789		
CLARK STORE 1849	MI0001853613		
FORD-NORTHVILLE PLT	MI0024643	Process, Treatment, and Waste Waters	Industrial Facilities Discharge Site
FOREST WASTE PRODUCTS	YCRCLA276		
OTISVILLE WWTP ^a	MI0028720	Waste Water, Dust, and Process Water	Permit Compliance System
ORCHARD COVE WWTP	MI0054755		
OTISVILLE WWTP ^a	MI0028720		

Note: Subscript denotes multiple permits

Sensitivity Analysis

Sensitivity is the natural ability of a SWA to provide protection against the contamination of the water supply intake, and includes physical attributes of lakes, rivers, and soils. The sensitivity analysis requires consideration of several different variables related to the natural environment, for example:

- Water quality history of the source.
- Distribution of moderately to highly-permeable soils.
- Amount of available water from precipitation or runoff.
- Potential for runoff to affect the intake.
- Nature of the intake, including: depth, distance from shore, age, and materials used.
- Surface water flow patterns in vicinity of intake.

To perform this analysis, USGS, MDEQ, and the operator of the Flint WTP collected, researched, and analyzed information from the WTP, monthly operator reports, sanitary surveys, soil maps, published reports, and historical plant operation and raw water quality data. The Michigan SWAP has three categories of sensitivity for surface water sources ranging from moderately sensitive to very highly sensitive. Analysis of this information, using guidelines provided in Brogren (1999) and Sweat and others (2000, in press), indicates that the Flint intake is at the high end of this range or very highly sensitive (fig. 3). This means that the natural environment offers little protection against contamination of the water supply intake.

Susceptibility Determination

Susceptibility is the relative potential for contamination to reach the public water supply intake used for drinking water purposes. Whereas the sensitivity of a water supply is the natural ability of the area to protect the intake against contamination, the susceptibility determination also takes into account other factors that will affect whether a contaminant reaches the intake. Whether or not a particular drinking water source becomes contaminated depends on three factors:

- (1) The distribution of PCS;
- (2) The source water area; and
- (3) The natural protection, or sensitivity, of the source.

In conducting a susceptibility determination, the part of the SWA that yields water to the water supply-system intake is identified by establishment of the susceptible area within the source water area. PCS within the susceptible area are then located. Based on the distribution of PCS within the susceptible area, the type of PCS, and the nature of the chemicals they use or store, PCS are analyzed for the risk they may represent to the water supply intake. Along with the presence and distribution of PCS, the sensitivity analysis is then used to determine the susceptibility of the water supply (fig. 3). This leads to a determination of whether the drinking water source is moderately susceptible, highly susceptible, or very highly susceptible to contamination (Brogren, 1999; Sweat and others, in press). It is important to understand that a system can have low sensitivity relative to some conditions (for example, intake construction and location), and high susceptibility because of other conditions (for example, the type of PCS). In Michigan, surface water sources of drinking water range from moderately-low to very-high susceptibility.

When a public water supply is determined to have a moderate, high, or very high susceptibility because of a particular condition or set of conditions, there is a significant risk of contamination of the drinking water source because of that condition or set of conditions. Although the susceptibility determination does not predict when or if contamination will actually occur, it does recognize conditions that are highly favorable for contamination of the supply. In the event of a contaminant release to soils or surface water within the susceptible area, it is very likely that contamination at the intake would occur without completion of remedial actions.

If a public water supply's drinking water source is determined to be highly susceptible, it is recommended that the system identify the condition(s) that lead to the high susceptibility. Immediate steps should be taken to protect the source, and action should be considered to remedy the condition (for example, repairing or replacing faulty intake construction, working directly with facility operators to implement sound management practices, etc.).

All water supplies, regardless of their susceptibility, should consider identified factors that could lead to higher susceptibility in the future, and should prepare a strategy to protect the water supply source. Raising public awareness through signs and other education programs, encouraging proper intake construction and the use of best management practices in existing facilities are good ways of ensuring that a surface water source maintains its moderate susceptibility rating.

Summary and Recommendations

The actual susceptibility of the drinking water source of a water supply depends on a number of contributing factors, some of which are only slightly related. Sensitivity is determined from the natural setting of the source and identifies the natural protection afforded to the source water. Susceptibility is determined by identifying those factors within the community's SWA that may pose a risk to the source water. The susceptibility determination provides information with respect to facilities within the SWA or

land areas within the SWA that should be given greater priority and oversight in the implementation of a drinking water protection program.

Sensitivity Analysis: Based on criteria adopted in the Great Lakes Protocol of the Michigan Source Water Assessment Program, the emergency intake for the Flint Water Treatment Plant has a very high degree of sensitivity to potential contaminants.

Susceptibility Determination: The SWA for the Flint intake includes 8 listed potential contaminant sources within the susceptible area, numerous storm drains discharging upstream of the intake, a railroad crossing plus urban, agricultural, and industrial runoff from the Flint River watershed. Combining these potential contaminant sources with the very highly sensitive intake yields a very highly susceptible determination for Flint source water (fig. 5).

Effective Treatment:

The results of this assessment and the recommendations based on these results are summarized as follows:

- ***Intake*** - The Flint Water WTP intake was installed in 1948 and draws water from the Flint River from a shoreline structure making the intake very highly sensitive.
- ***Soils*** - Using a mean, area-weighted, depth-integrated permeability estimation, the soil and subsoil permeability in the SWA range from 0.6 in/hr to as much as 7.7 in/hr. The mean permeability is 3.1 in/hr (Schneider and Erickson, undated, series of 5 maps; BASINS, 1998; MIRIS, 2000). About two thirds of the soils in the Flint SWA are moderately rapid or rapidly permeable. Sixteen (16) PCS are located on these soils. These factors combine to make the SWA, and thus the intake, very highly sensitive. The community should take steps to evaluate current and future land use in areas of highly permeable soils, particularly those occurring within the susceptible area. Those PCS that have been identified either on or in close proximity to these soils should be informed of the sensitive nature of the area and encouraged to adopt best management practices designed to minimize the risk of a ground release. Residential areas that have been developed on these soils should be targeted for educational programs identifying steps that residents can take to protect the water supply.
- ***Historical Contaminant Detections*** – Since the Flint WTP has not utilized the Flint River since 1967 as a source of public drinking water, extensive raw water quality data is not available. However, as is typical for river water, the periodic presence of coliform bacteria is indicative of a relationship between runoff and soil conditions, causing the presence of bacteria at detectable levels in river source water. Background turbidity has recently been reported in the range of 2.4 to 7.6 NTU. These factors indicate that the SWA, and thus the intake, is very highly susceptible.
- ***Sanitary Survey*** – Defects reported as requiring repair either have been corrected or are scheduled for repair. The Flint WTP is undergoing extensive upgrades to improve treatment and reliability. It is important that the water supply continue to follow good management practices.
- ***Potential Contaminant Sources*** - A review of the PCS inventory and the rapidly and very rapidly permeable soil distribution indicates that the Flint SWA has 21 PCS located on moderately rapid to rapidly permeable soils. Within the susceptible area, there are 7 PCS with 8 discharge permits. In addition, there are numerous storm drains within the vicinity of the intake. A railroad crossing immediately upstream of the intake also poses a potential contaminant threat. It is recommended that the community focus initially on PCS that are within the susceptible area as they pose the greatest potential threat to the water supply. These facilities should be made aware of free technical assistance that is available through MDEQ's pollution prevention programs. Through chemical inventory, waste reduction, and by increasing awareness of best management practices, the risk these facilities pose to source waters can be reduced. The PCS inventory indicates that the source is very highly susceptible.
- ***Source Water Assessment*** - The Flint source water assessment is based on these site-specific parameters:

1. Definition of a Critical Assessment Zone around both intake for a very highly sensitive source;
 2. Definition of a SWA for the Flint River, and shoreline near the intake;
 3. Flow duration and discharge in the Flint River upstream of the intake, and the effects of upstream contaminant discharges on the source water quality; and
 4. Listed and nonlisted potential contaminant sources.
- **Source Water Protection** - The City has initiated source water protection activities with an Industrial Pretreatment Program incorporating management plans, chemical containment, and spill response, spill response training, plus storm sewer and street cleaning programs.

The Flint WTP and/or the community should assemble a team to assist in the development and implementation of a source water protection program that uses this assessment to further protect the Flint source water area.

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- Carpenter, S.R., Caraco, N.F., Correll, D.L., Howarth, R.W., Sharpley, A.N., and Smith, V.H., 1998, Nonpoint Pollution of Surface Waters with Phosphorus and Nitrogen, *Ecological Applications*, 8:3, 559-568.
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- Sweat, M.J., Brogren, B.B., Jodoin, R.S., Rossi, T.A., and Loerop, M.A., 2002, Michigan's Source Water Assessment Program -- Surface Water Assessments Leading to Protection Initiatives, in, Proceedings of

Watershed 2002: Water Environment Federation International Conference, February 23-27, 2002, Fort Lauderdale, FL, 28 p. (also MDEQ Source Water Assessment Report 22)

Sweat, M.J., Brogren, B.B., Jodoin, R.S., and Rossi, T.A., in press, A source water assessment program for evaluation of public water supplies using surface water sources in Michigan: U.S. Geological Survey Water Resources Investigations Report 01-xxxx, xx p (also MDEQ Source Water Assessment Report 8)

Twenter, F.R., Knutilla, R.L., and Nowlin, J.O., 1976, Water resources of Washtenaw County, Michigan: Washtenaw County Planning Commission, 143 p., 43 figs., 18 tables.

U.S. Department of Agriculture, in press, Soil survey of Washtenaw County, Michigan:

-----, 1982, Soil survey of Oakland County, Michigan: 167 p., 135 sheets.

-----, 1992, Soil survey of Ingham County, Michigan: 149 p., 84 sheets.

-----, 1993, Soil survey of Livingston County, Michigan: 92 p., 44 sheets.

-----, in press, Soil survey of Jackson County, Michigan:

GLOSSARY

Critical Assessment Zone (CAZ) - the area from the intake structure to the shoreline and inland, including a triangular water surface and a land area encompassed by an arc from the endpoint of the shoreline distance on either side of the on shore intake pipe location

Geographic Information System (GIS) - a system to capture, store, update, manipulate, analyze, and display all forms of geographically referenced information

Impaired water bodies - As defined by USEPA and listed on the 303 (d) list of the federal Clean Water Act.

Intake - the point at which source (raw) water is drawn into a pipe to be delivered to a water treatment plant

Lignins - an amorphous, cellulose-like, organic substance that acts as a binder for the cellulose fibers in wood and adds strength and stiffness to cell walls

Maximum Contaminant Level (MCL) - the maximum permissible level of a contaminant in water that is delivered to any user of a public water system

Potential Contaminant Sources (PCS) - listed and non-listed agricultural sites, businesses, and industries that have the potential to cause contaminants to be introduced into source water

Sensitivity - a measure of the physical attributes of the source area and how readily they protect the intake from contaminants

Source - the water body from which a water supplier gets its water

Source Water Area (SWA) - the land and water area upstream of an intake that has the potential to directly influence the quality of the water at the intake

Source Water Assessment Program (SWAP)- in Michigan, the process defined by the state Department of Environmental Quality to complete assessments of all the state's public water supplies

Susceptibility - the Susceptibility identifies factors that may pose a risk within the community's SWA

Susceptible Area - the area defined by the critical assessment zone and a buffer on either side of any drainages that contribute water to an intake

Synthetic Organic Contaminants (SOC) - Manmade organic chemical compounds such as pesticides, etc.

Tannins - naturally occurring phenolic compounds that precipitate proteins, alkaloids, and glucosides from solution that has a yellowish appearance

Volatile Organic Contaminants (VOC) - Unnatural, volatile organic chemical compounds such as gasoline components, solvents, degreasers, etc

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, March 19, 2015 10:11 AM
To: 'bwright@cityofflint.com'
Subject: FW: PEAS call
Attachments: 20150318_174119.jpg; 20150318_173619.jpg; 20150318_174108.jpg; RE: WRD - PEAS - Oil Sheen

Brent,

More info.....

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

From: Bennett, Charles (DEQ)
Sent: Thursday, March 19, 2015 10:10 AM
To: Thomas Hutchings (thutchings@cityofflint.com)
Cc: Kammer, Stephanie (DEQ); Prysby, Mike (DEQ); Case, Robert; Busch, Stephen (DEQ)
Subject: PEAS call

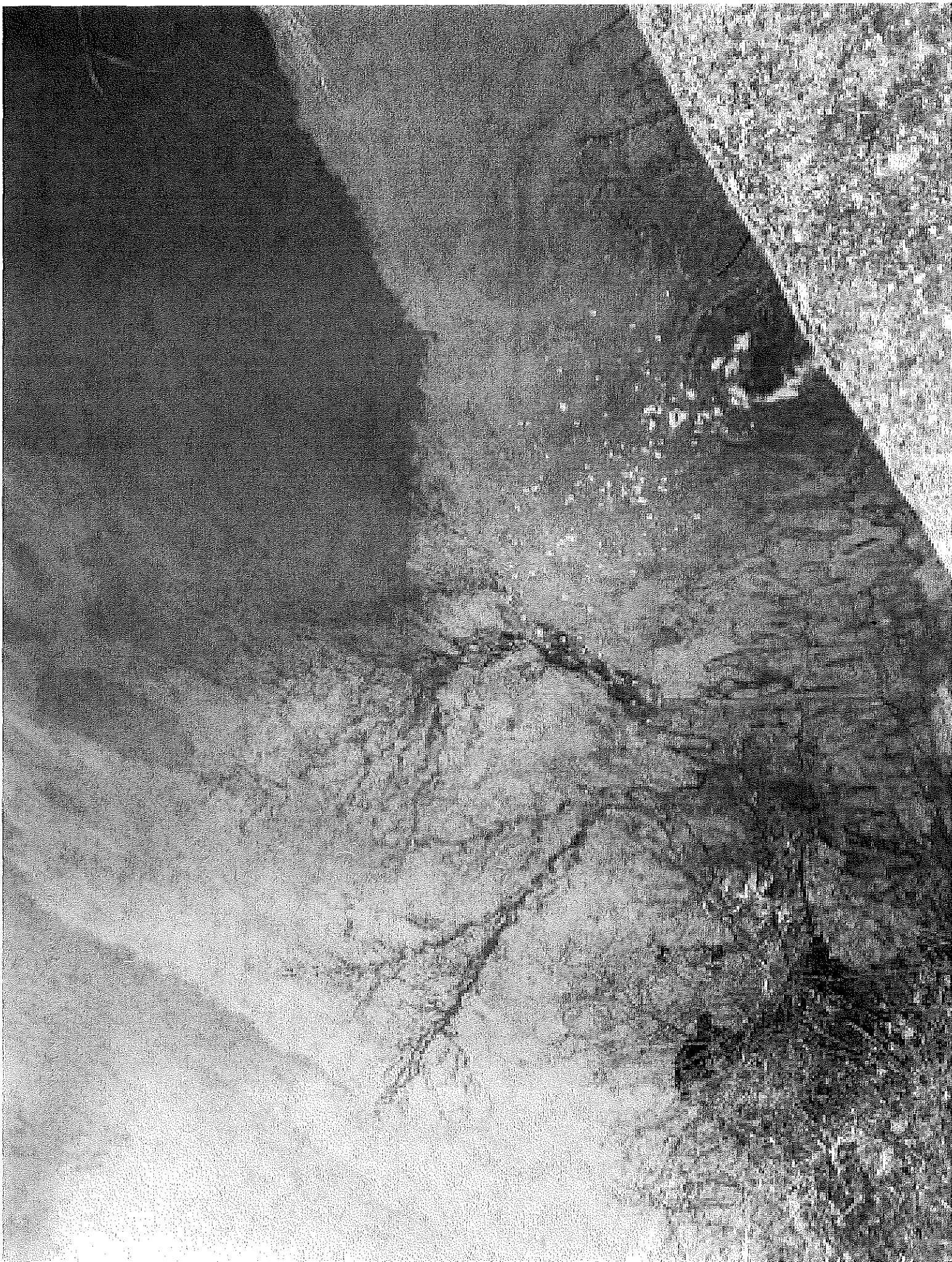
Tom, I just spoke with a gentleman that reported a discharge to the Flint River south of Carpenter Rd at Bray. The complainant stated that the material is whitish and may have a sheen also. He said it looks like crews have done some excavating along the bike path near this discharge. Attached are photos that I received a moment ago from the caller.

Also, you may want to contact Brent Wright about this matter as well, since our Drinking Water engineer has contacted him about this also (see attachment). Please let me know what you find.

thanks,
chuck

Charles Bennett, PE
DEQ Water Resources Division
Lansing District Office
BennettC4@michigan.gov
ph 517-284-6659; fax 517-241-3571







Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, March 19, 2015 10:03 AM
To: Rennaker, Joanne (DEQ); Blayer, Steve (DEQ); Arduin, Jim (DEQ)
Cc: Busch, Stephen (DEQ); Bennett, Charles (DEQ)
Subject: RE: WRD - PEAS - Oil Sheen

I notified the city – Brent Wright (WTP OIC) of the situation given that this just upstream of their WTP intake. Brent and his staff will go out to investigate. Based on past history, he is speculating that it is a break in their lime sludge line. This line is located close to the Flint River in this area and has experienced breaks in the past. I also provided Brent with the caller's name and suggested to contact him and let him know that the city is following up on this incident.

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

From: Rennaker, Joanne (DEQ)
Sent: Thursday, March 19, 2015 9:05 AM
To: Prysby, Mike (DEQ); Blayer, Steve (DEQ); Arduin, Jim (DEQ)
Subject: FW: WRD - PEAS - Oil Sheen

Jo Anne Rennaker
 Secretary
 Department of Environmental Quality - Lansing District Office
 Office of Drinking Water & Municipal Assistance
 Office of Waste Management & Radiological Protection
 517-284-6643

From: Jesko, Roxanne (DEQ)
Sent: Thursday, March 19, 2015 9:02 AM
To: Gutting, Karen (DEQ); DEQ-PEAS-Lansing
Cc: Bennett, Charles (DEQ)
Subject: RE: WRD - PEAS - Oil Sheen

WRD has it Chuck Bennett will be the lead.

From: Gutting, Karen (DEQ)
Sent: Thursday, March 19, 2015 8:44 AM
To: DEQ-PEAS-Lansing
Subject: WRD - PEAS - Oil Sheen
Importance: High

PEAS Form 2014		revised July 23,	
First Response please "Reply All" to receipt of this PEAS Notification ASAP. Media: Water County: Genesee Ticket # 1498			
Incident Description: There is a sanitary sewer that runs parallel with the Flint river that has had several line breaks. This is causing a sheen on the water. Some of this has solidified along the river bank and is white in color. This is approximately ¼ mile down the bike trail where Bray Rd. ends S of Carpenter. Whatever is coming out of the line, is coming out steady. Caller has photos if needed.			
Complainant (C)		Party Involved (PI) – Company	
Name	James Joseph	Person Name	
Street Address		Company Name	
City or Township		Street Address	
State		City or Township	
Phone	810-820-5526	State	
Alt Phone		Phone	
Type		Alternate Phone	
Incident Street Address	S. of Carpenter and Bray Rd (where Bray Rd. stops and now it's a bike path)		
Cross Streets		Name of Pollutant	unsure
City or Township	Flint	Release to Water (g)	unknown
County		Release to Ground (g)	
Water Body Impacted	Flint River	Release to Air (lbs)	
Occurred: Date/Time/Ongoing	unsure	Cleanup Contractor	
Release Secured: Y or N		Cleanup Contractor on site: Y or N	

Comments:

Karen Gutting
Department of Environmental Quality
Office of Environmental Assistance
Environmental Assistance Center
800-662-9278

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 03, 2015 2:47 PM
To: 'bwright@cityofflint.com'; Michael Glasgow
Subject: FW: Schematics for LT2 sampling plans
Attachments: Schematics_combined.pdf; SCHEMATIC_01.pdf; SCHEMATIC_02.pdf; SCHEMATIC_03.pdf; SCHEMATIC_04.pdf; SCHEMATIC_05.pdf; SCHEMATIC_06.pdf; SCHEMATIC_07.pdf; SCHEMATIC_08.pdf; SCHEMATIC_09.pdf; SCHEMATIC_10.pdf

Brent, Mike

Attached are the example schematics that the plants on Schedule 2 may use to indicate where the source water sampling location is in relation to the intake, chemical feed points, recycle streams (if any) and the plant. You can select the schematic that best fits your situation and mark the sampling location and other pertinent information on it. If you can't find a schematic that doesn't fit Flint's exact setup, you can use the generic/blank one (schematic 10). Your Schedule 2 Crypto. monitoring letter is being mailed to you today.

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

Figure 1. Sample Tap before Chemical Treatment and Backwash Water Recycle (if applicable)

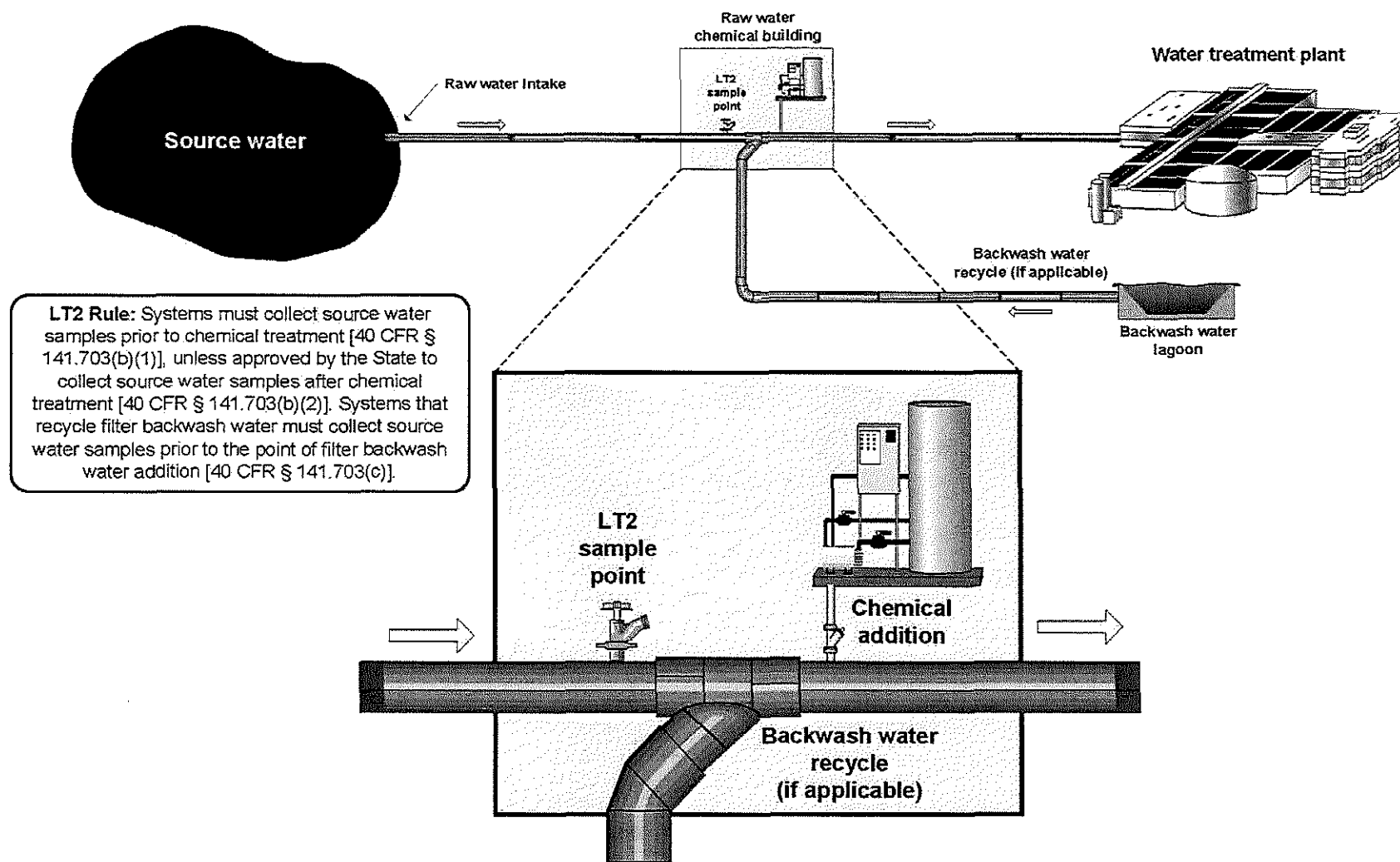


Figure 2. Multiple Sources: Sample Tap after Two Combined Sources

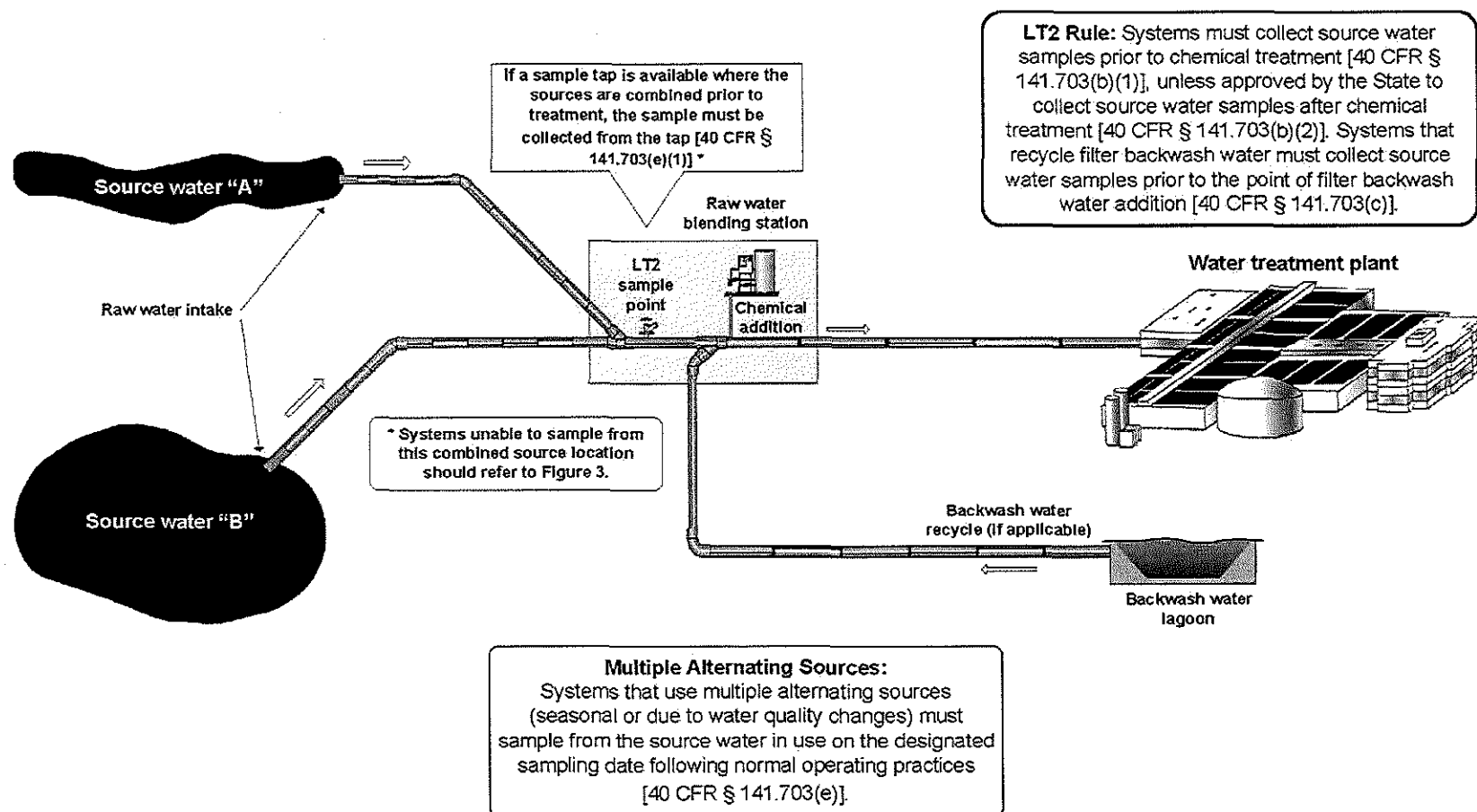
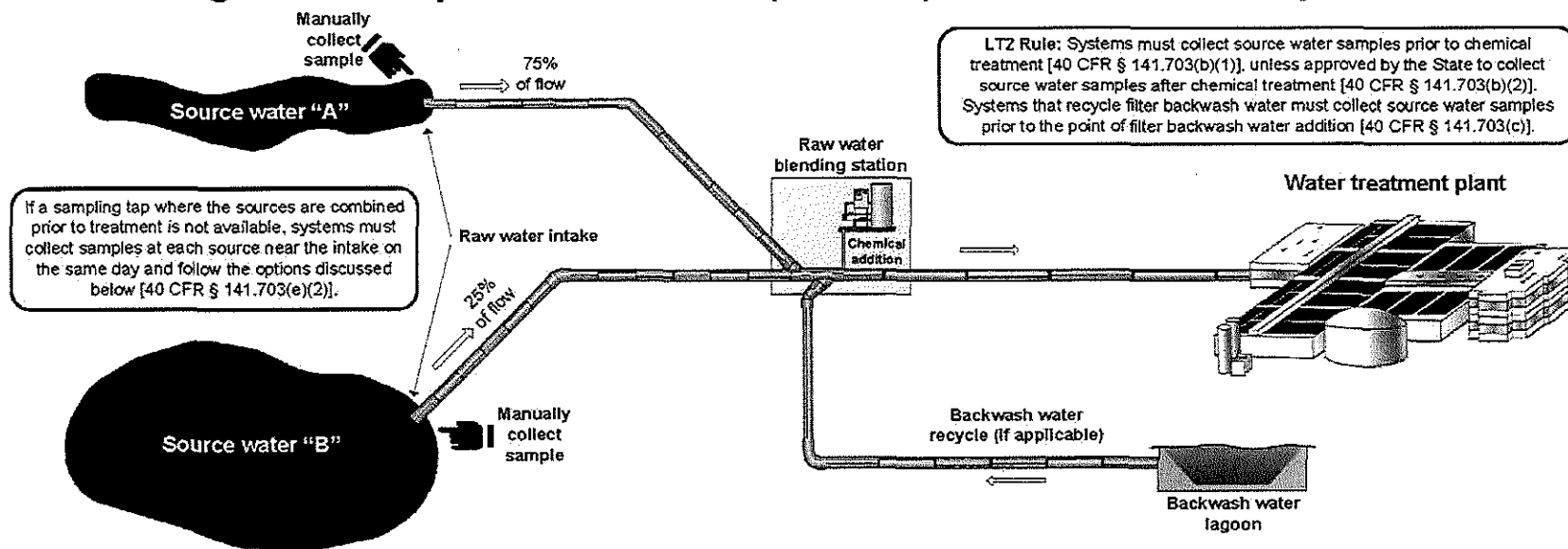
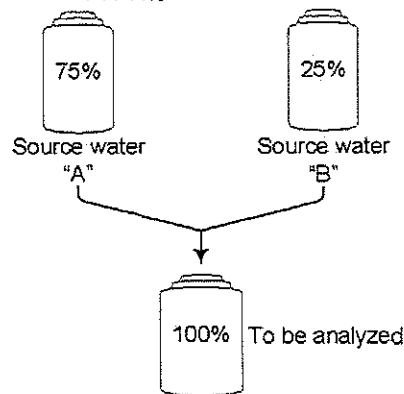


Figure 3. Multiple Sources: Two (or More) Sources to be Composited



OPTION 1 (Recommended Option):

Collect samples manually at each source near the intake on the same day and composite them into one sample to be analyzed. The volume of sample from each source must reflect its proportion of the total plant flow at the time the samples were collected [40 CFR § 141.703(e)(2)(i)].



OPTION 2:

Collect samples manually at each source near the intake on the same day and analyze each independently, then calculate a weighted average of the analysis results. This is done by multiplying the result for each source by the percentage of its contribution to the total plant flow at the time the samples were collected, and then summing these values [40 CFR § 141.703(e)(2)(ii)].

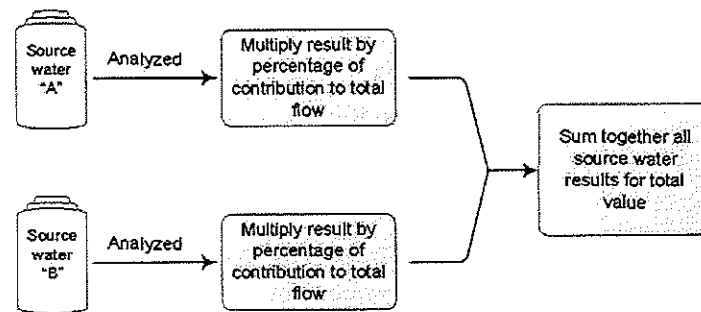


Figure 4. Multiple Plants with the Same Influent

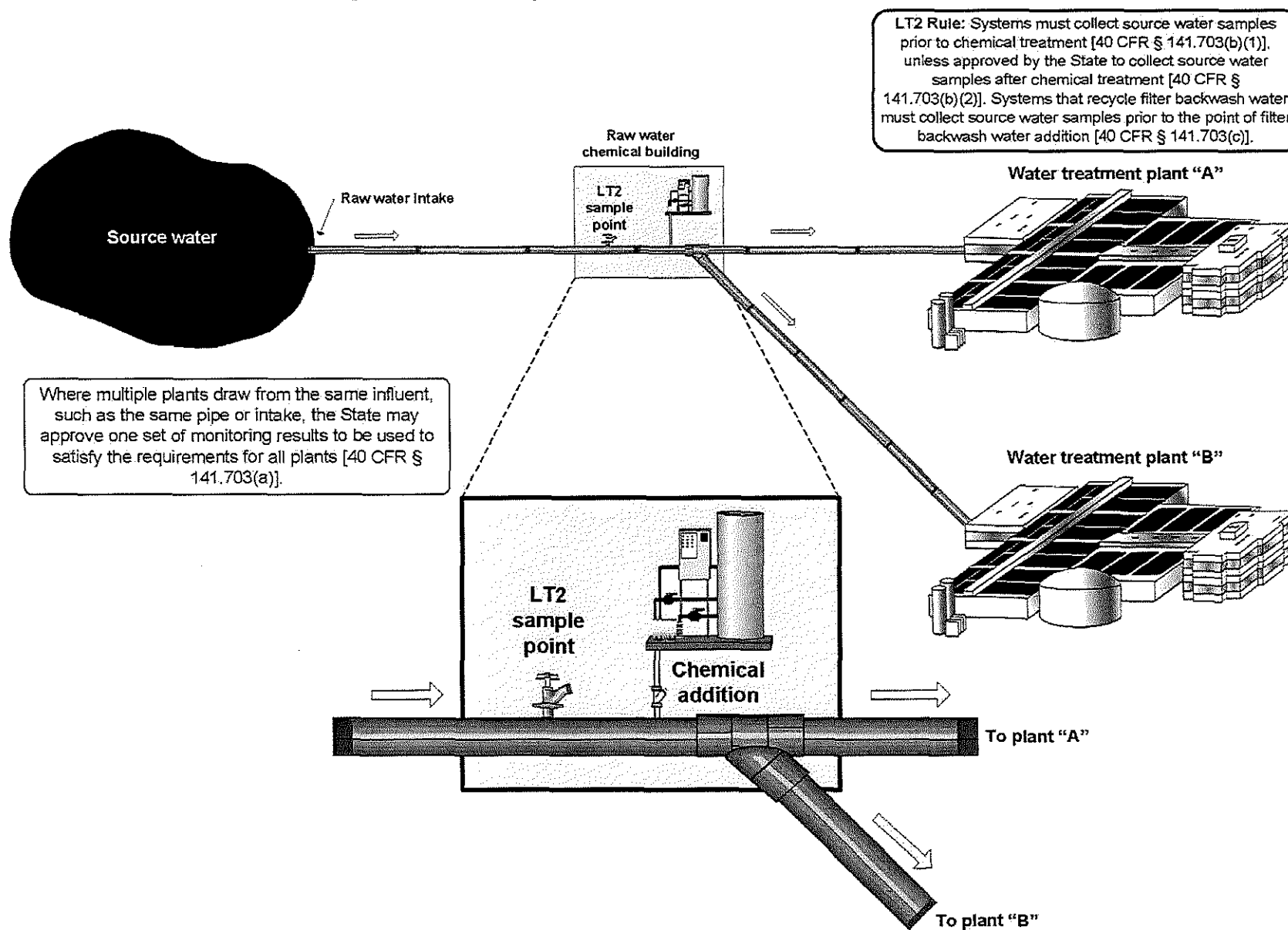
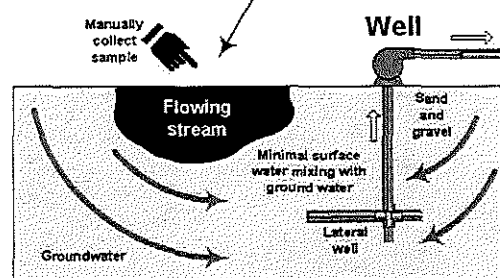


Figure 5. Bank Filtration

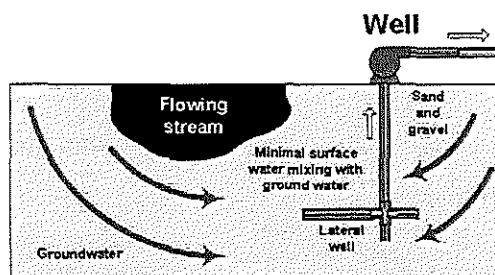
The correct sampling location for systems using bank filtration differs depending on whether the bank filtered water is treated by subsequent filtration:

Scenario 1: Systems that receive *Cryptosporidium* treatment credit for bank filtration must collect source water samples in the surface water prior to bank filtration [40 CFR § 141.703(d)(1)].*

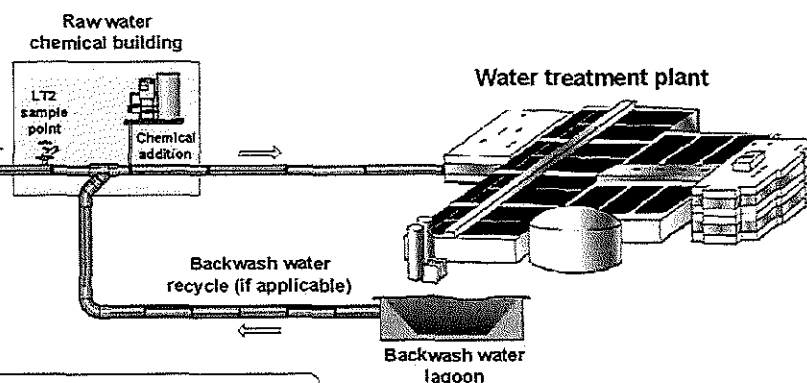
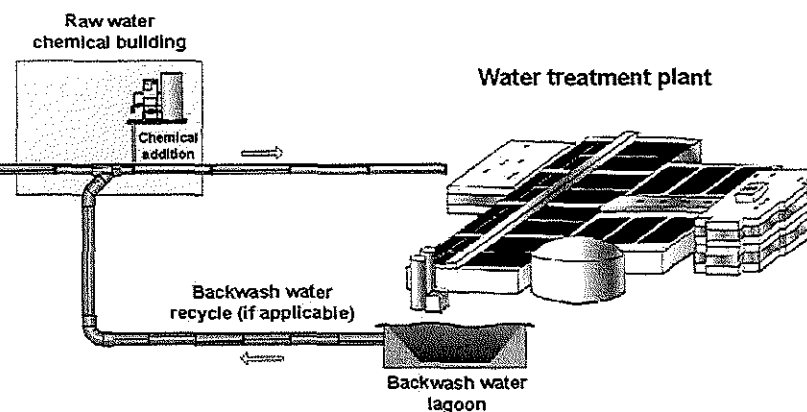


Bank filtration cross section

Scenario 2: Systems using bank filtered water that is treated by subsequent filtration must collect source water samples from the well source (i.e., after bank filtration) but before any other treatment.** Use of bank filtration during monitoring should be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive *Cryptosporidium* treatment credit for the bank filtration [40 CFR § 141.703(d)(2)].



Bank filtration cross section



* Refers to systems using bank filtration to meet *Cryptosporidium* removal requirements of the Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 ESWTR under 40 CFR § 141.173(b) or 40 CFR § 141.522(a).
 ** Refers to systems where bank filtration serves as pretreatment to a filtration plant.

Figure 6. Ground Water Under the Direct Influence of Surface Water (GWUDI)

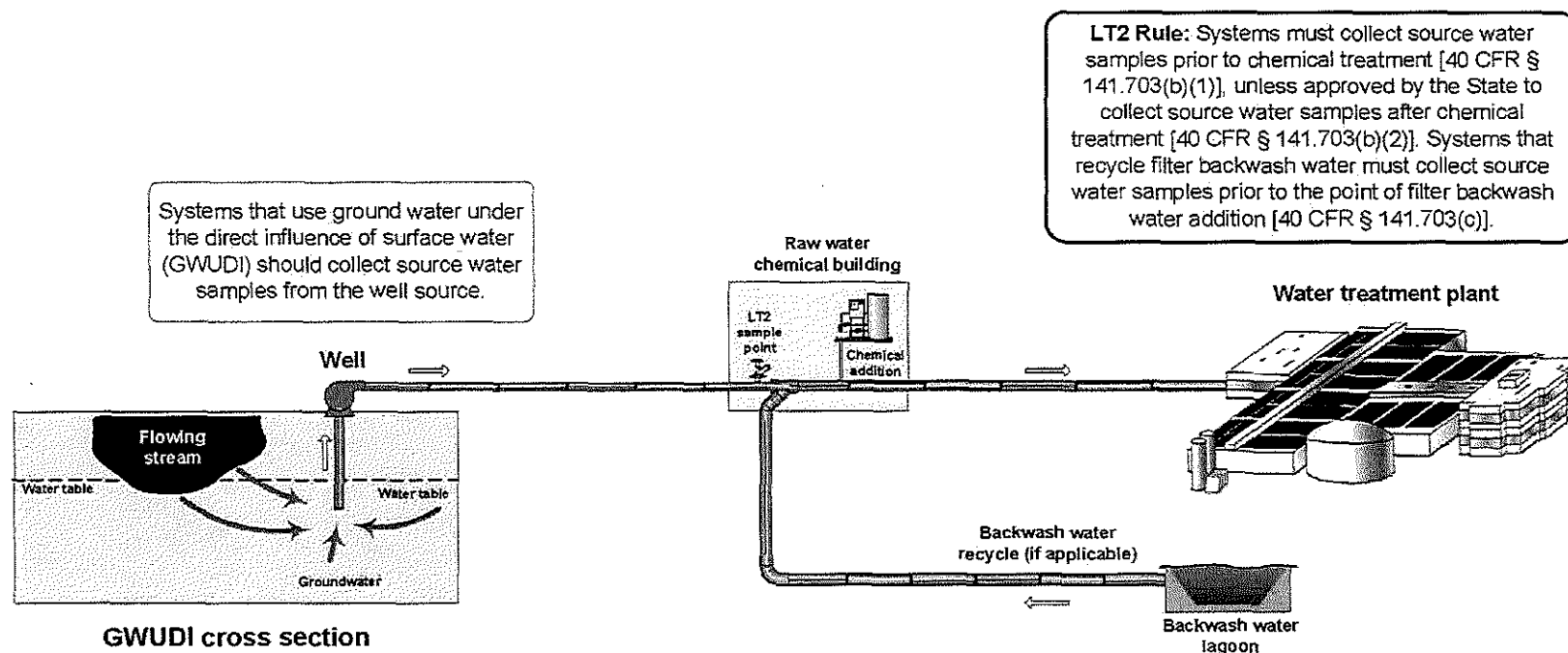
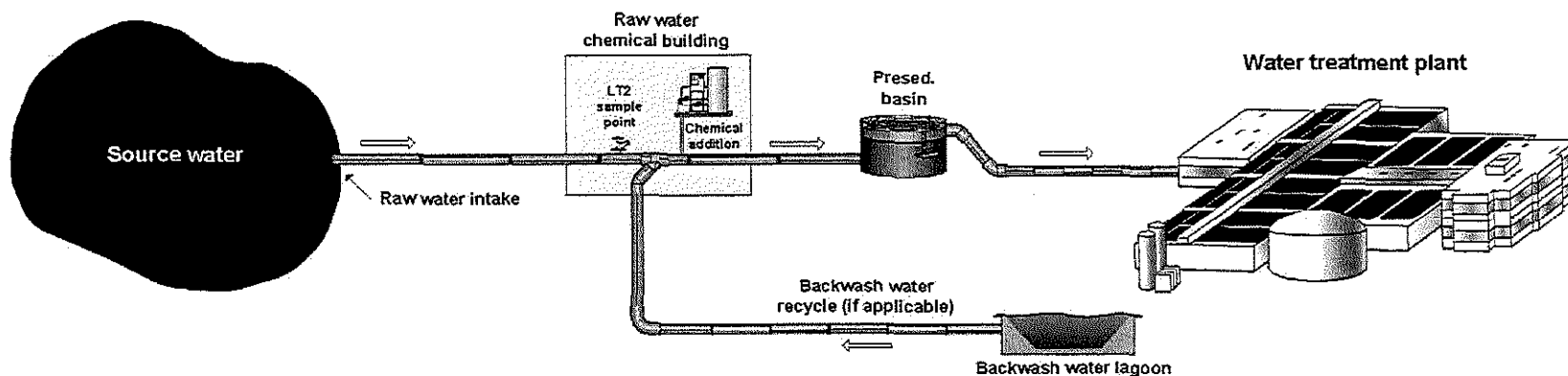


Figure 7. Presedimentation Basin

Scenario 1:

Systems using a presedimentation basin with chemical addition should collect source water samples prior to chemical treatment, unless approved by the State to collect source water samples after chemical treatment. Systems that recycle filter backwash water must collect source water samples prior to the point of filter backwash water addition [40 CFR § 141.703(c)].



Scenario 2:

Systems without chemical addition prior to or in a presedimentation basin, or that have been approved by the State to collect source water samples after chemical treatment, may sample after the presedimentation basin but will not receive any treatment credit for presedimentation.

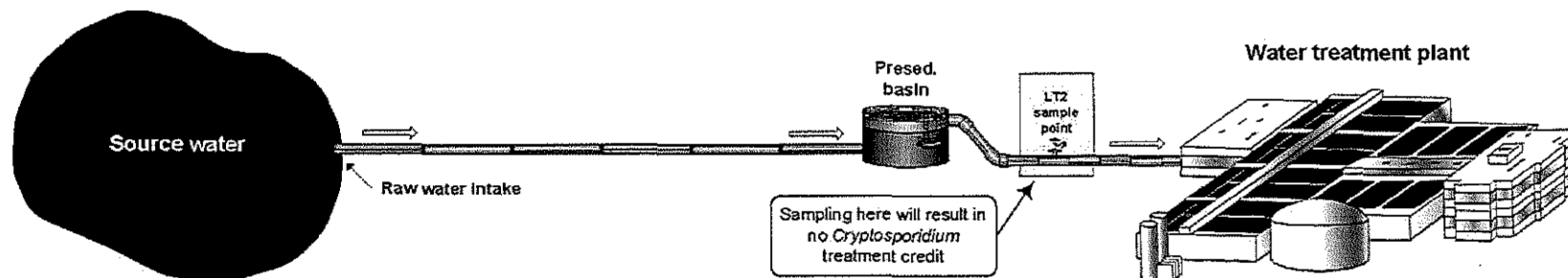


Figure 8. Raw Water Off-Stream Storage

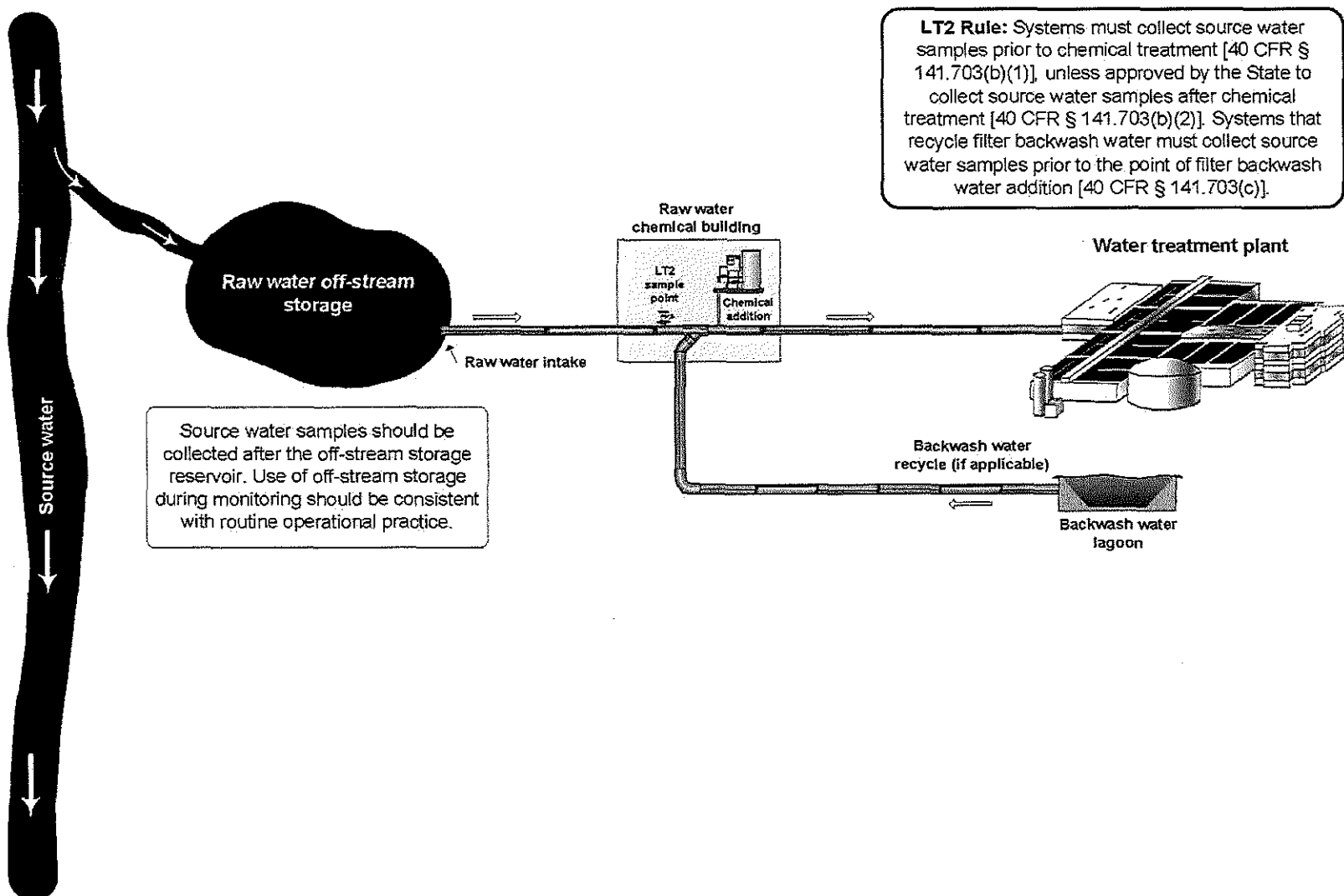


Figure 9. Mixed Source Water: Ground Water and Surface Water Sources

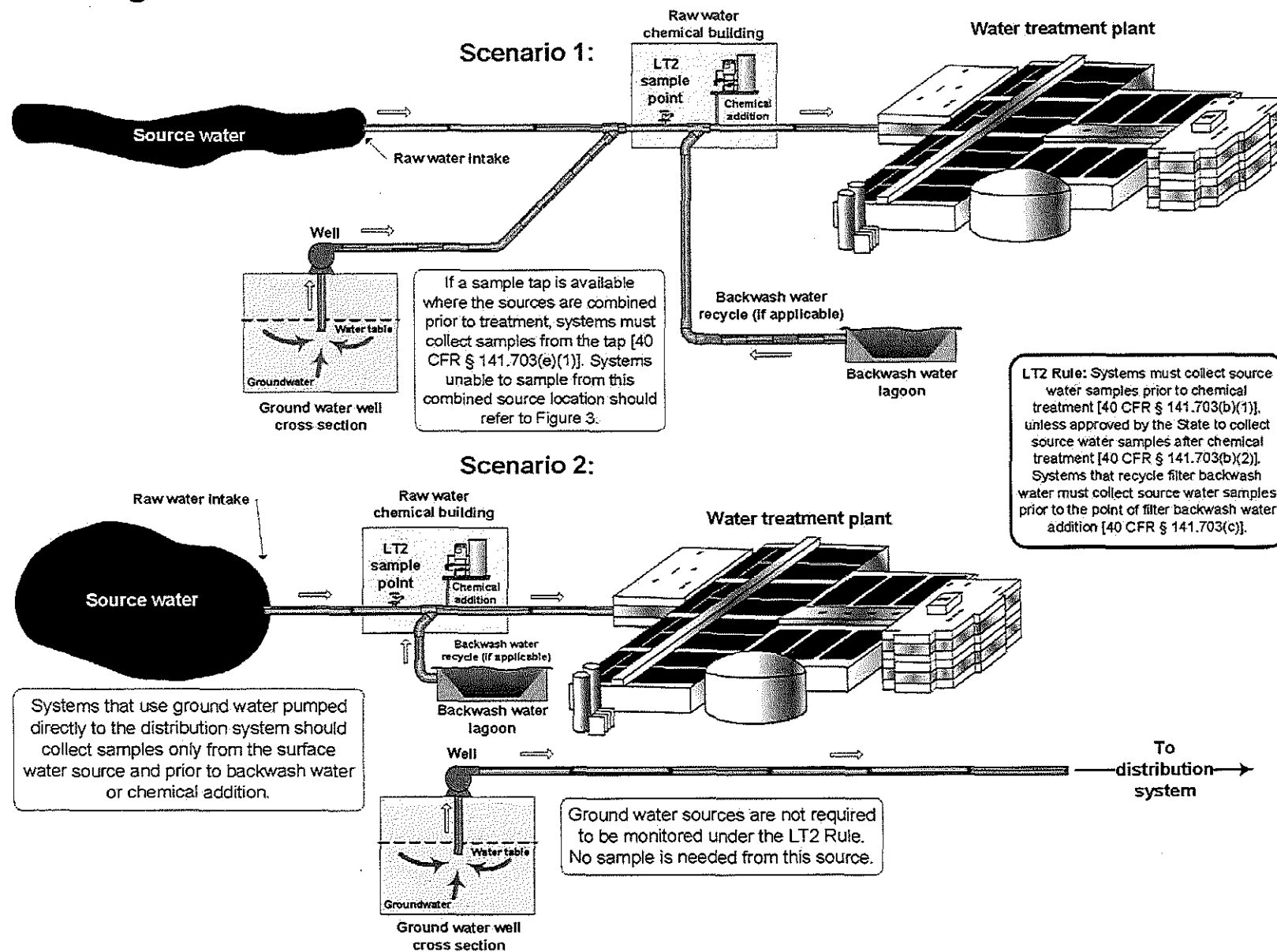


Figure 10. Blank Schematic for Submission to EPA

Public Water System (PWS) name: _____

PWS ID: _____

Water treatment plant name: _____

Water system facility ID: _____

Indicate the following on the diagram that best represents your facility type (if applicable):

1. LT2 sampling location
2. Points of chemical treatment prior to the treatment plant
3. Filter backwash water addition
4. Pretreatment processes (e.g., presedimentation basins, bank filtration)
5. Multiple source waters (show by adding additional sources)

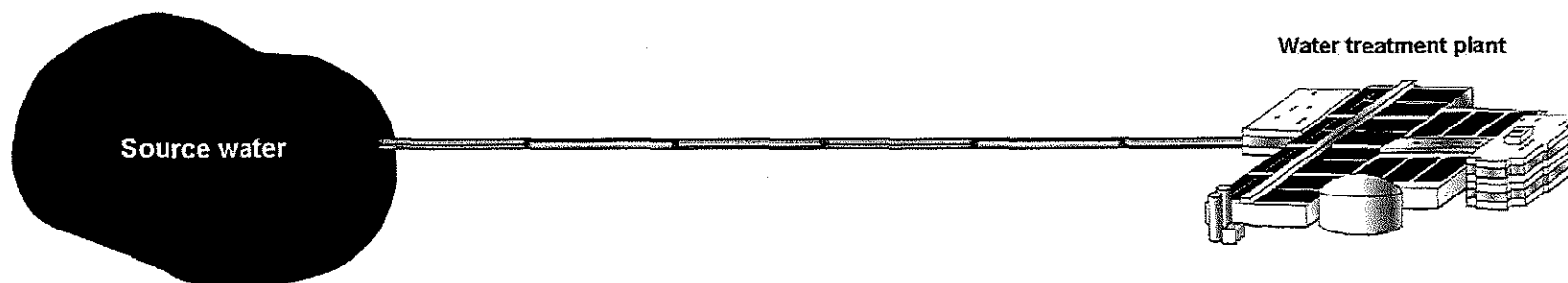


Figure 1. Sample Tap before Chemical Treatment and Backwash Water Recycle (if applicable)

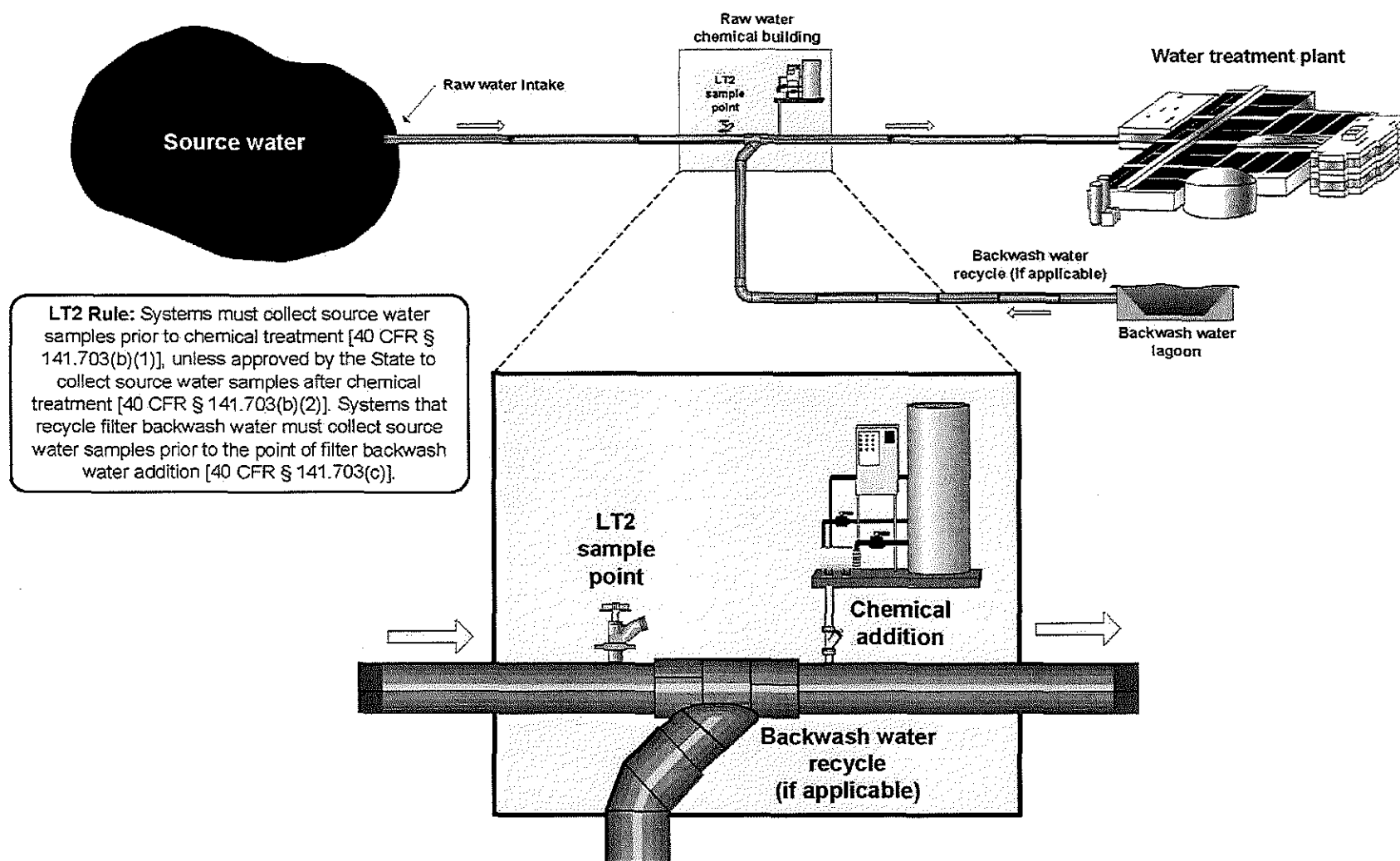


Figure 2. Multiple Sources: Sample Tap after Two Combined Sources

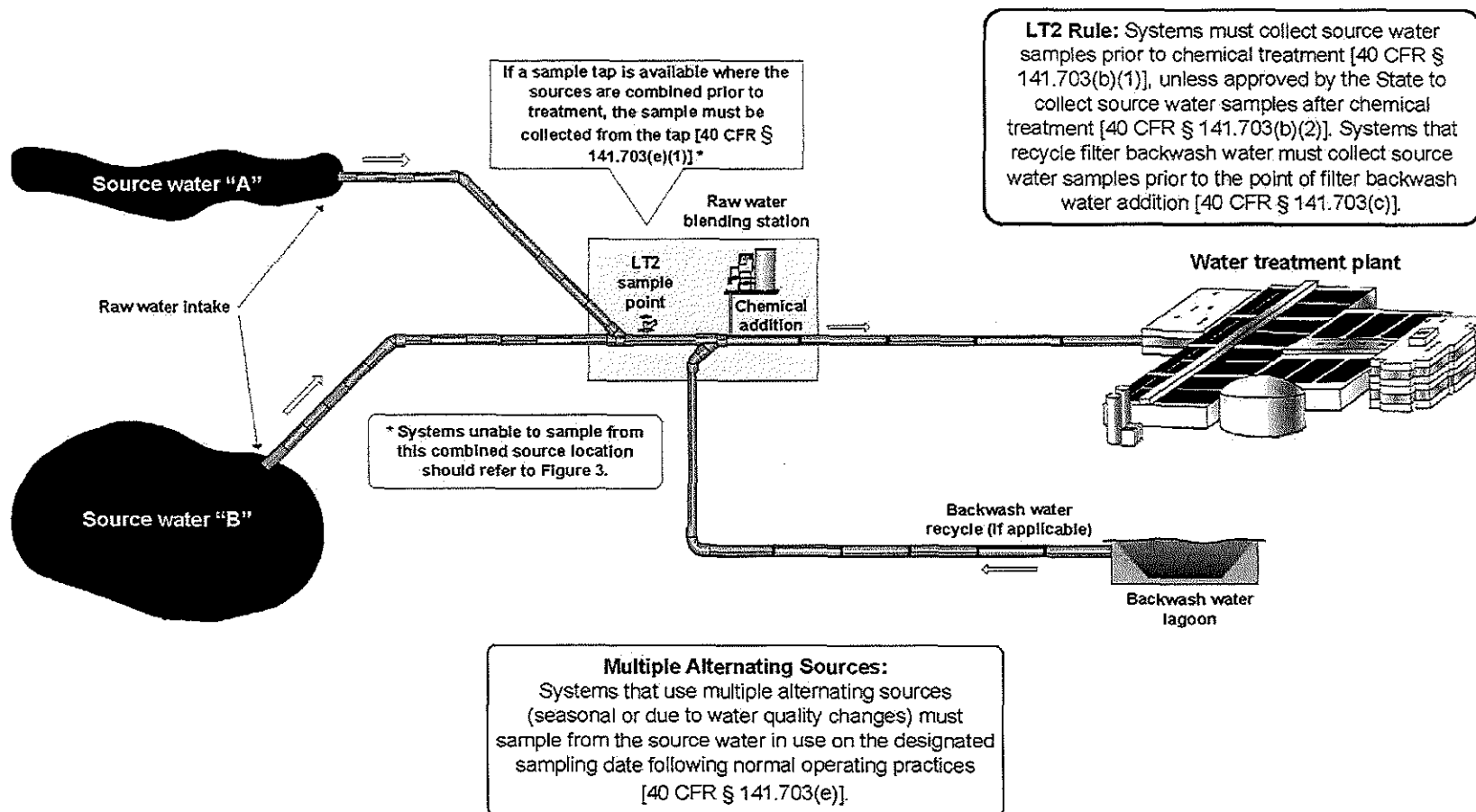
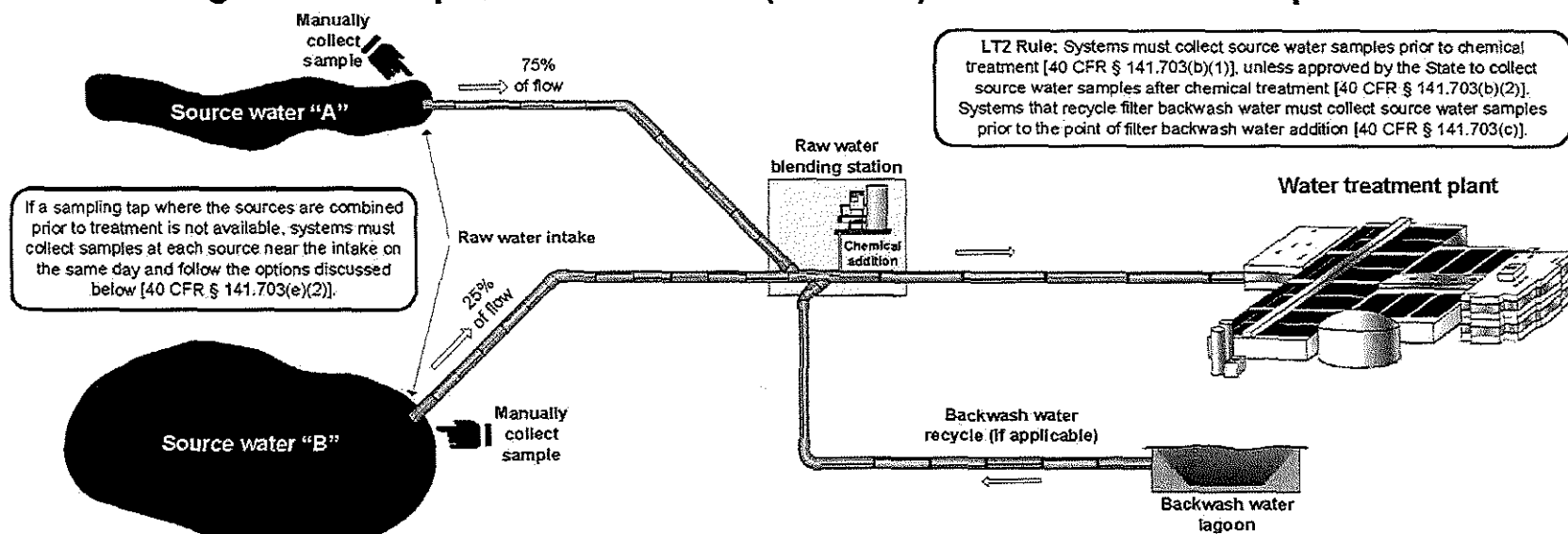
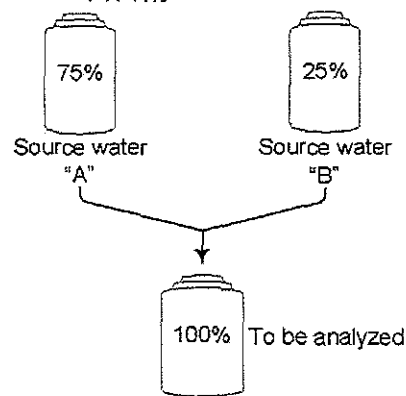


Figure 3. Multiple Sources: Two (or More) Sources to be Composited



OPTION 1 (Recommended Option):

Collect samples manually at each source near the intake on the same day and composite them into one sample to be analyzed. The volume of sample from each source must reflect its proportion of the total plant flow at the time the samples were collected [40 CFR § 141.703(e)(2)(i)].



OPTION 2:

Collect samples manually at each source near the intake on the same day and analyze each independently, then calculate a weighted average of the analysis results. This is done by multiplying the result for each source by the percentage of its contribution to the total plant flow at the time the samples were collected, and then summing these values [40 CFR § 141.703(e)(2)(ii)].

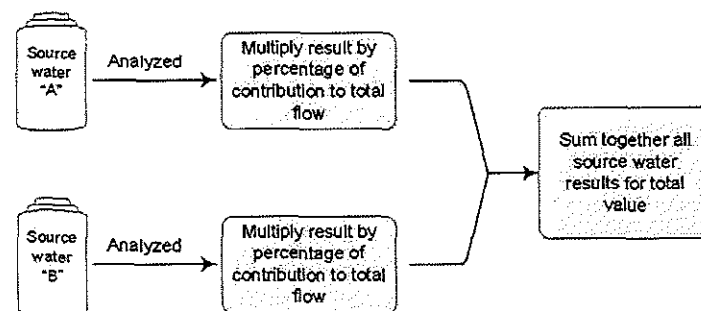


Figure 4. Multiple Plants with the Same Influent

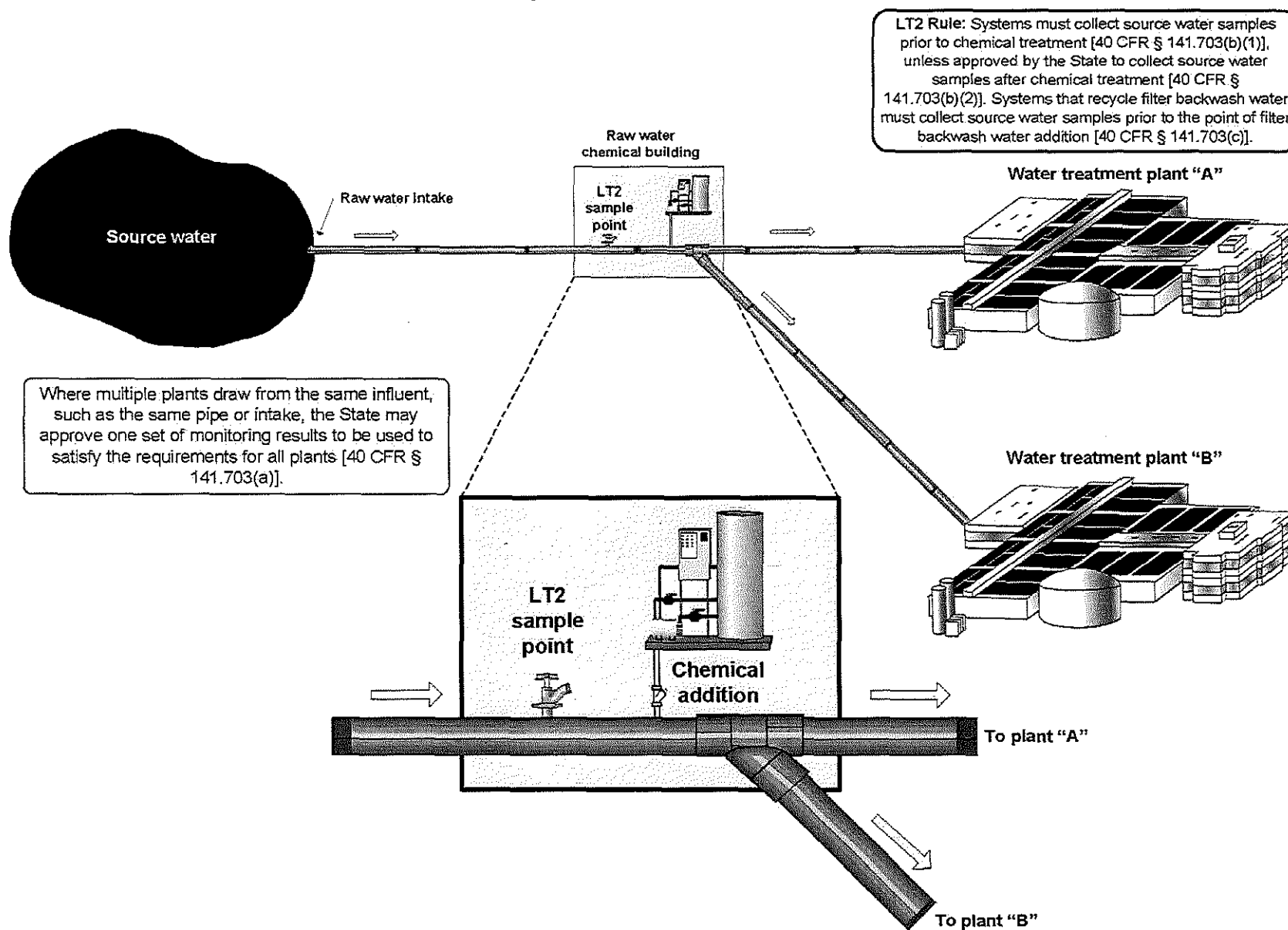
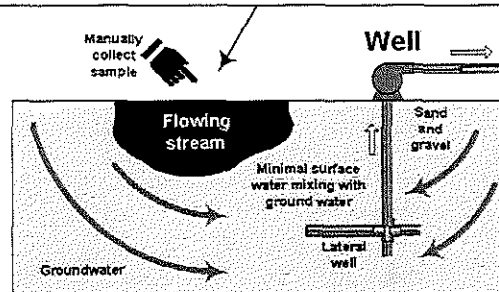


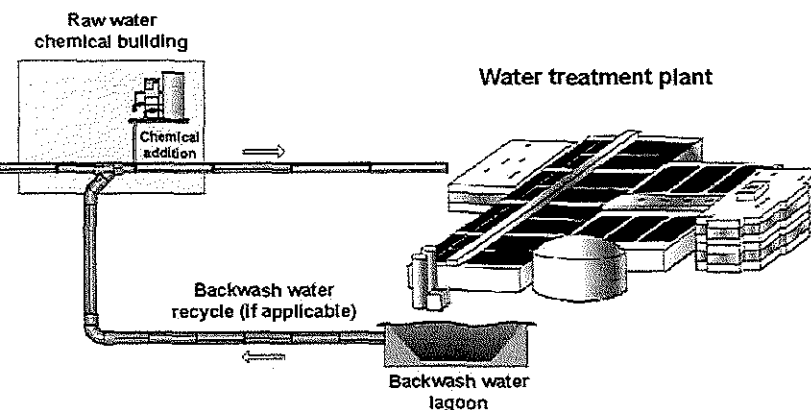
Figure 5. Bank Filtration

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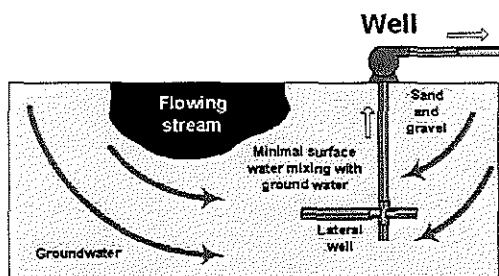
Scenario 1: Systems that receive *Cryptosporidium* treatment credit for bank filtration must collect source water samples in the surface water prior to bank filtration [40 CFR § 141.703(d)(1)].*



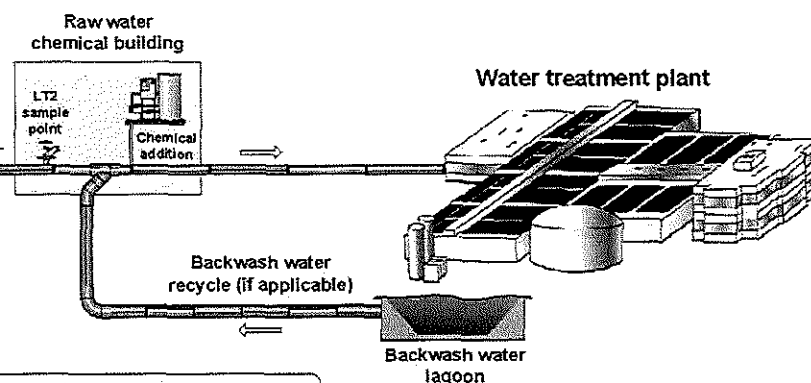
Bank filtration cross section



Scenario 2: Systems using bank filtered water that is treated by subsequent filtration must collect source water samples from the well source (i.e., after bank filtration) but before any other treatment.** Use of bank filtration during monitoring should be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive *Cryptosporidium* treatment credit for the bank filtration [40 CFR § 141.703(d)(2)].



Bank filtration cross section



* Refers to systems using bank filtration to meet *Cryptosporidium* removal requirements of the Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 ESWTR under 40 CFR § 141.173(b) or 40 CFR § 141.522(a).
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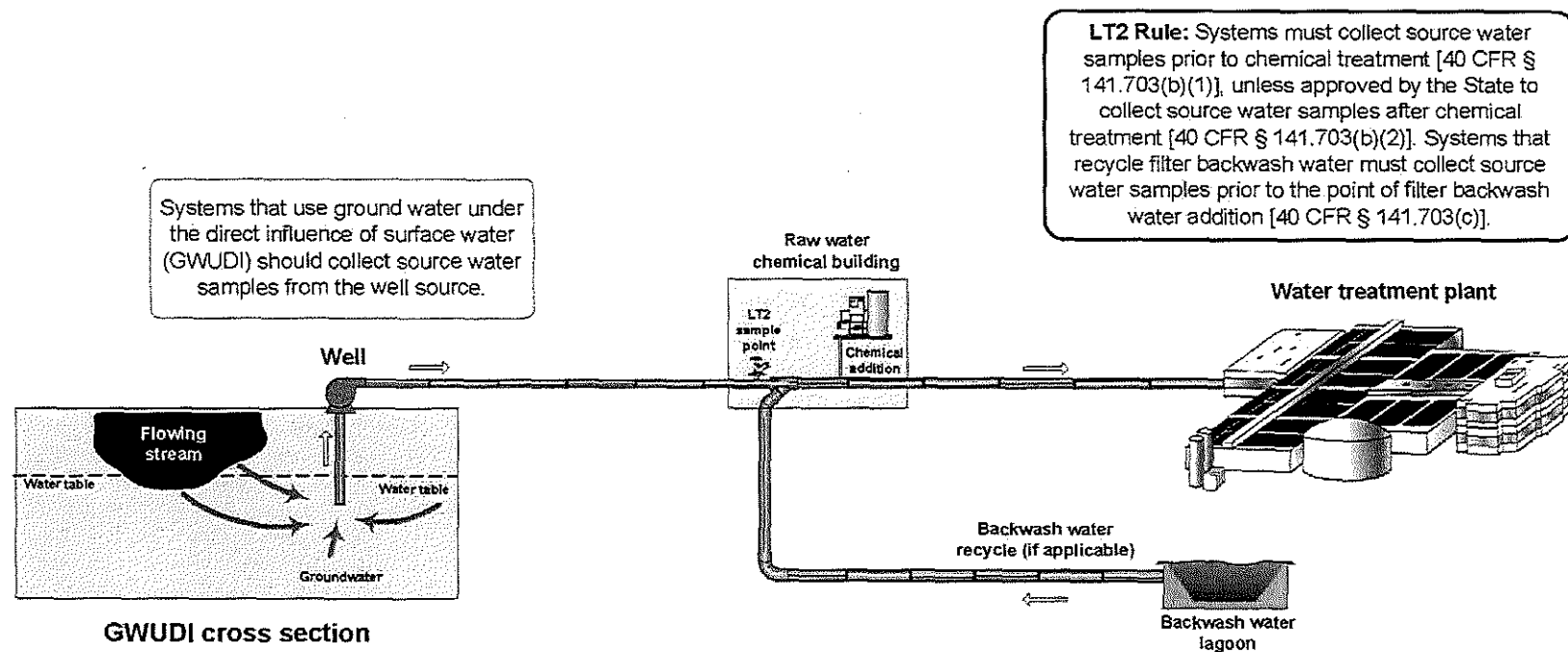
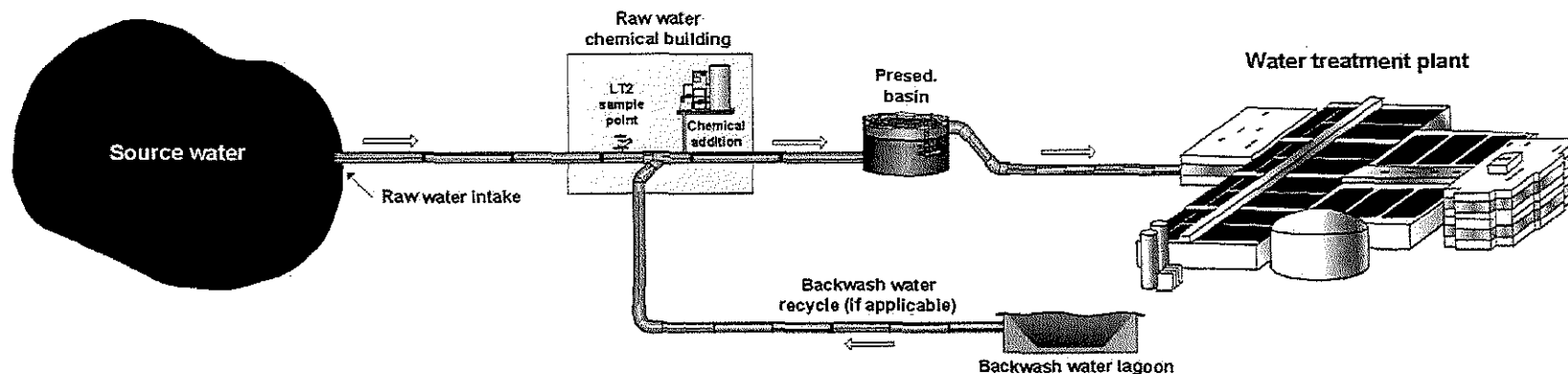


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Scenario 1:

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Scenario 2:

Systems without chemical addition prior to or in a presedimentation basin, or that have been approved by the State to collect source water samples after chemical treatment, may sample after the presedimentation basin but will not receive any treatment credit for presedimentation.

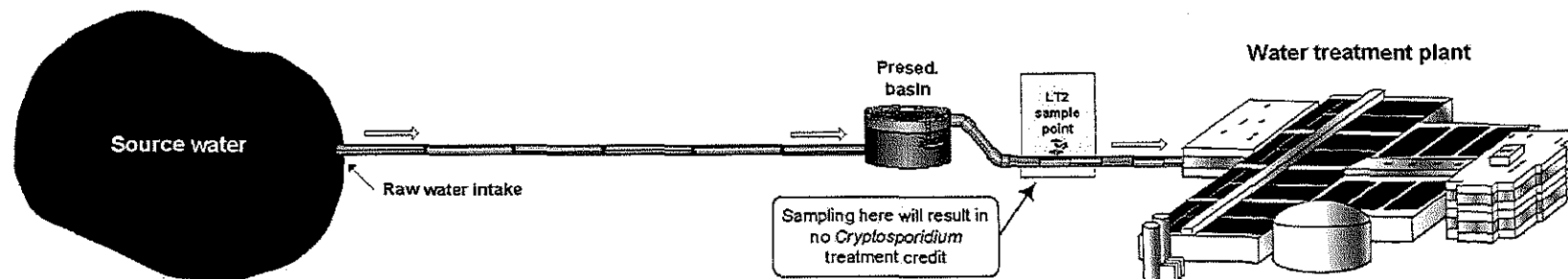


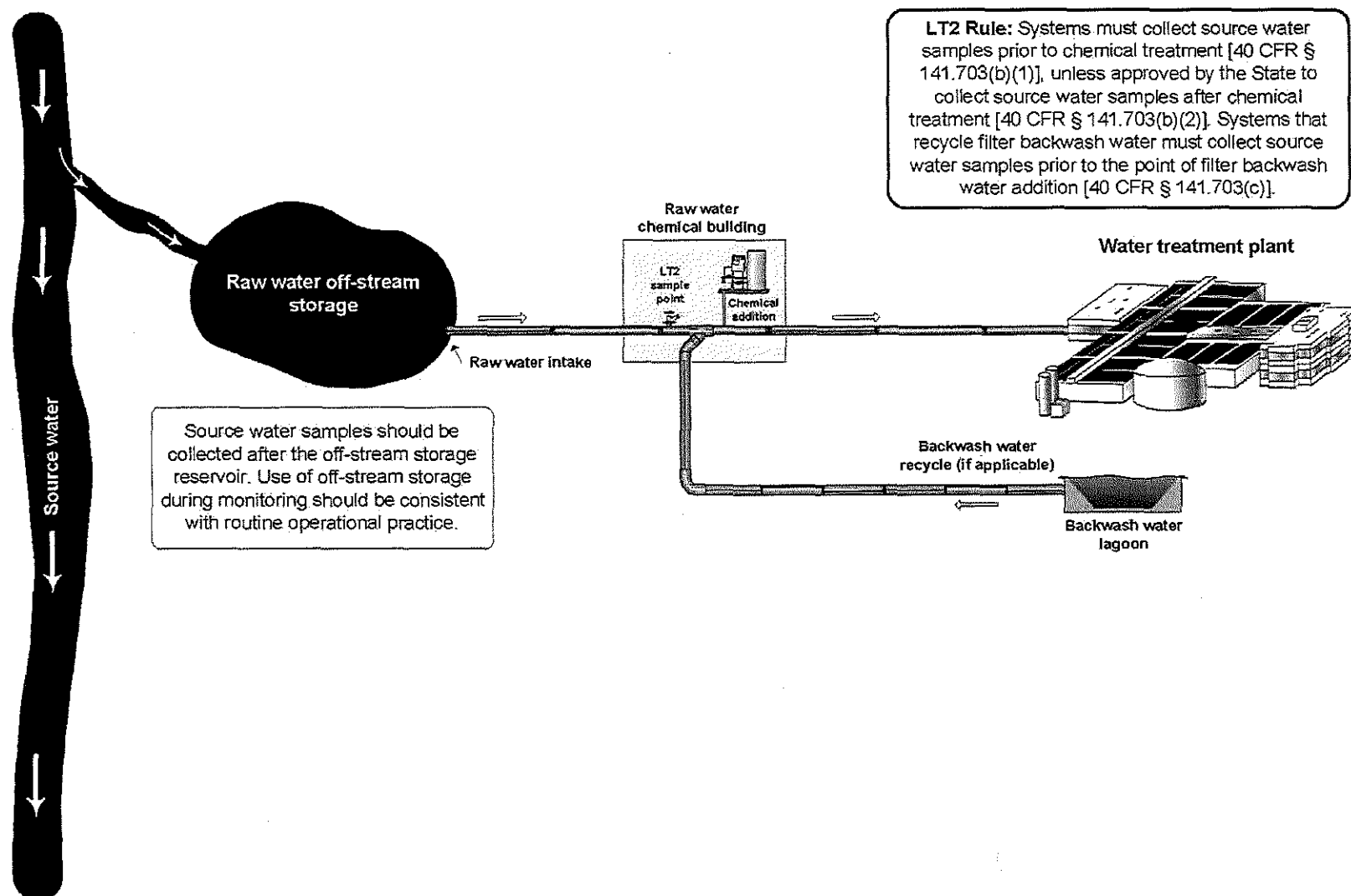
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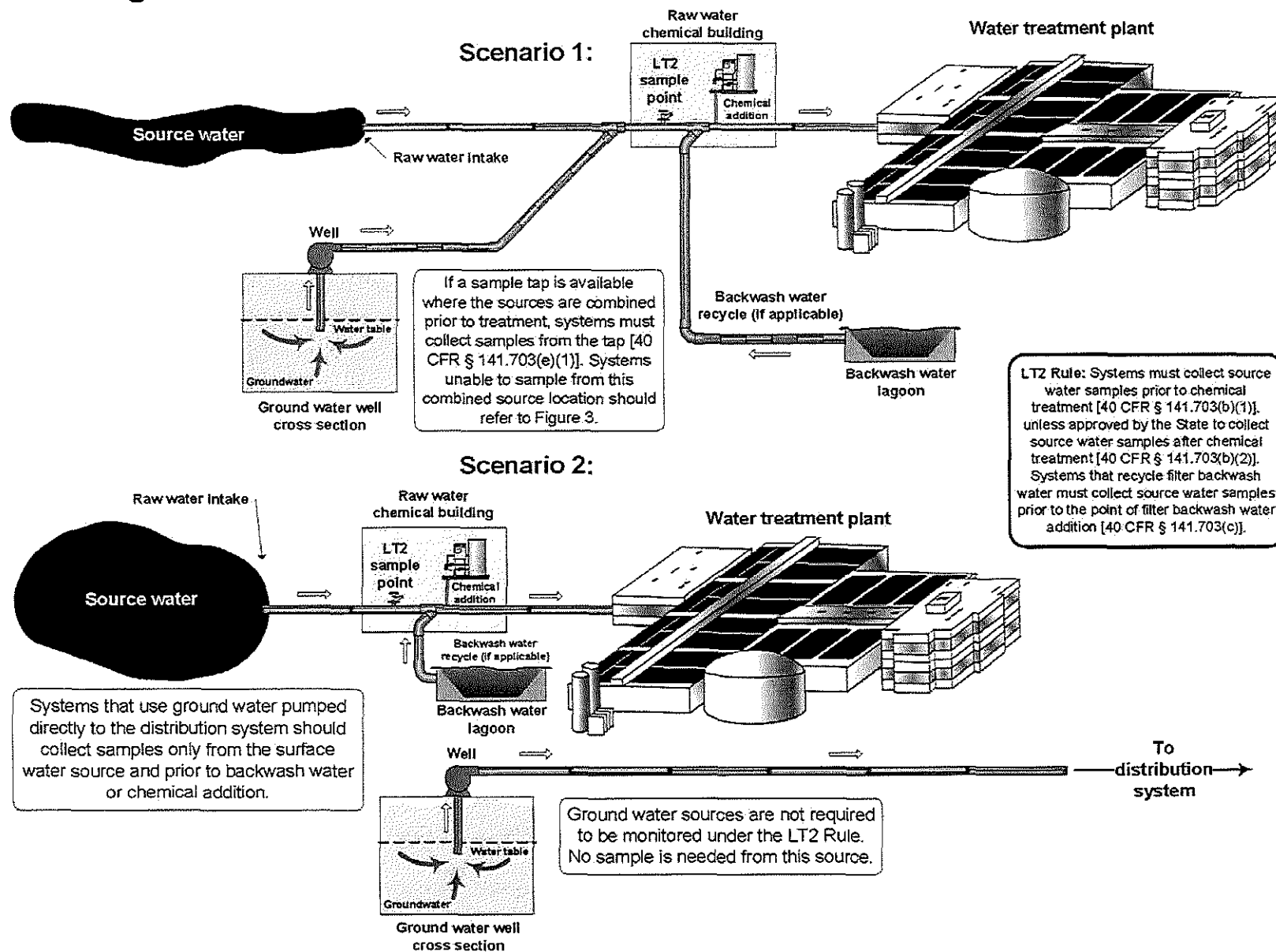


Figure 10. Blank Schematic for Submission to EPA

Public Water System (PWS) name: _____

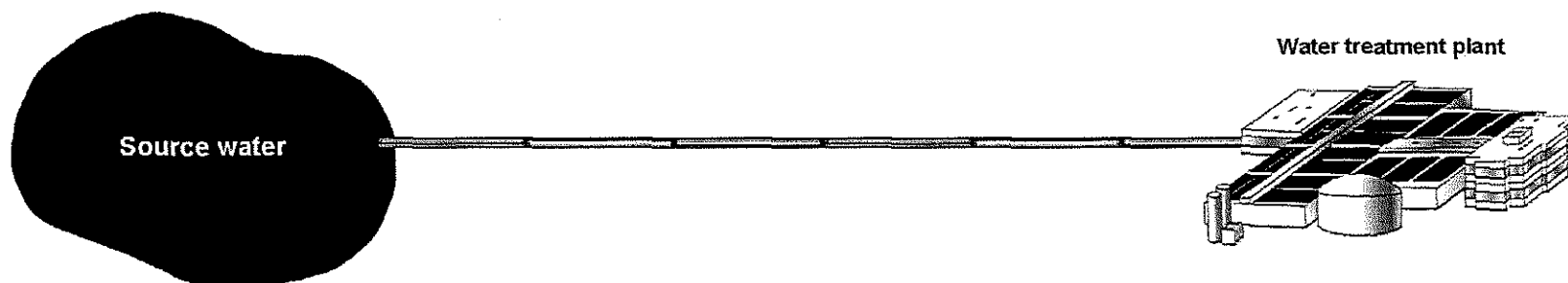
PWS ID: _____

Water treatment plant name: _____

Water system facility ID: _____

Indicate the following on the diagram that best represents your facility type (if applicable):

1. LT2 sampling location
2. Points of chemical treatment prior to the treatment plant
3. Filter backwash water addition
4. Pretreatment processes (e.g., presedimentation basins, bank filtration)
5. Multiple source waters (show by adding additional sources)



Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, February 06, 2015 11:01 AM
To: 'emurphy@cityofflint.com'
Subject: FW: Water Supply Sources

Elizabeth,

Below is a link to our website that lists all of surface water systems in Michigan. You will need to scroll down to the bottom of the list to see the listing of supplies using a river as their source. Also, I am not aware of any source water assessment conducted for the Flint River watershed; however, I would like to confirm that. I will let you know asap once I obtain the confirmation.

http://www.michigan.gov/deq/0,4561,7-135-3313_3675_3691-9775--,00.html

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

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, May 01, 2015 9:56 AM
To: 'gthomas@cityofflint.com'
Cc: Busch, Stephen (DEQ)
Subject: Premise plumbing
Attachments: Premise Plumbing.doc

Glen,

Based upon our discussion during our April 29th, 2015 site visit, approximately 40-45 commercial/industrial customers were identified as a potential candidate for needing a premise plumbing Water Safety Plan (WSP). Attached is a list of mechanical components within building premise plumbing to assist you in confirming this and/or identifying additional customers that could serve as WSP candidates. Please send us your completed list at your earliest convenience. Thanks.

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

Building Plumbing & Appurtenances to Consider

- 1. Cooling Towers ***
- 2. Evaporative Condensers ***

***evap fluid coolers/closed circuit cooling towers typically used for cooling industrial processes, refrigeration plants in cold stores, and cooling of make-up water for large building AC units**

- 3. Gravity fed storage tanks**
- 4. Boiler systems**
- 5. Plate heat exchangers**
- 6. Circulating/non-circulating hot water systems**
- 7. Buildings with extensive plumbing (large runs of hot water piping and/or dead-end piping).**

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, April 06, 2015 9:00 AM
To: 'Michael Glasgow'
Cc: Rosenthal, Adam (DEQ)
Subject: RE: City of Flint - March Bromate Results

Michael,

The March result is encouraging....we need a copy of the sample result from the sample collected in October of 2014...

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

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Monday, April 06, 2015 7:24 AM
To: Rosenthal, Adam (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: City of Flint - March Bromate Results

Adam,

Here are the results of our March bromate sampling.

Mike Glasgow
City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, May 26, 2015 3:29 PM
To: Howes, Sarah (DEQ); Pallone, Maggie (DEQ)
Cc: Benzie, Richard (DEQ); Devereaux, Tracy Jo (DEQ); Shaler, Karen (DEQ); Potter, Jodi (DEQ); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Communications between City of Flint and DEQ

Maggie and Sarah,

Is this specific to the City's drinking water? (your email just says DEQ in general)

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, May 26, 2015 1:59 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Devereaux, Tracy Jo (DEQ); Howes, Sarah (DEQ); Shaler, Karen (DEQ); Potter, Jodi (DEQ)
Subject: FW: Communications between City of Flint and DEQ
Importance: High

Note the deadline of COB Thursday to Sarah.

From: Pallone, Maggie (DEQ)
Sent: Tuesday, May 26, 2015 1:21 PM
To: Shekter Smith, Liane (DEQ)
Cc: Wurfel, Brad (DEQ); Wyant, Dan (DEQ); Howes, Sarah (DEQ); Thelen, Mary Beth (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); DEQ-Legislative-Contact; Potter, Jodi (DEQ)
Subject: Communications between City of Flint and DEQ

Liane,
 Rep Neely has requested any communications that DEQ has had with City of Flint between February 2015 and today. Could you please pull that information together and get it to Sarah by COB on Thursday? She will then forward it the Representative's office.

Please let me know if you need any additional details.

Thanks,
 Maggie

Maggie Pallone
 Director of Legislative Affairs
 Department of Environmental Quality

517-599-6190 (cell)

PalloneM@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, June 12, 2014 9:14 AM
To: McClellan, Michael (DEQ)
Subject: RE: Communications

There has been some concern and calls from residents in Flint about the Water Treatment Plant since it started operation back at the end of April. These calls have escalated to EPA Region 5 in Chicago and to EPA headquarters in Washington. No claims have been substantiated and the plant operation and monitoring indicates it is currently meeting all applicable standards.

Construction is underway in the City of Alma for expansion of their Water Treatment Plant to serve the City of St. Louis. Mark Joseph is the lead on this project.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: McClellan, Michael (DEQ)
Sent: Thursday, June 12, 2014 8:35 AM
To: Ballard-Atkins, Tina (DEQ); Bartley, Cheryl (DEQ); Bean, Lawrence (DEQ); Brown, Angela (DEQ); Busch, Stephen (DEQ); Schineman, Louis (DEQ); Shirey, Kathleen (DEQ); Vanderlaan, Mary (DEQ)
Subject: Communications

I have a communications outreach meeting this morning at 10:30. Are there any hot topics I should bring up?

I'll bring up the couple of PEAS we had related (sort of) to the fracking in Fowlerville. Anything else?

Thanks,
 Michael

Michael F. McClellan
 Lansing District Coordinator
 Lansing District Air Quality Supervisor
 Michigan Department of Environmental Quality
 525 W. Allegan
 Lansing, MI 48909
 Phone: 517-284-6637

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, September 10, 2015 7:58 AM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ)
Cc: Wyant, Dan (DEQ); Pallone, Maggie (DEQ)
Subject: RE: Congressman Kildee Letter on Lead in Flint Water
Attachments: Congressman Kildee Letter on Lead in Flint Water

I received a copy of Congressman Kildee's letter from Jordan as well. (attached).

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: Wurfel, Brad (DEQ)
Sent: Wednesday, September 09, 2015 10:09 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Wyant, Dan (DEQ); Pallone, Maggie (DEQ)
Subject: Fwd: Congressman Kildee Letter on Lead in Flint Water

Liane, need your team's help. We'll need a draft response, and possibly a briefing for the director tomorrow.
 I'll find you in the morning. Thanks!
 b

Sent from my iPhone

Begin forwarded message:

From: "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
Date: September 9, 2015 at 6:54:47 PM EDT
To: "Wurfelb@michigan.gov" <Wurfelb@michigan.gov>
Subject: FW: Congressman Kildee Letter on Lead in Flint Water

Hi Brad,

Can you please make sure the attached letter is passed along to Director Wyant? I will forward along a physical copy in the mail.

Thank you,

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

Rennaker, Joanne (DEQ)

From: Dickinson, Jordan <Jordan.Dickinson@mail.house.gov>
Sent: Wednesday, September 09, 2015 7:03 PM
To: Busch, Stephen (DEQ)
Subject: Congressman Kildee Letter on Lead in Flint Water
Attachments: 2015-09-09- Congressman Kildee Letter on Lead in Flint Water.pdf

Hi Mr. Busch,

Please see the attached letter from Congressman Kildee that you were cc'd on. I will forward along a physical copy in the mail.

Thank you,

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
FINANCIAL SERVICES**

**SUBCOMMITTEE ON
HOUSING AND INSURANCE**

**SUBCOMMITTEE ON
MONETARY POLICY AND TRADE**

SENIOR WHIP

**DEMOCRATIC POLICY AND
COMMUNICATIONS COMMITTEE**



Congress of the United States
House of Representatives
Washington, DC 20515
September 9, 2015

WASHINGTON OFFICE

227 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-3611
(202) 225-6393 (FAX)

DISTRICT OFFICE

111 EAST COURT STREET #3B
FLINT, MI 48502
(810) 238-8627
(810) 238-8658 (FAX)

WWW.DANKILDEE.HOUSE.GOV

/RepDanKildee

@RepDanKildee

Ms. Gina McCarthy
Administrator
Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

Mr. Dan Wyant
Director
Michigan Department of Environmental Quality
P.O. Box 30473
Lansing, MI 48909

Administrator McCarthy and Director Wyant:

The attached June 24, 2015, memorandum between two Environmental Protection Agency (EPA) employees, Miguel A. Del Toral and Thomas Poy, published recently by the American Civil Liberties Union of Michigan, suggests that there are high lead levels in the city of Flint, Mich., water transmission lines. Furthermore, this document reflects that children consuming this water had levels of lead in their blood in excess of three times what they were prior to the city of Flint switching its source water from the Detroit Water and Sewage Department (DWSD) to the Flint River.

In addition, this memorandum makes recommendations to Mr. Poy, Chief of the Ground Water and Drinking Water Branch of EPA Region 5, to do three things. First, for the EPA to work with the Michigan Department of Environmental Quality (MDEQ) to provide technical assistance to the city of Flint to deal with water quality issues. Second, it suggests the EPA review the compliance status of the city of Flint in respect to its compliance with the Lead and Copper Rule (LCR). Third, the memorandum recommends that the EPA conduct a review of the city of Flint testing procedures to ensure they are compliant with the LCR.

Regarding this memorandum and the surrounding water quality issues in the city of Flint, I have the following questions:

- Was this memorandum actually sent to Mr. Poy?

- Are the findings in the memorandum regarding the lead levels in the city of Flint water accurate?
- If there were in fact high levels of lead in the water in the city of Flint, when did the EPA and/or MDEQ plan to alert the public?
- What, if any, of the recommendations has the EPA followed from the memorandum?
- Given the demonstrated level of lead in the water in Flint, MI, is the water safe?

Regardless, I am very troubled by recent tests suggesting high levels of lead in the city of Flint's water system. As you know, on the EPA's website it says that lead above the "action level" in drinking water can cause a variety of adverse health effects, including delays in physical and mental development in babies and children.

According to the Safe Drinking Water Act, the EPA has the responsibility of enforcing water quality standards. EPA, however, has given the primary responsibility of enforcing water quality standards to the state of Michigan via MDEQ. As such, it is the responsibility of these agencies to ensure that the people of the city of Flint have safe drinking water.

Thank you and I look forward to hearing from you soon.

Sincerely,



Dan Kildee
MEMBER OF CONGRESS

cc:

State Senator Jim Ananich
State Representative Sheldon Neeley
State Representative Phil Phelps
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
Liane Shekter-Smith, MDEQ
Pat Cook, MDEQ
Stephen Busch, MDEQ
Brad Wurfel, MDEQ
Marc Edwards, Virginia Tech

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, February 11, 2015 12:39 PM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
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: Busch, Stephen (DEQ)
Sent: Tuesday, October 14, 2014 2:00 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: Busch, Stephen (DEQ)
Sent: Tuesday, November 12, 2013 10:33 AM
To: Prysby, Mike (DEQ)
Subject: RE: DEQ Meeting with Flint City

Ok.

As a proposal for sludge disposal has not been submitted we having nothing to comment on at this point.

I'm not sure that any recreational use can be restricted, but security around the intake area will likely be increased.

Central staff may complete a source water assessment as this would help identify long term impacts of using the river as a source, but a source water protection program is voluntary on the part of a water system.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance MDEQ
 517-643-2314

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

From: Prysby, Mike (DEQ)
Sent: Tuesday, November 12, 2013 8:02 AM
To: Busch, Stephen (DEQ)
Subject: FW: DEQ Meeting with Flint City

Steve,

Steve,

I have not spoken with Dave directly regarding his questions; however, John 'O and I talked last Friday (late morning) regarding these questions. I did not go into detail with John on Flint asking us to reconsider Bray Road....but kept it more general that Flint is investigating several cost options for disposal of lime sludge. I also indicated that we would not push source water assessment of the Flint River watershed on the basis that this is expected to serve as a temporary source (18-24 months).... then as an emergency back-up source after KWA.

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

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

From: John O'Malia [<mailto:jcomalia@gmail.com>]
Sent: Friday, November 08, 2013 8:59 AM
To: Prysby, Mike (DEQ)
Subject: Fwd: DEQ Meeting with Flint City

Can you address back to me your thoughts on David's questions. Thanks.

John O'

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

From: John O'Malia <jcomalia@gmail.com>
 Date: Fri, Nov 8, 2013 at 8:57 AM
 Subject: Re: DEQ Meeting with Flint City
 To: David Jansen <D_JANSEN@gcdcwws.com>

Will pursue ASAP.

John O'

On Thu, Nov 7, 2013 at 3:52 PM, David Jansen <D_JANSEN@gcdcwws.com> wrote:

> The Flint River Watershed Coalition has a meeting scheduled with the Commissioner and me on Tuesday. They're going to want to know the implications for the river if Flint puts the plant into operation. Questions to be raised include sludge disposal and implications for recreational use on Holloway and Mott Lake if MDEQ is going to make them implement source water protection plan, and if so, how extensive. See what you can find out, but don't push too hard.

> Thanks for the quick response, John

> Best regards,

> Dave

>

> -----Original Message-----

> From: John O'Malia [<mailto:jcomalia@gmail.com>]

> Sent: Thursday, November 07, 2013 3:38 PM

> To: David Jansen; Elgar Brown

> Subject: Re: DEQ Meeting with Flint City

>

> I did not get into the specifics but we can open up, Flint City improvements, for discussion on the 21st. With softening the sludge has to go somewhere for sure. We know the sludge pipeline from the WTP to Bray is shot!

> I can get more info. if needed right away? Monday they have off.

> John O'

>

> On Thu, Nov 7, 2013 at 10:58 AM, David Jansen <D_JANSEN@gcdcwws.com> wrote:

>> John, does this mean that DEQ is going to let them reopen Bray Road?

>>

>> -----Original Message-----

>> From: John O'Malia [<mailto:jcomalia@gmail.com>]

>> Sent: Thursday, November 07, 2013 10:49 AM

>> To: David Jansen; Matt Raysin; Osborn, Larry; Elgar Brown; Prysby,

>> Mike (DNRE)

>> Subject: DEQ Meeting with Flint City

>>

>> As per Mike they are going to operate the plant, with softening, starting in April 2014 when the DWSD contract expires. So, they have to move quickly to improve the plant to manage/produce water 24/7. It sounds like the design will proceed quickly to allow 24/7 operation and much is to be done quickly to meet the deadline. I am sure somethings will slip beyond April but they seem to be in a move quick mode!

>> I told Mike that they would get the 60% PS drawings by say Friday the 8th as they are closed Monday. Larry, I assume that is correct.

>> It appears that moving the meeting to the 21st is going to be OK for review of the PS drawings. They did not seem to have any heartburn with the standards as presented but it will be a good idea to just open that issue up, on the 21st, to be sure it is vetted.

>> All seems to progress.
>> Any questions let me know.
>> John O'.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 3:11 PM
To: 'Hansen, Jeff'
Cc: Prysby, Mike (DEQ); Adam Rosenthal (rosenthala@michigan.gov)
Subject: RE: DEQ-Laboratory Report-50201563

Jeff,

The Site codes listed by the City do not match that of their approved plan. We have properly aligned the sample results based on the site address to the DBP site code. We have notified the City of this issue previously but it has not been corrected.

Therefore, our results listings and calculations provided in my previous email are correct and should be used.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Hansen, Jeff [<mailto:jrhansen@lan-inc.com>]
Sent: Friday, February 27, 2015 2:34 PM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: FW: DEQ-Laboratory Report-50201563

Steve,

Thanks for the table. Flint passed the info on to me earlier today.

I see a discrepancy between your table and Flint's records and we have used Flint's data in the report. I have double checked the lab results and I believe the error is on your end, but that is something to resolve. I've attached what I believe is correct. We have already printed and sent out the report since it is due to you guys Sunday. Samir is hand delivering and will probably be by soon.

Jeffrey R. Hansen
 Senior Project Manager

 **Lockwood, Andrews
& Newnam, Inc.**
 A LEO A DALY COMPANY
 1311 South Linden Road, Suite B • Flint, MI 48532
 T 810.820.2682 C 810.333.3201
www.lan-inc.com • JRHansen@lan-inc.com

From: Brent Wright [<mailto:bwright@cityofflint.com>]
Sent: Friday, February 27, 2015 9:43 AM
To: Hansen, Jeff
Subject: Fwd: DEQ-Laboratory Report-50201563

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

From: **Michael Glasgow** <mglasgow@cityofflint.com>
 Date: Fri, Feb 27, 2015 at 8:09 AM
 Subject: Fwd: DEQ-Laboratory Report-50201563
 To: Brent Wright <bwright@cityofflint.com>

Here are the DBP results. Everything is great, but this still leaves us in violation at 3 sites, as shown in the other attachment.

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

From: **DEQ-DWR-LABREPORTS** <DEQ-DWR-LABREPORTS2@michigan.gov>
 Date: Thu, Feb 26, 2015 at 4:43 PM
 Subject: DEQ-Laboratory Report-50201563
 To: "MGLASGOW@CITYOFFLINT.COM" <MGLASGOW@cityofflint.com>

Dear Drinking Water Laboratory Client,

A PDF file containing your analytical results has been attached to this e-mail.

Please do not reply directly to this e-mail. It is an automated account that does not respond to incoming messages.

Please contact the laboratory directly at (517) 335-8184 with questions regarding your report.

Thank you for using the MDEQ Drinking Water Laboratory.

--

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: Busch, Stephen (DEQ)
Sent: Friday, September 25, 2015 12:30 PM
To: Krisztian, George (DEQ)
Cc: Lundy, Gregg (DEQ)
Subject: RE: Detroit News article about lead testing (follow-up)

The City of Flint is simply providing bottles and instructions and collecting the samples and then sending it to a certified lab for analysis. The City pays the lab, but is not charging the resident.

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: Krisztian, George (DEQ)
Sent: Friday, September 25, 2015 12:28 PM
To: Busch, Stephen (DEQ)
Cc: Lundy, Gregg (DEQ)
Subject: RE: Detroit News article about lead testing (follow-up)

I'm not sure if this really matters but I checked the Lab certification database and the city of Flint does not appear to be certified for the analysis of lead. Since they are not charging for the test this might not be that big of an issue but typically Gregg requires that Labs that analyze samples for parameters outside of the scope of the certification indicate on the report that the results are for informational purposes only.

I have copied Gregg on this e-mail in case you would like to discuss this with him further.

George

George L. Krisztian
 Laboratory Director
 Michigan Department of Environmental Quality
 (517) 335-8812

From: Busch, Stephen (DEQ)
Sent: Friday, September 25, 2015 12:16 PM
To: Krisztian, George (DEQ)
Subject: FW: Detroit News article about lead testing

I thought I had included you, not Susan when I hit reply.

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: Busch, Stephen (DEQ)
Sent: Friday, September 25, 2015 12:11 PM
To: Leeming, Susan (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Detroit News article about lead testing

George,

Sorry about the confusion. While we have said all along that the City of Flint has indicated that they are willing to test customer water for lead, the media doesn't appear to have carried the message through in their article. You can inform Flint customers that they can contact the Flint Water Treatment Plant at 810-787-6537.

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: Leeming, Susan (DEQ)
Sent: Friday, September 25, 2015 10:46 AM
To: Krisztian, George (DEQ)
Cc: Wagner, Robert (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Detroit News article about lead testing

I talked to Richard Benzie. He said that the City of Flint is providing free lead testing. Steve Busch or Mike Prysby might have a phone number or more info that you can pass on.

Sue Leeming, Assistant Chief
 Remediation and Redevelopment Division
 Department of Environmental Quality
 517-897-2839 (cell)
 517-284-5091 (desk)

From: Krisztian, George (DEQ)
Sent: Friday, September 25, 2015 10:33 AM
To: Wagner, Robert (DEQ) <WAGNERR1@michigan.gov>; Leeming, Susan (DEQ) <LeemingS@michigan.gov>
Subject: Detroit News article about lead testing
Importance: High

Hi Bob and Sue,

You may want to read the following article:

<http://www.detroitnews.com/story/news/local/michigan/2015/09/24/flint-plans-advisory-curbing-exposure-lead/72725736/>

The most pertinent part is:

"State regulators insist the water is safe, although they're urging anyone with concerns to have their water tested for free."

As you can imagine we have been getting quite a few calls about the "Free lead testing" that we provide. We have been informing callers that the article got it wrong and that we are a fee based service. People have been irritated with us but there is nothing that we can do about the situation. I just want to give you the heads up in case someone complains to their legislator about the Lab.

Please note that the article does not even mention the DEQ Lab or the Lab that is offering this "free service".

Brad is mentioned in the article and he probably should be made aware of the situation. What is the best way to do that?

George

George L. Krisztian
Laboratory Director
Michigan Department of Environmental Quality
(517) 335-8812

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, September 25, 2015 12:11 PM
To: Leeming, Susan (DEQ)
Cc: Wurfel, Brad (DEQ)
Subject: RE: Detroit News article about lead testing

George,

Sorry about the confusion. While we have said all along that the City of Flint has indicated that they are willing to test customer water for lead, the media doesn't appear to have carried the message through in their article. You can inform Flint customers that they can contact the Flint Water Treatment Plant at 810-787-6537.

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: Leeming, Susan (DEQ)
Sent: Friday, September 25, 2015 10:46 AM
To: Krisztian, George (DEQ)
Cc: Wagner, Robert (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Detroit News article about lead testing

I talked to Richard Benzie. He said that the City of Flint is providing free lead testing. Steve Busch or Mike Prysby might have a phone number or more info that you can pass on.

Sue Leeming, Assistant Chief
 Remediation and Redevelopment Division
 Department of Environmental Quality
 517-897-2839 (cell)
 517-284-5091 (desk)

From: Krisztian, George (DEQ)
Sent: Friday, September 25, 2015 10:33 AM
To: Wagner, Robert (DEQ) <WAGNERR1@michigan.gov>; Leeming, Susan (DEQ) <LeemingS@michigan.gov>
Subject: Detroit News article about lead testing
Importance: High

Hi Bob and Sue,

You may want to read the following article:

<http://www.detroitnews.com/story/news/local/michigan/2015/09/24/flint-plans-advisory-curbing-exposure-lead/72725736/>

The most pertinent part is:

“State regulators insist the water is safe, although they’re urging anyone with concerns to have their water tested for free.”

As you can imagine we have been getting quite a few calls about the “Free lead testing” that we provide. We have been informing callers that the article got it wrong and that we are a fee based service. People have been irritated with us but there is nothing that we can do about the situation. I just want to give you the heads up in case someone complains to their legislator about the Lab.

Please note that the article does not even mention the DEQ Lab or the Lab that is offering this “free service”.

Brad is mentioned in the article and he probably should be made aware of the situation. What is the best way to do that?

George

George L. Krisztian
Laboratory Director
Michigan Department of Environmental Quality
(517) 335-8812

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, May 14, 2014 8:52 AM
To: Benzie, Richard (DEQ)
Cc: Willard, Veronica (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: DIR00107 McCormick / Recent developments involving DWSD's water service to city of Flint and Genesee County
Attachments: Act 399 Capacity and Reliability Requirements.pdf

The attached letter to the City of Flint should cover the concerns.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Tuesday, May 13, 2014 1:35 PM
To: Busch, Stephen (DEQ)
Cc: Willard, Veronica (DEQ)
Subject: FW: DIR00107 McCormick / Recent developments involving DWSD's water service to city of Flint and Genesee County

Please draft a response regarding the reliability of Flint's water supply. I'm not sure DWSD needs to be assured but it's the courteous thing to do and probably makes them drop this issue.

From: Willard, Veronica (DEQ)
Sent: Tuesday, May 13, 2014 11:36:37 AM
To: Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: FW: DIR00107 McCormick / Recent developments involving DWSD's water service to city of Flint and Genesee County

Can you forward to appropriate staff to draft a response for the Director's signature? Thank you.

From: DEQ-LogLetter
Sent: Tuesday, May 13, 2014 9:49 AM
To: Willard, Veronica (DEQ)
Cc: Thelen, Mary Beth (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Anderson, Madhu (DEQ); Patterson, Leigh (DEQ); Shekter Smith, Liane (DEQ)
Subject: DIR00107 McCormick / Recent developments involving DWSD's water service to city of Flint and Genesee County

Assigned to ODWMA



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

April 29, 2014

Mr. Daugherty Johnson, Utilities Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 02310

Dear: Mr. Johnson

Subject: Act 399 Capacity and Reliability Requirements

This letter, per your request, is being written as verification that the City of Flint water system is currently in compliance with required capacity and power service reliability requirements under the Michigan Safe Drinking Water Act and Administrative Rules, Supplying Water to the Public.

The required capacity of a waterworks system as established in Rule 1204 (R 325.11204) required sufficient capacity to meet approved finished water supply requirements, and is based upon the combination of the following options:

- a. Rated capacity of an approved surface water supply or complete treatment system;
- b. Firm capacity of approved groundwater supply;
- c. Available contracted capacity that can be delivered from another public water supply;
- d. Excess finished water storage capacity.

Under the first option listed above, the City's baseline water withdrawal capacity from the Flint River, and rated capacity of the City's water treatment plant (WTP), both exceed its finished water supply requirements. The rated capacity of a complete treatment system is established under Rule 1006 (R 325.11006). In accordance with this rule, the Department of Environmental Quality (DEQ) has established a rated capacity of 36 million gallons per day for the City's WTP, which again far exceeds current and future finished water supply requirements for the City's service area.

In addition, while capacity under item d above for excess finished water storage has not been established, the City currently has enough finished water storage to supply more than 2 days of normal finished water supply requirements

Rule 1206 (R 325.11206) requires water systems to provide a means to continuously supply fully finished water during normal power service interruption. The City's WTP is now equipped with a redundant electrical system that includes provisions for stand-by power generation; thus meeting this requirement.

While additional means to meet the above requirements for capacity and power interruption can be provided through contracted interconnections with other water systems, the City has demonstrated compliance with these requirements without such means. However, the DEQ still supports and encourages such interconnections be maintained for emergency purposes as an additional barrier to help maintain public health protections. While these emergency

Mr. Daugherty Johnson

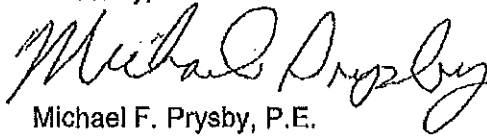
2

April 29, 2014

interconnections have no requirement to establish an available or contracted capacity, the DEQ encourages the corresponding utilities to establish mutual aid agreements where possible. Such agreements can be developed through the Michigan Water/Wastewater Agency Response Network (MiWARN). For more information, please visit miwarn.org. A MiWARN brochure is also enclosed for your information.

If you have any questions, feel free to contact me at (517) 290-8817; prysbym@michigan.gov; or Department of Environmental Quality, Office of Drinking Water and Municipal Assistance, Lansing District Office, 525 West Allegan Street, 1st Floor South, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,



Michael F. Prysby, P.E.
District Engineer
Field Operations Section
Office of Drinking Water and
Municipal Assistance

mfp/jlr
Enclosure

cc: Mr. Howard Kroft, Utilities Director, City of Flint

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 06, 2015 12:07 PM
To: 'Shoven, Heather'; Crooks, Jennifer; Prysby, Mike (DEQ)
Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

No problem.

As this is a chronic contaminant with a standard based on a locational running annual average, from a technical perspective it is important to keep in mind that analysis of samples collected from the last round in November do show levels currently below the 80 ppb standard at 7 of the 8 locations.

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 11:44 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

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: 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,
 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: 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.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

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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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Importance: High

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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."

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I appreciate your time.

Best wishes,
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Heather A. Shoven
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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

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Cc: Shoven, Heather

Subject: RE: Discussion with Michigan citizen regarding the Flint Drinking Water TTHM Standard Violation

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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

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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: 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

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 Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
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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)
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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: Busch, Stephen (DEQ)
Sent: Wednesday, January 21, 2015 1:12 PM
To: Anderson, Madhu (DEQ)
Subject: RE: Document for Review

Thanks. I was aware of this information, but had not seen the formal communication from DWSD.

The City of Flint has already issued the following response publically:

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.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Anderson, Madhu (DEQ)
Sent: Wednesday, January 21, 2015 1:05 PM
To: Busch, Stephen (DEQ)
Subject: Fwd: Document for Review

Steve - thought you might want to see this as well.

Madhu

Madhu R. Anderson
 Director, Office of Policy | Michigan Department of Environmental Quality
 office 517 284 6702 | cell 517 290 9653

Begin forwarded message:

From: "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov>
Date: January 21, 2015 at 11:51:53 AM EST
To: "Creal, William (DEQ)" <CREALW@michigan.gov>, "Shekter Smith, Liane (DEQ)" <SHEKTERL@michigan.gov>, "Anderson, Madhu (DEQ)" <AndersonM30@michigan.gov>, "Sygo, Jim (DEQ)" <SygoJ@michigan.gov>, "Datema, Maggie (DEQ)" <DatemaM@michigan.gov>, "Epkey, Amy (DEQ)" <epkeya@michigan.gov>
Cc: "Shaler, Karen (DEQ)" <SHALERK@michigan.gov>, "Willard, Veronica (DEQ)"

<WILLARDV@michigan.gov>, "Smith, Laura (DEQ)" <SMITHL16@michigan.gov>, "Feuerstein, Heather (DEQ)" <FeuersteinH@michigan.gov>, "Wilcox, Candra (DEQ)" <WilcoxC2@michigan.gov>

Subject: FW: Document for Review

Director asked that I share this with 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: Adamczyk, Lynne (GOV)

Sent: Friday, January 16, 2015 10:27 AM

To: Thelen, Mary Beth (DEQ); Pleyte, Beth (Treasury); VanSickle, Michele (GOV); Clement, Elizabeth (GOV); Rospond, Laurie (GOV); Hall, Jean (GOV); Brader, Valerie (GOV)

Subject: Document for Review

FYI

Lynne Adamczyk
Executive Assistant
Office of Governor Rick Snyder
517-373-3400 (o)
517-241-9412 (d)
adamczyk1@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 15, 2015 8:45 AM
To: Pallone, Maggie (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: RE: Elected leaders Flint water briefing

No Problem.

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: Pallone, Maggie (DEQ)
Sent: Tuesday, September 15, 2015 8:44 AM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Elected leaders Flint water briefing

Steve, Director may ask you to stay back if at all possible so he can get briefed and updated on this. We can discuss on our call at 11 (does this work for everyone?)

Do you mind having someone send out a conference call #?

Maggie

On Sep 15, 2015, at 8:16 AM, Busch, Stephen (DEQ) <BUSCHS@michigan.gov> wrote:

I'm in the office until 12:00 then headed up to the conference in Sault Ste. Marie. I can call in on the way up if you give me a time and number.

News agencies are reporting that Mayor Walling has now sent a request to the Governor yesterday for \$30 million to help address the lead issue. If this is for partial service line replacement it could exacerbate lead levels in homes rather than help reduce exposure. I have not seen this letter.

<http://michiganradio.org/post/flint-mayor-asking-state-30-million-fix-water-system#stream/0>

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: Shekter Smith, Liane (DEQ)
Sent: Tuesday, September 15, 2015 6:34 AM
To: Benzie, Richard (DEQ); Pallone, Maggie (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Elected leaders Flint water briefing

I spoke with Jim S. yesterday. I'll try to touch base with Maggie this morning, probably around 11ish. We should be able to get a call in to strategize. Not sure what time Steve is planning to arrive. But we'll make it work. And if the briefing is Friday, one of us should be able to be there.

From: Benzie, Richard (DEQ)
Sent: Monday, September 14, 2015 8:24:12 AM
To: Pallone, Maggie (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Elected leaders Flint water briefing

Maggie,

Liane is on her way to Sault Ste. Marie this morning. Steve Busch and I leave tomorrow morning for the same conference. We are not scheduled to be back in the office this week.

Liane will have to let you know when she is available for a conference call.

From: Pallone, Maggie (DEQ)
Sent: Sunday, September 13, 2015 9:56:51 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ)
Subject: Elected leaders Flint water briefing

Hi all-

Brad and I had a call with the Governor's office on Friday afternoon to discuss how to handle the Flint water letters we received from Congressman Kildee and from Senator Ananich and Reps. Phelps and Neeley.

As you are aware, the Michigan legislators letter was asking for a response by Monday. I am assuming we will not have a response vetted and ready to go by then. Instead, the Governor's office and us agreed the best course of action is an elected leaders briefing.

Congressman Kildee's office is checking his schedule, but I think this Friday in Flint might be the best time. Liane, when are you back? Will you have some availability while you are up north to have a conference call to plan this?

Please let me know your availability for the end of this week, or perhaps next Monday if we have to push it out that far.

Thanks,
Maggie

Maggie Pallone

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, September 14, 2015 3:42 PM
To: Pallone, Maggie (DEQ)
Subject: RE: Elected leaders Flint water briefing

Are we still meeting with Rep. Neeley on 9/22? Can we expand that meeting to include the others?

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: Pallone, Maggie (DEQ)
Sent: Sunday, September 13, 2015 9:57 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ)
Subject: Elected leaders Flint water briefing

Hi all-
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Thanks,
 Maggie

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 15, 2015 8:16 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Pallone, Maggie (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: RE: Elected leaders Flint water briefing

I'm in the office until 12:00 then headed up to the conference in Sault Ste. Marie. I can call in on the way up if you give me a time and number.

News agencies are reporting that Mayor Walling has now sent a request to the Governor yesterday for \$30 million to help address the lead issue. If this is for partial service line replacement it could exacerbate lead levels in homes rather than help reduce exposure. I have not seen this letter.

<http://michiganradio.org/post/flint-mayor-asking-state-30-million-fix-water-system#stream/0>

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: Shekter Smith, Liane (DEQ)
Sent: Tuesday, September 15, 2015 6:34 AM
To: Benzie, Richard (DEQ); Pallone, Maggie (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Elected leaders Flint water briefing

I spoke with Jim S. yesterday. I'll try to touch base with Maggie this morning, probably around 11ish. We should be able to get a call in to strategize. Not sure what time Steve is planning to arrive. But we'll make it work. And if the briefing is Friday, one of us should be able to be there.

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To: Pallone, Maggie (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Elected leaders Flint water briefing

Maggie,

Liane is on her way to Sault Ste. Marie this morning. Steve Busch and I leave tomorrow morning for the same conference. We are not scheduled to be back in the office this week.

Liane will have to let you know when she is available for a conference call.

From: Pallone, Maggie (DEQ)
Sent: Sunday, September 13, 2015 9:56:51 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Cc: Wurfel, Brad (DEQ); Sygo, Jim (DEQ)
Subject: Elected leaders Flint water briefing

Hi all-

Brad and I had a call with the Governor's office on Friday afternoon to discuss how to handle the Flint water letters we received from Congressman Kildee and from Senator Ananich and Reps: Phelps and Neeley.

As you are aware, the Michigan legislators letter was asking for a response by Monday. I am assuming we will not have a response vetted and ready to go by then. Instead, the Governor's office and us agreed the best course of action is an elected leaders briefing.

Congressman Kildee's office is checking his schedule, but I think this Friday in Flint might be the best time. Liane, when are you back? Will you have some availability while you are up north to have a conference call to plan this?

Please let me know your availability for the end of this week, or perhaps next Monday if we have to push it out that far.

Thanks,
Maggie

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 02, 2014 3:54 PM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: RE: Email Inquiry

Please contact the individual by phone. You should explain that the City provides extensive treatment in order to meet all of the required standards, they will not be drinking Flint River water directly.

Thanks.

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: Wednesday, April 02, 2014 3:50 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: FW: Email Inquiry

FYI. How do we respond?

Adam

From: deq-assist
Sent: Wednesday, April 02, 2014 3:34 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: Email Inquiry

Adam,
 I'm forwarding this email to you for response. If you determine it more appropriate to forward on to other staff please do so.

Thank you.

Tonya

Tonya Schelter, Department Analyst
 Michigan Department of Environmental Quality
 Office of Environmental Assistance
 Environmental Assistance Center 1-800-662-9278
 Office of Environmental Assistance
 517-284-6873
Deq-assist@michigan.gov
scheltert@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)
<https://www.surveymonkey.com/s/oeacs>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 20, 2013 8:41 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 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: Busch, Stephen (DEQ)
Sent: Tuesday, January 06, 2015 10:54 AM
To: Prysby, Mike (DEQ)
Subject: RE: flint caller

Ok thanks. When you get a chance try to put together a list of who has called and who you have talked to. Then email it to Adam, Richard, Liane, and me, so if we get repeat callers we can try to get on the same page.

Thanks Mike. Hang in there and keep up your efforts they really do make a difference.

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 06, 2015 10:50 AM
To: Busch, Stephen (DEQ)
Subject: flint caller

Yes....the (810) 701-6051 – Bradley tried to contact me twice at 10:15am so I will return his call

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, August 28, 2015 1:25 PM
To: Shekter Smith, Liane (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Re: Flint Citizen Sampling

Is the VT lab certified?

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 Aug 28, 2015, at 1:12 PM, Shekter Smith, Liane (DEQ) <SHEKTERL@michigan.gov> wrote:

From: Poy, Thomas [<mailto:poy.thomas@epa.gov>]
Sent: Friday, August 28, 2015 12:35 PM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Cc: Hyde, Tinka; Crooks, Jennifer
Subject: Flint Citizen Sampling

Liane/Richard: FYI...Marc Edwards (Virginia Tech) is working with some of the citizens in Flint and they are finding lead at levels above 5 ppb and some above 15 ppb. There's no indication of whether any of these homes were also sampled and analyzed by Flint and will now part of their compliance calculations. Virginia Tech sent out 300 bottles and have gotten 48 back. We are not involved in this effort by Dr. Edwards.

<https://flintwaterstudyupdates.wordpress.com/>

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 30, 2014 8:10 AM
To: Graham, Lois (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint city water quality complaint

Lois FYI.

We have been dealing with Mr. Jefferson for a few weeks now. We will take it from here. Thanks.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Graham, Lois (DEQ)
Sent: Friday, May 30, 2014 7:48 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: Flint city water quality complaint

Leighton Jefferson, 810-252-3607

Voice message complaint about quality of Flint's community water after switching over to 'river water'
 20-30 people he personally knows who have infections and rashes from the water. Concerned about TV reports,
 personally visited treatment plant to collect his own water sample.

Please call him back and thanks.

Lois Elliott Graham, R.S., M.S.A.
 Office of Drinking Water & Municipal Assistance
 Environmental Health Section
 Noncommunity & Private Drinking Water Supplies Unit
 P.O. Box 30241
 Lansing, Michigan 48909-7741
 Office: 517-284-6530
 Fax: 517-241-1328
grahaml@michigan.gov
 4-South, Pillar N8

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 01, 2015 11:34 AM
To: Cook, Pat (DEQ)
Subject: RE: Flint Corrosion Control?

Here is the revised version.

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. 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.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Friday, May 01, 2015 10:58 AM
To: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Steve – how does this look? Please add anything you want and return to me before I send it to Miguel.

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. Since Flint has only completed one round of 6 month monitoring, we have not made a formal decision as to whether or not they meet the exemption criteria or if they need to do a corrosion control study. Their second round of monitoring will be completed soon and we will make an formal decision at that time. This is similar to the process we followed in the early 1990's when the Pb/Cu rule was first implemented. We waited until large systems completed both rounds of full scale, 6 month monitoring before we made a decision about optimal corrosion control. If we tell Flint they have to install

corrosion control treatment, the rule allows up to 2 years to complete a study and 2 years to install the treatment unless we set a shorter time frame.

Another thing to consider is that Flint will be switching raw water sources in a little over a year. If we require a study, is it wise to tell them to do one when the raw water quality will be completely different than what they currently use? It's something to think about.

pat

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) 886-5253

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

Rennaker, Joanne (DEQ)

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: 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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, April 27, 2015 8:27 AM
To: Cook, Pat (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: RE: Flint Corrosion Control?

He continues to base his concern on a single location which has/had a lead service line and "pre-flushing" concerns which are not part of the current regulations.

Flint is now below the criteria for a large system. Technically they don't have to do any of this.

Flint has also only been through one round of lead copper sample not the two rounds needed to make the determination he lists below.

If he continues to persist we may need Liane or Director Wyant to make a call to EPA to help address his over-reaches.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Monday, April 27, 2015 7:59 AM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: FW: Flint Corrosion Control?

Hi Steve and Mike - I knew this was going to happen. Miguel is questioning that Flint is in compliance with optimal corrosion control. Please read the below email and let me know what you think. While it's not a big hurry at this time since Miguel is out till next week, we eventually will have to respond to him.

pat

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 RTCR 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) 886-5253

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 18, 2015 11:54 AM
To: Howes, Sarah (DEQ); Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: RE: Flint Drinking Water Letter?

Importance: High

Never mind this was a private lab in Flint, not the Flint WTP.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howes, Sarah (DEQ)
Sent: Tuesday, March 17, 2015 12:38 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: Flint Drinking Water Letter?

Hi all---

I just got a call from Rep. Neeley's office and it's their understanding that DEQ will be issuing a letter on Flint Drinking Water tomorrow. Is this true? If so, could you please PDF me a copy and I'll distribute to the legislative offices that have asked for updates when appropriate.

Thanks,
 Sarah

Sarah M. Howes | Legislative Liaison
 Department of Environmental Quality
 517.284.6707 O | C 517.282.9204

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 18, 2015 11:53 AM
To: Howes, Sarah (DEQ); Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: RE: Flint Drinking Water Letter?

Sarah,

I just got a 3/16 letter from the DEQ lab to the City of Flint for certification of the laboratory at the City water treatment plant. Maybe this is what they were wondering about?

The DEQ certified the Flint WTP lab for Microbiology analysis.

Let me know if you want a copy.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howes, Sarah (DEQ)
Sent: Tuesday, March 17, 2015 12:38 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Tommasulo, Karen (DEQ)
Subject: Flint Drinking Water Letter?

Hi all---

I just got a call from Rep. Neeley's office and it's their understanding that DEQ will be issuing a letter on Flint Drinking Water tomorrow. Is this true? If so, could you please PDF me a copy and I'll distribute to the legislative offices that have asked for updates when appropriate.

Thanks,
 Sarah

Sarah M. Howes | Legislative Liaison
 Department of Environmental Quality
 517.284.6707 O | C 517.282.9204

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 10, 2014 2:23 PM
To: Thelen, Mary Beth (DEQ); Sygo, Jim (DEQ)
Cc: Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: Flint drinking water

Thanks that will be more than enough time.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Thelen, Mary Beth (DEQ)
Sent: Wednesday, September 10, 2014 2:23 PM
To: Busch, Stephen (DEQ); Sygo, Jim (DEQ)
Cc: Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: Flint drinking water

Director and Jim Sygo have an opening from 9:00-9:30 tomorrow morning. Please plan on that. Okay? 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: Wednesday, September 10, 2014 10:58 AM
To: Thelen, Mary Beth (DEQ); Sygo, Jim (DEQ)
Subject: Flint drinking water

Mary Beth,

I spoke with Director Wyant briefly yesterday regarding a boil water advisory for the City of Flint's drinking water.

We have a separate compliance issue with the City of Flint regarding the drinking water standard for disinfection byproducts that I would like to inform the Director about as the City is still under a state appointed Emergency Manager.

Does Director Wyant have any time available to meet on this?

Please let me know. 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: Busch, Stephen (DEQ)
Sent: Thursday, April 24, 2014 12:38 PM
To: Prysby, Mike (DEQ)
Subject: Re: Flint inspection - meeting

Ok give me a call before you leave flint.

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 Apr 24, 2014, at 9:25 AM, "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov> wrote:

Steve,

As we discussed, I will visit the Flint WTP and the Bray Road site this afternoon to confirm that the remaining items discussed during last Friday's visit have been addressed and, more importantly, to confirm that the WTP is ready to distribute water to the Flint distribution system. For tomorrow's "switch-over ceremony", I will plan to drive separately to the WTP. The switch-over ceremony is at noon, so I plan on arriving between 11:30 – 11:45 timeframe. If there is any change in this schedule, I will inform you.

I will also complete and submit my timesheet today. I will make any modifications, as needed, on Monday to reflect earned comp time.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, July 15, 2015 9:39 AM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ); Cook, Pat (DEQ)
Subject: RE: Flint lead sampling results?

Jennifer,

We will provide the 90th percentile when available, but at this point we do not anticipate any violations of the Lead and Copper Rule.

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, July 14, 2015 3:34 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Bair, Rita
Subject: Flint lead sampling results?

Steve/Mike/Pat—Thank you for cluing me in to the fact that Liane and Tinka are talking about Flint next Tuesday. I guess it's just a manager discussion, from what I understand. I understand that Flint didn't get the minimum number of lead samples (100) for the second 6-month monitoring period that ended June 30, so I assume Flint is collecting the remaining samples now. Our Division Director, Tinka Hyde asked today if we will know what the lead results are from the second 6-month monitoring period. Perhaps you don't know what the results are for the remaining samples Flint began taking in July; but do you know what the other 80+ sample results are? Would you be able to share this information with us prior to the call on Tuesday? If not, Liane can share this info regarding the status of the sampling and the sample results with Tinka on Tuesday.

Thank you all for your hard work with Flint and with your management; I know this has not been an easy problem to deal with for anyone.

Jennifer

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 01, 2015 4:12 PM
To: Prysby, Mike (DEQ)
Subject: Re: Flint Lead

Please ask brad to respond

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 Sep 1, 2015, at 3:44 PM, Prysby, Mike (DEQ) <PRYSBYM@michigan.gov> wrote:

Steve,

Ron Fonger left me a voicemail concerning questions he has concerning the lead issue in Flint. Specifically, he is aware of the increased discussion of lead in Flint's drinking water and the home tests recently performed at residents request in corroboration with V Tech and concerned groups. Ron discussed this issue w. Mr. Kroft and has the impression that the DEQ has had discussions with the city about the lead issue; however, Mr. Kroft declined to discuss the issue any further. Mr. Fonger wishes to discuss with the DEQ as to what discussions the DEQ has had with the city concerning the lead issue. Our only discussion (written) that I am aware of...is our 90% PB/CU letter sent to the city and the need for the city to install optimal corrosion control. Should I return his call or pass this on to Brad?

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 09, 2015 2:38 PM
To: Howes, Sarah (DEQ); Benzie, Richard (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Datema, Maggie (DEQ); DEQ-Legislative-Contact
Subject: RE: Flint Legislator Questions

Great! Thanks so much for your help on this.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howes, Sarah (DEQ)
Sent: Friday, January 09, 2015 2:36 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Datema, Maggie (DEQ); DEQ-Legislative-Contact
Subject: RE: Flint Legislator Questions

Yes, Sen. Ananich and Rep. Phelps both received the advanced notice of the VN. I called Rep. Phelps and Rep. Neeley to let them know that DEQ was unable to attend or participate in the meeting earlier this week due to the short notice, but are happy to in the future.

I also left a message for Sen. Ananich saying that we can come over and brief him on the status and answer any questions. I haven't heard back yet.

Thanks you all for your work on this.
 Sarah

Sarah M. Howes | Legislative Liaison
 Department of Environmental Quality
 517.284.6707 O | C 517.282.9204

From: Benzie, Richard (DEQ)
Sent: Friday, January 09, 2015 10:34 AM
To: Busch, Stephen (DEQ); Howes, Sarah (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint Legislator Questions

Steve and Sarah,

I assume he received the advance notice of the violation with the other legislators. We could send him the summary that Mike had prepared and left with Representatives Neeley and Phelps on Tuesday, and offer to meet with him if he still has questions. But I think it would be appropriate for that information to be delivered

from Sarah or Maggie unless they advise the district to provide it to Senator Ananich's office directly and just copy them.

Richard

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

From: Busch, Stephen (DEQ)
Sent: Friday, January 09, 2015 8:24 AM
To: Howes, Sarah (DEQ)
Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Flint Legislator Questions

Sarah,

I know Mike, Richard, and you met with Neeley and Phelps earlier this week, but we may want to check in with Senator Ananich's office, to see if they have any questions as well. See the article below.

http://www.mlive.com/news/flint/index.ssf/2015/01/legislators_from_flint_want_st.html#incart_river

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 16, 2014 10:07 AM
To: Rennaker, Joanne (DEQ)
Subject: RE: Flint letter

I need to get this letter to the executive office ASAP. Thanks.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Rennaker, Joanne (DEQ)
Sent: Tuesday, December 16, 2014 9:33 AM
To: Busch, Stephen (DEQ)
Subject: Flint letter

The Flint letter wasn't in the stack of signed letters I got back. Adam has signed it and Mike has it for his signature. He is talking to Flint on the phone right now and says he will get it to me when he gets off the phone.

Jo Anne Rennaker
Secretary
Department of Environmental Quality - Lansing District Office
Office of Drinking Water & Municipal Assistance
Office of Waste Management & Radiological Protection
517-284-6643

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, April 29, 2014 10:18 AM
To: Prysby, Mike (DEQ)
Subject: RE: Flint letter
Attachments: Reliability requ-revised.doc

I revised it a bit to remove any reference to DWSD and make it more generic.

You should also enclose the following information.

http://miwarn.org/images/pdf/MiWARN%20Brochure_Ver4.pdf

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: Monday, April 28, 2014 1:27 PM
To: Busch, Stephen (DEQ)
Subject: Flint letter

Steve,

Attached is a draft letter to the city of Flint concerning the requirement to establish a back-up supply of drinking water from the DWSD.

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

Mr. Daugherty Johnson, Utilities Administrator

April 28, 2014

Dear: Mr. Johnson

Subject: Act 399 Capacity and Reliability Requirements

This letter, per your request, is being written as verification that the City of Flint water system is currently in compliance with required capacity and power service reliability requirements under the Michigan Safe Drinking Water Act and Administrative Rules, Supplying Water to the Public.

The required capacity of a waterworks system as established in Rule 1204 (R 325.11204) required sufficient capacity to meet approved finished water supply requirements, and is based upon the combination of the following options:

- a. Rated capacity of an approved surface water supply or complete treatment system
- b. Firm capacity of approved groundwater supply
- c. Available contracted capacity that can be delivered from another public water supply.
- d. Excess finished water storage capacity.

Under the first option listed above, the City's baseline water withdrawal capacity from the Flint River, and rated capacity of the City's water treatment plant both exceed its finished water supply requirements. The rated capacity of a complete treatment system is established under Rule 1006 (R 325.11006). In accordance with this rule, the Department has established a rated capacity of 36 million gallons per day for the City's Water Treatment Plant, which again far exceed current and future finished water supply requirements for the City's service area.

In addition, while capacity under item d above for excess finished water storage has not been established, the City currently has enough finished water storage to supply more than 2 days of normal finished water supply requirements

Rule 1206 (R 325.11206) requires water systems to provide a means to continuously fully finished water during normal power service interruption. The City's Water Treatment Plant is now equipped with a redundant electrical system that includes provisions for stand-by power generation; thus meeting this requirement.

While additional means to meet the above requirements for capacity and power interruption can be provided through contracted interconnections with other water systems, the City has demonstrated compliance with these requirements without such means. However, the DEQ still supports and encourages such interconnections be maintained for emergency purposes as an additional barrier to help maintain public health protections. While these emergency interconnections have no requirement to establish an available or contracted capacity, the DEQ encourages the corresponding utilities to establish mutual aid agreements where possible. Such agreements can be developed through the Michigan Water/Wastewater Agency Response Network (MiWARN). For more information, please visit miwarn.org.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, December 12, 2014 10:07 AM
To: Prysby, Mike (DEQ); Rennaker, Joanne (DEQ)
Subject: RE: Flint Letter

Importance: High

Mike take a look at lunch and give me a call.

Richard, Adam, and I think it is good to go. Once I hear back from you I will sign for you and get it out the door yet today, along with electronic copies to the executive office.

Thanks.

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, December 12, 2014 10:03 AM
To: Rennaker, Joanne (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: Re: Flint Letter

I am out in the field today...may get an opportunity to look at it otherwise I can take a last look first thing Monday

Sent from my iPhone

On Dec 12, 2014, at 9:41 AM, "Rennaker, Joanne (DEQ)" <RENNAKERJ@michigan.gov> wrote:

Good Morning Mike,

I have attached a copy of the Flint letter. It has been finalized, but Steve would like you to take one last look at it, then e-mail me back with any changes or to let me know that it is okay.

Thanks,

Jo Anne Rennaker
 Secretary
 Department of Environmental Quality - Lansing District Office
 Office of Drinking Water & Municipal Assistance
 Office of Waste Management & Radiological Protection
 517-284-6643

<Flint DBP MCL 4Q14 d3.doc>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 21, 2015 10:50 AM
To: Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water
Attachments: Flint Mayor Letter to Governor.pdf

Copy attached.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, January 21, 2015 10:41 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water

First I heard about the letter was on NPR this morning.

From: Wurfel, Brad (DEQ)
Sent: Wednesday, January 21, 2015 10:39 AM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water

Ooops. Thanks.

Need a copy of the letter if we have it. Want to make sure the Governor's office knows to send calls about this to us, and give them a quick briefing on the situation.

Thanks.

b

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, January 21, 2015 10:37 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water

That is the first option listed.

Changes made to date have reduced the formation of DBPs; but because of the way the standard is calculated the violation is anticipated to remain until at least late summer. However, it is difficult to predict whether the operational changes will be effective enough to address seasonal water quality changes that occur during the summer. It is possible

to have a spike in August that could cause the city additional problems. But for now, all indications are that DBP levels in the distribution system are within an acceptable range.

From: Wurfel, Brad (DEQ)
Sent: Wednesday, January 21, 2015 10:31 AM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water

Would a third option be to make adjustments to the plant that address the current water supply effectively?

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, January 21, 2015 10:26 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint Mayor request to Governor regarding Flint Water

In light of the Mayor's letter, this could be quite uncomfortable for us tonight.

Our position has always been that we do not dictate which acceptable option(s) a water supply may choose. Our responsibility is to see that operations are managed properly, regulations are met, and safe water is delivered. For example, when Flint decided to leave Detroit and operate using the River, our role wasn't to tell them our opinion; only what steps would be necessary to make the switch.

Now that there is a violation of a drinking water standard, we have been treating Flint as we would any other supply. It is up to them to propose a solution/corrective action. Our role is to determine the reasonableness of that proposal. One option available to them is to continue to use the river until the KWA source is available as long as they implement operational changes to mitigate the formation of DBPs. Another acceptable option is to return to Detroit (GLWA) until the KWA source is available. And third option could certainly be returning to GLWA permanently.

The Mayor is saying that since there is an EM, the state (Governor) has responsibility for decisions being made (not our position). It will be very important for DEQ staff to limit our discussion to our role under the Safe Drinking Water Act. Hopefully, the EM will be prepared to respond if and when the conversation veers off into this other arena.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

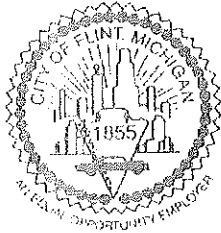
From: Busch, Stephen (DEQ)
Sent: Wednesday, January 21, 2015 8:41 AM
To: Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Datema, Maggie (DEQ); Howes, Sarah (DEQ)
Subject: Flint Mayor request to Governor regarding Flint Water

FYI. Please see the link below. The mayor of Flint has requested the state provide assistance through a number of specific initiatives.

http://www.mlive.com/news/flint/index.ssf/2015/01/flint_mayor_asks_governor_for.html

As we are scheduled to participate in the meeting in Flint this evening please let me know if we need to further discuss these requests.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314



CITY OF FLINT

Dayne Walling
Mayor

January 18, 2015

The Honorable Rick Snyder
Governor, State of Michigan
P.O. Box 30013
Lansing, MI 48909

RE: Flint Water Improvement Plan

Dear Governor Snyder:

On behalf of the Flint community, I am writing to convey serious concerns about water quality and to request your support for my proposed Flint Water Improvement Plan. Access to safe and clean water is a basic human right, and, therefore, policy and budget decisions need to ensure that water is affordable and secure for everyone in Flint and all across Michigan. It is essential there is City, State and Federal cooperation to address the challenges here and to meet the needs of vulnerable populations.

The Flint Water Improvement Plan is focused in five areas: safety, quality, access, investment and education. The plan puts safety and quality first because this is fundamental. It is designed to be a sustainable solution for the City of Flint and the community as we move towards a new permanent water supply from Lake Huron through the Karegnondi Water Authority. My plan offers new ideas and also builds on successful models of utility, energy and assistance programs at the State and Federal levels.

Safety & Quality

- 100% Safety is the standard
- City of Flint reports testing data to the public to assure safety and expands testing sites and frequency
- Bring on experienced river water treatment operational management in the City of Flint

Access

- Announce an amnesty program for Flint water service turn-ons and reduce the turn-on fee
- Develop a revised affordable payment plan policy to encourage customers to return
- Design Federal and State partnership to establish new Drinking Water Emergency Assistance Fund for the elderly and vulnerable families

Investment

- Accelerate water system improvements outlined in the City of Flint Capital Improvement Plan through Federal and State Investments
 - State approves City of Flint's Distressed Cities Fund applications

- Federal and State support for replacement or forgiveness of payment to the Drinking Water Revolving Loan Fund due to Flint's status as a distressed community
- Federal and State grants for infrastructure improvements in alignment with the Flint Master Plan
- City Water Department implements budgeted FY15 projects including leak detection, valve repairs, new pipes and meter replacements

Education

- Develop a community partnership with universities to provide household and business customers with information on testing and conservation
- Ongoing partnership with Michigan Department of Human Services, United Way, Salvation Army and community organizations to provide information and water assistance with the Keep the Water Flowing Fund and support services
- Expand youth energy initiative to assist households with conservation and efficiency (piloted in summer 2014 with Northwestern High School students, EcoWorks and Consumers Energy)

It is also critical to restore the public confidence in Flint Water. The implementation of this plan must be accompanied by extensive community engagement including local elected officials. My objective is to work with you and your appointed officials, State Senator Ananich, State Representatives Phelps and Neeley, Congressman Kildee, community groups, businesses, churches, foundations, the Flint City Council, and all of the City of Flint and government personnel.

It is imperative that we communicate better and provide residents more information. I understand representatives from the Michigan Department of Environmental Quality will be joining a public forum this week at City Hall. This engagement going forward is vital so thank you for supporting their efforts. I think this issue of transparency is important for communities all across the State. I recommend a review of the applicable laws and policies and, at a minimum, a new requirement that water testing data be reported publicly no less than quarterly by law in all Michigan communities in Flint's population category.

Thank you for the consideration Governor. There is nothing more important in Flint right now than fixing the water problems. We must work together to identify funds to repair and update the water treatment facilities and city-wide infrastructure and to help those persons without access to clean water so that the entire Flint community has sustainable, safe, secure and affordable water now and into the future. This is an important issue for the state of our State of Michigan and I urge you to work with us to implement solutions.

Sincerely,



Dayne Walling, Mayor
City of Flint

CC: Flint City Council President Joshua Freeman; Congressman Dan Kildee; State Senator Jim Ananich; State Representative Sheldon Neeley; State Representative Phil Phelps; Flint Emergency Manager Jerry Ambrose

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, October 07, 2014 8:11 AM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint MCL VN

I think we need to remove all of the August stuff and just focus this VN on the September MCL. The August violation was the acute E.coli which is stated in the letter but totaling the August monitoring and including it looks like we are hitting them with the same violation. My understanding was that the August acute MCL was public noticed and the violation previously resolved so there is no need to readdress August.

Let's revise the letter and just keep it to the samples that were collected in September and the September TC MCL.

If there is something I'm missing here, let me know.

For CC's include those Mike indicated and the ones from the OEL letter as we discussed. I will be back this afternoon so we should still be able to get it out today. Thanks.

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: Monday, October 06, 2014 3:23 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Flint MCL VN

Attached is the VN for edit/review. Wasn't sure who needed to be CC'd, so let me know.

Adam

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, June 12, 2014 9:04 AM
To: Cook, Pat (DEQ); Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov)
Subject: RE: Flint MOR and Test Results

Pat,

I appreciate your efforts to try and assist Mr. Jefferson, but I think at this point any further correspondence with him needs to be directed back to either Mike or I. If there are specific treatment questions we are unable to answer or need confirmation on we will let you know.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Thursday, June 12, 2014 8:05 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint MOR and Test Results

Thanks Mike. Mr. Jefferson left me a message yesterday wanting the phone number of the "clean drinking water administrator of the US". That would be EPA Administrator, Gina McCarthy. I'll call him back and give him Ms. McCarthy's phone number and the latest lab results. However, he has told me that he does not trust the city or the state since Gov. Snyder placed an emergency manager in the city.

pat

From: Prysby, Mike (DEQ)
Sent: Thursday, June 12, 2014 7:56 AM
To: Cook, Pat (DEQ)
Subject: FW: Flint MOR and Test Results

Pat,

This is the Flint WTP info (April MOR and May's Unit 37 sample results) that was sent EPA late last week. I have tried to contact Mr. Jefferson, his voicemail is full and won't accept messages.

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

From: Busch, Stephen (DEQ)
Sent: Friday, June 06, 2014 3:06 PM
To: poy.thomas@epa.gov
Cc: Crooks.Jennifer@epamail.epa.gov; Prysby, Mike (DEQ)
Subject: Flint MOR and Test Results

Tom,

The April MOR you requested is attached along with the following test results sampled in May.

- TOC
- Metals
- VOC
- SOC (all 3 categories)
- Partial Chemistry

As the WTP only operated for the last few days in April the MOR results provide limited information. The Bacteriological Portion of the May Operating Period will be due next Tuesday 6/10, but the operational monitoring won't be reported until 6/30.

If you have any other questions, just let us know.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 06, 2015 1:56 PM
To: Prysby, Mike (DEQ)
Subject: RE: Flint NBC News Interview - Flint TTHMs

It appears the reporter didn't listen very well. Their write up is completely misleading.
<http://www.minbcnews.com/news/story.aspx?id=1144852>

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 06, 2015 10:22 AM
To: Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Willard, Veronica (DEQ)
Subject: Flint NBC News Interview - Flint TTHMs

Attached is a summary of the interview I had with Flint NBC 25 News late yesterday.....sorry this summary is late as I am receiving incoming calls from Flint residents...

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, September 10, 2015 8:10 AM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint Pb&Cu Results

I believe the determination was made not to redact as the address is only a single piece of information. "Collected By" information is not directly related to the collection address.

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: Wednesday, September 09, 2015 5:21 PM
To: Poy, Thomas
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint Pb&Cu Results

I don't think the addresses were redacted. Almost 25 years ago, we received an Attorney General's opinion that was issued in response to a FOIA request from the media for lead results from Flint that said we could withhold the addresses. However, I believe we have since determined we do not have that authority.

But I will have to ask the Lansing district staff to weigh in on this matter. Steve and Adam, did we redact addresses for this FOIA?

From: Poy, Thomas [<mailto:poy.thomas@epa.gov>]
Sent: Wednesday, September 09, 2015 3:41 PM
To: Benzie, Richard (DEQ)
Subject: RE: Flint Pb&Cu Results

Richard: Thank you for the analytical results. Were the addresses redacted before sending to the ACLU in response to their FOIA? I'm not comfortable sending addresses out, even if it is to a Congressman, so we are going to tell Congressman Kildee that he needs to call MDEQ's Congressional Liaison to get the results.

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Wednesday, September 09, 2015 2:22 PM

To: Poy, Thomas

Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ); shekterl@michigan.gov

Subject: Flint Pb&Cu Results

Tom,

Here are the scanned analytical results from the latest round of compliance monitoring (January 1 – June 30, 2015) conducted in Flint. They were scanned for the purpose of responding to a Freedom of Information Act request.

I believe you already have a copy of the correspondence from our Lansing District Office notifying the city of Flint of the compliance determination that was based on these results.

If you need more information, contact Adam Rosenthal.

Richard

Richard Benzie, P.E., Chief

Field Operations Section

Office of Drinking Water and Municipal Assistance, MDEQ

517-284-6512

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 14, 2015 3:07 PM
To: Prysby, Mike (DEQ)
Cc: 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Subject: RE: Flint resident letter
Attachments: Resp Ltr to resident-Busch.doc

Mike,

Please review the revised letter (attached). If ok, Jo Anne can final and I will sign it first thing tomorrow morning. Thanks.

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: Wednesday, January 14, 2015 11:36 AM
To: Busch, Stephen (DEQ)
Subject: Flint resident letter

Steve,

Attached is the letter to Ms. Warner that summarizes my call...routed to us from DCH ...since Ms. Warner contacted them first. I tried to attach the boiler plate opening and closing paragraphs that Joanne provided me; however, my link to the scanned documents won't connect. If you need to look at the boiler plate paragraphs, I can have Joanne email it to you. I will also forward you (in a separate e-mail) the original assignment from Veronica that shows the e-mail thread beginning with DHC...to verify that all the appropriate staff are being copied.

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



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

January 14, 2015

Ms. Patty Warner
2721 Coventry Court
Flint, Michigan 48503

Dear Ms. Warner:

SUBJECT: City of Flint – Water System, Total Trihalomethane (TTHM) Maximum Contaminant Level (MCL) Violation

Thank you for your e-mail of January 6, 2015, to Ms. Nancy Grijalva in the Director's Office of the Michigan Department of Community Health (DCH). Your e-mail was referred from DCH to the Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA) for response.

The City of Flint's community water supply is regulated under the *Michigan Safe Drinking Water Act, 1976 PA 399, as Amended, and the Administrative Rules, Supplying Water to the Public R325.10101 to R325.12820*, (Act 399) authority for which has been conferred to the DEQ, ODWMA.

District staff from the ODWMA contacted you on January 9, 2015 to address your concerns regarding the City of Flint's community water supply system and specifically a violation of the drinking water standard MCL for TTHM following the quarterly monitoring period which ended in December 2014. Concerns discussed included the quality of the City's drinking water in relation to rates being charged to Flint residents, and the requirements regarding public notification of the TTHM MCL violation to customers of the water system. Factors that contribute to TTHM formation were also discussed.

Development of the TTHM standard is designed to limit exposure to TTHM's based on concerns that TTHM, if consumed in excess of the standard over many years, may lead to increased health risks. Therefore, the TTHM MCL standard is based on a Locational Running Annual Average (LRAA). The LRAA is a separate average of the samples for each required location, based on sample results from the previous four quarters, and evaluates long term exposure under worst case conditions rather than single sample results. While TTHM monitoring results from earlier quarters were elevated, the LRAA for the City's eight required sample locations did not exceed the standard until the quarterly monitoring period which ended in December 2014.

District staff confirmed that the City has met the Tier 2 public notification requirements under Act 399 regarding the TTHM MCL violation by directly mailing the public notification to all of its customers within 30 days following the violation. While the City

Ms. Patty Warner

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January 14 , 2015

could have provided water customers with additional information regarding TTHM results prior to the MCL standard violation, such action is not required under Act 399 and may have led to further confusion for customers.

District Staff explained that the City began taking steps to address elevated levels of TTHM prior to the violation by undergoing an operational evaluation of the City's water system. The operational evaluation consists of an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in source water quality, and treatment changes or problems that may contribute to TTHM formation and what steps could be considered to minimize future exceedances. The City has already implemented several changes based on the results of this evaluation and continues to implement others.

District staff also explained that the City's long term solution to reduce TTHM levels is connection to the Karegnondi Water Authority (KWA) to obtain higher quality source water from Lake Huron.

Finally, district staff explained that water rates are neither established nor regulated under Act 399. That the composition of each water system is unique based on aspects such as water source, water quality, treatment, extent of distribution system, and the type and number of customers being served. As such water rates must be established at the local level for each community water system. The DEQ encourages water customers to contact their water supplier and inquire how water rates have been established and what these funds are used to support.

If you need further information or assistance, please contact Mr. Michael Prysby, District Engineer, ODWMA, DEQ at (517) 290-8817,

Sincerely,

Stephen Busch, P.E.
District Supervisor
Office of Drinking Water and
Municipal Assistance
Lansing District Office
(517) 643-2314

cc: Mr. Richard Benzie, P.E., DEQ
Ms. Liane Shekter Smith, P.E., DEQ
Ms. Veronica Willard, DEQ
Ms. Nancy Grijalva, DCH

Ms. Patty Warner

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January 14 , 2015

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 14, 2015 11:47 AM
To: Prysby, Mike (DEQ)
Cc: 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Subject: RE: Flint resident letter

I won't be able to sign this letter until tomorrow morning. I will look at it this afternoon to make some changes.

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: Wednesday, January 14, 2015 11:36 AM
To: Busch, Stephen (DEQ)
Subject: Flint resident letter

Steve,

Attached is the letter to Ms. Warner that summarizes my call...routed to us from DCH ...since Ms. Warner contacted them first. I tried to attach the boiler plate opening and closing paragraphs that Joanne provided me; however, my link to the scanned documents won't connect. I you need to look at the boiler plate paragraphs, I can have Joanne email it to you. I will also forward you (in a separate e-mail) the original assignment from Veronica that shows the e-mail thread beginning with DHC...to verify that all the appropriate staff are being copied.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 08, 2015 5:25 PM
To: 'Howard Croft'; Henry, James
Cc: Hallwood, Dawn
Subject: RE: Flint Restaurants and Retail Food Stores

It sounds like from the meeting I just got out of the Lab would prefer to have the restaurants contact them directly. Let's touch base again tomorrow. We'll have to see if there is an easy and convenient way to distribute sample bottles and get them to the lab for analysis.

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: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Thursday, October 08, 2015 3:58 PM
To: Henry, James
Cc: Busch, Stephen (DEQ); Hallwood, Dawn
Subject: Re: Flint Restaurants and Retail Food Stores

Jim,

Let me look into the best location to handle that, we have been storing bottles at City Hall as well and could distribute from the DPW building.

On Thu, Oct 8, 2015 at 3:13 PM, Henry, James <jhenry@gchd.us> wrote:

Howard,

GCHD met with the state, MDEQ and MDA,(Agriculture)today regarding recommendations for restaurants and retail food stores that use Flint water. One recommendation will be to sample water and respond appropriately. There's approximately 400 locations (½ are licensed by the state) This will be a recommendation and we do not anticipate that all will sample.

Would it be ok for them to pick up a bottle at the water plant and return the sample w/payment to MDEQ lab back to the water plant? The water plant would then ship them off for analysis with the others.

GCHD and state wants to send out the recommendations asap. I'll copy you with the final draft of the recommendations.

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: Thursday, October 8, 2015 5:41 AM

To: Amy Hovey; Andy Leavitt; Brent Wright; Darren Lytle; Dayne Walling; donna. cole; edwardsm; Gerald (Jed) Natzke; Howard Croft; Henry, James; 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; John Monsees; Kevin Keane

Subject: Re: TAC Team Summary 10_7_15

All,

Please find attached, the summary of Wednesday's meeting.

Thank you,

On Wed, Oct 7, 2015 at 9:42 PM, Howard Croft <hcroft@cityofflint.com> wrote:

All,

I want to personally thank everyone for participating in today's meeting, it is encouraging to see the commitment that exists to address the concerns around health. I apologize for the poor phone reception we experienced today, I will have that corrected at the next meeting.

I am sending a summary of today's meeting and have attempted to chronicle the highlights or major points that we discussed. I have also included an electronic version of Marc Edwards presentation and will forward any other documents that are requested.

Please look for continued communication from me as we work to move forward as fast as possible. I expect to have November and December dates selected very soon and will maintain the stream of information to this team as it becomes available.

Please do not hesitate to email or call me with any questions or requests.

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

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 02, 2014 1:07 PM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint revised MS letter
Attachments: 2014 Flint revised MS-SBrev.doc

How does the attached look?

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: Tuesday, April 01, 2014 11:46 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Flint revised MS letter

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

April 1, 2014

Mr. Brent Wright
City Of Flint - D P W
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Revised Drinking Water Monitoring Schedule – 2014
Monthly Operation Reports
Siting Plans and Record Keeping

Monitoring Schedule:

Enclosed is your revised Drinking Water Monitoring Schedule for calendar year 2014 outlining the minimum requirements for your public water supply. Your schedule has been revised based on the City's intent to change the source of its drinking water from the Detroit Water and Sewerage Department to treatment of the Flint River utilizing the City's Water Treatment Plant. Collect samples early in the monitoring period of the year indicated on the schedule. If you use a private laboratory you are required to report the results to us within the first ten days of the month following the month that you received the results. To receive credit for monitoring, the "WSSN" (water supply serial number), the "Site Code," and "County" must appear on the sample result. Bottles will NOT be mailed automatically. If you use the DEQ Laboratory, you can order bottles by calling 517-335-8184. Be certain of the EPA sampling and analysis method requirements for hold times.

Please note that both distribution and entry point to the distribution system monitoring will increase upon plant startup.

Monthly Operation Report Requirements:

The City shall submit monthly operation reports as required under Administrative Rule 1502 (R325.11502). In addition to plant operational data collected and as noted in the attached schedule, the City of Flint will be required to collect Total Organic Compounds (TOC) samples from the source and finish water on a monthly basis. You will also be required to collect Water Quality Parameters (WQPs) at your entry point every 2 weeks. The City must also demonstrate adequate contact time (CT) for disinfection in accordance with Administrative Rule 1505a (R325.11505a).

Disinfection By-Product Sample Siting Plans:

The City of Flint must return to routine standard monitoring of disinfection by-products, and a revised Disinfection & Disinfectants By-Product (DDBP) plan must be submitted, which identifies 4 additional sites, 8 sites in total, for routine quarterly monitoring. These sites must be selected in accordance with the Stage 2 DDBP Rule and supporting documentation must be submitted with the plan for review and approval by this office prior to monitoring.

Lead and Copper Monitoring Requirements and Site Sample Pool

This change in source also increases your distribution system monitoring for WQPs to 25 samples per 6 months and 100 sample locations for Lead & Copper for 2 consecutive 6 month rounds of monitoring. The City will need to expand its current sample site pool in accordance with the requirements of Administrative Rule 710a (R325.10710a). A list of the proposed sample site pool locations, including each site's Tier, sample category, service material, and building plumbing material, shall be submitted to this office for review and approval.

Record Keeping:

The City shall maintain all monitoring records in accordance with all applicable requirements under the Administrative Rules including Rule 720a (R325.10720a), Rule 1506 (R325.11506), and Rule 1507 (R325.11507).

The Michigan Safe Drinking Water Act requires certain reports to be submitted to this office each year. Please remember that cross connection reports and annual pumpage reports are due by March 31, and the **Consumer Confidence Report** is due by July 1.

Also enclosed is the document "2014 Monitoring and Reporting Requirements." This provides additional details about monitoring and reporting requirements. If you have any questions, please contact us by telephone or email using the information below.



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



Adam Rosenthal, EQA
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-284-6644

MFP:AR:JR
Enclosure

cc/encl: Mr. Robert Bisnick, City Of Flint
Genesee Co. Health Dept.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 08, 2015 11:46 AM
To: Bennett, Charles (DEQ)
Subject: RE: Flint River Inquiry

Thanks Chuck.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Bennett, Charles (DEQ)
Sent: Wednesday, April 08, 2015 11:35 AM
To: Busch, Stephen (DEQ)
Cc: Vanderlaan, Mary (DEQ); Bishop, Susan (DEQ); Doty, Susan (DEQ); Kammer, Stephanie (DEQ)
Subject: RE: Flint River Inquiry

I'm NPDES compliance for genesee county and am neither aware of the monitoring or the letter

Charles Bennett, PE
 DEQ Water Resources Division
 Lansing District Office
BennettC4@michigan.gov
 ph 517-284-6659; fax 517-241-3571

From: Bishop, Susan (DEQ)
Sent: Wednesday, April 08, 2015 11:16 AM
To: Bennett, Charles (DEQ); Doty, Susan (DEQ)
Subject: FW: Flint River Inquiry
Importance: High

FYI

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 08, 2015 11:15 AM
To: Bartley, Cheryl (DEQ)
Cc: Bishop, Susan (DEQ)
Subject: Flint River Inquiry
Importance: High

Could you please have any of your staff that oversee Genesee County NPDES and Non-Point Source regarding the Flint River respond to me directly.

I am working with EPA Region 5 in response to a letter to the White House regarding Flint drinking water. The complainant indicates they received a "Letter of Alert" in January 2015 regarding the detection of refrigerant and solvent contaminants in the Flint River.

I just need to know if WRD staff are aware of any monitoring in the Flint River that could be associated with this, and if they might know where this "Letter of Alert" could be coming from.

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: Busch, Stephen (DEQ)
Sent: Tuesday, March 26, 2013 3:48 PM
To: Alexander, Michael (DEQ)
Subject: RE: Flint River Intake Location

Thanks for this information and the quick turnaround, it is greatly appreciated.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Alexander, Michael (DEQ)
Sent: Tuesday, March 26, 2013 3:20 PM
To: Busch, Stephen (DEQ)
Cc: Alexander, Christine (DEQ); Creal, William (DEQ)
Subject: RE: Flint River Intake Location

Hi Steve,

Based on the listing from Michigan's 2012 Integrated Report, the Flint River from just upstream of the City of Flint to the upstream end of the Holloway Reservoir is not meeting its designated uses for;

Fish consumption due to PCB in fish tissue and water column
 Total and partial body contact due to E. coli in water column
 Other indigenous aquatic life due to nutrients and phosphorus in the water column

These are just the major categories for the designated uses currently not being met within this subject stretch of the Flint River. If you would like the complete lists or any additional information regarding these listing please let me know.

Mike

Michael Alexander, Chief
 Lakes Erie, Huron and Superior Unit
 Surface Water Assessment Section
 Water Resources Division
 Department of Environmental Quality
 Office Phone 517-335-4189
alexanderm2@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Tuesday, March 26, 2013 12:08 PM
To: Alexander, Christine (DEQ); Alexander, Michael (DEQ)
Subject: Flint River Intake Location

Mike and Chris,

Sorry, I forgot to hit send. See red dot on attached picture.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 08, 2015 3:33 PM
To: 'Crooks, Jennifer'
Cc: Prysby, Mike (DEQ)
Subject: RE: Flint River Monitoring

Jennifer,

Here is what we think your complainant may be referring to:

The solvent/refrigerant reference appears to come from Wikipedia
<http://en.wikipedia.org/wiki/Trihalomethane>

The Flint Public Notice was mailed out to residents on January 2, 2015.
http://www.mlive.com/news/flint/index.ssf/2015/01/flint_water_has_high_disinfect.html

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, April 08, 2015 3:02 PM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: RE: Flint River Monitoring

Thank you, Steve, for such a prompt answer—I definitely appreciate it. So, I thought I would respond below—is this accurate in your opinion?

“Your letter indicated that you received a letter of alert regarding refrigerant and cleaning solvents found in the Flint River. Three different programs in the Water Resources Division were contacted, and none were aware of any reports of dumping of these chemicals, nor of any monitoring being done on the Flint River for these chemicals.”

Jennifer

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]
Sent: Wednesday, April 08, 2015 1:06 PM
To: Crooks, Jennifer
Cc: Prysby, Mike (DEQ)
Subject: Flint River Monitoring

Jennifer,

Per our phone conversation this morning, I have contacted MDEQ Water Resources Division Staff. This included: Stephanie Kammer, Acting Lansing District Supervisor

Chuck Bennett, NPDES and Wastewater Engineering
William Keiper, Aquatic Biologist, Surface Water Assessment Section
Susan Doty, Storm Water NPDES and Non-point Source

All responded and none of them are aware of such monitoring (solvents or refrigerants) being done on the Flint River.

Please let me know if you end up with a copy of this "Letter of Alert" from your complainant. I'm sure we would all be interested in the source of such information.

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: Busch, Stephen (DEQ)
Sent: Thursday, September 17, 2015 4:13 PM
To: Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Flint Sample Results

It may take a little time but I think putting together a spreadsheet of the whole history like I used to do in Grand Rapids could be beneficial.

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: Thursday, September 17, 2015 4:01 PM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: Fw: Flint Sample Results

Please assist Tom. You may want to call him to explain why they were collecting fewer samples in 2015 (population decline, failure of 100+ homeowners to submit samples, etc.) and that all sampling sites are still Tier 1. Thanks.

From: Poy, Thomas <poy.thomas@epa.gov>
Sent: Thursday, September 17, 2015 3:49:24 PM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: Flint Sample Results

Liane/Richard: Can you please send me copies of Flint's lead compliance monitoring sampling results for 2014? I've got the January – June 2015 sample results from you last week. I want to take a look at the results and the locations.

Thanks.

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, March 22, 2013 12:10 PM
To: Shekter Smith, Liane (DEQ); Donaldson, Kristina (DEQ); Prysby, Mike (DEQ)
Cc: Bloemker, Jon (DEQ); Benzie, Richard (DEQ); Butler, Sonya (DEQ); Willard, Veronica (DEQ)
Subject: RE: Flint Scenarios

Upon further discussions with Richard, I will take the point position to coordinate this effort. For the most part my schedule is open next week so I can accommodate the executive office's needs.

I fully anticipate meeting the Wednesday Morning deadline, if not Tuesday afternoon.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Friday, March 22, 2013 8:41 AM
To: Donaldson, Kristina (DEQ); Prysby, Mike (DEQ)
Cc: Bloemker, Jon (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ); Butler, Sonya (DEQ); Willard, Veronica (DEQ)
Subject: FW: Flint Scenarios
Importance: High

Kris and Mike –

Note the assignment below, due next Wednesday morning at the latest.

I'll need a point person to coordinate this. Any volunteers – Steve? Richard?

Sonya – I cc'd you as an FYI (thought you'd find the assessment interesting).

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-373-9523

From: Sygo, Jim (DEQ)
Sent: Thursday, March 21, 2013 6:07 PM
To: Shekter Smith, Liane (DEQ); Creal, William (DEQ)
Cc: Willard, Veronica (DEQ); Smith, Laura (DEQ)
Subject: FW: Flint Scenarios
Importance: High

Bill and Liane,

Please have the attached documents reviewed and comments provided relative to the City of Flint water supply needs and relative to the impacts that are possible to the Detroit System.

Treasury needs an assessment as to the need for the alternative water supply and it's impacts so they can provide input to the financial managers.

We need comments by next week and will likely meet with the Director on Thursday.

Bring in whatever staff you need for the review and please try to have your assessments by Wednesday morning.

Sorry for the tight time frame but this one is out of my hands. I will also be looking at the report.

From: Wyant, Dan (DEQ)
Sent: Thursday, March 21, 2013 5:10 PM
To: Sygo, Jim (DEQ)
Cc: Shaler, Karen (DEQ); Thelen, Mary Beth (DEQ); Wyant, Dan (DEQ)
Subject: FW: Flint Scenarios
Importance: High

Jim,

Director asked that you review and coordinate this with Liane Shekter Smith and/or Bill Creal and their appropriate staff. Director also asked that I schedule an internal meeting with you and staff on this for next week. After your review, please let me know who you want in the meeting. It needs to happen on Tuesday, Wednesday or Thursday of next week.

Thank you.

Mary Beth

From: Stibitz, Brom (Treasury)
Sent: Thursday, March 21, 2013 5:00 PM
To: Wyant, Dan (DEQ)
Cc: Dillon, Andy (Treasury)
Subject: FW: Flint Scenarios

Andy asked that I pass this information along to you.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 30, 2015 12:46 PM
To: Krisztian, George (DEQ); Renteria, Sylvia (DEQ)
Cc: Epkey, Amy (DEQ)
Subject: RE: Flint Schools Water Testing

These are the 1 liter lead and copper corrosion control tests which I think are \$26 each.

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: Krisztian, George (DEQ)
Sent: Wednesday, September 30, 2015 12:45 PM
To: Renteria, Sylvia (DEQ)
Cc: Busch, Stephen (DEQ); Epkey, Amy (DEQ)
Subject: RE: Flint Schools Water Testing

Hi Sylvia,

The Lab charges \$18.00 per lead test. That would mean that \$1500 would cover 83 lead tests. Please let me know if that is an issue.

Thank you
 George

George L. Krisztian
 Laboratory Director
 Michigan Department of Environmental Quality
 (517) 335-8812

From: Renteria, Sylvia (DEQ)
Sent: Wednesday, September 30, 2015 11:39 AM
To: Krisztian, George (DEQ)
Cc: Busch, Stephen (DEQ); Epkey, Amy (DEQ)
Subject: Flint Schools Water Testing

Hello George!

For the testing of the water supply at the Flint schools please use the following coding for the costs:

Index: 26000
 PCA: 11602
 AOBJ: 6895

Also, can you please confirm that the cost for the testing will be about \$1,500?

Thank you,
Sylvia

Sylvia Renteria
Financial Specialist
Michigan Department of Environmental Quality
6th Floor Constitution Hall
T: 517-284-5006
F: 517-241-7428

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 09, 2014 3:21 PM
To: Shekter Smith, Liane (DEQ); Sygo, Jim (DEQ); Wurfel, Brad (DEQ)
Cc: Shaler, Karen (DEQ); Feuerstein, Heather (DEQ); Willard, Veronica (DEQ); Benzie, Richard (DEQ)
Subject: RE: Flint Site 5 Boil water advisory documents

FYI. The Boil water advisory in Flint has been lifted based on non-detect total coliform sample results.

I have spoken to Director Wyant and he is in contact with the Governor's office.

The City is continuing to investigate this area of its distribution system for possible sources of contamination.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Friday, September 05, 2014 2:52 PM
To: Sygo, Jim (DEQ); Wurfel, Brad (DEQ)
Cc: Shaler, Karen (DEQ); Feuerstein, Heather (DEQ); Willard, Veronica (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: FW: Flint Site 5 Boil water advisory documents

FYI – heads up.

From: Busch, Stephen (DEQ)
Sent: Friday, September 05, 2014 2:47 PM
To: Daugherty Johnson (djohnson@cityofflint.com); Brent Wright (bwright@cityofflint.com); mglasgow@cityofflint.com
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: Flint Site 5 Boil water advisory documents

Gentlemen,

Attached are the boil water advisory public notice with all required language and a map of the impacted zone. Please distribute to your media contacts immediately.

Once we have 2 sets of non-detect samples from the impacted area we can discuss lifting the advisory.

You indicated that flushing of the area has already started.

Please ensure the water system is taking investigative steps to identify a possible source

- Inspect storage facilities
- Verify pumping and treatment system remains intact and uncontaminated

- Inspect cross connection accounts in the affected area
- Survey the area for any unidentified cross connections
- Review any recent construction or maintenance in the area
- Check for building permits and with building inspectors for any recent construction in the area
- Check with fire departments and DPW for any temporary or improper hydrant use
- Review pumpage and check for breaks, leaks, or an uptick in unaccounted water loss
- Ensure any vacant properties have had the water service shutoff
- Review CI residual data, conduct additional CI monitoring, and increase disinfectant residual

I will be in contact with the County Health Department and the MDARD Food and Dairy Division.

You can reach me over the weekend at this number or Mike Prysby at his number.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, April 25, 2014 11:21 AM
To: Prysby, Mike (DEQ)
Subject: RE: Flint Test Runs

Ok. Thanks.

In case we get questions about how we know the system works, obviously we've had an 8 year history showing they can meet standards under seasonal conditions and they are now going further to provide additional aesthetic treatment.

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 25, 2014 11:19 AM
To: Busch, Stephen (DEQ)
Subject: Re: Flint Test Runs

Flint started their quarterly test runs in 2006 and the first run was May of 2006.

Sent from my iPhone

On Apr 25, 2014, at 11:14 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

Mike,

Can you confirm that Flint has been conducting quarterly test runs at the WTP since 2006?

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 08, 2015 10:48 AM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ)
Subject: RE: Flint to switch to chloramines?

Jennifer,

I was out yesterday and didn't have a chance to respond. There was some brief consideration early on about converting to a chloramination system. However, given the biofilm, TC, EC, and other aesthetic issues that had occurred in August and September of 2014, there was concern that use of chloramines in that distribution environment could easily lead to the presence and proliferation of nitrifying bacteria, causing more public health risk than it would be helping.

Given the reduction in DBP levels the City has been able to accomplish in the last 6-9 months there hasn't been a need to revisit the use of chloramines, but it's not completely off the table as an option if high DBP levels were to come back and remain prevalent.

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, April 07, 2015 11:32 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint to switch to chloramines?

I heard that it was discussed at a public meeting, so it's probably just an idea floating around. Thank you for checking into this, Mike.

Jen

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Tuesday, April 07, 2015 10:01 AM
To: Crooks, Jennifer; Busch, Stephen (DEQ)
Subject: RE: Flint to switch to chloramines?

Jennifer,

I do not recall chloramines being considered as a treatment alternative to reduce TTHMs; however, I will confirm this.

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: Tuesday, April 07, 2015 9:24 AM

To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)

Subject: Flint to switch to chloramines?

Hi, Mike and Steve. We've heard that Flint may be contemplating a switch to chloramines in the near future. We're concerned about possible effects related to what happened in DC. Is Flint planning on switching to chloramines; and if so, when?

Jen

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:33 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Can I get the updated table. I need to call Jennifer Crooks back this morning. Thanks.

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, December 09, 2014 10:31 AM
To: Busch, Stephen (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Steve,

Initially, I was also not coming up with the LRAA of 99 ppb; however, I discovered that the table (May 21st TTHM column) in our Sept. 10th letter was not correct....the corrected table confirms the 99 ppb LRAA.

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

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:13 AM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Adam,

I would like a table showing the 3 rounds of results the LRAA and the current OEL for each of the 8 sites, just for TTHM. I'm not getting a high LRAA of 99 ppb based on the info Mike had provided.

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: Monday, December 08, 2014 1:48 PM
To: Rosenthal, Adam (DEQ); Busch, Stephen (DEQ)
Subject: Flint TTHM letter

Adam, Steve

I made some tweaks to the draft letter for consideration and can be tweaked further as needed. Changes are noted in red.....

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:13 AM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Adam,

I would like a table showing the 3 rounds of results the LRAA and the current OEL for each of the 8 sites, just for TTHM. I'm not getting a high LRAA of 99 ppb based on the info Mike had provided.

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: Monday, December 08, 2014 1:48 PM
To: Rosenthal, Adam (DEQ); Busch, Stephen (DEQ)
Subject: Flint TTHM letter

Adam, Steve

I made some tweaks to the draft letter for consideration and can be tweaked further as needed. Changes are noted in red.....

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 1:56 PM
To: Prysby, Mike (DEQ); Philip, Kris (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM

Ok I will take care of it. Now enjoy your weekend.

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, February 27, 2015 1:55 PM
To: Philip, Kris (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: Re: Flint TTHM

Jeff Hansen from LAN is interested in receiving the most recent TTHM results so they can include it in Flints OEL report due March 1st.

Sent from my iPhone

On Feb 27, 2015, at 12:24 PM, Philip, Kris (DEQ) <PHILIPK@michigan.gov> wrote:

Here are Flint's most recent 4 quarters of TTHM data.

<02310_Flint_TTHM_02 27 2015.xlsx>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 11:25 AM
To: Rennaker, Joanne (DEQ)
Subject: RE: Flint VN letter to final

Mike should be back by 1:00 to sign it.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Rennaker, Joanne (DEQ)
Sent: Thursday, March 05, 2015 10:54 AM
To: Busch, Stephen (DEQ)
Subject: RE: Flint VN letter to final

It is proofed and Adam has signed it, but I haven't seen Mike yet.

Jo Anne Rennaker
 Secretary
 Department of Environmental Quality - Lansing District Office
 Office of Drinking Water & Municipal Assistance
 Office of Waste Management & Radiological Protection
 517-284-6643

From: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 10:46 AM
To: Rennaker, Joanne (DEQ)
Cc: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint VN letter to final

Has this been signed yet? I would like to get it over to Sarah this morning if possible.

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 04, 2015 3:46 PM
To: 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Cc: prysbym@michigan.gov; Adam Rosenthal (rosenthala@michigan.gov)
Subject: Flint VN letter to final

Jo Anne,

Attached is the Flint Violation notice letter.

Please final the letter and have Mike and Adam sign it.

Then scan and email me a signed copy.

I will be emailing Sarah Howes for legislative distribution

Hold off on mailing the letter until the end of the day so we can be sure to allow Sarah time to inform legislative members. 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: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 10:46 AM
To: 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Cc: prysbym@michigan.gov; Adam Rosenthal (rosenthala@michigan.gov)
Subject: RE: Flint VN letter to final

Has this been signed yet? I would like to get it over to Sarah this morning if possible.

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 04, 2015 3:46 PM
To: 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Cc: prysbym@michigan.gov; Adam Rosenthal (rosenthala@michigan.gov)
Subject: Flint VN letter to final

Jo Anne,

Attached is the Flint Violation notice letter.

Please final the letter and have Mike and Adam sign it.
Then scan and email me a signed copy.
I will be emailing Sarah Howes for legislative distribution
Hold off on mailing the letter until the end of the day so we can be sure to allow Sarah time to inform legislative members. 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: Busch, Stephen (DEQ)
Sent: Thursday, September 17, 2015 5:14 PM
To: Wurfel, Brad (DEQ)
Subject: Re: Flint Water Elected leader meeting ODWMA Final Draft documents

Just make it look pretty

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 Sep 17, 2015, at 5:00 PM, Wurfel, Brad (DEQ) <WurfelB@michigan.gov> wrote:

On second thought, I'm not going to mess with this FAQ. It looks good. Time to let that be. Thank you, Steve. Nice work.

b

From: Busch, Stephen (DEQ)
Sent: Thursday, September 17, 2015 3:08 PM
To: Wurfel, Brad (DEQ); Pallone, Maggie (DEQ)
Cc: Thelen, Mary Beth (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Sygo, Jim (DEQ)
Subject: Flint Water Elected leader meeting ODWMA Final Draft documents

Brad and Maggie,

Attached are my final edits to the documents you requested. Let me know if you have questions or 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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 16, 2015 8:41 AM
To: Wurfel, Brad (DEQ)
Subject: RE: Flint Water Forum

We had discussed trying to plan on Tuesday afternoon, do you have any time then? Let me know and I will set up a meeting.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Friday, January 16, 2015 8:24 AM
To: Busch, Stephen (DEQ)
Subject: RE: Flint Water Forum

Okay ... Thanks, Steve. Let's find some time to debrief & plan on Tuesday.
 b

From: Busch, Stephen (DEQ)
Sent: Friday, January 16, 2015 8:23 AM
To: Wurfel, Brad (DEQ)
Subject: FW: Flint Water Forum

Brad,

It looks like Flint is planning to meet internally today (Friday) and then convey details back out rather than host the conference call. The meeting is tentatively next Wednesday at 7:00 PM, I believe at City Hall chambers. I expect all local TV stations will be there along with mlive and other news paper reporters.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Thursday, January 15, 2015 4:35 PM
To: Green, Warren
Cc: Jason Lorenz; Prysby, Mike (DEQ); Busch, Stephen (DEQ); djansen@gcdcwws.com; John O'Brien
Subject: Re: Water Forum

All,

We will confirm the time and details on next Wednesday's meeting internally tomorrow morning and I will relay information to everyone.

Thank you,

On Wed, Jan 14, 2015 at 5:04 PM, Howard Croft <hcroft@cityofflint.com> wrote:
All,

In looking ahead to next weeks forum on water I am planning to host a conference call this Friday morning with the participants to get everyone on the same page and discuss details of how the forum should be structured. We have participation commitments from LAN engineering, Genesee County Drain Commissioners office, and MDEQ but we are leaving the door open for others.

The meeting is scheduled for Wednesday January 21st and we are contemplating what time it should be held. Currently we think 7:00 pm is the best time slot.

Please forward me your best availability for Friday morning, and I will establish the call. We would like to begin informing the public of the time, place, and participants of the forum on Friday afternoon.

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

--

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: Busch, Stephen (DEQ)
Sent: Friday, January 30, 2015 1:46 PM
To: Johnson, Shannon (DCH)
Subject: RE: Flint Water Map

Yes that is correct, no changes to the City's distribution system.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Johnson, Shannon (DCH)
Sent: Friday, January 30, 2015 1:45 PM
To: Busch, Stephen (DEQ)
Subject: RE: Flint Water Map

Thanks, Stephen. No changes to the boundaries/areas served by Flint municipal water were made when they switched over from the Detroit system, correct? I just want to confirm that this map would be a current and complete representation of all those served by the City of Flint municipal system with source water from the Flint River.

Thanks again,
Shannon

Shannon Andrews Johnson, MPH
Infectious Disease Epidemiologist
Michigan Dept. of Community Health
201 Townsend St., CVB 5th Floor
Lansing, MI 48913
Phone: 517-335-8165
Fax: 517-335-8263

From: Busch, Stephen (DEQ)
Sent: Friday, January 30, 2015 9:23 AM
To: Johnson, Shannon (DCH)
Cc: Prysby, Mike (DEQ)
Subject: Flint Water Map

Shannon,

As requested per our conversation Wednesday 1/28, attached is a map of the Flint water system to help determine system boundaries. Please note this is a controlled document not subject to FOIA due to security concerns. Please do not make any copies. When you have finished using the map please, destroy/delete in accordance with DTMB requirements.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, August 03, 2015 12:27 PM
To: Clayton, Stacie (GOV)
Subject: RE: Flint Water Meeting with Pastor Overton & Flint Water Coalition

Stacie,

Was there any type of agenda, discussion points, list of issues, etc. for this meeting tomorrow?

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

-----Original Appointment-----

From: Clayton, Stacie (GOV)
Sent: Friday, July 31, 2015 9:28 AM
To: Clayton, Stacie (GOV); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Saxton, Thomas (Treasury); Workman, Wayne (TREASURY); Wurfel, Brad (DEQ); Hollins, Harvey (GOV); Muchmore, Dennis (GOV)
Cc: Feuerstein, Heather (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: FW: Flint Water Meeting with Pastor Overton & Flint Water Coalition
When: Tuesday, August 04, 2015 9:30 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Governor's Conference Room

Forwarding to Liane Shekter Smith and Stephen Busch to attend.

Thanks.

Mary Beth

-----Original Appointment-----

From: Clayton, Stacie (GOV)
Sent: Thursday, July 30, 2015 9:26 AM
To: Clayton, Stacie (GOV); Saxton, Thomas (Treasury); Workman, Wayne (TREASURY); Wurfel, Brad (DEQ); Hollins, Harvey (GOV); Muchmore, Dennis (GOV)
Subject: FW: Flint Water Meeting with Pastor Overton & Flint Water Coalition
When: Tuesday, August 04, 2015 9:30 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Governor's Conference Room

-----Original Appointment-----

From: Clayton, Stacie (GOV)
Sent: Wednesday, July 29, 2015 12:11 PM

To: Clayton, Stacie (GOV); Hollins, Harvey (GOV); Muchmore, Dennis (GOV)

Subject: Flint Water Meeting with Pastor Overton & Flint Water Coalition

When: Tuesday, August 04, 2015 9:30 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Governor's Conference Room

Stacie will send list of attendees later

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:13 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: RE: Flint water update

We are finishing a draft VN and should have it ready by tomorrow for Exec review.

I think the response below is probably simple enough. Results from the latest quarterly round of sampling show TTHM levels below 80 ppb at 7 of 8 sites.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, December 09, 2014 9:51 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: FW: Flint water update

Steve/Richard – I spoke with Randy this morning. I offered to review and provide comments on a summary that he drafted for his management. My suggested changes are in the paragraph below. It's important to keep it simple. Any other comments?

- The DEQ met with Flint officials last month. The City prepared an operational plan to reduce the formation of disinfection by-products. They have exceeded the standard which is primarily the result of using water from a different source, namely the Flint River. This is anticipated to be mitigated once the City begins using Lake Huron water from the Karagondi pipeline. A DEQ violation notice will go out next week which will require the city to issue a public notice. The DEQ Director plans to notify legislative members from the Flint area. In conclusion, the DEQ has seen a reduction in the numbers because of operational changes and the cooler weather. The violation is expected to continue for a while because it takes time to resolve this problem.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Byrne, Randall (Treasury)
Sent: Tuesday, December 09, 2014 9:16 AM
To: Shekter Smith, Liane (DEQ)
Subject: Flint water update

Liane:

Please review this draft on the Flint water issue and make any changes that will clarify this statement:

- The DEQ met with Flint officials last month. The City prepared an operational plan to reduce the disinfection by-product. They have exceeded the standard which is a result of using water from a different source, namely the Flint River. This will be gone once the City begins using Lake Huron water from the Karagondi pipeline. A DEQ violation notice will go out next week which will be a public notice. The DEQ Director will notify legislative members from the Flint area. In conclusion, the DEQ has seen a reduction in the numbers because of the cooler weather. The violation will continue for a while because it takes time to resolve this problem.

Thanks, once again for your assistance,
Randy,



Randall D. Byrne, Manager, Office of Fiscal Responsibility
State of Michigan 430 W. Allegan St. , Lansing, MI 48922
ByrneR1@michigan.gov (517) 335-2521



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Thank you.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, January 22, 2015 2:09 PM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint water

Mike is responding to her. It may take time to obtain the all the info she is after.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Thursday, January 22, 2015 1:59 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: Fwd: Flint water

Help?

Sent from my iPhone

Begin forwarded message:

From: "Erb, Robin" <rerb@freepress.com>
Date: January 22, 2015 at 1:34:44 PM EST
To: "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>
Subject: RE: Flint water

Hmmmm. Not yet.

Desk: 313-222-2708
 Cell: 313-378-6007

From: Wurfel, Brad (DEQ) [<mailto:WurfelB@michigan.gov>]
Sent: Thursday, January 22, 2015 1:30 PM
To: Erb, Robin
Subject: Re: Flint water

You get a call?

Sent from my iPhone

On Jan 22, 2015, at 10:40 AM, "Erb, Robin" <rerb@freepress.com> wrote:

Thanks for the time just now; it was nice to speak to you again.

I'd love to connect with Mike as soon as he has a few minutes. I'm also hoping to nail down a timeline for the boil advisories, the dates of the samples that were problematic, when DEQ notified Flint of the exceedance problems, and the dates of meetings that DEQ has had with residents.

My direct line is 313-222-2708. My cell is 313-378-6007.

Again, many thanks.

(And really, I don't think you're crazy to hang out on a slab of ice waiting for fish. Nope, not at all. Weirdo.)

Robin Erb

Detroit Free Press Medical Writer
160 W. Fort Street
Detroit, MI 48226
Metro desk: 313-222-6601
Direct line: 313-222-2708

Follow me on Twitter **@Freephealth**

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, April 04, 2014 2:26 PM
To: Matta, Samir; Prysby, Mike (DEQ)
Subject: RE: Flint WTP - Bray Road Lagoon Proposal - MDEQ comments

Samir,

You are correct, the section under vacuum would not be Schedule 80 steel, only sections that are under pressure as listed in 10 States Standards. Sorry for the confusion.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Matta, Samir [<mailto:SFMatta@lan-inc.com>]
Sent: Thursday, April 03, 2014 3:57 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: Re: Flint WTP - Bray Road Lagoon Proposal - MDEQ comments

Hi Mike,

Does the piping have to be schedule 80 steel as our system is under vacuum and not under pressure as required by ten states standards?

Thanks.

Lockwood, Andrews & Newnam
 Samir Matta, PE
 (517) 819-2367

On Apr 3, 2014, at 8:57 AM, "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov> wrote:

Samir,

Attached are our comments pertaining to submittals received for Phase II – Segments I and II for the Flint WTP. If you have any questions concerning our comments, I will be available till close of business today to discuss with you. After today, you will need to contact Steve Busch concerning any questions regarding the Flint WTP project. I will return from vacation on Monday April 21st.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance

517 290-8817

<Pre-lim Eng Reports - DEQ Comments III April 2, 2014.doc>

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Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, August 30, 2013 4:28 PM
To: Prysby, Mike (DEQ)
Cc: cookp@michigan.gov
Subject: RE: Flint WTP CT
Attachments: FlintCTcalculator.xls

They seem to meet the extra 0.5 log removal with no problem (see attached) at 0.25 intermediate Cl, 1.0 PT Cl and 9 pH.

Also they will not be producing 36 MGD during the interim period so the flow rate can be significantly reduced.

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: Wednesday, August 28, 2013 11:30 AM
To: Cook, Pat (DEQ); Busch, Stephen (DEQ)
Subject: Flint WTP CT

Attached is the Flint WTP CT calculation for several different operating scenarios with worst case meaning cold water – 0.5 deg C.

1. 12 MGD (0.5 C, pH 7.5, final CL 1.0 ppm)
2. 18 MGD (0.5 C, pH 7.5, final CL2 1.5 ppm)
3. 18 MGD w. softening (0.5 C, pH, final CL2 2.5 ppm)

Based on the higher pH, a minimum free residual of 2.5 mg/l from the clearwell appears necessary to meet the required CT in the third scenario.

I also ran the CT calc for the 3 MGAL clearwell at 2 deg C using the regression method. I will place a hard copy of the calc on your desk since my computer not mapped to the scanner on the printer....

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

Instructions for using this C*T Calculator:

1.) Gather data for the water supply. Data of concern is the maximum pH value and the minimum chlorine residual for each monitoring location within the plant. The sheets here allow the last 2 years worth of data to be entered, as well as an "other value".

*The "other value" can be useful if there is a historic minimum or maximum value that you would like to use, or to determine the minimum residual that needs to be maintained in order to satisfy the C*T requirement.*

*The data contained in these sheets is transferred to a "Water Quality Report" sheet that will print out with the C*T calculation when the "Print Report" button is clicked.*

2.) Be sure to label each monitoring location on the two data sheets. The label allows you to associate a monitoring location with each process on the CT Calculator sheet.

3.) Determine the number of processes that will be used in the C*T calculation. Then, on the CT Calculator worksheet, click the "Add Process" button until the appropriate number of processes are shown. The add and remove process buttons  their operations on the second column.

4.) Title each process and fill in **ALL** of the yellow cells for each process. Make sure that the monitoring locations on the CT Calculator sheet match the appropriate monitoring location specified on the pH and Cl sheets. Also determine the log inactivation required through disinfection and fill in the cell on the left side to reflect the requirement.

5.) Once all of the pH and chlorine residual data is entered and all of the yellow cells are filled in on the CT Calculator sheet, you are ready to make the CT calculation. Click on the "Calculate C*T" button. The rest of the empty cells should fill in and provide you with a percentage of the inactivation requirement. If the requirement is above 100%, then C*T has been attained. 

6.) Before printing the report, fill in the text boxes on the "CT Calculator" sheet to reflect the plant evaluated, the purpose of the evaluation, and the assumptions made during the calculation.

7.) When you are ready to print, click the "Print Report" button. Three pages will print: The C*T calculation, the Water Quality Report, and the Chlorine Residual Graph. You can still print a single sheet if you wish by selecting print from the file menu. 

Other Instructions:

This button will clear the blue cells, which are filled in by the macro when the "Calculate C*T" button is pressed.



This button will clear all of the cells on the "CT Calculator" sheet and remove  ss.

****You will lose any data you had previously entered****



	E. Solid Contact	W. Solid Contact	Filter	Clearwell
Volume (gallons)	1,280,000	1,280,000	500,000	3,000,000
Flowrate (MGD)	19	18	36	36
Flowrate (gpm)	13186	12492	24984	24984
Flowrate (cfs)	29.38	27.83	55.66	55.66
Detention time (min)	97.07	102.47	20.01	120.08
Baffling Factor	0.5	0.5	1	0.28
Cl ₂ Monitoring Location	Intermediate	Intermediate	Plant Tap	Plant Tap
True Min Cl	0.25	0.25	1	1
Min Cl for CT Table	0.4	0.4	1	1
pH Monitoring Location	Tap	Tap	Tap	Tap
Max pH	9	9	9	9
C*T Attained	12.13	12.81	20.01	33.62
C*T Req (1 log rem)	130	130	146	146
Log inactivation attained	0.0933	0.0985	0.1371	0.2303
% of required attained	18.67	19.70	27.41	46.06

0.5
log inactivation required

0.559
log inactivation attained

111.8
% of required

Water Treatment Plant Sanitary Survey 2005

Assumptions:

Mon. Location	Minimum Free Chlorine Residual					
	Pretreatment	Intermediate	Plant Tap			
Other Value		0.25	1			
Oct-03						
Nov-03						
Dec-03						
Jan-04						
Feb-04						
Mar-04						
Apr-04						
May-04						
Jun-04						
Jul-04						
Aug-04						
Sep-04						
Oct-04						
Nov-04						
Dec-04						
Jan-05						
Feb-05						
Mar-05						
Apr-05						
May-05						
Jun-05						
Jul-05						
Aug-05						
Sep-05						
Minimum =	0.00	0.25	1.00	0.00	0.00	0.00

Mon. Location	Maximum pH			
	Raw	Tap		
Other Value	9	9		
Oct-03				
Nov-03				
Dec-03				
Jan-04				
Feb-04				
Mar-04				
Apr-04				
May-04				
Jun-04				
Jul-04				
Aug-04				
Sep-04				
Oct-04				
Nov-04				
Dec-04				
Jan-05				
Feb-05				
Mar-05				
Apr-05				
May-05				
Jun-05				
Jul-05				
Aug-05				
Sep-05				

Maximum = 9.00 9.00 0.00 0.00

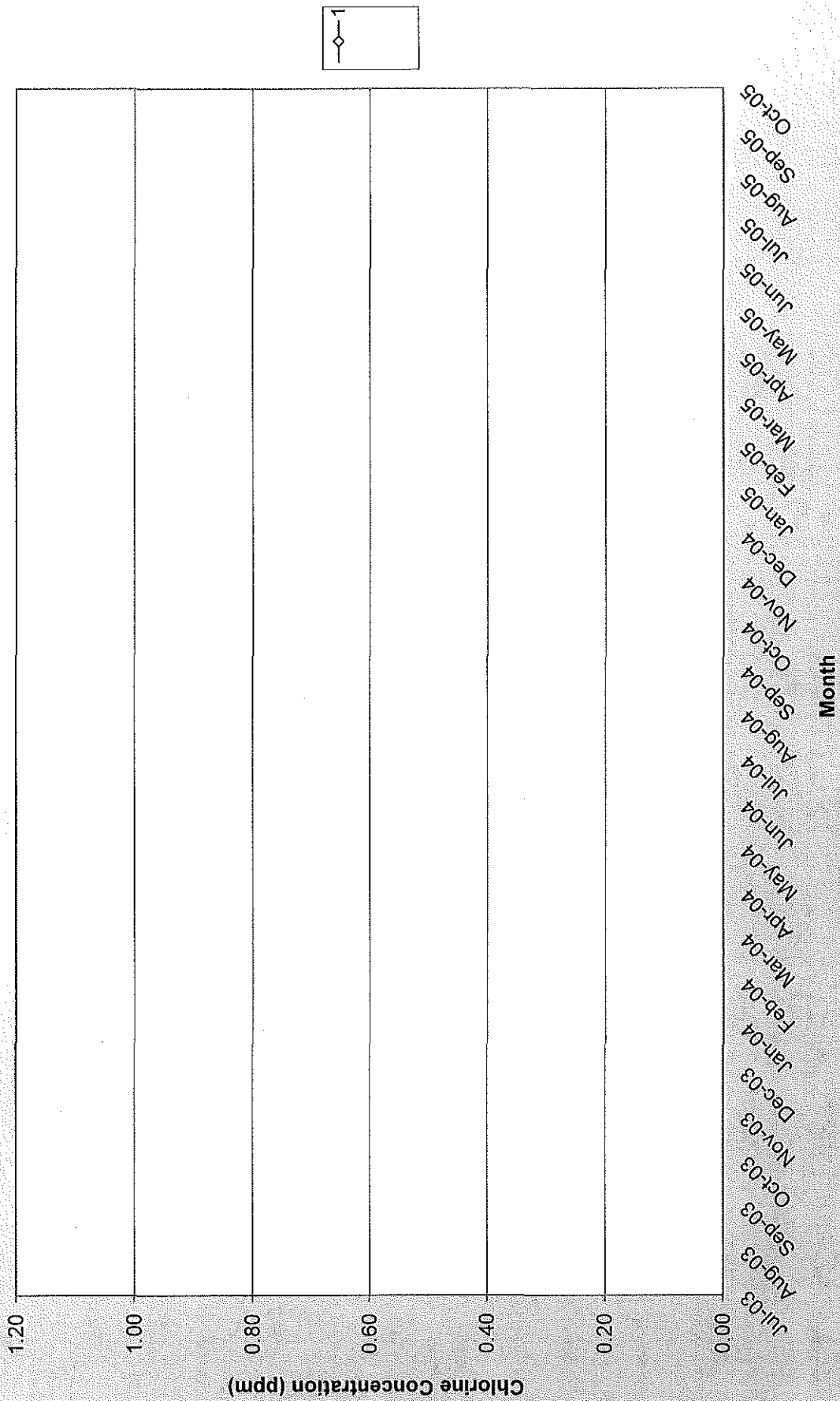
C*T Water Quality Parameters

Mon. Location	Maximum pH			
	Raw	Tap		
Other Value	9	9		
Oct-03				
Nov-03				
Dec-03				
Jan-04				
Feb-04				
Mar-04				
Apr-04				
May-04				
Jun-04				
Jul-04				
Aug-04				
Sep-04				
Oct-04				
Nov-04				
Dec-04				
Jan-05				
Feb-05				
Mar-05				
Apr-05				
May-05				
Jun-05				
Jul-05				
Aug-05				
Sep-05				

Maximum = 9 9 0 0

Mon. Location	Minimum Free Chlorine Residual				
	Pretreatment	Intermediate	Plant Tap		
Other Value	0.25	1			
Oct-03					
Nov-03					
Dec-03					
Jan-04					
Feb-04					
Mar-04					
Apr-04					
May-04					
Jun-04					
Jul-04					
Aug-04					
Sep-04					
Oct-04					
Nov-04					
Dec-04					
Jan-05					
Feb-05					
Mar-05					
Apr-05					
May-05					
Jun-05					
Jul-05					
Aug-05					
Sep-05					

Minimum = 0 0.25 1 0 0 0

Minimum Free Cl Residuals

	7.0	7.5	8.0	8.5	9.0
0.4	65	79	92	110	130
0.6	67	80	95	114	136
0.8	68	82	98	113	141
1	70	84	101	122	146
1.2	72	86	104	125	150
1.4	74	89	107	129	155
1.6	75	91	110	132	159
1.8	77	93	113	12	163
2	79	95	115	129	167
2.2	81	99	118	142	170
2.4	82	99	120	145	174
2.6	84	101	123	148	178
2.8	86	103	125	151	181
3	87	105	127	153	184

pH

Values at 0.5 °C and 1 log inactivation

Free Chlorine Residual

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, July 10, 2015 11:11 AM
To: 'Hansen, Jeff'; Matta, Samir
Cc: Prysby, Mike (DEQ); Brent Wright (bwright@cityofflint.com); mglasgow@cityofflint.com; Green, Warren
Subject: RE: Flint WTP GAC Permit Application

Samir,

You may drop off revised plans today Friday or Monday. The other documents we can print.

If you come today give me a call at the number below. I will be in meetings from 12:00 – 2:00

If you come on Monday give call Mike, as he is scheduled to be back.

Thanks.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Hansen, Jeff [mailto:jrhanzen@lan-inc.com]
Sent: Wednesday, July 08, 2015 8:52 AM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ); Brent Wright (bwright@cityofflint.com); mglasgow@cityofflint.com; Matta, Samir; Green, Warren
Subject: RE: Flint WTP GAC Permit Application

Steve,

In general response to your comments, our agreement with Flint is a design/build type so on the plans we have called out specific make/models to match what Flint currently uses for a number of items on your list rather than developing entire spec sections.

Specific responses to your comments are shown below in red. Revised plans and specs are attached and we will send hard copies by mail. Attachments are as follows:

1. Calgon Filtrasorb 400 GAC media data sheet
2. Calgon media change out procedures
3. Calgon disinfection procedures
4. Revised plans – there is only 1 change to a single note on sheet 6 as described below
5. Revised specs – added sections for piping, valves and pipe testing

Thanks,

Jeffrey R. Hansen
 Senior Project Manager



**Lockwood, Andrews
& Newnam, Inc.**

A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

T 810.820.2682 C 810.333.3201

www.lan-inc.com • JRHansen@lan-inc.com

From: Busch, Stephen (DEQ) [<mailto:BUSCHS@michigan.gov>]

Sent: Monday, July 06, 2015 3:50 PM

To: Hansen, Jeff

Cc: Matta, Samir; Green, Warren; mglasgow@cityofflint.com; Brent Wright (bwright@cityofflint.com); Prysby, Mike (DEQ)

Subject: Flint WTP GAC Permit Application

Our office received the permit application "Fint WTP Phase II, Segment 3 Filter Media Replacement" on June 30, 2015.

The only specifications provided with the permit application were for the following:

- 05550 Bolts, Anchor Bolts And Expansion Anchors
- 09928 Protective Coating Systems

Aside from information shown on the plan sheets and what was listed in the previously submitted basis of design document, no other specifications were provided regarding:

- GAC and Sand media, including removal, installation, ripening, and disinfection procedures
Plan sheet 5 calls out effective size, uniformity coefficient, and specific gravity for GAC and sand. Also, we have selected Calgon's product Filtrasorb 400 in our agreement. We did not want to dictate means and methods on the plans or specs. However, Calgon procedures are attached for your reference as well as their Filtrasorb 400 product sheet.
- Chlorine piping, joints, valves, installation, support, etc.
Chlorine piping and valves are to be ASAHI Chem Prolok which are dual wall HDPE with butt fused joints and also the same type as the existing mid point chlorination piping. We will add a specification for this and have added some wording to the pipe call out near the center of sheet 6. Specific supports are called out on the plans and notes refer to sections 09928 for coating and 05550 for anchor bolts. See Key Note #1 on sheet 6. Key note call outs are designated with a number inside a hexagon in the plan view.
- Water tight hatch to be installed
The Bilco hatch specified in Key Note #2 on sheet 6 with the options listed is water tight.
- Chlorine gas detector equipment
The specific make/model of the chlorine detection equipment is called out with Key Note #3 on sheet 6. That type was selected to match other chlorine gas detectors currently used at the plant.

Regarding the Protective Coating Systems specs and their related appendix, these are general in nature listing every part of the plant as potentially being recoated. Plan notes discuss a few items to be coated/recoated, but it is not entirely clear what the full scope of the coating work will consist of. Coating will only be applied to those items where it is called for on the plans, which are the hangers/supports.

We request any additional specification information regarding the above be provided for approval.

It is also noted that the basis of design is based on a flow of 30 MGD, approximately 2.5 gpm/ft² filter loading rate. The existing filters are currently rated for 36 MGD at 3 gpm/ft². This would cause the WTP capacity rating to be lowered to 30 MGD. Any future request to expand filter capacity back to 36 MGD would need to be demonstrated through filter performance testing. We showed 30 mgd in the basis of design and on the application form only because it is unlikely Flint demands will reach 36 mgd in the next 20 years. However, we would like to maintain the 36 mgd rating – do you need the basis of design and permit application resubmitted for this?

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

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Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 22, 2015 12:58 PM
To: Schock, Michael; 'Lytle, Darren'
Cc: Kempic, Jeffrey; Prysby, Mike (DEQ); kaplan.robert@epa.gov; Krisztian, George (DEQ); Sygo, Jim (DEQ) (SygoJ@michigan.gov)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

This will summarize our phone conversation of 10/19 and provide clarification regarding the previous comments.

The City of Flint converted back to purchasing of Detroit Water and Sewerage Department water on Friday October 16, 2015. No indications of upset in the distribution system have been reported to date.

Detroit Water and Sewerage Department (DWSD) has confirmed the use of Innophos "Phosphoric Acid 75% Technical" product which is NSF Standard 60 certified with a maximum allowable feed rate of 13 mg/L as product.

The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO₄) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO₄ and have a minimum plant tap residual of 0.8 mg/L as PO₄. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO₄). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO₄) as well.

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO₄). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO₄) in case orthophosphate loss is observed.

Flint will continue Water Quality Parameter Monitoring in accordance with the LCR at the same 25 distribution locations used under the Flint River. In addition 10 of these locations also serve as total coliform monitoring sites, including disinfectant residual, and Flint will be told to, for the purpose of assessing water stability, conduct water quality parameter monitoring along with turbidity and iron sampling will be at these 10 locations on a weekly basis as suggested. This will also ensure that a minimum recommended pH levels are being maintained throughout the system.

EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

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: Lytle, Darren [<mailto:Lytle.Darren@epa.gov>]
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO₄/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO₄/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the

history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO₄/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO₄/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO₄. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identify and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

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

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

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

From: Matta, Samir [<mailto:SFMatta@lan-inc.com>]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO₄ has been recommended for the

Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO₄. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO₄ demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO₄ when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE
Team Leader



**Lockwood, Andrews
& Newnam, Inc.**
A LEO A DALY COMPANY

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Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, July 09, 2013 2:36 PM
To: Prysby, Mike (DEQ)
Cc: Adam Rosenthal (rosenthala@michigan.gov)
Subject: RE: Flint WTP Test Run

Thanks for the update. If possible Liane and I are both interested in observing the softening operation. When you schedule a visit please include us both in the appointment.

You may want to remind them that if they plan to send out water from the plant they will need to provide appropriate water quality monitoring for CCR etc. and they should notify us prior to doing so for approval.

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, July 09, 2013 2:31 PM
To: Busch, Stephen (DEQ)
Subject: Flint WTP Test Run

Steve,

I will be conducting Genesee County surveillance visits tomorrow which will include a stop at the Flint WTP to observe the initial phase of their extended treatment plant test run. Based on my discussion with Brent today, the plant test run started yesterday, as planned, and the WTP will be operated this week without softening to verify proper operation of the critical treatment plant components. The WTP is currently operating at a 17.0 MGD rate. I will find out when they plan to initiate softening and, more importantly, whether they intend to send any of the treated water to the distribution system...and...if DWSD is agreeable to this. I will update you concerning the status of the plant test run. I also plan to conduct another visit during the test run while softening is being implemented.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, July 29, 2013 12:25 PM
To: Shekter Smith, Liane (DEQ)
Subject: Re: Flint WTP Visit

We will have a car out front at 12:30

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 Jul 29, 2013, at 10:26 AM, "Shekter Smith, Liane (DEQ)" <SHEKTERL@michigan.gov> wrote:

If ok with you, let's plan to eat before we go. I wasn't thinking this morning and packed a lunch.

From: Busch, Stephen (DEQ)
Sent: Friday, July 26, 2013 4:08 PM
To: Shekter Smith, Liane (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: Re: Flint WTP Visit

Okay let's plan on 12:30

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 Jul 26, 2013, at 4:04 PM, "Shekter Smith, Liane (DEQ)" <SHEKTERL@michigan.gov> wrote:

I can be flexible. 12:30pm is probably the earliest I should leave. There's a chance my 11am might run a bit long.

From: Busch, Stephen (DEQ)
Sent: Friday, July 26, 2013 3:35 PM
To: Shekter Smith, Liane (DEQ)
Subject: Flint WTP Visit

Liane,

Flint has started softening at the WTP. We should be all set to do a site visit on Monday if you still want to check it out. What time do you want to leave Con Hall? 12:00, 12:30, 1:00? Do you want to grab lunch on the way?

We can reserve a car but just need to know the leave time.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, October 13, 2015 10:07 AM
To: Gardner, Michael (OAG)
Cc: Shekter Smith, Liane (DEQ); Tetzlaff, Katherine (DEQ)
Subject: RE: Flint

Michael,

Based on my current schedule, Thursday would work best to meet. Let's plan on meeting at 9:00. To get any records you might need, it would be best to meet in the District office on the 1st floor of Constitution Hall. I will reserve a room in the District, but you can meet me in my office at 9:00.

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: Michael T. Gardner [<mailto:mgardner@audgen.michigan.gov>]
Sent: Monday, October 12, 2015 11:07 AM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Tetzlaff, Katherine (DEQ)
Subject: Flint

Good morning,

My name is Mike Gardner and I'm supervising the performance audit of the Office of Drinking Water and Municipal Assistance that is currently in progress. I believe I have met you a couple times before on other audits. As part of our audit, we would like to take a closer look at Flint's drinking water situation. Liane stated that you would be the person to meet with to obtain documentation/information concerning Flint. To begin our review, we would like to obtain some background information about Flint's change from the Detroit system to drawing water from the Flint River. I'm looking for information such as: why did Flint make the change; who made the decision to make the change; who had to approve such a change; how did Flint have the capacity to make such a change; when did the change occur; what was DEQ's involvement in the change of systems; what testing is required when such a change is made

I would like to set up a meeting with you in the near future to discuss Flint and to obtain information concerning the questions identified above. Please suggest a time and location for such a meeting. We are currently located on the 4th floor of the south tower but I don't have a phone in my cube. I usually work 6:30 a.m. to 4 p.m. Monday thru Thursday and 6:30 to 10:30 on Fridays. My schedule is very clean this week.

Thank you for your time.

Mike

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 23, 2014 4:51 PM
To: Wurfel, Brad (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Prysby, Mike (DEQ)
Subject: Re: Flint

Brad there is a ceremony at Flint we are planning to attend on Friday mid day so we need to develop a statement for the press sounds like ABC news 12 will be at the ceremony at least

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 Apr 23, 2014, at 11:09 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

Brad,

Here are some talking points:

- The City of Flint is going beyond minimum public health standard requirements to provide drinking water at a level of service meeting its customers' expectations (softening and ozone treatment to address taste and odor).
- While the Department is satisfied with the City's ability to treat water from the Flint River, the Department looks forward to the long term solution of continued operation of the City of Flint WTP using water from the KWA as a more consistent and higher quality source water.
- This is not a one time review. The Department will continue to oversee compliance by the City of Flint with all requirements under the Safe Drinking Water Act and monitor its operations in the same manner it does for the over 1400 community water systems throughout the State of Michigan.
- We support the City's commitment to enhance capital improvement work within its water distribution system, and not just here at the water treatment plant.

How is this for a start?

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Monday, April 21, 2014 11:09 AM

To: Busch, Stephen (DEQ)
Subject: Re: Flint

Half a dozen key talking points would e great.

Sent from my iPhone

On Apr 21, 2014, at 10:29 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

Brad,

Given that Flint is expected to complete work on the WTP and potentially change over from Detroit later this week, should we prepare a response statement from the DEQ in preparation for this event?

Obviously Flint is going to have a press release and invite media in as it's historic for them, but I know we are going to get questions.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, May 29, 2014 12:59 PM
To: Cook, Pat (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint

He has not contact me at all. Jennifer Crooks has spoken with him, and Mike followed up with Jennifer last week while she was in town on Flint.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Cook, Pat (DEQ)
Sent: Thursday, May 29, 2014 12:46 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: Flint

Have either of you talked to Lathan Jefferson recently? He left me a voicemail message with complaints about the Flint water system. Any updates would be appreciated.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, November 13, 2014 9:16 AM
To: Benzie, Richard (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint

FYI.

Mike called Tom Poy yesterday and spoke to him regarding the complaint detailed below.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Poy, Thomas [<mailto:poy.thomas@epa.gov>]
Sent: Wednesday, November 12, 2014 2:38 PM
To: Benzie, Richard (DEQ); Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint

Liane/Richard: FYI..Someone called the EPA Office of Inspector General's hotline with a complaint about Flint's drinking water. The OIG forwarded a log of the call with the name of the complainant redacted.

Complaint Details

Summary: Complainant calling regarding drinking water in Flint, Michigan.

Details: Complainant states the water in Flint, Michigan is not fit to drink. For several months they have been told by city officials not to drink, bathe or cook with the water. Complainant states a water scientist advised him that dogs have died and have been buried in the city water. Complainant states that some of the water mains have been broken for 2 – 3 months and only got fixed when the t.v. crews came and filmed it. Complainant states the Emergency Manager, Garnelle Early, and the city Mayor, Dane Walling stated the city was paying too much to get their water from Detroit and that they need get it from Parragondy Water Pipe Line. Complainant states the Mayor is President of the Parragondy Water Pipe Line. Complainant states the Mayor's children go to a public school and that their school has been advised not to drink the water and for the students to bring their own drinking water and the other public schools have not been told this. Also that water is trucked into city hall.

I know that you and your staff have been working with the Flint utility on their water quality and distribution system issues. Have you heard about one school being advised not to drink the water while the others have not? Or city hall getting alternate water?

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Thursday, November 06, 2014 9:10 AM
To: Poy, Thomas; Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Prysby, Mike (DEQ); shекterl@michigan.gov
Subject: Flint

Tom and Jennifer,

I received a phone call from an unidentified individual who wanted to talk to someone responsible for clean drinking water in the city of Flint. I told him that Michigan has adopted the Safe Drinking Water Act and has primary enforcement responsibility for this program. I provided him with the names of the district supervisor and district engineer that oversee this system, but he didn't want their telephone numbers because he wasn't going to waste his time with them.

He really wanted to talk to someone in Washington. I told him the EPA Administrator was Gina McCarthy, but I did not have her number or any of the others at headquarters because we work with the Region 5 EPA office. He asked for contact information, so I provided him with Tom's telephone number. I'm letting you know so you will hopefully be prepared to deal with the fact that he doesn't want to discuss this matter with the state.

I just talked to him again, as he called the OEA saying the number I gave him (312-886-5991) was incorrect, but he may have had it wrong initially. I offered to give him Jennifer Crooks phone number, and he was adamant that he did not want to talk to her. I suspect he has called about this issue previously.

Good luck.

Richard

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, March 17, 2015 8:23 AM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: RE: Flint

The City has currently contracted with two main engineering consulting firms. The primary contact for each firm is listed below.

Warren Green with Lockwood, Andrews & Newman, Inc.
630-918-2494
and
Marvin Gnagy with Veolia North America
419-450-2931

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance MDEQ
517-643-2314

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

From: Wurfel, Brad (DEQ)
Sent: Monday, March 16, 2015 4:44 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: Flint

Hey, all. Harvey has a meeting with city residents Wednesday. Need that enforcement info ASAP, tomorrow at latest and sooner is better. Also, on the water filter issue, spoke with Wyant today and he much liked the idea of having a specific product recommendation come from one of the cities contractors.

Steve, can you please get contact information for the best contractor in Flint to address this?

Thank you!

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, July 01, 2015 1:01 PM
To: Shekter Smith, Liane (DEQ)
Cc: Monosmith, Carrie (DEQ)
Subject: Re: Flint

We made need to bring Pat Cook into this call and discussion as our lead copper rule specialist.

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 Jul 1, 2015, at 8:31 AM, Shekter Smith, Liane (DEQ) <SHEKTERL@michigan.gov> wrote:

We'll need to discuss after we receive Miguel's report, but before the call later this month.

From: Hyde, Tinka <hyde.tinka@epa.gov>
Sent: Tuesday, June 30, 2015 4:40 PM
To: Shekter Smith, Liane (DEQ)
Cc: Monosmith, Carrie (DEQ); Henry, Timothy; Poy, Thomas; Bair, Rita; Damato, Nicholas
Subject: Flint

Hi Liane – I'm following up on the voicemail I left for you earlier today. I'm also copying Carrie Monosmith as I did get a chance to chat with her. In advance of our call scheduled for 7/21/15, I wanted to provide you with an update related to water quality challenges in Flint. I understand that some discussion occurred on June 10th with Tom Poy and staff during the semi-annual call regarding MDEQ's implementation of the LCR rule and the status of Flint. The Region is concerned about the lead situation in Flint and suggested that additional ORD assistance could be provided to Flint's Advisory Committee. We understand that the city is finishing up its second set of 6-month initial monitoring and I have scheduled a call with you on July 21st so we can discuss the Flint situation in more detail.

As you know, my staff have been out to Flint to collect samples and data which we felt could uniquely inform the NDWAC process and ultimately better inform the LCR rulemaking. Tom Poy asked Miguel Del Toral to prepare a report summarizing the visits and findings. Last week Miguel completed a draft interim report and provided it to management. Once Miguel addresses our comments, we will provide you with a copy of that report. In most cases, an internal EPA memo would not be distributed outside the agency, but given his interaction with the homeowner for one of the sampling locations, Miguel has shared a copy of the draft interim report as a courtesy with this Flint resident. Based on Miguel's initial analysis, elevated lead levels were found at this residence. In addition, it appears that the source of the lead may be from outside the home (Note: plumbing in the home is largely plastic).

Please know that Region 5 management is still being briefed on the lead issues in Flint and we look forward to the opportunity to discuss the situation with you in more detail so we can better characterize what MDEQ is already doing in Flint and how public health protection can best be provided to the citizens of Flint. If you would like to discuss this in advance of our call, please feel free to contact myself, or Tim Henry (312-886-6107). 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: Busch, Stephen (DEQ)
Sent: Monday, August 31, 2015 11:55 AM
To: Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: Flint

Mike spoke with some staff from Flint earlier today. They are still having internal discussions regarding corrosion control treatment.

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: Shekter Smith, Liane (DEQ)
Sent: Friday, August 28, 2015 3:33 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: FW: Flint

Any word?

From: Poy, Thomas [<mailto:poy.thomas@epa.gov>]
Sent: Friday, August 28, 2015 3:29 PM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: Flint

Liane/Richard: Has Flint replied yet on how they plan to comply with the corrosion control requirements of the 8/17 letter? Susan Hedman will be at a Brownfields meeting next week along with the Flint mayor and the subject of lead will likely come up.

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 29, 2015 12:32 PM
To: Wyant, Dan (DEQ); Sygo, Jim (DEQ)
Cc: Shekter Smith, Liane (DEQ); Pallone, Maggie (DEQ); Shaler, Karen (DEQ); Devereaux, Tracy Jo (DEQ); Thelen, Mary Beth (DEQ)
Subject: RE: Flint

Got it.

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

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

From: Wyant, Dan (DEQ)
Sent: Tuesday, September 29, 2015 11:47 AM
To: Busch, Stephen (DEQ); Sygo, Jim (DEQ)
Cc: Shekter Smith, Liane (DEQ); Pallone, Maggie (DEQ); Shaler, Karen (DEQ); Devereaux, Tracy Jo (DEQ); Thelen, Mary Beth (DEQ)
Subject: FW: Flint
Importance: High

Jim and Steve,
 Director wants you to handle this call with Tom Burke on lead this afternoon at 1:45. You can do it in Jim Sygo's office. Tom's number is 202-564-6620.
 Thank you.

MBT

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

From: Hedman, Susan [<mailto:hedman.susan@epa.gov>]
Sent: Tuesday, September 29, 2015 9:56 AM
To: Wyant, Dan (DEQ)
Cc: Burke, Thomas
Subject: Flint

Hi Dan --

It strikes me that one of the most important questions that EPA will be asked at the press conference later this week and in the months to come relates to EPA's assessment of the protocols that MDEQ and MDHHS are using to gather and analyze data collected as part of your "10 Point Plan." For that reason, I think that it would be useful to have some conversations now -- before sampling begins -- and I am cc-ing Tom Burke (who heads up EPA's Office of Research and Development) in the hope that we can get that conversation started today.

Please let me know when you plan to talk and I will join you if I can -- which may be difficult because I am traveling to Oklahoma City for an oil and gas task force meeting (where I will be seeing folks from DEQ's OOGM.) It's not essential for me to be part of this conversation -- but I think it is essential for you to start talking with Tom right away.

Thanks,

Susan

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, April 10, 2014 8:28 AM
To: rfonger1@mlive.com
Cc: Wurfel, Brad (DEQ)
Subject: RE: flint's application for flint river withdrawals

Mr. Fonger,

There is no application for withdrawal from the Flint River. The City has had an established baseline withdrawal capacity prior to water withdrawal legislation becoming effective and has the ability to withdraw water from the River.

The City of Flint has applied and obtained construction permits through our office under the Michigan Safe Drinking Water Act for modifications of its existing Water Treatment Plant facilities.

Let me know if you have any additional questions.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Tuesday, April 08, 2014 1:05 PM
To: Busch, Stephen (DEQ)
Subject: Fwd: flint's application for flint river withdrawals

Steve, can you or one of your staff please help the Flint Journal?

Sent from my iPhone

Begin forwarded message:

From: "Fonger, Ronald" <RFONGER1@mlive.com>
Date: April 8, 2014 at 12:13:31 PM EDT
To: "wurfelb@michigan.gov" <wurfelb@michigan.gov>
Subject: flint's application for flint river withdrawals

Hi Brad:

I met with several Flint officials yesterday about the city's application for Flint River withdrawals, which they submitted last week.

I'm interested in getting a copy of that application if I can in advance of the permit being acted on.

I'm also interested in knowing the outcome as soon as possible.

What's my best course of action?

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: Busch, Stephen (DEQ)
Sent: Tuesday, October 08, 2013 11:02 AM
To: Joseph, Mark (DEQ); prysbym@michigan.gov
Subject: RE: Fluoride Feed Equipment Grant Money

Please be sure to provide this information to:

- Alma WTP
- Flint WTP
- Genesee Co. WTP

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Monday, October 07, 2013 9:12 AM
To: Bolf, Michael (DEQ); Brennan, Patrick (DEQ); Brookens, Todd (DEQ); Chooi, Wood (DEQ); Chuhran, Laura (DEQ); Conradson, Scott (DEQ); Dehtiar, Luke (DEQ); Drake, Jerry (DEQ); Esparsa, Brian (DEQ); Gotham, Daryl (DEQ); Huddas, Patricia (DEQ); Islam, Abuzoha (DEQ); Johnson, Stephanie (DEQ); Joseph, Mark (DEQ); London, Bob (DEQ); Lopez, Amber (DEQ); Pascoe, Doug (DEQ); Prysby, Mike (DEQ); Rice, Jim (DEQ); Sarkipato, Ernest (DEQ); Skinker, Bethel (DEQ); Slater, Brad (DEQ); Swenor, Scott (DEQ); Thurston, Brian (DEQ); Wozniak, Gary (DEQ); Antil, Jeffrey (DEQ); Bergstrom, Carolyn (DEQ); Clark, John (DEQ); Kaiser, Rebecca (DEQ); Klein, Jeremy (DEQ); Maynard, David (DEQ); O'Boyle, Wade (DEQ); Ostrander, Debbie (DEQ); Pomaville, Katelyn (DEQ); Rosenthal, Adam (DEQ)
Cc: Howard, Brock (DEQ); Benzie, Richard (DEQ); Deming, Susan (DCH); Shekter Smith, Liane (DEQ); Bloemker, Jon (DEQ); Busch, Stephen (DEQ); Donaldson, Kristina (DEQ); Lachance, Amy (DEQ); Thomas, Chuck (DEQ)
Subject: Fluoride Feed Equipment Grant Money

As has been the case for the last four years, the Michigan Department of Community Health (DCH), Oral Health Program is once again promoting public water system fluoridation by offering grants to water systems wishing to purchase new or replacement fluoride feed equipment in 2014. \$90,000 was donated by Delta Dental of Michigan to fund this grant program for 2014. Since the start of this program in 2010, over 30 community water supplies have taken advantage of this grant to install new or replacement FI feed equipment.

Eligible water systems must have documentation that fluoridation has been discussed with the public and a vote in favor of adding fluoride to the drinking water by either the governmental body (city council, township board, etc.) or the public at large (ballot referendum). First priority will be given to those systems currently not fluoridating. If funds allow, replacement equipment will also be considered for those systems whose feed equipment is in need of updating. Funds cannot be used for constructing new buildings, building expansions or purchasing fluoride chemicals.

Attached is the Request for Proposals/Grant Application. If you know of any water supply that may be interested in this, please forward it to them. The application can also be found at www.michigan.gov/oralhealth and then clicking on Grant Opportunities.

If anyone has questions about the grant or the application please have them contact Susan Deming, Education and Fluoridation Coordinator, Department of Community Health at (517) 373-3624.

Some items to keep in mind:

- 1) The minimum population served of 1,000 to be eligible for the grant has been dropped.

- 2) Systems that have received monies in the past three years are not eligible.
- 3) Letter of Intent is due is January 31, 2014.
- 4) Full Proposal is due February 7, 2014.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, October 20, 2015 8:20 AM
To: Krisztian, George (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ)
Cc: Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Governor's Update

Update from 10/19.

- 11. Comments being taken on draft protocol.
- 16. Scheduled for Wed. 10/21.
- 19. Received EPA comments. Call with EPA scheduled for 10/20.
- 23. was completed on Friday 10/16.

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: Krisztian, George (DEQ)
Sent: Monday, October 19, 2015 5:10 PM
To: Cook, Pat (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ)
Subject: Governor's Update
Importance: High

Please submit your action item update for Monday (10/19/15). Please do this first thing Tuesday morning when you get in if you have not already done it.

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: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 1:48 PM
To: 'Crooks, Jennifer'; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.
- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.
- Has an Optimized Corrosion Control Program
- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.
- Has never had a 90th percentile lead AL exceedance
- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP
- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

212 Browning, the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab. While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

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: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnati Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov
(513) 569-7412

Jennifer

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collection on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO₄ (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally

reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO₄ for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

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: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, December 04, 2014 8:49 AM
To: Thelen, Mary Beth (DEQ)
Subject: RE: Hold Date for Flint Mtg. with Locals/Legislators?

Yes. We are going to work with Maggie to provide notification and answer any questions. Thanks for your help.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Thelen, Mary Beth (DEQ)
Sent: Wednesday, December 03, 2014 6:14 PM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Datema, Maggie (DEQ); Feuerstein, Heather (DEQ); Shaler, Karen (DEQ)
Subject: RE: Hold Date for Flint Mtg. with Locals/Legislators?

It is my understanding that the Director spoke with Liane and Maggie about the plan of action for this. I don't believe we are doing a meeting.
 Is everyone all set on this and on the same page?

Just checking in to make sure I don't need to do anything at this point.

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: Thelen, Mary Beth (DEQ)
Sent: Monday, November 24, 2014 11:58 AM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Datema, Maggie (DEQ); Feuerstein, Heather (DEQ); Thelen, Mary Beth (DEQ)
Subject: RE: Hold Date for Flint Mtg. with Locals/Legislators?

Okay, I will find out from the Director. He is out today and tomorrow but will be checking his email.

His schedule is extremely tight Dec. 8-12 (AL Th/Fr) but I'll see what he wants to do.

I am also copying Maggie Datema – Maggie, please see note below.

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: Monday, November 24, 2014 11:54 AM
To: Thelen, Mary Beth (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: Hold Date for Flint Mtg. with Locals/Legislators?

Mary Beth,

Director Wyant had suggested a meeting with Flint area members of the state legislature and others to provide them information about a water standard violations which may occur.

My office anticipates receiving the applicable monitoring results for determining such a violation during the week of December 1-5.

If the Director would still like to hold such a meeting, it would be best to do so during the following week December 8-12. Can you let me know whether this will work so we can start the planning process?

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: Busch, Stephen (DEQ)
Sent: Friday, March 13, 2015 3:47 PM
To: 'jhenry@gchd.us'
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: RE: Information Request and Documentation
Attachments: FOIA Request Flint Water.doc

Mr. Henry,

The January 27, 2015, FOIA request you provided was directed to the City of Flint, not the DEQ. The DEQ has no record of a FOIA request from your office for such information. It is our understanding that the City has responded to your FOIA request, has helped you adequately redefine your request within the City's scope of public record to address such ambiguities as "any additional areas of concern", and provided you with additional information beyond the scope of your request.

The DEQ fully recognizes the public health threat posed to individuals that contract Legionnaires' Disease with the understanding that the disease is not contracted by ingestion of potable water and therefore not regulated under the federal Safe Drinking Water Act. Your email below claims that you have explicitly explained the situation to our Department. However, since contacting our office early last October to indicate a rise in cases, we have not received any further information regarding your epidemiological investigation into this matter.

Further, conclusions that legionella is coming from the public water system without the presentation of any substantiating evidence from your epidemiologic investigation appears premature and prejudice toward that end.

It is highly unlikely that legionella would be present in treated water coming from the City of Flint water treatment plant given the treatment plant's use of ozone along with complete treatment and chlorine disinfect contact time to comply with federal surface water treatment rules for potable water. Detections of total coliform or heterotrophic bacteria in the City's public water distribution system indicate an environment where bacterial growth may be supported. However, there is no direct correlation that can be made to the presence of legionella. While total organic carbon levels in potable water may serve as a food source for bacteria growth in private plumbing system, water temperatures in the City's distribution system are below legionella growth range, and chlorine residual levels would also limit such growth.

Our office agrees that water main breaks, water leaks, and system repairs are possible vectors for legionella to enter the public water system. These should be investigated as part of your epidemiology. DEQ staff can be made available to assist GCHD and the City regarding such matters, but to date no request by GCHD for any such meeting has been received, let alone declined as alleged in your email.

If GCHD is seeking assistance to complete its epidemiological investigation regarding this matter, such resource requests should be directed to the Michigan Department of Community Health. Our Office agrees that a multi-agency partnership would be beneficial to move forward and develop a unified response. In that respect, if our Office can be of any further assistance you may contact me directly.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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.gchd.us

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 11, 2015 9:37 AM
To: Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Subject: RE: Information Request and Documentation

Mike,

I am not aware of a meeting request from Jim Henry or the Genesee County Health Department as indicated in his email below. Did you receive any such request?

The FOIA is specifically directed to the City of Flint not the DEQ. If requested some of the information asked for regarding Total Coliform and E.Coli compliance sampling could be provided, but there may also be additional construction repair sampling data.

We can respond to Jim when you get back in, but at this point while the change in source may have created water quality conditions that could provide additional organic nutrient source to support legionella growth, there is no evidence or confirmation of legionella coming directly from the Water Treatment Plant or in the community water supply distribution system at this time.

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: Wednesday, March 11, 2015 7:35 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: Fwd: Information Request and Documentation

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 12, 2015 8:50 AM
To: Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Howes, Sarah (DEQ)
Cc: Shaler, Karen (DEQ); Benzie, Richard (DEQ); Devereaux, Tracy Jo (DEQ); prysbym@michigan.gov
Subject: RE: Information Request and Documentation
Attachments: FOIA Request Flint Water.doc

For reference, attached is the county health department's FOIA request to the City of Flint from January.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, March 12, 2015 8:41 AM
To: Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Howes, Sarah (DEQ)
Cc: Shaler, Karen (DEQ); Benzie, Richard (DEQ); Devereaux, Tracy Jo (DEQ); Busch, Stephen (DEQ)
Subject: FW: Information Request and Documentation
Importance: High

The district received this late Tuesday.

Steve Busch has indicated that the district has not received a meeting request from Jim Henry or the Genesee County Health Department as indicated in his email below.

The FOIA is specifically directed to the City of Flint not the DEQ.

While the change in source may have created water quality conditions that could provide additional organic nutrient source to support legionella growth, there is no evidence or confirmation of legionella coming directly from the Water Treatment Plant or in the community water supply distribution system at this time.

Seems like the next step is to communicate with DCH and possibly develop a joint strategy/response. Not sure who in Exec wants to take the lead on this. Steve Busch and Mike Prysby will continue to be lead for us on this. They have been in contact with DCH recently but only to learn that little progress has been made in identifying a source or sources for the illnesses.

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>

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Respectfully,

Jim

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 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:

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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

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

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Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, January 26, 2015 1:59 PM
To: Tommasulo, Karen (DEQ)
Subject: Re: interview for article on Flint drinking water

No that was it. I called her back to direct her to the governor office but responded to all questions by email.

She will let me know if she has any follow up

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 Jan 26, 2015, at 1:51 PM, Tommasulo, Karen (DEQ) <TommasuloK@michigan.gov> wrote:

Have you had other contact with Chastity? Answered questions over the phone or talked with her at the public meeting or anything?

From: Busch, Stephen (DEQ)
Sent: Monday, January 26, 2015 1:09 PM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Prysby, Mike (DEQ); Datema, Maggie (DEQ); Tommasulo, Karen (DEQ)
Subject: FW: interview for article on Flint drinking water

FYI. Bridge Magazine request for information. See below. Note Letter to Governor office deferred to Governor's Office at this time.

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: Monday, January 26, 2015 1:07 PM
To: 'Chastity Pratt'
Subject: RE: interview for article on Flint drinking water

Ms. Pratt Please see responses to your questions below.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ

517-643-2314

From: Chastity Pratt [<mailto: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?

The City of Flint water system is one of over 1400 Community Water Systems in Michigan regulated under the Michigan Safe Drinking Water Act (1976 Public Act 399, as amended), which incorporates requirements of the federal Safe Drinking Water Act. The DEQ Office of Drinking Water and Municipal Assistance has been given authority for oversight of these regulations. DEQ regulatory oversight is mainly conducted through inspections, review of monitoring information (this includes sample results and operations data), issuance of construction permits for water systems, and planning (reliability, emergency response, capital improvement, operation and maintenance, etc.) As both community water systems and the DEQ desire the mutual goal of safe water, the DEQ works proactively in partnership with water systems to provide compliance assistance. This also includes activities such as source water protection and infrastructure funding.

2. What is the DEQ's response to the mayor's request for assistance?

As indicated by phone this letter was directed to the Governor's Office and should be followed up with that office for response at this point in time.

3. What on-going testing is DEQ doing with Flint water and how often?

The City is required to follow all state and federal monitoring requirements under Act 399. This includes sample analysis of over 90 contaminants with health based drinking water standards along with monitoring of its source, treatment, and distribution operations. Sample analysis frequency is based on the specific contaminant type, its level of detection if any, and its potential variability.

In regards to total coliform and e.coli bacteria compliance monitoring, the City is required to analyze at least 100 samples each monthly compliance period from its distribution system.

In regards to Total Trihalomethane (TTHM) compliance monitoring, the City is required to collect quarterly samples from 8 locations in its distribution system. The TTHM standard is based on a Running Annual Average for each of the 8 locations, rather than individual sample results. The location and timing of these samples is based on worst case conditions in the water system to identify the highest level of long term exposure.

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?

The City has had the following Maximum Contaminant Level (MCL) standard violations:

E.Coli Acute bacteria MCL violation, August 2014

Total Coliform bacteria MCL violation, September 2014

TTHM locational running annual average MCL violation, October-December quarter (2 of 8 sites)

There are generally two requirements in regards to the violations: Public Notification and corrective action

Public Notice for acute health threats like the e.coli MCL must be made within 24 hours of the violation.

Public Notice for non-acute health threats such as total coliform bacteria and TTHM must be made within 30 days of the violation.

Corrective action regarding bacteria detections generally involves taking steps to disinfect and repair the affected areas and sampling to obtain confirmation the bacteria source is has been addressed.

The City has remained in compliance with this standard for each of the monthly monitoring periods since September, including thus far in January

Corrective action for TTHM involves taking steps to reduce the amount of TTHM so that they are below the standard. The City is required to complete an Operational Evaluation report within 90 days of the violation. This report includes examination of treatment and distribution operational practices (source water quality, treatment changes, storage tank operations, excess storage capacity, distribution system flushing, treatment problems that contribute to TTHM formation. The City proactively completed an Operational Evaluation following sample results from August 2014, and is now completing another operational evaluation further evaluated based on information from the November monitoring. November monitoring showed individual sample results now below the standard at 7 of 8 locations. However, as noted compliance is determined based on a running annual average at each location.

5. What does DEQ tell Flint residents who call DEQ with concerns about discolored water?

Callers indicating discoloration or other aesthetic water quality issues are directed to contact the Flint DPW to allow the DPW staff to investigate the situation. Generally color, odor and taste are aesthetic water quality issues not related to any health based standards including total coliform bacteria, e.coli bacteria, and TTHM.

Treated water is monitored for color at the Water Treatment Plant as part of its operation, and has not been abnormal. The City of Flint has over 500 miles of distribution piping and conditions in some isolated sections of water main piping or private premise plumbing may cause changes to aesthetic conditions such as color, taste, or odor.

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)

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Subject: RE: interview for article on Flint drinking water

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 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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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: Busch, Stephen (DEQ)
Sent: Thursday, October 01, 2015 7:11 PM
To: Pallone, Maggie (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Re: Kildee Letter DRAFT

On the prior do you want to say begin?

On the later it may be simpler to request expedited promulgation of the long term revisions to the lead and copper rule.

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 Oct 1, 2015, at 5:19 PM, Pallone, Maggie (DEQ) <PalloneM@michigan.gov> wrote:

Steve or Richard, please see the attached letter. Is that the correct wording for request #4?
 Thanks,
 Maggie

From: Brown, Eric (GOV)
Sent: Thursday, October 1, 2015 5:16 PM
To: Lyon, Nick (DHHS) <LyonN2@michigan.gov>; Wyant, Dan (DEQ) <WyantD@michigan.gov>
Cc: Hertel, Elizabeth (DHHS) <HertelE@michigan.gov>; Pallone, Maggie (DEQ) <PalloneM@michigan.gov>; McBride, Bill (GOV) <mcbrideb@michigan.gov>
Subject: Kildee Letter DRAFT
Importance: High

Nick & Dan:
 Please take a look at the attached draft letter to Congressman Kildee, particularly the 4 requests for federal action. Please edit/add as necessary. Thanks for your quick attention to this – we need to have this ready for the Governor's signature by 8:30am tomorrow. Sorry for the tight turnaround.
 --Eric

Eric K Brown
 Senior Federal Policy Representative
 State of Michigan – Governor Rick Snyder
 Washington D.C. Office
 202.624.5840 (office)
 202.480.7235 (mobile)

<Kildee Lead Flint DRAFT 09-30-2015.docx>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, April 17, 2013 9:51 AM
To: Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ); Thelen, Mary Beth (DEQ)
Cc: Shaler, Karen (DEQ); Benzie, Richard (DEQ); Prysby, Mike (DEQ)
Subject: RE: KWA and City of Flint

Director Wyant, Deputy Director Sygo, and Liane,

A response at this point may be moot as Flint and Genesee Co. already held a press conference yesterday rejecting the DWSD offer.

It is also unclear whether DWSD provided its offer directly to Flint and Genesee Co. by the deadline in Treasurer Dillon's letter. However, Flint and Genesee Co. still took the offer under consideration.

Our office concurs with both Flint and Genesee Co. that the offers provided by DWSD were incomplete.

Of the two scenarios provided by DWSD it appeared that only Scenario 2 was listed as potentially being more cost effective. However, this scenario did not address the following:

1. The DWSD scenarios are based on 40 MGD of service capacity. However, the KWA project is providing 60 MGD of initial capacity with potential expansion to 75 MGD in the future. Therefore, in order for a more direct comparison the DWSD scenario would need to increase capacity to 60 MGD, which would increase fixed rate commodity costs as well as the capital costs for the Huron Plant that DWSD was planning to allocate to Flint and Genesee Co., presumably by as much as 50%.
2. DWSD proposals cover a 30 year period to 2042, but fail to recognize that after this period bond payments for the KWA project will be complete and result in a significant reduction in costs for the KWA option.
3. While DWSD indicates that Flint and Genesee Co. would be given "broadened representation", it remains unclear exactly what this means in terms of actual control in the decision making process.
4. This scenario continues to rely on a single transmission system and would require the City of Flint to maintain its WTP for emergency purposes and these costs do not appear to be included. In addition, use of the Flint WTP as an emergency backup would leave Genesee Co. without an adequate backup supply to meet their 30 year needs.

Again, without DWSD providing the specific details of these proposals, it is difficult to provide a true comparative analysis, and as such Flint and Genesee Co. appear to be justified in their rejection of these proposals.

Please let me know if you require any further response.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Sygo, Jim (DEQ)
Sent: Tuesday, April 16, 2013 9:59 AM

To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ); Shaler, Karen (DEQ); Thelen, Mary Beth (DEQ)
Subject: FW: KWA and City of Flint

Steve, Mike and Richard,

Please take a look at DWSD's last best offer to the City of Flint and provide your collective perspective to the Director through Liane by the end of the week. Copy me in as well. I'll be out of the office but would like to know if you think this is worth considering.

Thank you for your expedited review.

From: Wyant, Dan (DEQ)
Sent: Tuesday, April 16, 2013 6:52 AM
To: Sygo, Jim (DEQ)
Subject: FW: KWA and City of Flint

Jim,

Liane is out of the office today, Can you forward this directly to her staff that worked on this with us.

Dan Wyant, Director
Department of Environmental Quality
517-373-7917

From: Wyant, Dan (DEQ)
Sent: Tuesday, April 16, 2013 6:51 AM
To: Sygo, Jim (DEQ); Creal, William (DEQ); Shekter Smith, Liane (DEQ)
Cc: Anderson, Madhu (DEQ)
Subject: FW: KWA and City of Flint

Bill and Liane,

Can you have your staff's take a quick look at this and let me know today if they think this changes their thoughts and comments to me last week.

Dan Wyant, Director
Department of Environmental Quality
517-373-7917

From: Dillon, Andy (Treasury)
Sent: Monday, April 15, 2013 7:55 PM
To: Wyant, Dan (DEQ); Dennis Muchmore; Roberts, John (GOV)
Cc: Stibitz, Brom (Treasury); Saxton, Thomas (Treasury)
Subject: Fwd: KWA and City of Flint

FYI

Dan, any thoughts re the attached?

We gave dwsd until today to put best offer on table. Flint is to get back to us tmrw. I want to make sure their expected rejection is made in good faith.

Sent from my iPad

Begin forwarded message

From: "Debra Ragland" <dragland@dwsd.org>
To: "ekurtz@cityofflint.com" <ekurtz@cityofflint.com>
Cc: "jwright@co.genesee.mi.us" <jwright@co.genesee.mi.us>, "Dillon, Andy (Treasury)" <DillonA2@michigan.gov>, "James Fausone" <fausone@dwsd.org>, "orrk@detroitmi.gov" <orrk@detroitmi.gov>, "Sue McCormick" <mccormick@dwsd.org>
Subject: KWA and City of Flint

Please see attached on behalf of Sue F. McCormick.

Faxed copy forwarded to Mayor Dayne Walling and Jeff Wright.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, June 25, 2013 1:40 PM
To: Prysby, Mike (DEQ)
Subject: RE: KWA Meeting

OK.

Jon said he would see me tomorrow so I assume he is planning to attend. We may also want to discuss monitoring requirements that could be impacted by the source switch such as lead copper, total coliform, DBP, etc.

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, June 25, 2013 1:36 PM
To: Busch, Stephen (DEQ)
Subject: KWA Meeting

Steve,

Let's plan on meeting at the Exit 98 Park & Ride at 8 am tomorrow. That should get us in at the Flint WTP by 8:45. Steve Ashford just notified me that he will not be attending the meeting since the meeting is specifically concerning the operation of the Flint WTP and it does not appear that the raw water transmission main or intake will be discussed. I haven't heard from Jon regarding his plans.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 01, 2015 10:26 AM
To: Pieper, Julia (DEQ)
Cc: prysbym@michigan.gov
Subject: RE: lead samples from Flint schools

We have a call into Genesee County Health Dept., but I think sampling will occur Friday morning. Mike Prysby is coordinating the pickup and delivery.

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: Pieper, Julia (DEQ)
Sent: Thursday, October 01, 2015 9:30 AM
To: Busch, Stephen (DEQ)
Subject: lead samples from Flint schools

Steve,
Do you expect that we will receive some of the samples today?

Julia Pieper
Drinking Water Coordinator
Organic Sub-Unit Manager
DEQ-RRD-Laboratory Services
pieperj2@michigan.gov
(517)-335-8076 phone
(517)-335-8562 fax

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, April 07, 2015 12:10 PM
To: 'Henry, James'
Cc: Prysby, Mike (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: RE: Legionella Conference Call w/ MDCH

I am out of the office on Sick Leave today.

Mike Prysby will try to call in.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Henry, James [<mailto:jhenry@gchd.us>]
Sent: Tuesday, April 07, 2015 12:06 PM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: Legionella Conference Call w/ MDCH

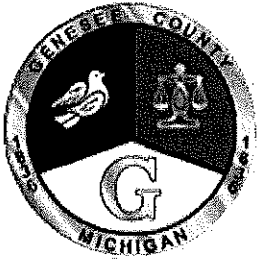
Hello Mr. Busch,

If possible would you or a representative from your office please attend the conference call that is being hosted by MDCH regarding the Legionella cases in Genesee County. Your knowledge and experiences may help us better understand the Flint municipal water system and municipal water in general, relative to Legionella. I understand that this is short notice, the meeting is today at 2:30pm and the call line is below.

1-877-873-8017
 Access code: 7931338

Thank you
 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: Hasan, Shurooq
Sent: Tuesday, April 7, 2015 10:25 AM
To: Henry, James
Subject: FW: Conference call line

From: Johnson, Shannon (DCH) [<mailto:JohnsonS61@michigan.gov>]
Sent: Monday, April 06, 2015 8:40 AM
To: Hasan, Shurooq
Subject: Conference call line

Hi Shurooq,

The conference call line for tomorrow's call from 2:30-3:30pm is:

1-877-873-8017
 Access code: 7931338

Thanks,
 Shannon

Shannon Andrews Johnson, MPH
 Infectious Disease Epidemiologist
 Michigan Dept. of Community Health
 201 Townsend St., CVB 5th Floor
 Lansing, MI 48913
 Phone: 517-335-8165
 Fax: 517-335-8263

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, February 09, 2015 4:00 PM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Poy, Thomas
Subject: RE: Letter from the White House-Flint
Attachments: Flint-Results-2013CCR.pdf

Jennifer,

The City's most recent Monthly Operation for December 2014 is available on the City website:
<http://cityofflint.com/wp-content/uploads/CoF-WTP-Monthly-Operation-Report.pdf>

It includes pH, alkalinity, hardness, distribution CI residuals, and other info we discussed.

Attached is the following additional information:

- Pages 1-3 Flint WTP plant tap results from 10/28/2014. (Includes Metals, Inorganics, VOC, SOC's).
- Page 4 Table from 2013 CCR (Issued in 2014 with results under DWSD)

I think this will cover everything we discussed this morning, but if you need something else just let us know. Thanks.

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: 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



Michigan Department of Environmental Quality

Replicate Laboratory Report for Lansing Drinking Water Laboratory

Owner/Location Information:

CITY OF FLINT
4500 N DORT HWY
FLINT MI 48505

Sample Number: LLF44687

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 10/28/2014 8:04:00 AM

Arrival Date: 10/29/2014 11:15:14 AM

Site Code:

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: PLANT TAP

Collector: Public Water Supply Operator

Collected By: MIKE GLASGOW

CasNo	Analyte	Result	Detect	Units	Method
16984-48-8	FLUORIDE (AUTOMATED)	0.62	0.1	mg/L	SM 4500 FC
7439-89-6	IRON	ND	0.1	mg/L	SM 3500 FeB
HARD-00-C	HARDNESS AS CaCO ₃	143	20	mg/L	SM 2340 C
7440-23-5	SODIUM	18	5	mg/L	SM 3500 NaB
7440-38-2	ARSENIC (TOTAL)	ND	0.002	mg/L	EPA 200.8
7440-39-3	BARIUM	0.02	0.01	mg/L	EPA 200.8
7440-41-7	BERYLLIUM	ND	0.0004	mg/L	EPA 200.8
57-12-5	CYANIDE	ND	0.02	mg/L	OIA-1677
7440-43-9	CADMIUM (TOTAL)	ND	0.0003	mg/L	EPA 200.8
7647-14-5	CHLORIDE (AUTOMATED)	60	4	mg/L	SM 4500-Cl E
7440-47-3	CHROMIUM (TOTAL)	ND	0.01	mg/L	EPA 200.8
93-76-5	2,4,5-T	ND	0.002	mg/L	EPA 515.4
93-72-1	2,4,5-TP (SILVEX)	ND	0.0003	mg/L	EPA 515.4
94-75-7	2,4-D	ND	0.002	mg/L	EPA 515.4
50594-66-6	ACIFLUORFEN	ND	0.004	mg/L	EPA 515.4
25057-89-0	BENTAZON	ND	0.002	mg/L	EPA 515.4
1918-00-9	DICAMBA	ND	0.002	mg/L	EPA 515.4
88-85-7	DINOSEB	ND	0.0003	mg/L	EPA 515.4
87-86-5	PENTACHLOROPHENOL	ND	0.00006	mg/L	EPA 515.4
1918-02-1	PICLORAM	ND	0.001	mg/L	EPA 515.4
1861-32-1	TOTAL DCPA, MONO & DI-ACID DEGRADATES	ND	0.001	mg/L	EPA 515.4
116-06-3	ALDICARB	ND	0.0005	mg/L	EPA 531.2
1646-88-4	ALDICARB SULFONE	ND	0.0005	mg/L	EPA 531.2
1646-87-3	ALDICARB SULFOXIDE	ND	0.0005	mg/L	EPA 531.2
63-25-2	CARBARYL	ND	0.001	mg/L	EPA 531.2
1563-66-2	CARBOFURAN	ND	0.0005	mg/L	EPA 531.2
16655-82-6	HYDROXYCARBOFURAN,3-	ND	0.001	mg/L	EPA 531.2
2032-65-7	METHIOCARB	ND	0.001	mg/L	EPA 531.2
16752-77-5	METHOMYL	ND	0.001	mg/L	EPA 531.2
23135-22-0	OXAMYL	ND	0.001	mg/L	EPA 531.2
114-26-1	PROPOXUR (BAYGON)	ND	0.001	mg/L	EPA 531.2
34256-82-1	ACETOCHLOR	ND	0.001	mg/L	EPA 525.2

Laboratory Sample Report

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16972-60-8	ALACHLOR	ND	0.0002	mg/L	EPA 525.2
309-00-2	ALDRIN	ND	0.0004	mg/L	EPA 525.2
1912-24-9	ATRAZINE	ND	0.0002	mg/L	EPA 525.2
5103-71-9	CHLORDANE, ALPHA-	ND	0.0002	mg/L	EPA 525.2
5103-74-2	CHLORDANE, GAMMA-	ND	0.0002	mg/L	EPA 525.2
72-54-8	DDD,4,4'-	ND	0.001	mg/L	EPA 525.2
72-55-9	DDE,4,4'-	ND	0.001	mg/L	EPA 525.2
50-29-3	DDT,4,4'-	ND	0.0005	mg/L	EPA 525.2
60-57-1	DIELDRIN	ND	0.0005	mg/L	EPA 525.2
72-20-8	ENDRIN	ND	0.0001	mg/L	EPA 525.2
7421-93-4	ENDRIN ALDEHYDE	ND	0.001	mg/L	EPA 525.2
76-44-8	HEPTACHLOR	ND	0.0002	mg/L	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	ND	0.0001	mg/L	EPA 525.2
118-74-1	HEXACHLOROBENZENE	ND	0.0001	mg/L	EPA 525.2
319-84-6	HEXACHLOROCYCLOHEXANE (ALPHA-BHC)	ND	0.001	mg/L	EPA 525.2
319-85-7	HEXACHLOROCYCLOHEXANE (BETA-BHC)	ND	0.001	mg/L	EPA 525.2
319-86-8	HEXACHLOROCYCLOHEXANE (DELTA-BHC)	ND	0.001	mg/L	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	0.0005	mg/L	EPA 525.2
58-89-9	LINDANE (GAMMA-BHC)	ND	0.0001	mg/L	EPA 525.2
72-43-5	METHOXYCHLOR	ND	0.0001	mg/L	EPA 525.2
61218-45-2	METOLACHLOR	ND	0.001	mg/L	EPA 525.2
21087-64-9	METRIBUZIN	ND	0.001	mg/L	EPA 525.2
2212-67-1	MOLINATE	ND	0.0005	mg/L	EPA 525.2
12674-11-2	PCB (AROCOR 1016)	ND	0.0001	mg/L	EPA 525.2
11104-28-2	PCB (AROCOR 1221)	ND	0.0001	mg/L	EPA 525.2
11141-16-5	PCB (AROCOR 1232)	ND	0.0001	mg/L	EPA 525.2
53469-21-9	PCB (AROCOR 1242)	ND	0.0001	mg/L	EPA 525.2
12672-29-6	PCB (AROCOR 1248)	ND	0.0001	mg/L	EPA 525.2
11097-69-1	PCB (AROCOR 1254)	ND	0.0001	mg/L	EPA 525.2
11098-82-5	PCB (AROCOR 1260)	ND	0.0001	mg/L	EPA 525.2
59536-65-1	POLYBROMINATED BIPHENYLS	ND	0.0001	mg/L	EPA 525.2
122-34-9	SIMAZINE	ND	0.0002	mg/L	EPA 525.2
8001-35-2	TOXAPHENE	ND	0.001	mg/L	EPA 525.2
71-43-2	BENZENE	ND	0.0005	mg/L	EPA 524.2
108-86-1	BROMOBENZENE	ND	0.0005	mg/L	EPA 524.2
74-97-5	BROMOCHLOROMETHANE	ND	0.0005	mg/L	EPA 524.2
75-25-2	BROMOFORM	0.0014	0.0005	mg/L	EPA 524.2
74-83-9	BROMOMETHANE	ND	0.001	mg/L	EPA 524.2
104-51-8	BUTYLBENZENE,NORMAL-	ND	0.0005	mg/L	EPA 524.2
136-98-8	BUTYLBENZENE,SEC-	ND	0.0005	mg/L	EPA 524.2
98-06-6	BUTYLBENZENE,TERT-	ND	0.0005	mg/L	EPA 524.2
56-23-5	CARBON TETRACHLORIDE	ND	0.0005	mg/L	EPA 524.2
108-90-7	CHLOROBENZENE	ND	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.0080	0.0005	mg/L	EPA 524.2
75-00-3	CHLOROETHANE	ND	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.012	0.0005	mg/L	EPA 524.2
74-87-3	CHLOROMETHANE	ND	0.0005	mg/L	EPA 524.2
95-49-8	CHLOROTOLUENE,2-	ND	0.0005	mg/L	EPA 524.2
108-43-4	CHLOROTOLUENE,4-	ND	0.0005	mg/L	EPA 524.2
74-95-3	DIBROMOMETHANE	ND	0.0005	mg/L	EPA 524.2
95-50-1	DICHLOROBENZENE,1,2-	ND	0.0005	mg/L	EPA 524.2
541-73-1	DICHLOROBENZENE,1,3-	ND	0.0005	mg/L	EPA 524.2
106-46-7	DICHLOROBENZENE,1,4-	ND	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.012	0.0005	mg/L	EPA 524.2
75-71-8	DICHLORODIFLUOROMETHANE	ND	0.001	mg/L	EPA 524.2
75-34-3	DICHLOROETHANE,1,1-	ND	0.0005	mg/L	EPA 524.2
107-06-2	DICHLOROETHANE,1,2-	ND	0.0005	mg/L	EPA 524.2

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	DICHLOROETHYLENE,1,1-	ND	0.0005	mg/L	EPA 524.2
156-69-2	DICHLOROETHYLENE,1,2-CIS	ND	0.0005	mg/L	EPA 524.2
156-60-5	DICHLOROETHYLENE,1,2-TRANS	ND	0.0005	mg/L	EPA 524.2
78-87-5	DICHLOROPROPANE,1,2-	ND	0.0005	mg/L	EPA 524.2
142-28-9	DICHLOROPROPANE,1,3-	ND	0.0005	mg/L	EPA 524.2
594-20-7	DICHLOROPROPANE,2,2-	ND	0.0005	mg/L	EPA 524.2
563-68-6	DICHLOROPROPENE,1,1-	ND	0.0005	mg/L	EPA 524.2
10061-01-5	DICHLOROPROPENE,1,3-CIS	ND	0.0005	mg/L	EPA 524.2
10061-02-6	DICHLOROPROPENE,1,3-TRANS	ND	0.0005	mg/L	EPA 524.2
100-41-4	ETHYLBENZENE	ND	0.0005	mg/L	EPA 524.2
75-69-4	FLUOROTRICHLOROMETHANE	ND	0.001	mg/L	EPA 524.2
87-68-3	HEXACHLOROBUTADIENE	ND	0.0005	mg/L	EPA 524.2
98-82-8	ISOPROPYL BENZENE	ND	0.0005	mg/L	EPA 524.2
99-87-6	ISOPROPYL TOLUENE, PARA-	ND	0.0005	mg/L	EPA 524.2
78-93-3	METHYL ETHYL KETONE	ND	0.005	mg/L	EPA 524.2
108-10-1	METHYL ISOBUTYL KETONE	ND	0.005	mg/L	EPA 524.2
1634-04-4	METHYL TERT-BUTYL ETHER	ND	0.001	mg/L	EPA 524.2
75-09-2	METHYLENE CHLORIDE	ND	0.0006	mg/L	EPA 524.2
91-20-3	NAPHTHALENE	ND	0.0005	mg/L	EPA 524.2
98-95-3	NITROBENZENE	ND	0.01	mg/L	EPA 524.2
103-65-1	PROPYLBENZENE, NORMAL-	ND	0.0005	mg/L	EPA 524.2
100-42-5	STYRENE	ND	0.0005	mg/L	EPA 524.2
630-20-6	TETRACHLOROETHANE,1,1,1,2-	ND	0.0005	mg/L	EPA 524.2
79-34-5	TETRACHLOROETHANE,1,1,2,2-	ND	0.0005	mg/L	EPA 524.2
127-18-4	TETRACHLOROETHYLENE	ND	0.0005	mg/L	EPA 524.2
109-99-9	TETRAHYDROFURAN	ND	0.005	mg/L	EPA 524.2
108-88-3	TOLUENE	ND	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.033	NA	mg/L	EPA 524.2
87-61-6	TRICHLOROBENZENE,1,2,3-	ND	0.0005	mg/L	EPA 524.2
120-82-1	TRICHLOROBENZENE,1,2,4-	ND	0.0005	mg/L	EPA 524.2
71-55-6	TRICHLOROETHANE,1,1,1-	ND	0.0005	mg/L	EPA 524.2
79-00-6	TRICHLOROETHANE,1,1,2-	ND	0.0005	mg/L	EPA 524.2
79-01-6	TRICHLOROETHYLENE	ND	0.0005	mg/L	EPA 524.2
96-18-4	TRICHLOROPROPANE,1,2,3-	ND	0.0005	mg/L	EPA 524.2
95-63-6	TRIMETHYLBENZENE,1,2,4-	ND	0.0005	mg/L	EPA 524.2
108-67-8	TRIMETHYLBENZENE,1,3,5-	ND	0.0005	mg/L	EPA 524.2
75-01-4	VINYL CHLORIDE	ND	0.0004	mg/L	EPA 524.2
XYLMP-00-C	XYLENE,META-&PARA-	0.0005	0.0005	mg/L	EPA 524.2
95-47-6	XYLENE,ORTHO-	ND	0.0005	mg/L	EPA 524.2
1330-20-7	XYLENES (TOTAL)	0.0005	NA	mg/L	EPA 524.2
7439-97-6	MERCURY	ND	0.0001	mg/L	EPA 200.8
7440-02-0	NICKEL	ND	0.01	mg/L	EPA 200.8
14797-65-0	NITRITE AS N (AUTOMATED)	ND	0.05	mg/L	10-107-04-2-B
14797-55-8	NITRATE AS N (AUTOMATED)	ND	0.4	mg/L	10-107-04-2-B
7439-92-1	LEAD (TOTAL)	ND	0.001	mg/L	EPA 200.8
7440-36-0	ANTIMONY	ND	0.0006	mg/L	EPA 200.8
7762-49-2	SELENIUM (TOTAL)	ND	0.001	mg/L	EPA 200.8
14808-79-8	SULFATE (AUTOMATED)	22	10	mg/L	SM 4500 SO4E
7440-28-0	THALLIUM	ND	0.0002	mg/L	EPA 200.8

Laboratory Comments:

A trip blank was not available for analysis with this sample.

By authority of PA 368 of 1978 as amended.

Print Date: Mon Feb 9 13:50:23 EST
2015

Lake Huron Water Treatment Plant

2013 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	05/13/2013	ppm	4	4	0.55	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	05/13/2013	ppm	10	10	0.32	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	6/9/2008	ppm	2	2	0.01	n/a	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

Disinfection By-Products – Monitoring in Distribution System								
Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2013	ppb	n/a	80	37.8	11.5 – 43.8	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2013	ppb	n/a	60	17.0	6.0 – 19.0	No	By-product of drinking water disinfection

Disinfectant Residuals Monitoring in Distribution System								
Contaminant	Test Date	Units	Health Goal	Allowed Level	Highest RAA	Range of Detection	Violation	Major Sources in Drinking Water
Disinfectant Total Chlorine Residual	Jan-Dec 2013	ppm	MRDGL 4	MRDL 4	0.81	0.65-0.93	No	Water additive used to control microbes

2013 Turbidity – Monitored every 4 hours at Plant Finished Water Tap

Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation	Major Sources in Drinking Water
0.26 NTU	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2013 Microbiological Contaminants – Monthly Monitoring in Distribution System

Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	In one month 1	No	Naturally present in the environment.
E.coli or Fecal Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E. coli positive.	entire year 0	No	Human waste and animal fecal waste.

2011 Lead and Copper Monitoring at Customers' Tap

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation	Major Sources in Drinking Water
Lead	2011	ppb	0	15	< 2.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2011	ppm	1.3	1.3	0.10	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2013 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.52	Erosion of natural deposits

Collection, sampling result information and table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, M. Semegen

Additional sample result information provided by the City of Flint Water Plant Laboratory, M. Glasgow

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, September 11, 2015 3:08 PM
To: Wurfel, Brad (DEQ)
Subject: RE: mayor walling's comment
Attachments: FW: Director's Office Assignment -- Flint - need update asap; Flint lead history.pdf

See attached. This may be more info than is being asked.

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: Wurfel, Brad (DEQ)
Sent: Friday, September 11, 2015 2:10 PM
To: Busch, Stephen (DEQ)
Subject: RE: mayor walling's comment

Steve, do you have / can you assemble our figures on lead / copper testing in Flint? I spent quite some time last night talking with Ron Fonger, explaining wanted to see them. Not just the most recent round, but the previous rounds as well. Oh, and if you've got the DCH blood lead level tests document that they shared with us a few weeks ago, I don't seem to have that.
 b

From: Busch, Stephen (DEQ)
Sent: Friday, September 11, 2015 1:45 PM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: RE: mayor walling's comment

The City has not sent us their recommendation at this time. Per our 8/17 letter (attached), we recommended they select phosphate treatment which was previously provided by DWSD. They have until the end of the year to make a recommendation, but they are planning to have the treatment in place by January 2016. Their engineering consultant is working on this. Howard Croft noted this in his September 3 email to members of the technical advisory team the City formed.

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: Wurfel, Brad (DEQ)
Sent: Friday, September 11, 2015 1:18 PM

To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: FW: mayor walling's comment

Help?

From: Ronald Fonger [<mailto:RFONGER1@mlive.com>]
Sent: Friday, September 11, 2015 1:03 PM
To: Wurfel, Brad (DEQ)
Subject: mayor walling's comment

Brad:

On his campaign Web site, Mayor Walling addresses a lot of water issues and states, "The City will be continuing to optimize its water treatment process including planning to use a corrosion inhibitor now that it is being allowed by the MDEQ."

Do you have any information on what the corrosion inhibitor is and whether DEQ has approved its use?

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: Dykema, Linda D. (DCH)
Sent: Tuesday, July 28, 2015 3:25 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: FW: Director's Office Assignment -- Flint - need update asap
Attachments: Flint Testing and EBLLs_2.xlsx

Hi,

I just wanted to make you aware of this analysis.

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

-----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

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

From: Anderson, Paula (DCH)

Sent: Wednesday, July 22, 2015 5:31 PM

To: Miller, Corinne (DCH); Travis, Rashmi (DCH)

Cc: Priem, Wesley F. (DCH); Dykema, Linda D. (DCH); Peeler, Nancy (DCH); Bouters, Janese (DCH); Barr, Jacqui (DCH)

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

Importance: High

Good afternoon,

Please see the message below received from the Director's office just before 5. If at all possible, please provide an update of what you may, or may not, know ASAP, today if at all possible. Include Nancy Grijalva and Sue Moran in the response. Thank you.

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

From: Miller, Mark (DCH)

Sent: Wednesday, July 22, 2015 5:28 PM

To: Anderson, Paula (DCH)

Subject: RE: Flint - need update asap

There's an article from the metro times I located:

<http://www.metrotimes.com/Blogs/archives/2015/07/14/flint-family-finds-hazardous-waste-levels-of-lead-in-its-tap-water>

Based on this it sounds like at least one family might have had a child with elevated lead blood levels, which might or might not have come from the water. Sounds like the issue is old lead service lines, but there seems to be some difference of opinion on appropriate testing methods.

I'd send this over to Linda Dykema, Wes Priem and Nancy Peeler for their comments.

DEQ has jurisdiction over municipal water supplies, but we do have a program to follow-up on children with elevated blood lead levels, so I think it would be appropriate for the folks above to discuss the situation and recommend any action.

Mark

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

From: Anderson, Paula (DCH)

Sent: Wednesday, July 22, 2015 4:51 PM

To: Miller, Mark (DCH)

Cc: Moran, Susan (DCH)

Subject: FW: Flint - need update asap

Importance: High

Nancy requested an answer TODAY. Thanks.

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

From: Grijalva, Nancy (DCH)

Sent: Wednesday, July 22, 2015 4:47 PM

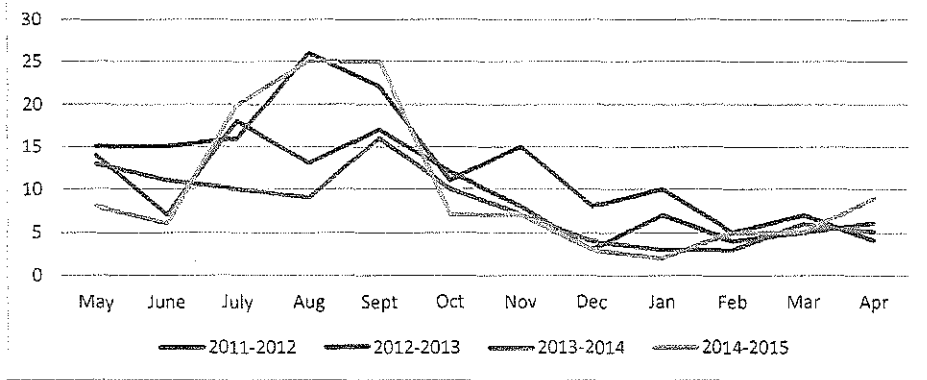
To: Moran, Susan (DCH)

Cc: Anderson, Paula (DCH)

Subject: FW: Flint - need update asap

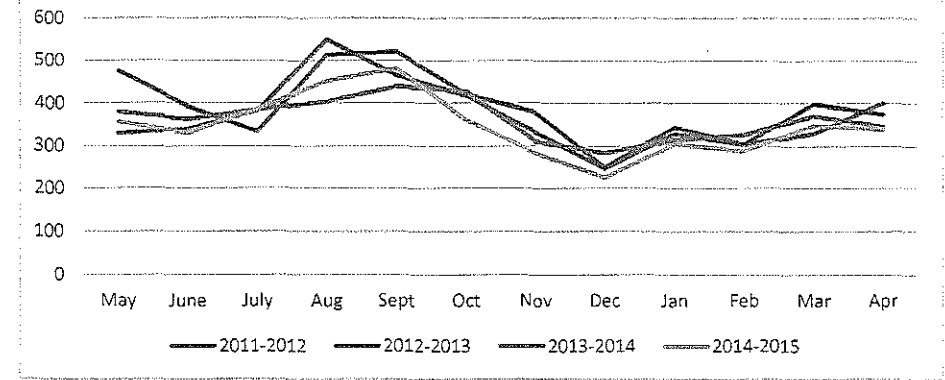
I'm frustrated by the water issue in Flint. I really don't think people are getting the benefit of the doubt. Now they are concerned and rightfully so about the lead level studies they are receiving from the DEQ samples. Can you take a moment out of your impossible schedule to personally take a look at this? These folks are scared and worried about the health impacts and they are basically getting blown off by us (as a state we're just not sympathizing with their plight).

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

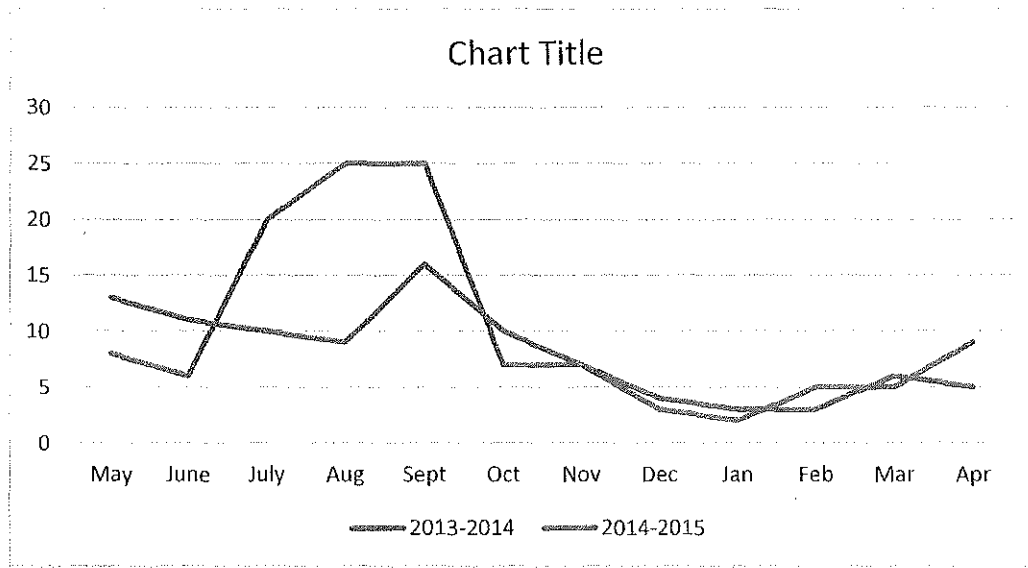


	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2011-2012	15	15	16	26	22	11	15	8	10	5	7	4
2012-2013	14	7	18	13	17	12	8	3	7	4	5	6
2013-2014	13	11	10	9	16	10	7	4	3	3	6	5
2014-2015	8	6	20	25	25	7	7	3	2	5	5	9

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



City of Flint Lead Compliance Monitoring History					
Monitoring Period	90th Percentile (parts per billion)	Number of Samples above 15 ppb	Samples Required	Samples Collected	Required Frequency
Jan. - June 2015	11 ppb	6	60	69	OCC Treatment
July - Dec. 2014	6 ppb	2	100	100	6 months
New Source and Treatment - Flint River and Flint WTP					
June - Sept. 2011	0 ppb	0	23	23	3 years
June - Sept. 2008	0 ppb	0	33	33	3 years
June - Sept. 2005	1.4 ppb	0	33	33	3 years
June - Sept. 2002	4 ppb	1	33	33	3 years
June - Sept. 2001	4.4 ppb	0	33	33	1 year
June - Sept. 2000	7 ppb	2	33	33	1 year
Jan. - June 1999	5 ppb	0	33	33	1 year
July - Dec. 1998	7.4 ppb	1	33	33	6 months
July - Dec. 1997	5 ppb	1	33	33	6 months
Jan. - June 1997	4.5 ppb	1	33	33	6 months
DWSD Study and OCC Treatment					
July - Dec. 1992	14.4 ppb	3	33	33	6 months
Jan. - June 1992	15 ppb	4	33	33	6 months

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, September 11, 2015 1:45 PM
To: Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: RE: mayor walling's comment
Attachments: City of Flint PbCu15 8_17_15.pdf

The City has not sent us their recommendation at this time. Per our 8/17 letter (attached), we recommended they select phosphate treatment which was previously provided by DWSD. They have until the end of the year to make a recommendation, but they are planning to have the treatment in place by January 2016. Their engineering consultant is working on this. Howard Croft noted this in his September 3 email to members of the technical advisory team the City formed.

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: Wurfel, Brad (DEQ)
Sent: Friday, September 11, 2015 1:18 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: FW: mayor walling's comment

Help?

From: Ronald Fonger [<mailto:RFONGER1@mlive.com>]
Sent: Friday, September 11, 2015 1:03 PM
To: Wurfel, Brad (DEQ)
Subject: mayor walling's comment

Brad:
 On his campaign Web site, Mayor Walling addresses a lot of water issues and states, "The City will be continuing to optimize its water treatment process including planning to use a corrosion inhibitor now that it is being allowed by the MDEQ."
 Do you have any information on what the corrosion inhibitor is and whether DEQ has approved its use?
 Thanks,

Ron Fonger
 MLive Media Group
 Reporter

mobile 810.347.9963
 email rfonger1@mlive.com
 address 540 S. Saginaw St. #101, Flint MI 48502



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

August 17, 2015

Mr. Brent Wright
City of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

SUBJECT: Flint, City of WSSN: 02310
Lead and Copper Monitoring of Drinking Water Taps

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), received your report for the monitoring period January 1, 2015, through June 30, 2015.

Action Levels	Results this monitoring period			
	90th Percentile	# of Samples Above Action Level	# of Samples Required	# of Samples Collected
Lead 15 parts per billion (ppb)	11 ppb	6	60	69
Copper 1.3 parts per million (ppm)	0.16 ppm	0	60	69

Ninety percent or more of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). These results must be reported on your 2015 Consumer Confidence Report (CCR) due to our office, your customers, and the local health department, by July 1, 2016. Also include the following statement in the CCR, regardless of the lead and copper levels:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.water.epa.gov/drink/info/lead>.

Mr. Brent Wright

2

August 17, 2015

Recent changes to the Lead and Copper Rule (LCR) require the water supply to provide individual lead tap results to people who receive water from sites that were sampled, even if lead was not detected, within 30 days of learning of results. You must also send us a certification that you met all the delivery requirements along with a sample copy of your customer notice by three months after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice of Lead Result Certificate* in Microsoft Word or PDF format, visit <http://www.michigan.gov/deq>. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms under the Manuals, Forms and Brochures heading. Water supplies that fail to distribute the Consumer Notice of Lead Results must include the following statement in their CCR, "During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule."

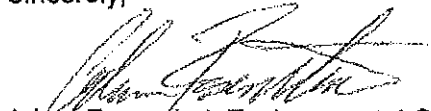
While the City's LCR compliance monitoring has continued to meet action level requirements, the LCR also requires all large systems (those serving over 50,000 people) to optimize corrosion control regardless of their 90th percentile lead concentration. One way to demonstrate fully optimized corrosion control treatment is through two consecutive six month rounds of LCR compliance monitoring in which the difference between the 90th percentile level and the highest source water lead concentration is less than the Practical Quantitative Level for lead (0.005 milligrams per liter). Since the City did not meet these criteria in both the July – December 2014, and January – June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment within six months in accordance with requirements under Act 399, Administrative Rule 604f (R 325.10604f). **This recommendation must be provided to our office as soon as possible, but no later than January 1, 2016.**

However, given the past use of phosphate treatment by the Detroit Water and Sewerage Department (DWSD) to fully optimize corrosion control treatment when the City was a wholesale customer of DWSD, the ODWMA recommends the City select this as its recommended treatment option, and begin implementation as soon as possible to address ongoing concerns by customers regarding lead levels within their premise plumbing systems. Under the second step of this Rule, the DEQ can specify optimal corrosion control treatment.

Our office will inform you when monitoring needs to be conducted as part of the optimization of the implemented corrosion control treatment. Customer requested samples for lead shall continue to be collected and analyzed. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria.

Please contact me at 517-284-6644 or rosenthala@michigan.gov at your earliest convenience to discuss how the City will be complying with the above requirements.

Sincerely,



Adam Rosenthal, Environmental Quality Analyst
Lansing District Office
Office of Drinking Water and Municipal Assistance

cc: Mr. Michael Glasgow, City of Flint

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 30, 2015 9:31 AM
To: jhenry@gchd.us; 'btawwab@flintschools.org'; 'tsitko@flintschools.org'
Cc: Pallone, Maggie (DEQ); Wurfel, Brad (DEQ)
Subject: RE: MDEQ Water Testing for Flint Community Schools
Attachments: School Lead_Copper_Sampling_Instructions.pdf

A school based sampling instruction sheet is attached. We will provide copies to the Genesee County Health Department with sampling units.

A sheet should be completed for each sample. As discussed yesterday the plan is to collect 3 samples from each facility.

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: Pallone, Maggie (DEQ)
Sent: Tuesday, September 29, 2015 5:16 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: FW: MDEQ Water Testing for Flint Community Schools

Steve-
 Can you work on putting together the quick info they will need?
 Thanks,
 Maggie

From: Sitko, Anthony M [<mailto:tsitko@flintschools.org>]
Sent: Tuesday, September 29, 2015 5:15 PM
To: Pallone, Maggie (DEQ) <PalloneM@michigan.gov>
Cc: Tawwab, Bilal <btawwab@flintschools.org>; Lisa Ermak <lermak@byrumfisk.com>
Subject: RE: MDEQ Water Testing for Flint Community Schools

Greetings Maggie,

Mr. Tawwab our Superintendent has a principal meeting tomorrow morning with our district principals.

If at all possible it would be good for us to be able to present them with the information needed (protocols) to prepare for the County Health Department to get the water samples from the schools on Thursday and/or Friday.

Mr. Tawwab would like to get them a memo communication in the morning to this effect. Therefore, please send the needed information that we discussed in the conference call as early as you can tomorrow for this important communication to our district principals.

Thanking you in advance,

Tony

From: Pallone, Maggie (DEQ) [<mailto:PalloneM@michigan.gov>]

Sent: Tuesday, September 29, 2015 3:12 PM

To: Sitko, Anthony M

Cc: Tawwab, Bilal; FARRIS SHARRECE; Lisa Ermak; Busch, Stephen (DEQ); Tommasulo, Karen (DEQ); Pallone, Maggie (DEQ)

Subject: RE: MDEQ Water Testing for Flint Community Schools

We would like to have this call at 4:00.

Conference call info: 1-888-251-2909

Access Code: 8426781

Please let me know if you have any questions.

Thanks!

Heather Feuerstein for Maggie Pallone

Management Assistant to

Maggie Pallone, Deputy Director and

Brad Wurfel, Communications Director

Department of Environmental Quality

517.284.6715

From: Sitko, Anthony M [<mailto:tsitko@flintschools.org>]

Sent: Tuesday, September 29, 2015 1:23 PM

To: Pallone, Maggie (DEQ)

Cc: Tawwab, Bilal; FARRIS SHARRECE; Lisa Ermak

Subject: MDEQ Water Testing for Flint Community Schools

Importance: High

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

Drinking Water Lead & Copper Sampling Instructions

Thank you for helping to monitor for lead and copper in your drinking water. It is important that you follow these instructions so that we may collect an accurate measurement of the lead and copper in your drinking water. This sample is supposed to represent the water you would typically drink and the faucet from where you would drink the water. Call the contact listed below if you have any questions.

1. Select a faucet in the school that is commonly used for drinking. DO NOT sample from a laundry sink or a hose spigot.
2. The DAY PRIOR to collection, flush the COLD water for at least 5 minutes at the selected faucet. Then let the water sit for at least 6 hours **before** you plan to collect the sample. If you have a single handle faucet, turn it to the COLD side. DO NOT use this faucet again until it is sampled.
3. Wait at least 6 hours before collecting your sample. Note, stagnation periods longer than 24 hours may not be representative of normal use. Collect the sample prior to occupancy the next morning.
4. Fill the sample bottle to the neck with the "first draw" of COLD water from the faucet that you flushed at least 6 hours previous.

5. Please answer the following questions:

- a) Did you flush the water for at least 5 minutes and let it sit unused for 6 hours before you filled the bottle? ☐ Yes ☐ No
- b) What date and time did you **flush the faucet**? Date _____ Time _____ P.M.
- c) What date and time did you **fill the bottle**? Date _____ Time _____ A.M.
- d) Did you fill the bottle from the same faucet that was flushed 6 hours before? ☐ Yes ☐ No
If NO, please explain: _____
- e) Which faucet did you use to fill the bottle? ☐ Kitchen ☐ Main Bathroom ☐ Other
If OTHER, please describe: _____
- f) Is this faucet connected to a treatment device such as a water softener, a reverse osmosis unit, an iron removal device OR is any kind of additive used in the school? ☐ Yes ☐ No
If YES, please describe: _____

Your Printed Name _____

Your Address _____

Your Signature _____

6. Attach this form to the bottle and contact the individuals listed below for pick-up.

If you have any questions call:

Local Health Dept.: Genesee County Health Dept.

Contact: Mr. Jim Henry, EH Supervisor

Phone: 810-257-3618

Or contact:

Michigan Department of Environmental Quality

DEQ contact: Mr. Michael Prysby

Phone: 517-290-8817

Thanks again for your help. We will send you the results once available. Contact the personnel listed above if you have any questions.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 27, 2014 12:09 PM
To: Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Willard, Veronica (DEQ)
Cc: prysbym@michigan.gov
Subject: RE: Media Contact FW: questions about Flint River

I just had a follow up phone conversation with Mr. Adams, Flint Journal/Mlive.

He had been informed by the City that they had provided all construction information to the Department for review.

I reiterated to Mr. Adams that we have received preliminary engineering plans and specifications regarding this proposed project that we have provided the City comment on, but that we have not received the construction permit application form, which lays out the scope of the project, some of the entities involved, and other considerations related to the construction site.

Mr. Adams again asked for clarification regarding the review process.

I indicated that while a permit application of this complexity would normally require 30-45 days for a complete response, since the City has approached us with these preliminary designs allowing us to address most issues prior to their application, it will likely reduce our response time, and that we have a meeting scheduled with the City on Monday that will in part address some of these remaining design issues. However, staff would still need to review the plans and specifications submitted with a permit application to ensure they are complete and this will take some time prior to issuing the permit.

Mr. Adams asked about inspection of the project, and I indicated that the applicant identifies who will provide inspection of construction work, usually an engineering consultant, or City staff engineer. Mr. Adams asked whether the DEQ does any inspection. I informed him that for this type of project we will do an inspection prior to startup to ensure that the City will be able to comply with the operating requirements of the Safe Drinking Water Act.

Mr. Adams asked about the City proceeding prior to a permit, and I explained that if the City hired a contractor prior to the proposed work prior to obtaining a permit, any revisions to the project for permitting would need to be addressed as part of the contract signed with the construction company.

I will let you know if there is any additional follow up from Mr. Adams, but he did not appear to have any additional questions.

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, March 25, 2014 2:16 PM
To: Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Willard, Veronica (DEQ)

Cc: prysbym@michigan.gov

Subject: Media Contact FW: questions about Flint River

I received the email below from Mr. Dominic Adams with Mlive and the Flint Journal.

I called Mr. Adams back and we discussed the following:

Process for switching from DWSD to Flint River

Water provided by DWSD is treated. The City's of Flint's existing WTP was designed for emergency use of the Flint River in the event of a failure in the DWSD system. So the WTP is already capable of the switchover, they would just close the line from DWSD and start pumps from the intake. The DEQ would need to be notified prior to the switchover in source water as there are regulatory requirements under the Safe Drinking Water Act. Failure to meet regulatory requirements would result in violations, and both the City and DEQ, would prefer to prevent that from occurring if possible.

(He asked about fines and I provided a link to the administrative fines information on our website)

Is time needed for the Detroit line

Other water systems utilize the pipeline from Detroit and will continue to do so without interruption.

Why is the City upgrading the WTP and what is being done

The City WTP is designed for short term emergency operation, these improvements would give them the ability to better operate the plant on a continuous basis. You should be able to obtain the full project scope from the City, but it includes additional chemical storage, modification to the disinfection system, electrical modifications, and pump modifications.

How is the DEQ involved in the project

The City is required to obtain construction permits from the DEQ Office of Drinking Water and Municipal Assistance prior to making modifications to its water system. The City has provided preliminary design information regarding the WTP improvements which we have commented on, but we have not received a formal permit application at this time.

(FYI they already held a groundbreaking which was reported)

http://www.mlive.com/news/flint/index.ssf/2014/03/flint_residents_should_be_drin.html

How long will a permit take?

For a permit of this complexity, we are normally able to respond to an applicant 30-45 days after receiving a permit application.

Does the DEQ have to inspect the system.

The DEQ conducts routine inspection visits of public water systems, we conduct at least 4 inspection visits with the City of Flint (its treatment and distribution systems) each year and a full inspection of the system is required once every 3 years. The last full inspection report was completed in 2013.

When the City operates its water treatment plant, they need to conduct daily monitoring and report those results to the DEQ. So we are constantly reviewing their treatment operations.

The City has set a date of April 17 to switchover, is that achievable?

I believe this is a tentative date based on a one year deadline set when the contract between Flint and DWSD was terminated. You would need to contact the City regarding their timeline for completing construction work upon obtaining a permit.

I indicated it would be good to contact the City about what residents should expect regarding water service when the change is made.

I tried to get a better idea from Mr. Adams about his article. He indicated he didn't feel the City was fully disclosing everything that is involved in completing this changeover.

PS, Mr. Adams claimed to have my info wrong or dialed a wrong number, my voicemail is not full and has been working fine. I provided him with my current info.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Adams, Dominic [mailto: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: Busch, Stephen (DEQ)
Sent: Monday, April 21, 2014 10:22 AM
To: Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov); Willard, Veronica (DEQ)
Cc: prysbym@michigan.gov
Subject: RE: Media Contacts: City of Flint WTP

Dominic Adams, Flint Journal/Mlive called this morning with some follow up after last week.

He asked about when work would be completed.

- I indicated he would need to ask the City to see when their contractors would be done

Will the DEQ be back out prior to re-inspect?

- I indicated we would, once the City notifies us, but we have not been contacted yet.

What work needs to be done?

- Primarily the completion of reconstructing some disinfection equipment.
 (While they are completing other work to soften the water using lime, this is not for public health protection, not a DEQ requirement for treatment)

When you inspected was the work done wrong and you asked for changes or just not done?

- Just not completed yet.

Should residents be concerned about this disinfection as part of treating the water?

- No. Flint water will be disinfected similar to how Detroit disinfects its water.

Does the DEQ need to complete sampling of the water before allowing Flint to start?

- The City of Flint has been provided with all of their monitoring requirements. The City maintains its own lab at the treatment plant to monitor water during operation. More complex monitoring which the City is not certified for analysis will be collected by the City and sent to either the state lab or a private lab for analysis according to the required schedule we have provided them.

Aside from the disinfection is there other work the City must get done to start the water treatment plant.?

- Startup of the treatment process will take several days to complete and the City has already begun this process.

I indicated that I'm sure the City of Flint will inform the media when it has started to provide residents with water from its water treatment plant.

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, April 18, 2014 5:32 PM
To: Wurfel, Brad (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); 'Richard Benzie P.E. (BENZIER@michigan.gov)'; Willard, Veronica (DEQ)
Cc: prysbym@michigan.gov
Subject: Media Contacts: City of Flint WTP

I was contacted today by the following reporters:

- Stephanie Parkinson, NBC news 25 Flint
- Kevin Wilson, ABC news 12 Flint
- Dominic Adams, Flint Journal/MLive

I provided a statement to each late this afternoon that:

DEQ staff were in the City of Flint today (4/18) to check on construction progress of work being completed at the Flint water treatment plant. The construction work nearing completion but is not yet complete. The WTP has initialized some of its treatment systems, and this process will take several days to complete. As such the WTP is not yet serving water to residents.

Stephanie Parkinson had a few followup questions.

- Will the work be completed by Monday? I indicated the City would be best able to answer questions regarding the construction schedule, Monday does not appear likely but they did think construction would be completed by next week.
- Has the DEQ completed testing of the City water? The City maintains a lab that conducts most operational testing, and then the City is required to submit their results to the DEQ.
- What equipment is still under construction? Disinfection equipment is the main focus of the remaining work.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, July 09, 2013 9:01 AM
To: Wurfel, Brad (DEQ); Copen, Leigh (DEQ); Shekter Smith, Liane (DEQ); Bloemker, Jon (DEQ); Willard, Veronica (DEQ)
Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Subject: RE: Media Inquiry - Flint WTP Engineering

FYI. Published article linked below.

http://www.mlive.com/news/flint/index.ssf/2013/07/flint_to_spend_171000_for_engi.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: Monday, July 08, 2013 11:20 AM
To: Wurfel, Brad (DEQ); Copen, Leigh (DEQ); Shekter Smith, Liane (DEQ); Bloemker, Jon (DEQ); Willard, Veronica (DEQ)
Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Subject: Media Inquiry - Flint WTP Engineering

I received a call this morning (July 8) from Dominic Adams, Flint Journal/Mlive. I called him back with Mike Prysby, District Engineer sitting in on the call.

Mr. Adams had obtained information that the City of Flint was contracting some engineering work for the Flint WTP, and the work was in part to potentially use the Flint River as a primary drinking water source.

I informed Mr. Adams that the City of Flint receives treated water from DWSD and has been since the 1960's, but has had the WTP available for reliability should the single transmission line system from DWSD fail. In an emergency the Flint WTP is already approved to use the Flint River for source water and is designed to meet all drinking water standards and public health requirements.

I also informed Mr. Adams that the engineering work in question would be to primarily enhance treatment capabilities beyond minimum requirements for the purpose of softening to provide customers with water quality consistent with what they already receive from DWSD. Some equipment for softening is already in place, but under emergency operation would not normally be used due to the time required for startup and fine tuning.

Mr. Adams asked whether the DEQ has approved or signed off on the proposed engineering work and on allowing the City of Flint to use the River as its source water. I explained that the ODWMA has not received a construction permit application for such work at this time, and that one would be required. I also indicated to Mr. Adams, that regardless of the source water, the City of Flint would be required to meet all applicable Drinking Water Standards and public health requirements and again that the WTP is already approved as a redundant supply to use the Flint River as a source water meeting all drinking water standards and that the WTP undergoes test runs on a quarterly basis to maintain the WTP.

Mr. Adams asked for more specifics regarding the treatment process and I explained that the removal of hardness for aesthetic water quality at this WTP is called lime softening.

Mr. Adams also inquired about the City being able to use the Flint River after the contract with DWSD terminates, and I indicated that may be one option, but they could also continue to purchase treated water from DWSD.

In Mr. Adams voicemail he mentioned a variance to use the Flint River, and I reiterated that there is no "Variance", but that the WTP has been constructed and approved to treat water from the Flint River to appropriate standards as needed.

Let me know if you have any questions.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 1:46 PM
To: Shekter Smith, Liane (DEQ)
Subject: RE: Meeting on March 9
Attachments: Tap Filters

Liane,

I have accepted the meeting request.

Brad called me at the end of the day yesterday, after you and I had talked, and explained the filter situation to me and asked me to help him put together some info for this morning. I sent the attached info, but not sure that it does much to support this concept.

If you are around tomorrow maybe we should have some further discussion about various options to help address the type of outcome the Governor's office is looking for.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, March 05, 2015 1:26 PM
To: Thelen, Mary Beth (DEQ)
Cc: Devereaux, Tracy Jo (DEQ); Shaler, Karen (DEQ); Feuerstein, Heather (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: RE: Meeting on March 9

According to a calendar check, Steve and I are both available. We will both plan to attend the meeting.

Thanks.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Thelen, Mary Beth (DEQ)
Sent: Thursday, March 05, 2015 12:14 PM
To: Shekter Smith, Liane (DEQ)
Cc: Devereaux, Tracy Jo (DEQ); Shaler, Karen (DEQ); Thelen, Mary Beth (DEQ); Feuerstein, Heather (DEQ)
Subject: FW: Meeting on March 9
Importance: High

Liane,

Director has asked that Brad Wurfel attend this on Monday.

We also need you OR Stephen OR Mike or a combination of 2 of you. Director said it was your call. Brad felt it would be best to have Stephen at this meeting.

Please let me know ASAP who can attend.

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: Clayton, Stacie (GOV)
Sent: Wednesday, March 04, 2015 5:25 PM
To: Wyant, Dan (DEQ)
Cc: Thelen, Mary Beth (DEQ)
Subject: Meeting on March 9

Director Wyant,

Harvey Hollins is requesting a DEQ technical person attend a meeting on Monday, March 9, at 1pm. The meeting will take place in the offices of the Sterling Corporation in the Hollister Building, 106 W. Allegan, Suite 2, Lansing, MI, and its purpose is regarding a possible solution for the Flint Water matter. Also in attendance will be Flint EM Gerald Ambrose and a Flint Water representative.

Additionally, I will have more you background information by Friday morning.

Thank you,
 Stacie

Stacie Clayton, Assistant Director
 Harvey Hollins III, Director
 Governor's Office of Urban and Metropolitan Initiatives
 3044 West Grand Boulevard, Ste. 14-650
 Detroit, MI 48202
 313.456.4994 (office)
claytons3@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 9:39 AM
To: 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Subject: Tap Filters

Brad,

Regarding point of use and point of entry water filters:

ANSI NSF Standard 42 Covers bacteriostasis, taste and odor (associated only with chlorine removal), and other aesthetic conditions

http://standards.nsf.org/apps/group_public/download.php/19895/NSF_42-11%20-%20watermarked.pdf

ANSI NSF Standard 53 Covers health effects removal

http://standards.nsf.org/apps/group_public/download.php/19896/NSF_53-11a%20-%20watermarked.pdf

It is important to note that the filters are not required to meet all aspects of the standard, only the portions they want to make claims for. So product information for each filter must be reviewed to determine its applicability.

Most of these point of use filters are basic activated carbon filters that simply remove taste and odor specifically associated with chlorine, not other things like iron, manganese, hydrogen sulfide, etc. that can also impact taste and odor as well as color.

It is important to recognize that taste and odor is generally an individual preference and such standards have for the most part not been developed because groups of individuals may still consider taste and odor issues to exist even after levels for such a standard have been met.

Other considerations are that the test water for such filters attempting to meet the standard uses hardness levels of 170 mg/L or less. Flint's water at times may be above this level, which could then impact filter performance and longevity.

Most of these filters are designed to be replaced after 100 gallons or less of use, a period of about 3 months for most households. In addition the tests allow for initial pressure drops of up to 15 psi. This may limit use in households that already rely on minimum pressure within their household plumbing.

Regarding the health effects standards, as the Flint water system already meets such requirements, with the exception of the current TTHM locational running annual average, there is little point to the use of these filters for such a purpose.

If you need additional information or have other questions please let me know.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 07, 2015 12:17 PM
To: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Meeting w Legislator

Mike is going to call City management this afternoon to see what they are doing and have planned to restore confidence. If asked by the City and the setting is appropriate we may participate. If so, we would be sure to coordinate with Brad, Sarah, and both of you. We would also be very clear with the City and those involved that any participation would be in a supportive role and that it should not be construed as a DEQ meeting.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Wednesday, January 07, 2015 11:53 AM
To: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: RE: Meeting w Legislator

Mike's getting quite experienced at these types of meetings and handling them well.

Another question asked by Representative Neeley that I think we answered adequately was whether immunocompromised individuals and infants were more at risk from these contaminants. Mike explained that while we were not toxicologists or medical professionals, it was our understanding that those subgroups were more susceptible to microbial contaminants of an acute nature, and we were not aware of any increased risk from these chronic contaminants. We explained that these contaminants were in fact byproducts created by the thorough chlorination of the water to eliminate microbial contaminants.

In addition to Mike's summary, it also seemed that the Representatives were primarily concerned about whether Flint had the personnel to handle this situation, which I think Mike addressed. It was also made clear to us that the Representatives (or their constituents) would like more frequent monitoring. I tried to explain how any additional monitoring would be incorporated into the compliance determination – that additional sample results from the pre-established sampling sites would be averaged over each compliance period (quarter) before being averaged with previous quarterly results, and that samples from other locations would primarily be for operational considerations and public awareness, but not compliance.

Finally, they indicated that based on the number of calls they are receiving and the tenor of the callers, there appears to be a significant (I think they used the word complete) loss of public confidence in the drinking water quality in Flint. Mike indicated that we would be working with the city to try to restore that confidence. Steve and Mike may want to carry that message to the city and discuss how they can restore confidence by becoming more transparent about their monitoring and acknowledging any past oversights, like not recognizing the need to alter their pumping and storage practices from one of maintaining high volumes in the event of a pipeline break to one of frequent and complete cycling of the tank volumes to reduce stagnation and TTHM formation. It should be a brainstorming session and not one of assigning blame but how to move forward. Maybe there are some lessons to be learned from how the Lansing BWL is trying to recover from the loss of public confidence as a result of their response to the ice storm a year ago.

Richard

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

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 28, 2015 1:20 PM
To: Miller, Mark (DCH); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ)
Cc: Anderson, Paula (DCH); Robinson, Mikelle (DCH)
Subject: RE: Need for information on the municipal water situation in Flint.....Urgent

Please call me at the number listed below at 2:00. I will be on my way to the meeting with Richard Benzie, Field Operations Section Chief.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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: Busch, Stephen (DEQ)
Sent: Friday, July 24, 2015 12:14 PM
To: Wurfel, Brad (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ); Wyant, Dan (DEQ); Pallone, Maggie (DEQ)
Subject: RE: Need upate on lead / copper tests for Flint

Brad,

Mike and I will come up to your office at 1:15.

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: 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: Busch, Stephen (DEQ)
Sent: Thursday, March 20, 2014 9:37 AM
To: Shekter Smith, Liane (DEQ)
Subject: RE: New 3.13

Thank you Liane.

I never would have come up with including the DWSD termination. I know staff in OWMRP will also be glad to finally get some progress on the Bray Road site once this is signed.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, March 20, 2014 9:26 AM
To: Brim, Richard (DEQ); Busch, Stephen (DEQ)
Cc: Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: New 3.13

All – the sentence requiring an Act 399 permit in 13.3 has been removed. I was uncomfortable that it appeared to only pertain to the activities under 13.3., when it's required for other actions proposed to be taken. In addition, there already is a general provision that actions taken under the order must comply with state and federal law, so I think Steve's concern is covered.

Thanks everyone for getting this done.

Liane

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Brim, Richard (DEQ)
Sent: Thursday, March 20, 2014 9:03 AM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: New 3.13

We have added the suggested provision to the end of paragraph 3.13 as Steve requested, Rich.

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, March 20, 2014 8:57 AM
To: Busch, Stephen (DEQ); Brim, Richard (DEQ)

Cc: Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: New 3.13

Rich – can you verify that the Order contains a provision that they must comply with state law (i.e., they need to apply for and get appropriate permits before commencing construction)? I think this will address Steve's concern below.

Otherwise, we'll probably need a generic statement about getting the appropriate Act 399 permits before they make system improvements.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Busch, Stephen (DEQ)
Sent: Thursday, March 20, 2014 8:37 AM
To: Shekter Smith, Liane (DEQ)
Cc: Brim, Richard (DEQ); Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: New 3.13

I think this language is more palatable. Since this is being brokered by OWMRP, if we added a line at the end requiring the respondent to obtain necessary permits under 399 from ODWMA it might make a little more sense as a compliance program item.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, March 19, 2014 4:51 PM
To: Busch, Stephen (DEQ)
Cc: Brim, Richard (DEQ); Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: FW: New 3.13

I spoke with Mike earlier and suggested language that conveys that Flint has elected to leave the DWSD system. I think this addresses our issue. Your thoughts?

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Robinson, Michael [<mailto:MRobinson@wnj.com>]
Sent: Wednesday, March 19, 2014 4:47 PM
To: Shekter Smith, Liane (DEQ)
Subject: FW: New 3.13

From: Robinson, Michael
Sent: Wednesday, March 19, 2014 4:36 PM
To: 'Brim, Richard (DEQ)'
Subject: New 3.13

“Respondent has chosen to use its WTP to supply water to its customers and leave the DWSD after receipt of a notice of termination of service from DWSD. In order for Respondent to continue to use the WTP, Respondent must undertake the KWA public improvement project or undertake other public improvement projects to continue to use the Flint River, such as additional WTP public improvements, source water protection public improvements, and public improvements to obtain a back-up water supply, in order to comply with Act 399.”

Mike

--

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 20, 2014 8:37 AM
To: Shekter Smith, Liane (DEQ)
Cc: Brim, Richard (DEQ); Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: RE: New 3.13

I think this language is more palatable. Since this is being brokered by OWMRP, if we added a line at the end requiring the respondent to obtain necessary permits under 399 from ODWMA it might make a little more sense as a compliance program item.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Wednesday, March 19, 2014 4:51 PM
To: Busch, Stephen (DEQ)
Cc: Brim, Richard (DEQ); Craig, John (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Willard, Veronica (DEQ)
Subject: FW: New 3.13

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To: Shekter Smith, Liane (DEQ)
Subject: FW: New 3.13

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Mike

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, July 20, 2015 10:15 AM
To: Pallone, Maggie (DEQ); Howes, Sarah (DEQ); DEQ-Legislative-Contact; Sygo, Jim (DEQ) (SygoJ@michigan.gov); Thelen, Mary Beth (DEQ) (THELENM2@michigan.gov); Shaler, Karen (DEQ); 'Rennaker, Joanne (DEQ) (RENNAKERJ@michigan.gov)'
Cc: Shekter Smith, Liane (DEQ); Winegar, Carla (DEQ); Devereaux, Tracy Jo (DEQ); Donaldson, Kristina (DEQ); Butler, Sonya (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov)
Subject: RE: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint

In response to the constituent request below from Senator Pavlov's office, I called Adam back at 9:20 this morning.

I briefly explained that there are two pipelines, a new one being constructed by the Karegnondi Water Authority (KWA) and the existing Detroit Water and Sewerage Department (DWSD) pipeline from their Lake Huron Water Treatment Plant that brings water into and currently serves portions of Genesee County.

Adam's questions were specifically regarding the KWA pipeline.

I explained that KWA obtained a water withdrawal permit from the DEQ for their Lake Huron intake, the beginning source of the pipeline.

His other questions were about payment for the pipeline.

I explained that KWA obtained bond funds through Genesee County for the project, and that the customers of KWA would pay that back through customer rates. (These rates would be to wholesale customers, but would be passed on to the retail customers, Flint, Genesee County, etc. customers.)

I provided Adam with the following contacts at Genesee County and KWA.

John O'Brien, Genesee County 810-732-7870

Jeff Wright, KWA CEO (Genesee County Drain Commissioner)

Adam indicated he had no further questions.

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: Monday, July 20, 2015 9:20 AM
To: Devereaux, Tracy Jo (DEQ); Butler, Sonya (DEQ); Donaldson, Kristina (DEQ)
Cc: Shekter Smith, Liane (DEQ); Winegar, Carla (DEQ)
Subject: RE: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint

I will respond to Adam and follow up with any additional questions.

I know how the KWA line is funded, but the existing DWSD Lake Huron WTP pipeline into Genesee County I assume was paid for by DWSD with funds recovered by rate payers? If it's the DWSD line in question, I'll be in touch.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Devereaux, Tracy Jo (DEQ)
Sent: Monday, July 20, 2015 9:14 AM
To: Butler, Sonya (DEQ); Donaldson, Kristina (DEQ); Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Winegar, Carla (DEQ)
Subject: FW: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint
Importance: High

Incoming Legislative Assignment...including Sonya as they mention funding; Kris as they mention Detroit; and Steve as they mention Flint. Please include everyone on this e-mail and those highlighted below with your response by 7/22/2015. Thanks.

Thanks,

Tracy Jo

From: DEQ-Legislative-Contact
Sent: Monday, July 20, 2015 9:03 AM
To: Devereaux, Tracy Jo (DEQ)
Cc: Thelen, Mary Beth (DEQ); Sygo, Jim (DEQ); Shaler, Karen (DEQ); Pallone, Maggie (DEQ); Howes, Sarah (DEQ); Shekter Smith, Liane (DEQ); DEQ-Legislative-Contact
Subject: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint
Importance: High

Due 7/22/15

Please have staff respond to Adam from Senator Pavlov's office regarding the question below.

Please keep all updated to any responses.

Thanks!

Heather Feuerstein
 Management Assistant to
 Maggie Pallone, Director of Legislative Affairs and
 Brad Wurfel, Communications Director
 Department of Environmental Quality
 517.284.6715

From: Adam Skubik [<mailto:ASKubik@senate.michigan.gov>]
Sent: Thursday, July 16, 2015 11:01 AM
To: DEQ-Legislative-Contact
Subject: RE: Constituent Inquiry

Hi Heather,

The specific question I am looking to have answered is, does the city of Flint and Detroit pay anything to take the water from Lake Huron? If so, who do they make that payment to?

Thanks,

Adam Skubik
Legislative Aide
Senator Phil Pavlov
517-373-7708

From: DEQ-Legislative-Contact [<mailto:DEQ-Legislative-Contact@michigan.gov>]
Sent: Thursday, July 16, 2015 10:57 AM
To: Adam Skubik
Subject: RE: Constituent Inquiry

Hi Adam, I believe we have had involvement with this issue. Do you only want to know where the funding come from, or did you have additional questions.

I can send this down to our Office of Drinking Water and Municipal Assistance and see what they can tell us about it.

Thanks!
Heather Feuerstein
Management Assistant to
Maggie Pallone, Director of Legislative Affairs and
Brad Wurfel, Communications Director
Department of Environmental Quality
517.284.6715

From: Adam Skubik [<mailto:ASKubik@senate.michigan.gov>]
Sent: Thursday, July 16, 2015 10:54 AM
To: DEQ-Legislative-Contact
Subject: Constituent Inquiry

Hi Heather,

I am not sure if you are the correct person to ask this question. I had a constituent reach out who is looking for information on the water pipeline that runs from Lake Huron to Flint. Do you know who is responsible for funding the construction of this pipeline or who is responsible for paying to maintain the pipeline? Any insight that you are able to offer would be greatly appreciated.

Thank you,

Adam Skubik
Legislative Aide
Senator Phil Pavlov
517-373-7708

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, July 20, 2015 9:20 AM
To: Devereaux, Tracy Jo (DEQ); Butler, Sonya (DEQ); Donaldson, Kristina (DEQ)
Cc: Shekter Smith, Liane (DEQ); Winegar, Carla (DEQ)
Subject: RE: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint

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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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To: Butler, Sonya (DEQ); Donaldson, Kristina (DEQ); Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ); Winegar, Carla (DEQ)
Subject: FW: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint
Importance: High

Incoming Legislative Assignment...including Sonya as they mention funding; Kris as they mention Detroit; and Steve as they mention Flint. Please include everyone on this e-mail and those highlighted below with your response by 7/22/2015. Thanks.

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Subject: ODWMA/LEG00139/Pavlov/Use of Lake Huron by Detroit and Flint
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Due 7/22/15

Please have staff respond to Adam from Senator Pavlov's office regarding the question below.

Please keep all updated to any responses.

Thanks!

Heather Feuerstein
Management Assistant to
Maggie Pallone, Director of Legislative Affairs and
Brad Wurfel, Communications Director
Department of Environmental Quality
517.284.6715

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Senator Phil Pavlov
517-373-7708

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Sent: Thursday, July 16, 2015 10:57 AM
To: Adam Skubik
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Hi Adam, I believe we have had involvement with this issue. Do you only want to know where the funding come from, or did you have additional questions.

I can send this down to our Office of Drinking Water and Municipal Assistance and see what they can tell us about it.

Thanks!

Heather Feuerstein
Management Assistant to
Maggie Pallone, Director of Legislative Affairs and
Brad Wurfel, Communications Director
Department of Environmental Quality
517.284.6715

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I am not sure if you are the correct person to ask this question. I had a constituent reach out who is looking for information on the water pipeline that runs from Lake Huron to Flint. Do you know who is responsible for funding the construction of this pipeline or who is responsible for paying to maintain the pipeline? Any insight that you are able to offer would be greatly appreciated.

Thank you,

Adam Skubik
Legislative Aide
Senator Phil Pavlov
517-373-7708

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 09, 2015 8:51 AM
To: Tommasulo, Karen (DEQ)
Subject: RE: Outreach meeting Thursday

Karen,

I will not be at the meeting on Thursday due to a conflict with ODWMA management meetings, but here is a list of stuff going on in Lansing.

Flint Drinking Water

- Return to compliance with TTHM standard.
- Concerns by Virginia Tech researcher about lead levels found in water in home plumbing. Mark Edwards is planning to be in Flint on September 15.
- Judgement against Flint water rate structure, now given class action status

RRD Old US27 MDOT cleanup site work complete?

Consent Agreement on Diamond Chrome

Gratiot Area Water Authority – service to St. Louis is expected to begin in October. Ribbon cutting 10/12 or 10/16.

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: Tommasulo, Karen (DEQ)
Sent: Tuesday, September 08, 2015 12:06 PM
To: Flechter, Matt (DEQ); DeBruler, Cari (DEQ); Pearson, Sara (DEQ); Acevedo, Jennifer (DEQ); Woods, Vence (DEQ); Wygant, Adam (DEQ); Berman, Jonathan (DEQ); Sweet, Robert (DEQ); Adelman, Mitch (DEQ); Casey, Steve (DEQ); Roycraft, Phil (DEQ); Busch, Stephen (DEQ); Jordan, Kameron (DEQ); Lachance, Amy (DEQ); Rudolph, Brian (DEQ); Kecskemeti, Tracy (DEQ)
Subject: Outreach meeting Thursday

The Communications Outreach team is meeting this Thursday. Sorry for the short notice, but the holiday weekend snuck up on me!

Please send me your agenda items so we can keep the meeting on time and make the best use of everyone's time. I also use your agenda item summaries in the meeting follow up note, so it's a good way to make sure everyone has the relevant points on paper.

Karen Tommasulo
 Public Information Officer

Michigan Department of Environmental Quality
517-284-6716 | 517-599-5733
tommasulok@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, February 17, 2015 11:39 AM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Outreach team meeting notes

I had forgotten you did that. I didn't respond because I didn't have any comments. I was a little worried the summary was coming from someone not directly involved with the situation even though the information as presented was fine. (I should have recognized it as your prose from the start ☺).

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Tuesday, February 17, 2015 11:25 AM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Outreach team meeting notes

Steve,

I provided the information as requested by our representative on the outreach team. It was the same information I had provided to some Region 5 EPA staff unfamiliar with the Flint situation in an attempt to clarify why they were receiving public inquiries and complaints about the water.

I was trying to keep it off your TO DO list. You had an opportunity to review and comment. I forwarded it to you verbatim on February 6th and asked if the summary was appropriate. I don't believe you responded.

Richard

From: Busch, Stephen (DEQ)
Sent: Tuesday, February 17, 2015 9:16 AM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: FW: Outreach team meeting notes

FYI. See attached meeting notes document. The notes on Flint are rather extensive and I'm not sure who they came from. This is being passed from the communications team back to the district coordinators and then out to the other DS's and potentially to their staff. I'm a little concerned about information being distributed in this fashion without any additional oversight or opportunity to review the draft not knowing where its coming from. There is potential for mixed messaging that differs from the talking points we have already developed. Most of the other topics have very brief bullet points.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Adelman, Mitch (DEQ)

Sent: Friday, February 13, 2015 4:20 PM

To: Bean, Lawrence (DEQ); Busch, Stephen (DEQ); Miller, Scott (DEQ); Russell, Jon (DEQ); Schineman, Louis (DEQ); Seibenick, Jeff (DEQ)

Cc: Sygo, Jim (DEQ); McClellan, Michael (DEQ); Campbell, Matthew (DEQ); Brown, Angela (DEQ); Tommasulo, Karen (DEQ); Aimar, Jennifer (DEQ); Aronoff, Lori (DEQ); Cogger, Jim (DEQ); Greer, Linda (DEQ); Hamel, Daniel (DEQ); Hiske, Terry (DEQ); Kolon, Sybil (DEQ); Lund, Kevin (DEQ); Doxtader, Sheryl (DEQ)

Subject: FW: Outreach team meeting notes

Notes and other attachments from yesterday's communications team meeting are attached. I had to leave the call early, so see also the note I sent to Karen summarizing stuff I would have brought up had I not had a conflict.

Good, long weekend to all, and stay warm!

Mitch

From: Tommasulo, Karen (DEQ)

Sent: Friday, February 13, 2015 3:01 PM

To: Flechter, Matt (DEQ); DeBruler, Cari (DEQ); Pearson, Sara (DEQ); Acevedo, Jennifer (DEQ); Woods, Vence (DEQ); Wygant, Adam (DEQ); Snow, Mark (DEQ); Berman, Jonathan (DEQ); Sweet, Robert (DEQ); Adelman, Mitch (DEQ); Casey, Steve (DEQ); Hare, Chris (DEQ); Hartz, Andrew (DEQ); Hollenbach, Heidi (DEQ); Bean, Lawrence (DEQ); Roycraft, Phil (DEQ); Sellers, Fred (DEQ)

Cc: Feuerstein, Heather (DEQ)

Subject: Outreach team meeting notes

Here's notes from yesterday's outreach meeting. Please let me know if I missed anything important.

Thanks all! See you next month. Feel free to let me know if something comes up in the meantime.

Karen Tommasulo

Public Information Officer

Michigan Department of Environmental Quality

517-284-6716 | 517-599-5733

tommasulok@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 30, 2014 8:14 AM
To: Bennett, Charles (DEQ)
Cc: Bartley, Cheryl (DEQ); Shirey, Kathleen (DEQ); prysbym@michigan.gov; McClellan, Michael (DEQ)
Subject: RE: PEAS

Please keep Mike Prysby and I informed as to this discharge. Any impacts to the Flint River are highly sensitive due to use by the Flint WTP. Thanks.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Bartley, Cheryl (DEQ)
Sent: Thursday, May 29, 2014 2:33 PM
To: Collett, Joli (DEQ); DEQ-PEAS-Lansing
Cc: DEQ-OEA-Compliance-Assistance
Subject: RE: PEAS

Got it... ..Charles Bennett will be the lead.

From: Collett, Joli (DEQ)
Sent: Thursday, May 29, 2014 2:29 PM
To: DEQ-PEAS-Lansing
Cc: DEQ-OEA-Compliance-Assistance
Subject: PEAS
Importance: High

First response please "Reply All" to receipt of this PEAS Notification ASAP.

Incident Description:

Noticed a sheen in the river, observed coming out of one the storm drains that discharges to the Flint River, coming out of Parcel B of the property known as old Chevy in the Hole, 300 North Chevrolet Avenue, Flint. A brownfield that was split in to five different parcels as they have worked on it. Outfall ID # F13-WARD-14.

One of the contractors remediating site to build park noticed the sheen coming out of the outfall after 9:20 am, after 7 minutes the sheen dissipated, believe it was first flush after the rain, entering the storm sewer. Checked again at 10:30, 11:30 am and 8:00 pm yesterday, reported no sheen was occurring.

Is an ongoing investigation due to remediation.

Complainant (C)		Party Involved (PI) – Company	ATT Pearlless

• Name	Tom Hutchings City of Flint	• Name	Lyon Londraigan
• Street Address	Water Pollution Control Facility G-4652 Beecher Road	• Street Address	
• City or Twp	Flint	• City or Twp	
• State	MI 48532	• State	MI
• Phone	810-766-7210 x 3655	• Phone	989-754-9896
• Alt Phone		• Alt Phone	
• Type	Landline	• Type	
Incident Street Address		Name of Pollutant	Sheen, oil
• Cross Streets		Release to Water (g)	Yes
• City or Twp		Release to Ground (g)	
• County	Genesee	Release to Air (lbs)	
Water Body Impacted	Flint River	Cleanup Contractor	
Occurred Date/Time/Ongoing	5-28-2014, 9:20 am	Release Secured (Y or N)	Yes

Is a cleanup contractor on-scene or called, if so , who: Ongoing investigation, remediation of brownfield site.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, October 15, 2014 9:23 AM
To: Wurfel, Brad (DEQ)
Cc: Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Wyant, Dan (DEQ); Datema, Maggie (DEQ)
Subject: Re: Phone Message - Questions Regarding Chloride Levels in Flint River Water.

<http://search.mlive.com/flint+gm+water/>

There appears to be quite a bit on this in the last day.

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 Oct 15, 2014, at 9:18 AM, Wurfel, Brad (DEQ) <WurfelB@michigan.gov> wrote:

On review, let's be really careful on this. GM's announcement has potential to put us in an awkward spot with respect to decisions Flint needs to make on its own.

b

Sent from my iPhone

On Oct 15, 2014, at 8:44 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

I didn't get this until after I got home from Jackson yesterday evening.

Did you still need me to call? If so it will have to be this afternoon. Mike Prysby responded to Ron Fonger on this on Monday. His media contact email is attached.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Tuesday, October 14, 2014 3:38 PM
To: Busch, Stephen (DEQ)
Subject: FW: Phone Message - Questions Regarding Chloride Levels in Flint River Water

Can you handle this one?

From: Berry, Virginia (DEQ)
Sent: Tuesday, October 14, 2014 12:39 PM
To: Wurfel, Brad (DEQ)

Cc: Feuerstein, Heather (DEQ)

Subject: Phone Message - Questions Regarding Chloride Levels in Flint River Water

Hi Brad!

A Mr. Walter Smith-Randolph of NBC 25 – Flint phoned, and he has questions regarding the Flint river water chloride levels. His number is: 810-247-1305.

Thanks!

Ginny Berry

DEQ - Office of the Great Lakes

Michigan Coastal Management Program

Areas of Concern

(517) 284-5052

berryv@michigan.gov

<mime-attachment>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, October 15, 2014 8:45 AM
To: Wurfel, Brad (DEQ)
Cc: prysbym@michigan.gov
Subject: RE: Phone Message - Questions Regarding Chloride Levels in Flint River Water
Attachments: Media Inquiry

I didn't get this until after I got home from Jackson yesterday evening.

Did you still need me to call? If so it will have to be this afternoon. Mike Prysby responded to Ron Fonger on this on Monday. His media contact email is attached.

Stephen Busch, P.E.
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 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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 DEQ - Office of the Great Lakes
 Michigan Coastal Management Program
 Areas of Concern
 (517) 284-5052
berryv@michigan.gov

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: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, July 28, 2015 9:47 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Monosmith, Carrie (DEQ); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ); Holdwick, Kevin (DEQ)
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Final Notes from Michigan semi-annual call on 6/10

I was supposed to finalize these in mid-July, but I didn't receive any changes from anyone, so these notes are final now. Thank you all again for participating.
 Jennifer

From: Crooks, Jennifer
Sent: Wednesday, July 01, 2015 5:31 PM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; Holdwick, Kevin (DEQ)
Cc: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review—I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:

MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
 EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Nouredin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP—for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:

(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits

to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June – September 2016 timeframe

(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe

(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all NTNCWSs. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality. The State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

d. Submittal of the lead and copper reporting form

(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field. Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. Dan stated that sample sites for NTNCWSs are actually identified by LHDs during the sanitary survey and are documented in the sanitary survey. The LHDs check the pdf of the laboratory results that clearly states where the sample was taken, and calculates the 90th percentile. However, Dan stated that the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

From our discussion, the Region concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentiles to ensure proper LCR monitoring is conducted by ALL NTNCWSs at the proper sample sites. After our call, I asked for verification of this statement, and Dan Dettweiler

responded, "Just as with an exceeding value of an MCL, WaterTrack alerts the LHD when at least one sample for a water system exceeds the AL. A 90th percentile calculation is made only when an exceeding result alerts the LHD. For cases where there are no exceeding results, private lab samples are reviewed at the time LHDs hand-enter them into WaterTrack. State lab samples, which flow electronically via nightly downloads from the state lab database, are reviewed when pdfs of the analysis reports are, routinely, emailed by the state lab to LHDs. Beyond that, MDEQ's annual evaluation of the LHDs provides another opportunity for us to oversee the proper assigning and use of designated sampling locations."

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather

NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:

Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (± 27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.

Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent (OR drafted?) to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

<https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/>

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Ms. Leeanne Walters in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.

Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, \$2M which includes \$900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is

number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the queue, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"

Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April

From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement—that of decreasing numbers of bacte/nitrate M/R violations.

However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:

Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarions, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, September 10, 2015 5:58 PM
To: Shekter Smith, Liane (DEQ)
Cc: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Poy, Thomas; Porter, Andrea; Devereaux, Tracy Jo (DEQ); Kuefler, Janet; Shoven, Heather; Deltoral, Miguel
Subject: Final Notes from call Tuesday 8/31/15 with MI DEQ RE: Flint

Thank you, Liane, for your edits—I incorporated all of your edits, and further clarified who said what.
 Jennifer

Date: August 31, 2015
Present: Liane Shekter Smith, Richard Benzie, Steve Busch, (2 other MDEQ staff?), Tom Poy, Andrea Porter, Janet Kuefler, Jennifer Crooks

STRATEGIC NEXT STEPS FOR FLINT TO ADDRESS LEAD CORROSION CONCERNS

Tom Poy discussed Marc Edwards' website, "Flint, MI Water Study Updates" (<https://flintwaterstudyupdates.wordpress.com/>). The discussion focused on the lead sampling and analytical results Marc Edwards' team posted to their website. Tom emphasized that EPA is not involved with Marc Edwards' work in Flint. Tom mentioned that the Edwards team's samples may not have been analyzed by a certified lab (which is only required for compliance samples) nor taken from sites that qualify as Tier 1 for LCR compliance sampling, but the results give further evidence that lead levels in Flint are trending upward. (The conclusion that there is an increasing trend of lead concentrations at consumer taps builds upon earlier compliance sampling taken by Flint in 2014 and 2015 that showed the 90th percentile of the 1st 6-month sampling period at 6ppb, then the 90th percentile of the 2nd 6-month sampling period at 11ppb.) Everyone at the meeting agreed that Flint is in compliance with the Safe Drinking water Act action level for lead. However, because the city's population exceeds 50,000 persons, MDEQ stated that Flint needs to additionally optimize their treatment process to reduce lead levels further, if possible.

The "Flint, MI Water Study Updates" website is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of optimized corrosion control treatment in an expedited manner in order to protect the residents from exposure to high lead levels. Richard noted that there are numerous systems across the country that have installed corrosion control treatment, have optimized their corrosion control, but did not necessarily reduce their lead levels. We all acknowledged that this is true. MDEQ acknowledged that implementing installation of corrosion control treatment in Flint is prudent to protect public health since there are approximately 15,000 lead service lines within the city. EPA acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint's many lead service lines are continuously in contact with corrosive water.

Region 5 and MDEQ brainstormed on strategic next steps for Flint to address lead corrosion concerns. These steps included:

1. **Public Education for Flint Residents.** Liane has contacted the Department of Community Health to discuss developing a consumer lead education piece outlining the consumer's options to lower the lead in their drinking water. The Region was glad to hear of a plan to initiate Lead Public Education since this will provide the public immediate actions they can take. The educational material could include steps consumers can take to reduce their exposure to lead in drinking water (flushing their lines after long stagnation periods, using filters certified to remove lead, etc.) as well as longer term fixes to remove lead sources (for example, financing the cost to

remove any part of a lead service line on the owner's property at the same time as Flint is replacing its portion of the lead service line).

2. **Gathering Information on Flint's Future Treatment Plans.** Steve Busch said Flint and their engineering consultants were meeting this week (Sept 1) to discuss conceptually the necessary optimized corrosion control treatment at Flint. Tom Poy shared EPA lead experts' (Mike Schock and Darren Lytle of EPA's Office of Research and Development in Cincinnati) caution against simply adding orthophosphate without first studying the water quality and existing distribution system conditions to ensure that any installed treatment has a good chance of working. EPA lead experts have research and field experience showing the complexity of optimizing corrosion control treatment when water quality is significantly changed, as is the case for Flint.
3. **Offering Flint Free Help from EPA Experts.** Steve Busch has already provided the names of EPA lead experts (Mike Schock and Darren Lytle) to Flint, as has Susan Hedman, R5 Administrator. MDEQ and Region 5 agree that, to successfully control lead corrosion in the distribution system, Flint needs to review this situation holistically, while also addressing the lead issue in an expedited manner.
4. **Laying Groundwork for MDEQ/EPA Collaboration with Flint.** If Flint accepts the offer of technical assistance for optimizing corrosion control, Tom Poy suggested that MDEQ and EPA lead experts (Mike Schock and Darren Lytle) form a partnership to provide such help. EPA experts are able to provide pipe scale analyses, as well as other laboratory support. Although Flint (using their consultant) bears the ultimate responsibility for designing and installing corrosion control, MDEQ and EPA experts are willing and able to provide advice throughout the process.

END

Jennifer

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Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Monday, August 03, 2015 3:34 PM
To: Cook, Pat (DEQ); Busch, Stephen (DEQ)
Subject: FW: FOR REVIEW: MDEQ - Flint Call Notes
Attachments: MDEQ Call on July 21_call notes v4.docx

Just received the attached. Haven't reviewed it yet.

From: Hyde, Tinka [<mailto:hyde.tinka@epa.gov>]
Sent: Monday, August 03, 2015 3:31 PM
To: Shekter Smith, Liane (DEQ)
Cc: Poy, Thomas; Bair, Rita
Subject: FOR REVIEW: MDEQ - Flint Call Notes

Hi Liane – Attached are our notes from our call on 7/21 regarding Flint Drinking Water System. Please take a look and let me know if you have any questions or comments. Thanks

Notes on Call with MDEQ on July 21, 2015

MDEQ Implementation of LCR Rule and Flint Issues

Issue #1: Is there a public health concern regarding lead in Flint or other regulatory requirements?

- The 90th percentile results of the 2nd round of monitoring was 11 ppb.
- The population has dropped to under 100,000 and therefore the 1st round of 6-month monitoring was done for 100 samples, but the 2nd round only needed 60 samples.
- Customer-requested samples were included, but MDEQ did not have specifics on how many there were.
- Tinka asked about the timeline for Flint to switch over to the Lake Huron water source. MDEQ said the pipeline is under construction and scheduled to be complete by July 2016. MDEQ expects some delays and thinks a more realistic timeframe is October 2016.
- MDEQ explained that Flint would have 18 months to complete the corrosion control study and the complicating factor of switching over to Lake Huron. Should the corrosion control study be based on the Lake Huron source? MDEQ also explained that once Flint is using Lake Huron water that they would then need to complete 2 more rounds of 6-month monitoring to assess whether any adjustments to the corrosion control treatment was needed.
- MDEQ will be sending a letter to Flint telling them they need to complete a corrosion control study – based on results they are not optimized. Given the timing of completing a corrosion control study and the anticipated switch to Lake Huron water, MDEQ will have discussions with Flint and request that they start corrosion control treatment as soon as possible.
- MDEQ asked for Region 5's opinion on whether the regulations allow for the study requirement for Flint to be waived if MDEQ has Flint start pH adjustments and adding phosphates. Region 5 will look into this and get back to MDEQ with an answer. All acknowledged that if Flint initiated corrosion control treatment and continued to evaluate the system to ensure optimization that these efforts would essentially equate to a corrosion control study.
- The Region raised its concern about looking at treatment more comprehensively to ensure problems with DBPs didn't occur. MDEQ stated that Flint is on the brink of DBP compliance and that bacteriological issues haven't occurred since last year. Any adjustments for corrosion control treatment would need to make sure the other issues weren't exacerbated.
- Region 5 again offered the assistance of ORD staff, Darren Lytle and Mike Schock which MDEQ said they had shared with Flint already.

Issue #2: Discuss optimal corrosion control requirements

Discussion Items:

- MDEQ explained that they did not treat the switch to Flint River water as a "new system", but as a new source. It is their understanding that 2 rounds of 6-month monitoring is still needed to characterize the water quality. They don't know what is optimized until those 2 rounds of 6-month monitoring are completed.

- Region 5 noted that under 141.81(b)(3)(iii) that any system that has been deemed optimized must notify the State of any long-term change in treatment or the addition of a new source. The State must review and approve the change and may require any such system to conduct additional monitoring or other action to ensure that the system maintains minimal levels of corrosion in the distribution system. The State's requirement for 2 additional rounds of 6-month monitoring would fall under the "additional monitoring" prescribed by the State and not the initial 2 rounds of 6-month monitoring for new systems.
- Region 5 explained that they have talked to HQ about the interpretation of regulations and believes that systems that have been deemed optimized need to "maintain" corrosion control. The Region agreed to provide supporting regulatory citations for the language about maintaining corrosion control. Ed Moriarty in OGWDW is also consulting OGC on this topic and the OGC opinion will also be shared.
- MDEQ mentioned that there are other communities that may leave the Detroit system or connect to the new Lake Huron pipeline, but many of those either don't need to treat for corrosion control or will be building new treatment plants. Requirements for maintaining corrosion control for additional communities connecting to the Lake Huron pipeline will be discussed further after receipt of the HQ/OGC opinion.

Issue #3: Discuss Pre-flushing (as time allows)

- Lead compliance sampling procedures in the state of Michigan comply with Federal SDWA requirements which calls for a minimum of 6 hours during which there is no water used from the tap the sample is taken from.
- MDEQ is not interested in changing its position on pre-flushing until new regulations come out. They also pointed out that the pre-flushing instructions are not requirements, but suggestions.
- The Michigan pre-flushing instructions were developed as a way to ensure that sampled faucets were not stagnant for an excessive period of time beyond the targeted 6 hour (i.e., rarely used faucets or when a homeowner has been gone for an extended period of time).

Next Steps:

- MDEQ will send a letter to Flint regarding the 2 rounds of 6-month monitoring results that exceed 5 ppb and the need for a corrosion control study. They will have discussions with Flint to request that they start corrosion control treatment as soon as possible rather than waiting for the completion of a study that can take 18 months.
- MDEQ and the Region were in agreement that it is important to get phosphate addition going in Flint as soon as possible. MDEQ mentioned tapping Mike Shock for help with this in the interim.
- Region 5 commented that we now have a path forward for Flint despite a difference of opinion on whether the regulations required Flint to "maintain" corrosion control treatment when they started serving treated water from the Flint River.
- MDEQ and Region 5 agreed that after Flint implements corrosion control treatment, when they switch back to Lake Huron water, they will need to continue the corrosion control treatment while conducting monitoring to determine if this treatment is optimized with the new Lake Huron water quality.

- **Region 5 will get back to MDEQ once it gets HQ/OGC's opinion on the need to "maintain" corrosion control treatment once a system is deemed optimized.**
- **MDEQ and Region 5 agreed that other communities currently implementing corrosion control treatment and change sources will need to continue to provide corrosion control treatment and conduct monitoring to determine whether the treatment is optimized with the new source water quality.**
- **Region 5 will research and get back to MDEQ on the 141.81 (3)(b)(5) citation and the ability to waive a CCT study.**

DRAFT

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, January 12, 2015 3:17 PM
To: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Public Works Meeting

I can attend this as well. I suspect it will be in the city council chambers and that media will be in attendance.

Should we have a pre-meeting to go over the talking points, potential questions, and whether we want to have any basic information to present or handout?

Next Tuesday afternoon 1/20 looks like it may be the best time for everyone.

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: Monday, January 12, 2015 1:50 PM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Wurfel, Brad (DEQ); Shekter Smith, Liane (DEQ)
Subject: Public Works Meeting

I do not have any conflicts preventing me from participating in Flint's Public Works Meeting proposed on Jan 21 at 5:30pm.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 16, 2015 9:32 AM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Quadrant Diagram Draft

I don't think the City has an established Source Water Protection Program for the Flint River. We don't do the actual protection but do conduct the source water assessment.

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: Wednesday, September 16, 2015 9:30 AM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: Re: Quadrant Diagram Draft

You should include compliance determination in the state quadrant. You could pair it with verification of monitoring results. You could also mention training & certification of operators in the state quadrant and source water protection in both the state and city quadrants.

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 16, 2015 9:19:08 AM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Quadrant Diagram Draft

A draft of the quadrant diagram to separate responsibilities is attached

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: Busch, Stephen (DEQ)
Sent: Friday, September 25, 2015 8:27 AM
To: 'Yanna Lambrinidou'
Cc: Richard Benzie P.E. (BENZIER@michigan.gov); cookp@michigan.gov; prysbym@michigan.gov; Wurfel, Brad (DEQ); 'hyde.tinka@epa.gov'
Subject: RE: question about optimal WQP ranges for Flint's water
Attachments: DWSD Water Quailty Parameters.pdf

Dr. Lambrinidou,

I'm sorry for the delay in my response. As some of your questions relate more to statewide program implementation I have requested assistance with the response from staff within our central program office. However, these staff were attending and participating in an offsite (American Water Works Association Conference Michigan Section) conference last week.

Michigan has implemented an EPA approved modified consecutive system approach to lead and copper monitoring where a wholesale water supply sells water to other community water systems. In addition, while water quality parameter (WQP) monitoring occurs at both the water treatment plant and in the combined distribution system, a WQP range is only required to be established at the water treatment plant tap after the system has demonstrated optimized corrosion control treatment (OCCT).

Thus when the City of Flint was a customer of the Detroit Water and Sewerage Department (DWSD), the City of Flint participated in WQP monitoring of its distribution system, but ranges were established only for the OCCT at DWSD treatment plants. The attached letter from our Department established the minimum levels for pH and phosphate dosage in 2000.

As the City of Flint water treatment plant has not yet installed such treatment or been given the designation of OCCT these plant tap values have not been established.

However, the City of Flint WTP has continued to maintain the minimum pH value requirement previously established for DWSD

As noted in your Working Group Report to the NDWAC, "Corrosion Control Treatment (CCT) involves the addition of chemicals (e.g. orthophosphates or silicate) to create a barrier between the pipes and the drinking water, or to modify drinking water chemistry (such as pH and hardness) to inhibit the potential for corrosion."

Should you consider the Flint WTP softening process to be OCCT, then the City already continues to comply with the OCCT requirements as the City of Flint has never had 10% or more of compliance tap samples exceed the 15 ppb action level. Even prior to DWSD's established OCCT the City of Flint lead compliance monitoring has never exceeded the 15 ppb action level.

If you have additional questions we would appreciate having them routed through the NDWAC and your Working Group. Thanks.

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: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Wednesday, September 16, 2015 7:22 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: Re: question about optimal WQP ranges for Flint's water

Dear Mr. Busch,

Thank you for your quick response. I appreciate the information at, I am sure, a very busy time for you and MDEQ.

Could you please help me understand the following?

When you say that all previous optimal water quality parameter ranges would have been established for the Detroit water utility (not for the City of Flint), do you mean that MDEQ never set optimal water quality parameter ranges *specifically* for Flint before Flint's switch to Flint River water?

It is my impression, please correct me if I'm wrong, that under the LCR, all large systems -- whether they are consecutive or not -- must have optimal water quality parameter ranges designated by states *specifically for them* (at the time when these systems are deemed to have optimized their treatment). Is there language in the LCR I am missing that allows a utility not to have optimal quality parameter ranges established specifically for it?

My second question is this: If the City of Flint had no optimal water quality parameter ranges established specifically for it in the past, how did it achieve LCR compliance? Isn't it the case that utility-specific optimal water quality parameter ranges (and maintenance of these ranges) are required for all large systems to avoid an LCR violation?

I would appreciate your assistance on this matter, as it will shed light on an issue that seems to be very important for EPA's assessment of and upcoming revisions to the LCR.

Kindly,

Yanna Lambrinidou

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

From: "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
To: Yanna Lambrinidou <pnalternatives@yahoo.com>; "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>
Sent: Monday, September 14, 2015 11:05 AM
Subject: RE: question about optimal WQP ranges for Flint's water

Dr. Lambrinidou,

All previous water quality parameter ranges would have been established for the City of Flint's wholesale finished water supplier, the Detroit Water and Sewerage Department, not the City of Flint itself.

As the City of Flint has not yet established optimized corrosion control treatment, the MDEQ is not yet at the point of regulatory requirements where the range of water quality parameters would be set.

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: Yanna Lambrinidou [<mailto: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
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001 05:43 FAX 313 267 3834

WATER QUALITY

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TG copy

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING PO BOX 30473 LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

DRINKING WATER & RADIOLOGICAL
PROTECTION DIVISION
SOUTHEAST MICHIGAN DISTRICT OFFICE
36980 SEVEN MILE ROAD
LIVONIA, MICHIGAN 48152-1005

March 3, 2000

Mr. Robert Malloch, Water Production Manager
City of Detroit
Water and Sewerage Department
735 Randolph Street
Detroit, Michigan 48826-2830

WSSN: 1880

Dear Mr. Malloch:

SUBJECT: Water Supply - Detroit Water and Sewerage Department (DWSD)
Lead and Copper Water Quality Parameter Limits

This letter is intended to correct errors contained in a previous letter, dated September 27, 1999, acknowledging lead and copper results and establishing water quality parameters.

Results of the January through June 1999, follow-up monitoring required by the Lead and Copper Rule have been mailed separately to Ms. Pamela Turner of DWSD. The 90th percentile action levels for lead and copper are 15 ug/l and 1300 ug/l, respectively. Based on the 104 samples collected, the 90th percentile results for the city of Detroit were 6 ug/l for lead and 47 ug/l for copper. Therefore, the city has met both action levels and public education is not required. In addition, we have received satisfactory results of the water quality parameter monitoring from the distribution tap samples and from the point of entry samples collected at the five (DWSD) owned water treatment plants.

DWSD has demonstrated optimum corrosion control using phosphoric acid. The state must determine water quality parameters that must be maintained to ensure that optimum corrosion control will continue. Based on our review of monthly operation reports and numerous discussions, we have agreed on limits for pH, phosphoric acid dosage and residual, measured at the water treatment plant taps.

Mr. Robert Malloch

Page 2

March 3, 2000

A minimum pH of 7.0 must be maintained at the treatment plant tap with no more than 9 days per six-month period (Jan. through June, July through Dec.) in non-compliance with this established minimum. If more than one pH sample is collected in a day, the results will be a weighted average for the day.

In addition to pH, a lower limit must be maintained for the phosphoric acid dosage and measured residual at the treatment plant taps. Again, based on our review of monthly operation reports and discussions with you, we have agreed on a minimum dosage and residual for phosphoric acid.

A minimum total phosphate dosage of 0.9 mg/l must be maintained at each of the five water treatment plant taps on a daily basis. In addition, a total phosphate residual of 0.8 mg/l must be maintained at each of the water treatment plant taps. If more than one phosphate sample is collected in a day, the results will be a weighted average for the day. Again, no more than 9 days in a six-month period can be in non-compliance with these established limits.

In addition to water treatment plant tap sampling, water quality parameters from the distribution system will continue to be required every six month period (Jan. - June, July - Dec.). Two samples per six-month period are required from each site and the parameters to be analyzed include pH, total phosphate and alkalinity. The numbers of sites to be sampled are reduced from previous monitoring periods.

Water Quality Parameter Monitoring

Service Area	Previous # WQP Sites	New # WQP Sites
Detroit	25	10
Detroit Suburbs	140	70
SOCWA	25	10
Flint	8	8
Genesee County	6	6

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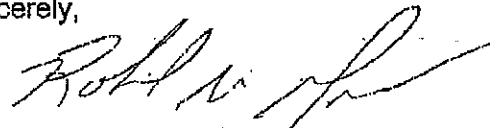
WATER QUALITY

004

Mr. Robert Malloch
Page 3
March 3, 2000

Should you require additional details or further explanation of any of this information, please feel free to contact me.

Sincerely,



Robert A. Green, P.E., Supervisor
Field Operations Section
Drinking Water and Radiological
Protection Division
734-953-1439

RAG:

cc: Ms. Pamela Turner, DWSD
Tucker, Young, Jackson and Tull, Inc.
Wayne County Health Department

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, September 14, 2015 11:05 AM
To: 'Yanna Lambrinidou'; Wurfel, Brad (DEQ)
Subject: RE: question about optimal WQP ranges for Flint's water

Dr. Lambrinidou,

All previous water quality parameter ranges would have been established for the City of Flint's wholesale finished water supplier, the Detroit Water and Sewerage Department, not the City of Flint itself.

As the City of Flint has not yet established optimized corrosion control treatment, the MDEQ is not yet at the point of regulatory requirements where the range of water quality parameters would be set.

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: Yanna Lambrinidou [<mailto: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.dcdwasawatch.blogspot.com

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 13, 2015 12:23 PM
To: Crooks, Jennifer
Cc: Benzie, Richard (DEQ); Poy, Thomas; Prysby, Mike (DEQ)
Subject: Re: question on Flint

Mike got a copy of the rate schedule last week. We figured around 7500 gallon per month usage on a 5/8 th inch meter was around \$100 per month.

We can get you the full info tomorrow

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 Jan 13, 2015, at 11:50 AM, Crooks, Jennifer <crooks.jennifer@epa.gov> wrote:

I just talked with Tom Poy, and he heard on one of the news lines up there that the Emergency Manager is planning to hire a consultant for the drinking water supply.

Yes, I think some people would definitely take their Internet and cellphone service over water anytime, but then complain to us—like what we saw happening in Detroit!

Jen

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Tuesday, January 13, 2015 9:44 AM
To: Crooks, Jennifer
Cc: Poy, Thomas; Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: question on Flint

Those bills seem high even if it includes sewerage. Do you know if it does include wastewater? If it does, be sure to point that out – that it is a combined bill that reflects both utilities, not just the cost of drinking water. But those bills sound almost as high as what most of those customers are probably paying for their internet and cellphone service or even their cable bills! I wonder which one they think is more essential.

I believe there have been some significant wastewater treatment plant projects in the Genesee County system in recent years, so maybe a significant component of any increase is also on the wastewater side.

Richard

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Tuesday, January 13, 2015 10:33 AM

To: Benzie, Richard (DEQ)
Cc: Poy, Thomas
Subject: RE: question

Thanks for the update, Richard. The numerous people I talk to from Flint say their water bills are between \$175-\$200/month. Would DWSD have raised their rates that high? (Don't answer that; just pure conjecture ☺) I talked with a woman yesterday, whose pediatrician swears there has been an increase in kidney stones in his patients since April. I told her to have the pediatrician contact CDC in Atlanta. (I prepared a briefing this summer for ATSDR/CDC about the physical ailments people were complaining about to me, but without any expert or documentation, they didn't pick it up.) Talked to another man yesterday that's mounting a campaign to stop paying their water bills, and wants to organize against the City. And on it goes...

Jen

From: Benzie, Richard (DEQ) [mailto:BENZIER@michigan.gov]
Sent: Monday, January 12, 2015 5:08 PM
To: Crooks, Jennifer
Subject: RE: question

Still going on – even some council members talking about going back to Detroit at least until the KWA pipeline is available sometime in 2016. I don't know that the newspapers or media are advocating for one side or the other in this issue, but covering those individuals who are keeps the flames flickering.

I can't say the city wouldn't be better off to not have switched to the River, but I believe Flint was sure that DWSD was going to raise water rates significantly after the contract expired (by decree of DWSD) in order to recoup lost bonding costs or something similar. Flint did not want to be subjected to rates without any contractual controls.

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Monday, January 12, 2015 4:57 PM
To: Benzie, Richard (DEQ)
Subject: question

Richard—Last week when we were on the call with Jason, Wendy, and Tom Poleck, you made a passing comment about the newspaper getting into the stories about Flint drinking water, maybe elevating the issue in the public to fire them up? Perhaps talk of going back to Detroit water?

Jen

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 15, 2015 7:21 PM
To: Wyant, Dan (DEQ); Shekter Smith, Liane (DEQ)
Cc: Pallone, Maggie (DEQ); Wurfel, Brad (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov)
Subject: RE: Questions for Director Wyant
Attachments: NDWAC LCR Work Group Report Final 08 24 2015.pdf

See my responses below in red.

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: Wyant, Dan (DEQ)
Sent: Tuesday, September 15, 2015 6:19 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Pallone, Maggie (DEQ); Wurfel, Brad (DEQ)
Subject: Fwd: Questions for Director Wyant

I will need to respond to this.

Sent from my iPhone

Begin forwarded message:

From: "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov>
Date: September 11, 2015 at 7:14:12 PM EDT
To: "Wyant, Dan (DEQ)" <WyantD@michigan.gov>
Subject: FW: Questions for Director Wyant

I will also print for you – see below.

From: Jumana Vasi [<mailto:JVasi@mott.org>]
Sent: Friday, September 11, 2015 5:29 PM
To: Thelen, Mary Beth (DEQ)
Subject: Questions for Director Wyant

Hi Mary Beth –

Thank you for arranging my call with the Director. He's asked me to send my follow-up questions in writing, so here they are below. Could you please forward them to him?

Thank you,
 Jumana

Dan –

Thank you so very much for your time this afternoon. Here are the questions we've got concerning Flint drinking water.

The Lead and Copper Rule requires water systems to obtain prior approval from the State to add a new source of water or make any long-term change in water treatment process prior to implementation. Did the DEQ have any concerns related to the switch from Detroit water to Flint River water in terms of potential increases in corrosion?

Prior to becoming a customer of Detroit in the 1960's, the City of Flint operated its water treatment plant and obtained water from the Flint River. As Detroit was unable to provide a secondary feed to Flint, the City of Flint choose to keep its water treatment plant as an emergency backup. In 2014 service from Detroit was terminated and the City of Flint began using its water treatment plant again. Differences in water quality have long been recognized between treated Lake Huron water obtained from Detroit and Flint's treatment of Flint River water. Whenever community water systems make changes in source water or treatment that could impact corrosion they are required to return to full scale lead and copper monitoring for two six month rounds to demonstrate continued compliance with the action levels. The City of Flint has just completed this monitoring and met the action level.

The corrosivity of Flint's drinking water seems to be the main contributor to lead levels from residential faucets*. Does the state offer recommendations (treatment options, consumer use guidelines, etc.) for dealing with water that is considered to be "highly corrosive"?

As a water system that serves a population of 50,000 or more, the City of Flint is also required to demonstrate optimized corrosion control in accordance with the lead and copper rule requirements. The City is in the process of installing additional corrosion control treatment measures. Should the City's compliance monitoring exceed the action level in future additional steps would be required following the lead and copper rule requirements.

Customers that participate in the City's lead monitoring are provided a copy of their result and information regarding actions they can take to help limit exposure see page 4 of the linked guidance

http://www.michigan.gov/documents/deq/deq-wb-dwehs-cws-LeadCopperRptConsNotice_294665_7.pdf

Information regarding lead is also included in the City's Annual Consumer Confidence Report (aka Water Quality Report). Below is a link to the City's report covering May – December 2014.

<https://www.cityofflint.com/wp-content/uploads/CCR-2014.pdf>

- Are other Michigan cities using similarly corrosive water? What steps are they taking to protect residents from lead leaching from their home plumbing systems?

The DEQ Office of Drinking Water of Municipal Assistance oversees more than 1,400 community water systems and nearly 10,000 non-community water systems across Michigan. This oversight includes Lead and Copper Rule requirements as part of the Michigan Safe Drinking Water Act. Systems that exceed action level requirements are required to take action in accordance with lead and copper rule requirements as established by EPA and under the primacy granted to MDEQ for this regulation.

- Is Flint conducting compliance monitoring under the Lead and Copper Rule? If so, why have their test results differed from the Virginia Tech findings?

Flint has certified that it is following the requirements of the Lead and Copper Rule. Flint provides customers bottles and instructions for sampling in accordance with these requirements and obtains a signed statement from customers that these instructions were followed (see link below). Samples are analyzed at a certified lab.

http://www.michigan.gov/documents/deq/Lead_Copper_Sampling_Instructions_329915_7.pdf

Virginia Tech has not provided any information to the DEQ regarding its sampling protocols and whether they have followed all requirements of the lead and copper rule.

- What could the city be doing to better educate and protect its residents

The City is already following requirements of the lead and copper rule. However reduction of exposure to lead in drinking water cannot be achieved by regulation alone. Effective elimination of leaded materials in contact with water is a shared responsibility. While the City could undertake a lead service line replacement program, partial lead service line replacement has been shown to exacerbate lead exposure, and many Flint residents are unable to afford replacement of their privately owned portion of the service line.

The DEQ is currently working with the Michigan Department of Health and Human Services to develop a more robust consumer awareness campaign regarding lead exposure through drinking water. We hope the City of Flint will partner with our agencies in this endeavor.

The August "Report of the Lead and Copper Rule Working Group To the National Drinking Water Advisory Council" (attached) discusses an number of other recommendations regarding public education.

Thank you for all of your help. We are really looking forward to having you here next week.

Jumana

*<http://flintwaterstudy.org/2015/08/why-is-it-possible-that-flint-river-water-cannot-be-treated-to-meet-federal-standards/>

Jumana Vasi
Program Officer, Environment Program
C.S. Mott Foundation
503 S. Saginaw Street
Flint, MI 48503
(810) 766-1714

**Report of the Lead and Copper Rule Working Group
To the National Drinking Water Advisory Council**

FINAL

AUGUST 24, 2015

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Report of the Lead and Copper Working Group to the National Drinking Water Advisory Council - Final

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Appendices

Appendix A – Lead and Copper Working Group Members

Appendix B – Table 2

Figures

Figure 1 – Overview of Recommended Revised Lead and Copper Rule Framework

Abbreviations

AL – Action Level
ALE – Action Level Exceedance
CCR – Consumer Confidence Report
CCT – Corrosion Control Treatment
DWLRP – Drinking Water Lead Reduction Plan
EPA – Environmental Protection Agency
LAL – Lead Action Level
LCR – Lead and Copper Rule
LCRWG – Lead and Copper Rule Working Group
LSL – Lead Service Line
LSLR – Lead Service Line Replacement
LTR LCR – Long Term Revisions to the Lead and Copper Rule
MCLG – Maximum Contaminant Level Goal
mg/L – Milligram per Liter
µg/L – Microgram per Liter
µg/dL – Microgram per Deciliter
NDWAC – National Drinking Water Advisory Council
OGWDW – Office of Ground Water and Drinking Water
OCCT – Optimum Corrosion Control Treatment
OWQP – Optimal Water Quality Parameter
PE – Public Education
pH – Negative log of hydrogen ion molar concentration
PLSLR – Partial Lead Service Line Replacement
POTW – Publicly Owned Treatment Works
POU – Point-of-use Treatment Device
PWS – Public Water System
SAB – Science Advisory Board
SDWA – Safe Drinking Water Act
DWSRF – Drinking Water State Revolving Fund
TT – Treatment Technique
WQP – Water Quality Parameter

Report of the Lead and Copper Rule Working Group to the National Drinking Water Advisory Council

1. Executive Summary

The Lead and Copper Rule Working Group (LCRWG) of the National Drinking Water Advisory Council (NDWAC) has completed its deliberations on issues associated with long term revisions to the Lead and Copper Rule (LCR). This report includes the group's findings and recommendations.

This executive summary provides a brief overview of the report. Details of the findings and recommendations are provided in the body of the report. A list of the members of the working group can be found in Appendix A.

1.1. Charge

The charge to the LCRWG was to provide advice to the NDWAC as it develops recommendations for the U.S. Environmental Protection Agency (EPA) on targeted issues related to long term revisions to the Lead and Copper Rule under the Safe Drinking Water Act (SDWA).

1.2. Findings and Recommendations

The anticipated Long Term Revisions to the Lead and Copper Rule (LTR LCR) is a very important opportunity for removing sources of lead in contact with drinking water and for reducing exposure to lead from drinking water in the meantime. Creative financing and robust public education also are essential.

The LCRWG took the following considerations, among others, into account in making recommendations for revisions to the LCR. A more detailed list of considerations is included in the full report.

There is no safe level of lead. Lead can pose health risks to anyone, but there are heightened risks for pregnant women, infants and young children and other vulnerable populations with both acute and chronic exposures. Effective elimination of leaded materials in contact with water and minimization of exposure to lead in drinking water is a shared responsibility; public water systems (PWSs), consumers, building owners, public health officials and others each have important roles to play. The lack of resources to reduce the sources of exposure in some communities, however, also raises important questions of disparate impact and environmental justice. Thus, creative financing mechanisms will be needed.

The LCR should remain a treatment technique rule, but it can be improved based on the scientific knowledge that has emerged since the current LCR was promulgated. Corrosion control treatment is complicated, and will vary based on specific circumstances in each public water system. Thus, regular updates to guidance by EPA based on the latest science and the creation of a national clearinghouse of information both for the public and for PWSs are needed.

The LCRWG considered but did not quantify the cost implications of its recommendations. An important factor in the group's deliberations was the principle that PWS and state resources should be focused on actions that achieve the greatest public health protection. Recognizing that lead service line (LSL) replacement programs will be costly in some locations, the LCRWG also encourages PWSs to incorporate

anticipated costs into their capital improvement program as appropriate to their situation, and urges states to include the costs of LSL replacement in their criteria for allocation of Drinking Water State Revolving Funds.

The LCRWG specifically recommends that EPA revise the LCR to:

- Require proactive lead service line (LSL) replacement programs, which set replacement goals, effectively engage customers in implementing those goals, and provide improved access to information about LSLs, in place of current requirements in which LSLs must be replaced only after a lead action level (AL) exceedance;
- Establish more robust public education requirements for lead and LSLs, by updating the Consumer Confidence Report (CCR), adding targeted outreach to consumers with lead service lines and other vulnerable populations (pregnant women and families with infants and young children), and increasing the information available to the public;
- Strengthen corrosion control treatment (CCT), retaining the current rule requirements to re-assess CCT if changes to source water or treatment are planned, adding a requirement to review updates to EPA guidance to determine if new scientific information warrants changes;
- Modify monitoring requirements to provide for consumer requested tap samples for lead and to utilize results of tap samples for lead to inform consumer action to reduce the risks in their homes, to inform the appropriate public health agency when results are above a designated household action level, and to assess the effectiveness of CCT and/or other reasons for elevated lead results;
- Tailor water quality parameters (WQPs) to the specific CCT plan for each system, and increase the frequency of WQP monitoring for process control;
- Establish a health-based, household action level that triggers a report to the consumer and to the applicable health agency for follow up;
- Separate the requirements for copper from those for lead and focus new requirements where water is corrosive to copper; and
- Establish appropriate compliance and enforcement mechanisms.

Although leadership by EPA is essential, reduction of exposure to lead in drinking water cannot be achieved by EPA regulation alone. Thus, this report also includes recommendations for renewed commitment, cooperation and effort by government at all levels and by the general public. We urge EPA to play a leadership role not only in the revisions to the LCR but also in educating, motivating, and supporting the work of other EPA offices; federal state and local agencies and other stakeholders. (See Section 4: Complementary Actions Critical to the Success of the National Effort to Reduce Lead in Drinking Water.)

2. Considerations and Background Information

2.1. Considerations in Preparing this Report

The members of the LCRWG brought different perspectives and expertise to the preparation of this report. Although not all members agreed with each and every consideration listed below, the LCRWG took one another's perspectives into account and, thus, the following concepts collectively underlie the recommendations in this report. Additional detail is provided in the recommendations section below.

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- There is no safe level of lead. Lead can pose health risks to anyone, but there are heightened risks for pregnant women, infants and children with both acute and chronic exposures.
- Lead-bearing plumbing materials in contact with drinking water pose a risk at all times (not just when there is a lead action level (LAL) exceedance).
- Effective elimination of leaded materials in contact with water and minimization of exposure to lead in drinking water is a shared responsibility. PWSs, consumers, building owners, public health officials and others each have important roles to play.
- The LTR LCR is an important opportunity for removing sources of lead in contact with drinking water and for reducing exposure to lead from drinking water in the meantime. However, additional action beyond the scope of the Safe Drinking Water Act is needed. Removing lead from drinking water systems also will require renewed commitment, cooperation and effort by government at all levels and by the general public. (See Section 4: Complementary Actions Critical to the Success of the National Effort to Reduce Lead in Drinking Water.)
- Proactive action is needed to remove the sources of lead, with appropriate incentives both for PWSs and their customers needed to encourage such action.
- Successful implementation of the revised LCR can only take place in the context of a more holistic effort on lead in water issues involving stakeholders other than just EPA and water systems, and resources beyond those able to be brought to bear by water systems. Partnerships at all levels are essential. Recognizing that public agency budgets are tighter than ever, greater engagement by local health agencies, those funding housing programs, and those involved in permitting and construction is particularly important.
- Creative financing mechanisms also will be needed to achieve this goal for all individuals potentially exposed to lead, regardless of race, ethnicity or income. Leaving a lead service line in place because a low-income resident does not have the means to pay raises serious questions of disparate impact and environmental justice.
- The public plays a critical role in protecting their families' health by reducing exposure to lead and copper, and informing the public enables them to be effective participants in implementing their share of the responsibility.
- The issues associated with lead and copper are very different and warrant more separate attention than has been the case in the past.
- The LCR should remain a treatment technique rule, but it can be improved.
- Corrosion control treatment (CCT) is complex, dynamic, and varies based on the circumstances in each PWS. The understanding of the challenges with CCT has improved in recent years, but questions still remain.
- Attention to unintended consequences is important generally and, in particular, with respect to CCT.
- The presence of lead-bearing materials in premise plumbing raises issues about what systems can implement in customers' homes.
- Attention to what States are able to oversee and enforce also is important.
- PWS and state resources should be focused on actions that achieve the greatest public health protection.

2.2 Regulatory Background and Formation of the NDWAC Lead and Copper Work Group

Under the Safe Drinking Water Act EPA sets public health goals and enforceable standards for drinking water quality.¹ The Lead and Copper Rule is a treatment technique rule. Instead of setting a maximum contaminant level (MCL) for lead or copper, the rule requires (PWSs) to take certain actions to minimize lead and copper in drinking water, to reduce water corrosivity and prevent the leaching of these metals from the premise plumbing and drinking water distribution system components and when that isn't enough, to replace lead service lines under their control. The current rule sets an action level (AL), or concentration, of 0.015 mg/L for lead and 1.3 mg/L for copper. An AL is not the same as an MCL. An MCL is based on health effects and feasibility; whereas an action level is a screening tool for determining when certain treatment technique actions are needed.

The LCR action level is based on the practical feasibility of reducing lead through controlling corrosion. In the LCR, if the AL is exceeded in more than ten percent of tap water samples collected during any monitoring period (i.e., if the 90th percentile level is greater than the AL), it is not a violation, but triggers other requirements that include water quality parameter monitoring, corrosion control treatment (CCT), source water monitoring/treatment, public education, and lead service line replacement (LSLR). The rule also requires States to report the 90th percentile for lead concentrations to EPA's Safe Drinking Water Information System (SDWIS) database for all water systems serving 3,300 or more persons, and for those systems serving fewer than 3,300 persons only when the lead action level (LAL) is exceeded. States only report the 90th percentile for copper concentrations in SDWIS when the copper action level is exceeded in water systems regardless of the size of the service population. Public education requirements ensure that drinking water consumers receive meaningful, timely, and useful information that is needed to help them limit their exposure to lead in drinking water.

Copper is a common material used in household plumbing and drinking water service lines in the United States. Copper is an essential nutrient in small amounts; however, acute ingestion of excess copper in drinking water has been associated with adverse health effects, including acute gastrointestinal symptoms such as abdominal discomfort, nausea, and vomiting.

The SDWA requires EPA to set MCLGs at concentration levels at which no known or anticipated adverse effects would occur, allowing for an adequate margin of safety. EPA proposed an MCLG of 1.3 mg/l for copper in 1985, and finalized that MCLG in 1991 when the LCR was promulgated. The LCR set the action level (AL) for copper, the level at which treatment technique actions are triggered for the water system, equal to the MCLG. The AL is triggered if the 90th percentile level of water samples is exceeded. All community water systems must report the 90th percentile level and the number of samples that exceeded the 90th percentile in their Consumer Confidence Reports.

In early 2004, EPA began a wide-ranging review of the implementation of the LCR to determine if there was a national problem related to elevated levels of lead in drinking water. As part of its national review, EPA collected and analyzed lead concentration data and other information, carried out a review of implementation in States, held four expert workshops to discuss elements of the regulations, and worked to understand local and State efforts to monitor for lead in school drinking water, including a national meeting to discuss challenges and needs. EPA released a Drinking Water Lead Reduction Plan (DWLRP) in March 2005. This plan outlined short-term and long-term goals for improving implementation of the

¹ EPA establishes national primary drinking water regulations (NPDWRs) under SDWA. NPDWRs either establish a feasible maximum contaminant level (MCL) or a treatment technique "to prevent known or anticipated adverse effects on the health of persons to the extent feasible."

LCR. The plan can be found at the following web address:
http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/lead_review.cfm

In 2007, EPA promulgated regulations, which addressed the short-term revisions to the LCR that were identified in the 2005 DWLRP. These requirements enhanced the implementation of the LCR in the areas of monitoring, treatment, LSLR, public education, and customer awareness. These revisions were intended to better ensure drinking water consumers receive meaningful, timely, and useful information needed to help them limit their exposure to lead in drinking water.

A number of Safe Drinking Water Act (SDWA) amendments aim to reduce lead in drinking water by limiting the amount of allowable lead in plumbing materials that come into contact with drinking water. In 1986, the SDWA was amended to prohibit the “use of any pipe, any pipe or plumbing fitting or fixture, any solder, or any flux, in the installation or repair of (i) any public water system; or (ii) any plumbing in a residential or non-residential facility providing water for human consumption, that is not lead free”. Lead Free was defined as solder and flux with no more than 0.2% lead and pipes with no more than 8% lead.

Congress again amended the SDWA in 1996, to prohibit the introduction into commerce of any pipe, pipe or plumbing fitting or fixture that is not lead free and to also require pipes, pipe or plumbing fittings or fixtures be in compliance with 3rd party lead leaching standards. These provisions ensure that only products meeting the lead free definition are sold in the U.S. and that pipes, pipe or plumbing fittings or fixtures are certified to be lead free.

The Reduction of Lead in Drinking Water Act of 2011 revised the maximum allowable lead content from not more than 8% to not more than a weighted average of 0.25% lead and included a calculation procedure for determining the weighted average; further reducing the amount of lead in contact with drinking water. It also eliminates the federal requirement to comply with the lead leaching standard and included exemptions from the lead free definition for plumbing devices that are used exclusively for non-potable services and also for specific plumbing devices such as toilets, bidets and urinals. The Community Fire Safety Act of 2013 further amended the SDWA to add fire hydrants to the list of exempted plumbing devices.

EPA has continued to work on the long-term issues that required additional data collection, research, analysis, and full stakeholder involvement, which were identified in the 2005 DWLRP and the 2007 rule revisions. This action is referred to as the LCR Long-Term Revisions (LTR). The LCR LTR would apply to all community water systems (CWSs) and non-transient non-community water systems (NTNCWSs). In this report, the term public water system (PWS) is meant to refer to both of these categories but not to transient non-community water systems.

Seeing the need for additional input on potential revisions to the Lead and Copper Rule, EPA requested that the National Drinking Water Advisory Committee (NDWAC) form the Lead and Copper Rule Working Group (LCRWG) to consider several key questions for the LCR LTR, taking into consideration previous input. The LCRWG met seven times in 2014 and 2015 to produce this report, and sought input from the NDWAC in advance of the last meeting to understand and address questions the NDWAC might have about the working group’s recommendations.

A list of members of the working group is provided in Appendix A. This report was approved by the LCRWG, with one dissent.

3. Recommendations for Revisions to the Lead and Copper Rule

The long term revisions to the LCR is an important opportunity for removing sources of lead in contact with drinking water and for reducing exposure to lead from drinking water in the meantime. Creative financing and robust public education also are essential.

The LCRWG offers the following recommendations, based on information provided to the work group and on the work group's own deliberations. The LCRWG considers these recommendations to be an integrated package, not a menu of choices from which some recommendations can be selected and combined with others. This package reflects a concerted attempt to strengthen public health protection, which includes targeting the resources available to PWSs for the greatest public health value. While individual members might differ on specific recommendations, the work group (with one dissent) agrees that this package of recommendations constitutes an improvement over the current LCR.

The LCRWG carefully considered the information and questions posed by EPA in a white paper prepared for the working group. In its deliberations, the LCRWG came to the conclusion that the lessons learned from the implementation of the current LCR warranted a fresh look at the premises of the regulation. To truly solve the problem of exposure to lead in drinking water, the LCRWG concluded that lead-bearing materials should be removed from contact with drinking water to the greatest degree possible, while minimizing the risk of exposure in the meantime. That premise has led to a different paradigm for a revised LCR and, thus, to a somewhat different set of assumptions than underlay questions posed to the working group.

The diagram on page 12 illustrates the conceptual framework of the recommendations that follow.

The LCRWG specifically recommends that EPA revise the LCR to:

- Require proactive LSL replacement programs, which set replacement goals, effectively engage customers in implementing those goals, and provide improved access to information about LSLs, in place of current requirements in which lead service lines (LSLs) must be replaced only after a lead action level (AL) exceedance and CCT;
- Establishes more robust public education, by creating a national clearinghouse of information for the public and templates for PWSs, by updating the Consumer Confidence Report, adding targeted outreach to consumers with lead service lines and other vulnerable populations (pregnant women and families with infants and young children), and increasing the information available to health care providers and the public;
- Strengthen corrosion control treatment (CCT), retaining the current rule requirements to re-assess CCT if changes to source water or treatment are planned, adding a requirement to review updates to EPA guidance to determine if new scientific information warrants changes;
- Modify monitoring requirements to provide for consumer requested tap samples for lead and to utilize results of tap samples for lead to inform consumer action to reduce the risks in their homes, to inform the appropriate public health agency when results are above a designated household action level, and to assess the effectiveness of CCT and/or other reasons for elevated lead results;
- Tailor water quality parameters to the specific CCT plan for each system, and increases the frequency of WQP monitoring for process control;

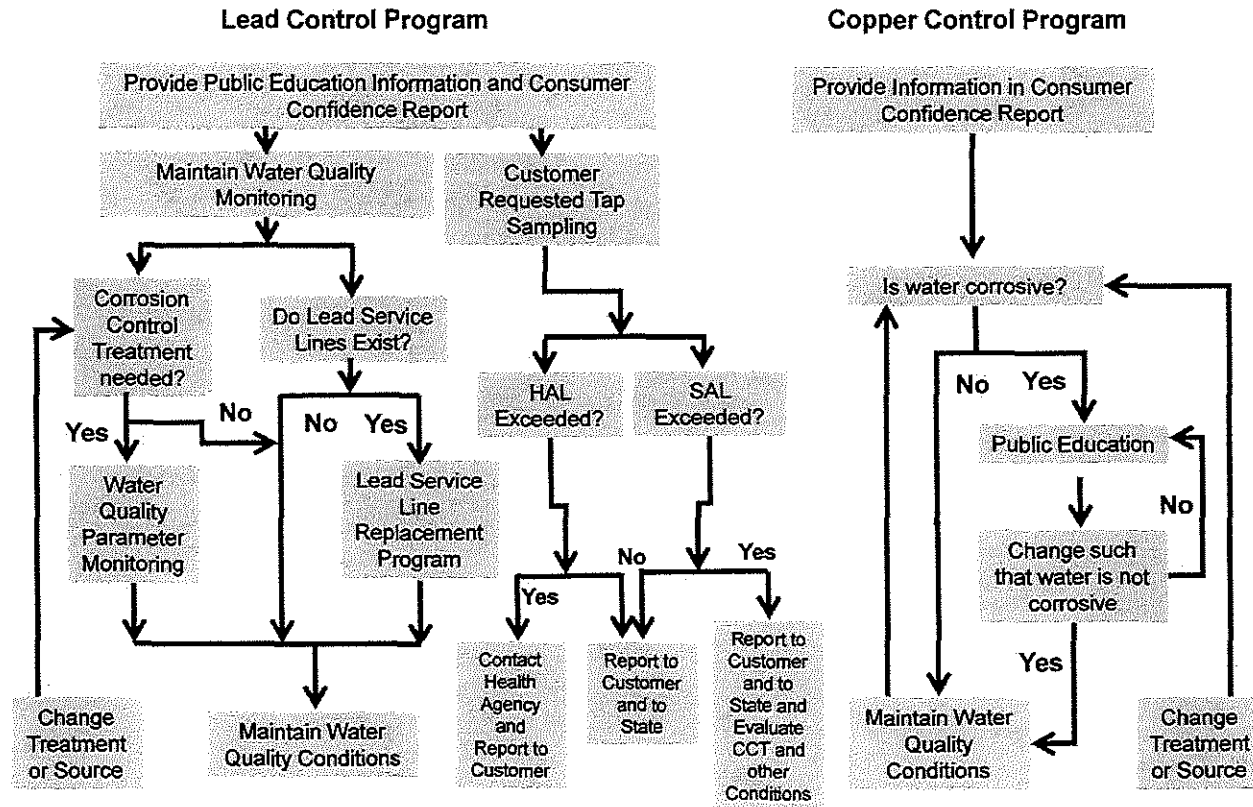
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- Establish a health-based, household action level that triggers a report to the consumer and to the applicable health agency for follow up;
- Separate the requirements for copper from those for lead and focus new requirements where water is corrosive to copper; and
- Establish appropriate compliance and enforcement mechanisms.

Although leadership by EPA is essential, reduction of exposure to lead in drinking water cannot be achieved by EPA regulation alone. Thus, this report also includes recommendations for renewed commitment, cooperation and effort by government at all levels and by the general public. We urge EPA to play a leadership role not only in the revisions to the LCR but also in educating, motivating, and supporting the work of other EPA offices; federal, state and local agencies and other stakeholders. (See Section 4: Complementary Actions Critical to the Success of the National Effort to Reduce Lead in Drinking Water.)

Overview of Recommended Revised Lead and Copper Rule Framework

Note: Compliance steps are embedded throughout the framework



3.1. Replace Lead Service Lines²

Removing the sources of lead in drinking water should be a national goal. More proactive action than has taken place to date is needed to achieve it.

Although success in achieving this goal will require a concerted effort by many and can not be accomplished solely through the authorities provided under the Safe Drinking Water Act, revisions to the Lead and Copper Rule are an important component to achieving this goal and should be structured accordingly. [See Section 4 for recommendations that complement revisions to the LCR.]

The existing LCR has not created sufficient incentives to fully replace LSLs and other sources of lead, because LSL replacement is only required when the lead AL has been exceeded and optimizing CCT is insufficient to bring a system back under the action level. Systems that do not exceed the lead AL will never have to implement a LSL replacement program. Further, the link to action level exceedance does not allow adequate time for a well-planned LSLR program, and a significant unintended consequence where systems have had to implement a LSL replacement program quickly has been an increase in partial LSL replacement.

EPA asked the Science Advisory Board (SAB) to evaluate the current scientific data regarding the effectiveness of PLSLR and the review centered around five issues: (1) associations between PLSLR and blood lead levels in children; (2) lead tap water sampling data before and after PLSLR; (3) comparisons between partial and full LSLR; (4) PLSLR techniques; and (5) the impact of galvanic corrosion. The SAB found that the quantity and quality of the available data are inadequate to fully determine the effectiveness of PLSLR in reducing drinking water lead concentrations. The small number of studies available had major limitations (small number of samples, limited follow-up sampling, lack of information about the sampling data, limited comparability between studies, etc.) for fully evaluating PLSLR efficacy.

While recognizing the limits to current data, the SAB concluded that PLSLRs have not been shown to reliably reduce drinking water lead levels in the short-term, ranging from days to months, and potentially even longer. Additionally, PLSLR is frequently associated with short-term elevated drinking water lead levels for some period of time after replacement, suggesting the potential for harm, rather than benefit during that time period. The available data suggest that the elevated tap water lead levels tend to increase then gradually stabilize over time following PLSLR, sometimes at levels below and sometimes at levels similar to those observed prior to PLSLR. The SAB also concluded that in studies comparing full LSLR versus PLSLR, the evaluation periods were too short to fully assess differential reductions in drinking water lead levels. However, the SAB explained that full LSLR appears generally effective in achieving long-term reductions in drinking water lead levels, unlike PLSLR. Both full LSLR and PLSLR generally result in elevated lead levels for a variable period of time after replacement. The limited evidence available suggests that the duration and magnitude of the elevations may be greater with PLSLR than full LSLR.

Taking all of these considerations into account, the LCRWG has concluded that an effective framework for replacement of LSLs would include the following and, thus, the LCR should be revised accordingly:

² 40 CFR 141.2 defines: “*Lead service line* means a service made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.”

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- Requiring all PWSs to establish a LSL replacement program that effectively informs and engages customers to share appropriately in fully removing LSLs, unless they can demonstrate that LSLs are not present in their system;
- Modifying the definition of lead service lines to include any service line where any portion, including a lead pigtail, gooseneck or other fitting, is made of lead;
- Clear guidance, case studies, and templates for LSL replacement programs, including a toolkit of ideas for creative financing strategies;
- Targeted outreach to customers with LSLs, with information about the risks of lead exposure, an offer to test a tap sample, and information about and encouragement to participate in the LSL replacement program;
- Dates by which systems should have met interim goals and completed replacement of all LSLs and PLSLs, without penalty to PWSs for those homeowners who refuse to participate in the replacement program as long as the PWS has made a meaningful effort to work with such a homeowner;
- Creating incentives for understanding where LSLs and PLSLs exist, while making action on full replacement, rather than on investigation of the location of LSLs and PLSLs the priority;
- Maintaining ongoing-outreach to homeowners where LSLs or PLSLs still exist;
- Implementation of standard operating procedures (SOPs), either from EPA guidance or tailored to the system, that helps define operations that disturb LSLs and practices to minimize disturbance and consumer exposure to lead;
- Stronger programs to educate consumers, and to provide test results of tap samples at the request of consumers;
- Focus efforts on action to replace LSLs rather than on the time and expense of upfront plan approval and on using simplified reporting to the states so they would only need to intervene when problems arise; and
- Requirements that provide strong encouragement for full LSL replacements, with the understanding that there may be justifiable exceptions and that those exceptions would occur only after the efforts outlined in the recommendations below on the part of the PWS to work with customers to complete a full LSL replacement. Such exceptions might include emergency repairs where property owners have refused to participate in a full LSL replacement; during a main replacement project; or when a sufficiently high percentage of property owners participate in an area-wide LSL replacement project to justify replacing LSLs to the property lines of those who do not participate at the time. Revisions to the LCR should include options for risk management to occupants of those properties with remaining, partial lead service lines, e.g. additional sampling, filters, dielectrics to reduce the risk of galvanic corrosion, plastic piping, aggressive premise flushing, etc.

3.1.1. Update Inventories and Improve Access to Information about Lead Service Lines

Updating and improving access to information about the location of both full and partial lead service lines is both essential to ensuring LSLs are replaced and important for successful, proactive outreach to customers who are most likely to have a LSL.

The LCRWG recommends combining:

- 1) The presumption that a service line put in place prior to the date when lead service lines were prohibited has leaded materials unless the PWS has information to confirm that it not, with
- 2) Providing credit to a PWS toward its replacement goals for demonstrating that a service line presumed to include lead does not have leaded materials.

This approach is intended to create incentives for prompt action to develop an accurate inventory of LSLs and PLSLs in part by being overly conservative initially on the potential existence of LSLs, time to organize an effective replacement program, and an opportunity to take action to replace LSLs rather than devoting time and resources on planning documents that must be approved by the primacy agency.

The LCRWG recognizes that PWSs vary in the amount of information they have about the location of full and partial LSLs. EPA should take the impact on small and medium systems into account when developing the proposed rule.

The LCRWG also recognizes that the current definition of a lead service line exempts a service line that has a lead pigtail or gooseneck or other fitting but is otherwise not made of lead. We recommend that the LCR be revised to remove this exemption since a lead pipe, even if only a small portion, poses a sufficiently similar risk as a full lead service line. Because utilities may not know where these portions are and may not be able to locate them without excavating, we recommend that the presumption described above not apply to lines where the utilities do not have information or are unaware of their use. Finally, we recommend that these fittings be replaced when they are encountered during excavations and that the applicable operations and customer engagement requirements described in the next section apply.

In addition, the LCRWG recommends that all PWSs should establish a clear mechanism for customers to access information on LSL locations (at a minimum). Detailed public education recommendations for both lead and copper follow in separate sections. With respect to information about LSLs, PWSs should:

- Have outreach materials that indicate that property specific information is available.
- Inform customers who may have LSLs about the risks of partial line replacement, who is responsible for paying for replacing the service line, and the legal basis of that determination.
- Provide information it has about LSLs to existing home owners and residents on request.
- Provide information to realtors, home inspectors, and potential home buyers on request
- Communicate that this information is subject to disclaimer for accuracy based on information available to the PWS.
- Develop a system to track LSL replacement.

Where a service line serves multiple dwellings or places such as schools or child care centers that have many children, EPA should establish a formula for giving an extra weight or numerical count to these

lines in the initial inventory to recognize the additional children that would be affected and effectively prioritize replacement of these LSLs.

3.1.2. Establish Active LSL Replacement Programs

Proactive LSL replacement programs by PWSs and their customers are key to moving to a future in which lead is not in contact with drinking water. To accomplish this, the LCRWG recommends replacing the current regulations, in which LSL replacement is required only if a PWS has a lead AL exceedance and after the PWS takes action to operate CCT, because this has not resulted in the complete replacement of many LSLs across the country.³

Instead, a revised LCR should include a requirement that all PWSs with lead service lines prepare and implement a LSL replacement program, along with a combination of changes to the regulatory approach described in this report and supportive actions by other public and private agencies, customers and other stakeholders. Taking this approach has the advantages of making replacement of LSLs something all systems do and of establishing programs that are put in place in an organized and measured way.

Supportive actions include increased funding of federal lead risk reduction programs under the Department of Housing and Urban Development (HUD) to help fund customer-owned portions of LSLs and to consider federal tax deductions for this purpose. Additionally, states should pass legislation requiring inspection, disclosure and/or replacement of LSLs on sale of property, and when lines have been disturbed as part of a renovation. Details on these and other ideas are included in Section 4 of this report.

The LCRWG recommends that EPA include the following revisions to the LCR:

1. Goal: PWSs will work with their customers to implement full replacement of all lead service lines in their service areas according to the milestones outlined in Table 1. Revisions to the LCR should maximize the likelihood of achieving this goal, consistent with the recommendations in this section. EPA should urge PWSs to work with their customers to replace LSLs in their service areas more quickly, while recognizing that the recommended approach of replacing LSLs in all PWSs with LSLs adds a new and potentially costly requirement for utilities and their customers with LSLs who currently are not and may not ever be triggered into a LSLR program under the current rule.
2. Interim Milestones: PWSs that identify LSLs in their inventory should be required to perform targeted outreach to customers on the inventory of LSLs and to work with them to replace LSLs according to a sequence of three-year milestones,⁴ beginning 36 months after the effective date of a revised LCR. Milestones would be set at a faster pace in earlier years and would recognize progress may be more difficult to achieve in later years with those LSLs that remain at that time. Table 1 provides an illustration of this concept. PWSs should be encouraged to contact a larger number of homeowners than needed for compliance, since some homeowners may fail to reply or may refuse to participate. If replacement goals are not met, the revised LCR should require the PWS to take additional actions intended to enhance interest in and incentives for customer participation in full LSL replacement. The details of this approach should be determined by EPA with the intent of the LCRWG being that the PWS be given the flexibility to choose among

³ EPA estimates that there were approximately 10.5 million LSLs in 1988 before the promulgation of the LCR and approximately 7.3 million LSLs now.

⁴ Three years is a standard reporting timetable for drinking water regulations.

options that are appropriate for the size and type of ownership of the system and that the number of required efforts would increase over time if replacement goals are not met. EPA should seek to add to the initial list of options suggested in Table 2 to ensure a robust menu for PWSs to choose from (again considering system size and type of ownership) to avoid a situation where a PWS is forced into specific actions; and EPA should set the number of required efforts with consideration for the number and feasibility of choices provided.

3. Replacement Credit: The following actions can be counted toward the cumulative replacement requirement:

- Full LSL replacement
- Replacement of lead pigtail where the pigtail is the only lead material on the service line
- Confirmation that an LSL included in the initial inventory is not lead.

PLSLR will not be counted toward this requirement. Lack of response or refusal to participate by the customer also will not count toward replacement milestones.

4. Targeted Outreach: EPA should create a list of options in the rule of approved outreach methods for contacting customers with LSLs and inviting them to participate in the utility's LSLR program. Table 2 provides an initial list of options for such resident engagement, along with additional system policies and other actions if milestones aren't met. EPA also should provide guidance and/or templates for these options. For compliance purposes, the revised LCR should require that a PWS individually notify customers with known or possible LSLs describing the risks of lead in drinking water, specifically inviting them to participate in the LSLR program, and clearly describing the terms of the program, and how to follow up. If the customer does not respond or chooses not to participate, the PWS must follow up with another invitation at least every three years and always when there is a new customer at that address until the full LSL is replaced.
5. Control and Responsibility: The revised LCR should require PWSs to clearly state how the PWS defines ownership of LSLs, who has what financial responsibility for the replacement, what the legal basis is for that determination and any financial assistance programs that may be available.
6. Planning and Financing Options: EPA should provide a template and guidance for planning LSL replacement programs, including reference to options to assist customers replace their portion of lead service lines. Small systems may wish to refer to a national information source, such as one provided by EPA; large systems may wish to tailor such information to their circumstances. (See section 4 for further detail.)
7. Operations and Customer Engagement: EPA also should provide guidance on PWS policies and procedures for how to engage customers in full lead service line replacement and to inform them on appropriate risk reduction measures. PWSs should adopt templates provided in guidance by EPA or, for larger systems, their own standard operating procedures (SOPs) and make them available to their customers and the primacy agency for:
 - a) planned capital projects by the PWS that would require:
 - Prior notification (e.g., 45 days prior to planned main replacement or repair) - Contact letter to affected households likely to have lead service lines, providing information about lead service lines, associated risk, risk reduction options, and full-lead service line replacement options.

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- Reminder of flushing post LSLR (e.g., 48 hours prior to actual field work affecting structure) -- Door hanger (or alternative direct contact) with information on flushing and POU devices immediately after lead service line replacement.
 - b) emergency main and service line repairs by the PWS that would define how to manage potential disturbance to LSLs safely:
 - Direction to information on lead service lines, associated risk, risk reduction options, and full-lead service line replacement options.
 - Door hanger (or alternative direct contact) with information on flushing and POU devices immediately after lead service line replacement.
 - c) flushing of service lines after lead service line replacement:
 - Flush outside hose bib or similarly located spigot close to the meter
 - Initial flush followed by house flush by homeowner or plumber using multiple taps to maximize water velocity
 - Information on proper use of filters when lead levels might be high
 - d) Requiring PWSs to inform other utilities (e.g. power, cable) whose work might affect water service lines or water mains, both proactively and at “mark out” for specific projects, about how to manage potential disturbances safely and about information to provide residents of affected homes about potential risks and risk mitigation measures. Those other utilities would have the responsibility to alert residents.
8. Community and NTNC water systems (schools, hospitals, churches, jails, etc.) who own the system and control the entire distribution system should replace LSL’s as soon as practical, at a timetable to be determined by EPA. This requirement would not apply to community systems where the majority of the connections are individual residential connections (such as mobile home parks and HOA’s) where there may be complications due to property ownership of the residence.

The LCRWG discussed and agreed that EPA guidance should encourage PWSs to make every effort to ensure that LSL replacement provides equal protection to low income customers (or rental units with low income residents), people of color and others protected by civil rights law and policy. Environmental justice and civil rights considerations are particularly important in those jurisdictions where the PWS requires the property owner to pay a share of the costs of removing the LSL. Making environmental justice a priority can be achieved through creative financing programs for low-income customers and setting priorities for which neighborhoods are targeted first for LSLR to ensure equal treatment of low income neighborhoods.

The LCRWG also discussed but did not agree that the definition of control as ownership should be changed in the revised LCR. In the current LCR, when a system exceeds the LAL, EPA requires water systems to replace only that portion of the LSL that it owns. This is based on EPA’s current interpretation of the term “control” in the definition of public water system as limited to ownership. Some members of the LCRWG urged that the current definition of control as “ownership” should be replaced with a requirement that PWSs must replace the entire LSL, where they have the authority to “replace, repair, or maintain” the line or where they have other forms of authority over the LSL. However, the LCRWG also recognized that some utilities are prevented by law from spending public funds on private property and that gaining physical access to private property poses significant legal issues when a property owner objects.

The LCRWG does agree that the revised LCR should require PWSs to inform customers about the scope of their responsibility with regard to LSL replacement and the legal basis for that decision.

3.1.3 LSL Compliance

3.1.3.a LSL Replacement Compliance

Recordkeeping:

- Inventory of LSLs
- Customer refusals to participate in full LSL replacement

Reporting: At the end of each three year period, each PWS must provide to the primacy agency:

- Certification of the outreach and other efforts implemented (see Table 2 for initial examples);
- Report on the change in the number of LSLs removed from the inventory with better information;
- Report on the number of full LSLs replaced; and
- Report on locations where the utility side LSL was replaced, but the homeowner did not replace the private portion

Violations:

- Failure to conduct required outreach;
- Failure to step up intensity of efforts if 3-year LSL replacement target has not been met;
- Failure to provide on-going outreach to new customers and to follow up (at least every 3 years) with customers at locations with full or partial LSL who do not respond or chose not to participate in the LSL replacement program;
- Outreach materials do not meet the content requirements of the rule

3.1.3.b Operations and Customer Engagement Compliance

PWS must maintain records of who was notified, when notice was given, and content of notice for each capital project. (for 7a and 7b)

Violations:

- Lack of timely notice to customer that LSL removal is scheduled
- Notice materials do not meet rule content requirements

PWS also must develop SOP, and maintain records that it was provided to all utilities conducting activities which may impact LSL (for 7d)

Violation:

- PWS has not developed an SOP (or adopted an SOP template available on the National Clearinghouse) or not provided it to other utilities

3.2 Develop Stronger Public Education Requirements and Programs for Lead and LSLs

Given the public's role in the shared responsibility nature of the LCR, notifying and educating the public about lead in drinking water is important for risk reduction. Public education about the risks of lead in drinking water also is important regardless of whether LSLs are present, since lead can be present in other

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premise plumbing materials. Moreover, targeted outreach and, possibly, other efforts are a key to the success of LSL removal programs. The current LCR does not adequately focus on creating on-going opportunities to educate customers on the risks of LSLs or on opportunities to replace them, especially when action is most likely, e.g. at the sale of a home.

The objectives of public education programs should include consumer understanding of: 1) the risks of lead in drinking water; 2) the likelihood that the water in one's home may contain lead; 3) the LCR as a "shared responsibility" rule; and 4) the availability of additional resources that consumers can use to better minimize their exposure to lead.

Although the LCRWG was briefed on and has experience with public education requirements and practices, it does not include members whose specific area of expertise is consumer-centered risk communication. Thus, the LCRWG generally recommends that public education programs for lead should move away from past practices of one-way communication from "experts" to the "public" toward newer concepts of risk communication that involve sustained, multiple, two-way channels of ongoing communication and partnership with the public.⁵ EPA should consult with those with such expertise about the outreach and communication recommendations in this report, and encourage and apply best practices in effective ways to communicate with the public.

Communication in languages appropriate to the demographics of the community, in clear terms understandable by the public, and with engaging, reader-friendly graphics, photos, and video all help achieve greater understanding. Outreach programs and materials can be improved by involving people with diverse, and consumer-oriented expertise and perspectives, including consumer-centered risk communication experts, community members with extensive experience with lead in water including individuals not necessarily affiliated with an organization, lead/copper corrosion experts, grassroots public-health workers, and staff of PWSs, state and federal regulatory agencies and public health agencies. This information can and should be conveyed in different ways and through different communication channels, tailored to the specific circumstances.

Thus, with these and other considerations in mind, the LCRWG recommends that EPA, in consultation with the aforementioned stakeholders and drawing on principles of consumer-centered risk communication:

- Establish an easily accessible, national clearinghouse of information about lead in drinking water to serve the needs of the public and of public water systems (section 3.2.1).
- Require information be sent to all new customers on the potential risks of lead in drinking water (section 3.2.2)
- Revise the current CCR language to address lead service lines and update the health statements (section 3.2.3). Add requirements for targeted outreach to customers with lead service lines (section 3.1.1).

⁵ Resources include: 1) EPA's "Risk Communication in Action" (<http://nepis.epa.gov/Adobe/PDF/6000012U.pdf>) ; 2) EPA's "7 Cardinal Rules of Risk Communication" (http://www.wvdhhr.org/bphtraining/courses/cdcenergy/content/activeinformation/resources/epa_seven_cardinal_rules.pdf); and 3) Education & Communication WG Report 2010; National Conversation on Public Health and Chemical Exposures (http://www.resolve.org/site-nationalconversation/files/2011/02/Education_and_Communication_Final_Report.pdf)

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- Strengthen requirements for public access to information about lead service lines, tap monitoring results, and other relevant information (section 3.2.4).
- Expand the current requirements for outreach to caregivers/health care providers of vulnerable populations (section 3.2.5)

As part of EPA's consultation with the aforementioned communication experts and stakeholders, the LCRWG recommends that EPA include consultation about methods that would increase public awareness of and motivation to learn about the effects of lead in drinking water and the benefits of removing these materials and/or taking regular precautions when cooking or drinking, regardless of whether LSLs are present or there has been a lead AL exceedance. Consistent with this advice, EPA also should take small systems into account and consider whether such methods should be included in guidance or in revisions to the LCR.

3.2.1 National Lead in Drinking Water Clearinghouse

The LCRWG recommends that EPA take the lead, working with other partners to establish a national, accessible information clearinghouse. The LCRWG suggests that this information clearinghouse include a website, that the materials on the web site be accessible for distribution through the Safe Drinking Water Hotline for those who may not have internet access, and that EPA investigate and apply newer communication technologies and ideas for interactive or other innovative means of communication with the public about lead in drinking water (e.g. social media methods and outreach programs).

The clearinghouse should include information in multiple languages, in clear terms understandable by the public, and should include engaging, reader-friendly graphics, photos, and video. EPA is encouraged to include the design of the clearinghouse in its consultation with people with diverse, and consumer-oriented expertise and perspectives described above.

Such a clearinghouse would be intended for use by the general public, PWS's, public health agencies, and health professionals. It should include:

- information and educational materials for the public that the public could access directly and that PWSs could use to meet many of the public education requirements of the LCR.
- guidance and templates, particularly for small systems, on SOPs for compliance with the LCR (e.g. templates for communicating lead monitoring results to individual customers, templates for explaining to customers how to obtain information on whether their service line could be lead, templates for standard operating procedures related to the LSL replacement program recommendations above, etc).
- Principles and guidelines for best practices in developing the content of the public education materials.
- Case examples of how communities have been successful in lead inventory updates and removal programs, information about funding sources, model ordinances or other types of authorities PWSs have to enable them to implement full LSL replacements, and contacts to other relevant agencies.

Further, EPA should consider best practices in methods for achieving greater public awareness of the clearinghouse so that it reaches as many people as possible.

The web site should include the following information:

Health risks

- Clear and prominent statement that no level of lead in drinking water is safe for human consumption and that a short-term exposure to a young child can result in permanent harm to the brain if the levels are high enough.
- Clear and distinct language on the health risks of consuming lead in drinking water
- Identification of the most vulnerable populations
- Importance of drinking water plumbing as a lead source
- How to have blood lead levels (BLLs) checked and limitations of testing
- How to have water tested and limitations of testing
- List of labs for testing water other than the utility and what to ask for in terms of number and size of bottles, diameter of mouth of bottles, analysis that measures lead particles, etc.

Forms of lead in water and health risk implications

- Soluble
- Particulate
- Unpredictability of lead release

Sources of lead in drinking water

- LSLs
- Other lead-bearing plumbing
- Scale on internal plumbing that can be a source of lead from present or past LSLs

Identification of service line material

- How to recognize a pipe that is made of lead (and when not to check due to age of home)
- What to do about galvanized pipe and why it is a potential source of lead

For homes with LSL

- LSL ownership
- Difference between full and partial lead service line replacement (physically and in terms of health risks)
- Benefits to full LSL replacement
- Actions to take if you have a partially replaced LSL
- Available methods for LSL removal
- Opportunities for removal, approximate cost, and financing options
- Overall benefits to the community of removing LSLs fully (lower treatment costs, better community health, environmental, etc.)
- Where applicable, requirements for notification during real estate transfer or new rental

Health-protective actions

- Precautionary water-use practices
- Role of filters and proper maintenance of them if they are used
- Replacement of leaded plumbing with lead-free plumbing

Additional information

- How to contact your utility and request a LSL inspection and/or water test
- Where applicable, reference to utility-specific website with local lead-related documents and data (e.g. Consumer Confidence Reports (CCRs), sampling protocol used for LCR compliance, lead-in-water test results, etc.)

- What you need to know about lead in water in schools and day care centers (it is not regulated, and link to national website that provides more information)
- Reference to a national website that provides a video version of basic educational information, including information on how the LCR works (with minority language versions)
- Other standard operating procedures, model ordinances, or templates for compliance with the revised LCR
- Where to get more information on drinking water, on lead in water, and on lead in general

3.2.2 Outreach to New Customers

The LCRWG recommends that a revised LCR require PWSs to provide information to all⁶ new customers in a letter or via other direct means on the potential risks of lead in drinking water.

The outreach materials should include information about the potential for lead from plumbing materials to contaminate drinking water even when a PWS meets the LCR LAL, to contaminate drinking water in homes with and without LSLs, and to pose chronic and acute health risks to vulnerable populations. The specific information to be covered in those materials could be included in the consultation with the diverse group of experts as described in the introduction to Section 3.2 above and in Section 4 below. Although the LCRWG defers to such a group, it suggests that at a minimum the following topics be covered:

1. Information about lead in drinking water (its sources, variable and erratic release, and wide range of lead concentrations)
2. Information about the health effects of lead in drinking water (including chronic and acute health risks)
3. Information about the LCR's shared responsibility regime
4. Actions the PWS is taking to minimize lead in drinking water
 - PWSs with LSLs would mention their proactive LSL replacement program
5. Steps consumers can take to reduce exposure to lead in drinking water
 - In addition to a list of actions like the ones mentioned in the current Rule, PWSs with LSLs would spell out how consumers in homes with a LSL can participate in their proactive LSL replacement program
6. Phone numbers and online links for additional information (including a link to EPA's online National Clearinghouse)

The outreach to new customers should be delivered within 30 days or with the first bill.

3.2.3 Revise the Current CCR Language

The CCR is a necessary but not sufficient source of information for the public. It can provide general information, but is not designed to be frequent or detailed enough for all public education purposes.

All community water systems (CWSs) should continue to include a statement about lead in their CCR. There may be circumstances (e.g. a subdivision built entirely after January 2014 when "lead-free" requirements came into effect), where a CWS can demonstrate that there are no lead-bearing materials in contact with drinking water. EPA may want to consider allowing the primacy agency to waive this CCR language requirement if an entire CWS can meet this criterion.

⁶ EPA may wish to consider circumstances under which exceptions might be applicable.

The LCRWG recommends that the CCR language should be strengthened to include:

- Public health statements updated to reflect current understandings that there is no safe level of lead and a summary of the health effects, that this risk pertains to everyone, and that some individuals are particularly vulnerable;
- A link to the national clearinghouse should be added to the CCR for all CWSs;
- Recognition that a CWS's compliance with federal regulations does not guarantee what level of lead (lower or higher) might be found at the tap in a particular home; and
- The message that customers play an important role in protecting themselves from exposure to lead.

In addition, the work group recommends that PWSs where full or partial lead service lines exist (or are presumed to exist until an inventory demonstrates otherwise) also add information about what a lead service line is and how to contact the utility for information about how to find out if you have one and why you should replace it.

Further, the LCRWG recommends that the following redraft of the CCR be considered as a starting point for incorporating the elements listed above, to be reviewed by the diverse group of experts that the LCRWG suggests EPA consult .

***Important Information from EPA about Lead** If lead is present in your drinking water, it ~~elevated levels of~~ can cause serious health problems, especially for pregnant women and young children. Lead can affect children's brains and developing nervous systems, causing reduced IQ, learning disabilities and behavioral problems. Lead is also harmful to adults. Lead in drinking water is primarily from materials and components associated with ~~service lines and home plumbing and service lines~~ (the pipe connecting your home to the water main). ~~(System name) is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.~~ Contact us for information about lead service lines, how to find out if you have one and why you should replace it. [Last sentence for systems with LSLs.]*

~~When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.~~ Protecting you against exposure to lead is a shared responsibility. Your water utility is required to minimize the corrosivity of the water. However, because every home is different, the amount of lead in your tap water may be lower or higher than the monitoring results for your public water system as a whole. You can take responsibility for identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. If you have lead service lines or lead-bearing materials in your home, are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or www.epa.gov/safewater/lead. [Insert new national web site link]

3.2.4 Strengthen Requirements for Public Access to Information

The LCRWG supports the public's right to know about the quality of their water and considered various options to increase the public's access to data related to lead and copper.

Under the current rule, the PWS is only required to make publicly available through the Consumer Confidence Report (CCR) that the "90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level." 40 CFR 141.153. In many jurisdictions, a

concerned consumer may be able to obtain or view a redacted version of the complete sampling data set but this approach is time-consuming and burdensome on the PWS (or the state) and the community. EPA receives only a summary of the sampling results.

As the LCRWG evaluated different approaches, we kept in mind EPA's Office of Enforcement and Compliance Assurance (OECA) five principles for highly effective regulations and that OECA is working with regulatory programs to evaluate new and revised rules against these principles. Principle 4 calls for rules to "leverage accountability and transparency by providing the government and the public with real-time access to quality information on regulated entities" emissions, discharges and key compliance activities and outcomes." OECA identified two tools to accomplish this:

- Electronic reporting to the government.
- Public accountability via websites, paper/electronic mailings, and other ways to provide the public and stakeholders (e.g., customers, ratepayers) with compliance information.

The LCRWG encourages EPA to use the SDWIS-Prime data system⁷ that is under development to meet the first provision of the above goal. Electronic reporting from utilities to a centralized data system would allow the public to access data from the State or EPA in a coordinated manner and allow for consistent access to all water quality data, not just data for lead and copper.

Until such time as the new data system is in place, though, the LCRWG believes that water systems should increase the availability of data to the public. This would include:

- The number of samples over the Household Action Level (described in Section 3.5 below) in the last monitoring period, the highest level found during the last monitoring period, the median levels, and the most recent 90th percentile level compared to the "system action level" (renamed from the current action level).
- Requiring water systems to include WQP-related information on their webpage, or in the CCR or some equally accessible manner (e.g., CCT treatment, approved WQP ranges, WQP results from the last monitoring period)
- Encouraging water systems to post additional information on their webpages such as:
 - Public education materials (and link to National Clearinghouse).
 - Sampling protocols the water system provides to customers to use when collecting lead samples and any variations from EPA recommendations.
 - Individual sampling results (with appropriate privacy provisions such as address redaction).
 - Inventory (such as a map) of confirmed and presumed lead service lines.

Where a community has lead service lines, EPA should require PWSs provide a public statement of lead service line ownership and the legal basis of said determination. (See section 3.1.2, point 5 "*Control and Responsibility.*")

⁷ SDWIS is a database for storage about drinking water systems. The federal version (SDWIS/FED) stores the information EPA needs to monitor approximately 156,000 public water systems. The state version (SDWIS/STATE) is a database designed to help states run their drinking water programs. SDWIS-Prime is an upcoming version of this program. The website for SDWIS is located here:

<http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/index.cfm>

SDWIS Reports:

<http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/howtoaccessdata.cfm>

3.2.5 Routine Outreach to Caregivers/Health Care Providers of Vulnerable Populations

The LCRWG recommends that a revised LCR encourage PWSs to cooperate in locally appropriate public education programs targeted at caregivers and health providers of the populations most vulnerable to lead in drinking water (i.e., pregnant women, infants, young children, and children with elevated BLLs). The intent of such outreach is to raise awareness among caregivers and health providers about the health risks of lead in drinking water, easy steps to prevent exposure, and the availability of EPA's online National Clearinghouse for further information. It is expected that public education messaging in service areas with LSLs will differ from public education messaging in service areas without such lines.

In conducting outreach to caregivers and health care providers it is important that the message be provided by an organization or individual that carries credibility with those audiences. The LCRWG suggests the way to best ensure that caregivers and health providers hear and respond appropriately to information about lead and drinking water is for water suppliers to participate in joint communication efforts, lead by state health departments, state lead poisoning prevention agencies, and state drinking water primacy agencies. This outreach should be targeted to individuals, organizations and facilities likely to be visited by the vulnerable populations of pregnant women, infants, and young children, such as:

1. local public health agencies;
 2. public and private pre-schools, schools;
 3. Women Infants and Children (WIC) and Head Start programs;
 4. public and private hospitals and medical clinics;
 5. pediatricians, obstetricians-gynecologists, and midwives;
 6. family planning clinics;
 7. local welfare agencies; or
 8. licensed childcare centers.
1. The outreach efforts should make use of the information provided in the clearinghouse

Examples of communication vehicles that might be suggested in guidance materials include:

- Development and routine delivery of a joint communication from the PWS (or a group of PWSs) and the City/State to:
 - * Health providers (e.g., OBGYNs, pediatricians, midwives)
 - * Childhood lead poisoning prevention professionals/organizations
 - * Professionals at licensed daycare centers and schools
 - * Listservs/organizations for pregnant women/parents of infants (e.g., local listservs, environmental health groups, La Leche League, etc.)
- Delivery of educational materials during any water-related work at customer homes
- When lead-in-water levels at individual homes test above the HAL, delivery of information to
 - a) the residents at the home and b) City/State health departments. These materials ought to cover information prescribed in the current LCR for public outreach during a LAL exceedance as well as:
 - * The lead level detected at the specific home
 - * What this level means in terms of health risk to vulnerable individuals
 - * If the PWS determines that the home has a LSL, information about how to participate in the PWS's proactive, full LSL replacement program.

The LCRWG also recommends that EPA, informed by the advice of the diverse group of experts described above and working with CDC, HHS and HUD, develop guidance (and make it available through the National Clearinghouse) on how to develop and deliver effective communication efforts to caregivers and health care providers focusing on ways those individuals and groups can reach pregnant women, parents of infants and young children and those who care for them. The audience for those materials would be state primacy agencies, state or local health departments, and state or local lead poisoning prevention agencies, as well as PWSs.

To support PWSs in the development of feasible, locally appropriate, and successful public outreach programs targeting vulnerable groups on a routine basis, the LCRWG recommends the following: that the diverse group of experts EPA may convene for the development of consumer-centered public education messaging and materials (see introduction to Section 3.2), also develop guidelines and best practices that PWSs can use to create proactive risk communication programs. Echoing extant principles and understandings of effective risk communication,⁸ we imagine such programs to involve robust collaboration between PWSs, many of the local public health agencies and organizations listed above, as well as local childhood lead poisoning prevention groups (State-funded and grassroots), environmental health organizations, and key community leaders (e.g., advisory neighborhood commissioners).

Education of public health and health care providers on lead and water issues

The LCRWG had extensive discussions about the frustration that members of the group had that many in the public health community minimized the risk of lead exposure from drinking water, placed a lower priority on actions to reduce that risk, and frequently provided incomplete or conflicting information to members of the public or patients. This made and continues to make the work of water professionals in motivating appropriate action by customers more difficult. Those in the health sector are highly regarded, and viewed as knowledgeable about all health related topics. Customers will look to them for advice and to validate what they hear from their water provider. Efforts by water systems to reach out to their customers must be appropriately re-enforced by those in the health sector if those efforts are to be successful.

The LCRWG recommends that EPA, CDC, HHS and HUD conduct training and outreach to local health agencies, medical professionals and local and state lead poisoning prevention agencies on:

1. Information about lead in drinking water (its sources, variable and erratic release, and wide range of lead concentrations)

⁸ Lundgren, R. E. and A. H. McMakin. 2013. *Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks*. Hoboken, NJ: John Wiley & Sons, Inc.

Risk Communication in Action, <http://nepis.epa.gov/Adobe/PDF/6000012U.pdf>

Communicating about Lead Service Lines,

<http://www.awwa.org/Portals/0/files/resources/publicaffairs/pdfs/FINALLeadServiceLineCommGuide.pdf>

Strategies to Obtain Customer Acceptance of Complete Lead Service Line Replacement,

<http://www.awwa.org/Portals/0/files/legreg/documents/StrategiesforLSLs.pdf>

National Conversation on Public Health and Chemical Exposures: Education and Communication Work Group Report, http://www.utmb.edu/cet/downloads/Natl_Conv_Edu_Comm_WorkGroup%20Report.pdf

Advancing Collaborations for Water-Related Health Risk Communication,

<http://www.waterrf.org/PublicReportLibrary/91145.pdf>.

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2. Information about exposures routes of lead in drinking water to different vulnerable populations, including pregnant women, infants and young children
3. Information about lead service lines
4. Information about the LCR's shared responsibility regime between water system and customer
5. Actions that PWSs typically take to minimize lead in drinking water
6. Steps consumers can take to reduce exposure to lead in drinking water, including removal of LSLs
7. Phone numbers and online links for additional information (including a link to EPA's online National Clearinghouse)

The LCRWG also recommends that EPA work with CDC to incorporate in the CDC's website, educational materials, and materials used by CDC-funded childhood lead poisoning prevention programs nationwide, accurate and up-to-date information about lead in drinking water (its sources, variable and erratic release, wide range of lead concentrations, chronic and acute health risks, the LCR's shared responsibility regime, steps to prevent exposure).

3.2.6 Public Education Compliance

3.2.6.a Compliance for New Customer Outreach

Violations:

- Failure to provide information to new customers

3.2.6.b Compliance for CCR

Recordkeeping, reporting and violations: Same as in the current CCR rule, with updated content.

3.2.6.c PE Compliance for Public Access to Information

PWS must provide the public access to information about:

- Number of samples over the Household Action Level, median, 90th percentile, and highest level found in the last monitoring period
- CCT treatment, approved WQP ranges and WQP results from the last monitoring period

Violations:

- Failure to make this information available to the public

3.3 Improve Corrosion Control

Corrosion Control Treatment (CCT) involves the addition of chemicals (e.g. orthophosphates or silicate) to create a barrier between the pipes and the drinking water, or to modify drinking water chemistry (such as pH and hardness) to inhibit the potential for corrosion. The concept is to manage the treatment system to reduce corrosion (and, thus, the release of metals such as lead and copper) from the distribution system and premise plumbing.

Under the current LCR, PWSs serving more than 50,000 people were required to work with their primacy agency (typically the state) from 1994 to 1997 to designate and install optimal corrosion control treatment. Systems serving 50,000 people or less must optimize corrosion control treatment only if the

results of lead and copper tap sample exceed the action levels. A PWS exceeds the lead AL if ten percent or more of the tap samples collected are greater than the 15 ppb action level.

In evaluating CCT choices, a PWS must consider list of assessment parameters; and, as part of the approval of a PWS CCT plan, the state also approves a shorter list of process control parameters applicable to that system to demonstrate that the selected treatment is being properly operated over time. For purposes of this report, the term water quality parameters (WQPs) applies to these latter process control measures. Recommendations concerning WQPs are included in Section 3.4.

Based on the experience with current LCR requirements provided to this work group and shared by work group members, the LCRWG has concluded the following:

- CCT remains an important component of the LCR, in that it is intended to achieve a water quality that minimizes dissolution of lead and copper in water.
- Effective CCT varies based on the specific conditions from system to system. Increased knowledge about CCT since promulgation of the current LCR, if applied today, could lead to improvements in CCT in some systems. Thus, PWSs and their primacy agency should apply the most current science, tailored to the unique circumstances of each system, to the choice of treatment plan and its associated water quality parameters. A variety of factors affect the dissolution of lead in water, including but not limited to pH and alkalinity. Factors other than the stability of designated WQPs can include, among others, the formation/dissolution of protective scales; the presence of manganese, iron, chlorides, sulfates, aluminum and other materials; and temperature. Variations in water quality also can occur within the distribution system. These water quality conditions vary among PWSs, which in turn affect the CCT choices a PWS must make in the context of other regulatory requirements.
- Lead also occurs in different forms in plumbing systems, from soluble to insoluble and particulate in nature. Sources of lead vary from the very common leaded solder and brass fixtures/valves, to LSLs, and to less common lead-lined iron pipe. CCT is more effective in reducing exposure to soluble lead than it is for particulate lead, although CCT that contributes to the formation of certain scales may also provide benefits in reducing exposure to particulates. Thus, while very important, CCT is not the only lead control mechanism that a PWS must have in place. In other words, CCT should not be relied upon by itself to control lead in water. Rather, it should be one of a tool box of other required mechanisms depending on a PWS's particular conditions and lead sources (e.g. LSLs, leaded solder, leaded brass, etc.). These tools are described in other sections of this report and include: LSL replacement (as well as the replacement of other less common sources of lead such as lead-lined iron pipe), current and future use of lead-free materials, stronger public education including targeted public education to vulnerable populations (pregnant women and families with infants and young children), availability of certified POU filters, instructions on how to flush plumbing systems when lead could be disturbed, etc.

3.3.1 Corrosion Control Recommendations

The LCRWG recommends that:

- EPA release a revised CCT guidance manual as soon as possible and update this manual every six years, so that PWSs and primacy agencies can take advantage of improvements in the science;
- EPA provide increased expert assistance on CCT to PWSs and primacy agencies;
- The LCR continue to require re-evaluation of CCT when a PWS makes a change in treatment or source water;

- The LCR continue to require WQP monitoring to ensure that the CCT is achieving the treatment objectives and that EPA consider requiring such monitoring on a more frequent basis with additional guidance on process control methods; and
- Large systems review their existing CCT plan in light of current science in a newly revised guidance manual with their primacy agency to determine whether the WQPs reflect the best available current science. The LCRWG suggests that this review be done every six years following EPA's six year rule review cycle, and subject to there being sufficient science change that EPA updated the guidance manual. EPA should plan to review and refresh Agency guidance every 6 years, subject to significant improvement in the state of knowledge, to allow research to inform rule implementation. In addition, regularly revised guidance would help states and systems stay current with corrosion control science as they respond to problem situations, but more importantly help them anticipate challenges as new water sources and treatments are brought on line, or they contemplate further refinement to corrosion control. Small and medium sized systems should work with their primacy agency to determine whether updates to CCT guidance is applicable to them.

3.3.2 Corrosion Control Compliance

PWS must maintain records that it reviewed new EPA guidance manuals and assessed whether and, if so, what changes to CCT are applicable, based on the current state of the science.

Violations:

- Failure to notify and consult with primacy agency on re-evaluating CCT if the PWS makes a change in treatment or source water
- Failure to review CCT when EPA updates the guidance manual (for large systems)
- Failure to act if state notifies them that they should assess CCT or make adjustments, based on state review of guidance manual (for medium and small systems)

3.4 Modify Monitoring Requirements

Under the current LCR, a PWS is required to conduct monitoring to assess the effectiveness of its corrosion control treatment (CCT) and trigger additional actions to reduce exposure when necessary. Water systems must compare sampling results to an Action Level (AL). The AL for lead is 15 µg/L and the AL for copper is 1.3 mg/L. In the Lead and Copper Rule (LCR), water systems must prioritize sample site locations (often residences) within the distribution system which are at a high-risk of elevated lead and/or copper in the water. Selection and use of these elevated lead and copper sites enables a smaller number of sample sites than random or geographic site selection procedures.

Implementation of this approach over time has revealed numerous challenges. Recruitment of customers to take in-home samples can be difficult and costly. Customers are not professional samplers and, thus, may implement the sampling protocols inconsistently. Research on sampling protocols also has shown that sampling results may vary, and not necessarily consistently, based on the configuration and length of lines from the water main to the sampling tap and whether the sample is a first draw or a subsequent sample intended to reflect water that had been in a LSL for some time.

The LCRWG recommends two types of on-going monitoring: 1) a more robust WQP monitoring program to improve process controls for CCT, and 2) voluntary customer initiated tap water sampling coupled with a more robust and targeted public education program to encourage sampling, in part to provide direct

information to consumers that they can use to reduce potential exposures to lead from drinking water in their home and to provide ongoing information to the PWS to identify and correct unanticipated problems.

The LCRWG also recommends that EPA establish criteria for a PWS to transition from the current rule framework into the new rule framework. The LCRWG recommends that the transition includes a condition that a PWS must comply with the requirements of the current LCR until the PWS has achieved three rounds of monitoring results under the lead AL using the current LCR requirements. Results from past rounds of monitoring can be used or new data will be required if prior data are above the AL. At that point, the PWS can define their CCT or WQPs for the new rule as that which was used to achieve this record. The existing lead AL should be redefined as a System Action Level in the new rule wherein it will be used when determining re-optimization, e.g. for use during a review of a new source or treatment, if the state determines that additional utility tap sampling is warranted. In other words, it will provide a baseline target for confirming CCT if lead sampling is chosen as one means by which to determine CCT. PWSs must continue to demonstrate that they are maintaining the WQPs used to establish the transitions. All systems, regardless of their lead AL status, should be required to transition to the new LSL replacement program and public education program requirements of the revised LCR as of the effective date of the new rule.

3.4.1 Water Quality Parameter Monitoring

As noted above, WQP monitoring is distinguished from the more extensive list of parameters that a water system would consider as it evaluates corrosion control technology choices. WQPs for the purpose of this section involve the on-going process control monitoring that demonstrates that the selected treatment is being properly operated over time.

The WQP program recommended below builds on what is in the current rule by recommending:

- 1) more frequent monitoring than currently required and monitoring that is representative of the distribution system (e.g. at points currently used for DBP monitoring or at a subset of points used for TCR monitoring) to capture currently undetected variability;
- 2) continuing to tailor WQPs to the individual PWS CCT plan and asking EPA to review and consider adding to the list of WQPs referenced in the LCR, based on EPA's anticipated revision to the CCT guidance manual;
- 3) that WQP monitoring be periodically revisited based on the advancing science as documented in research reports and disseminated through periodically revised EPA guidance manuals; and
- 4) that a more rigorous data review process such as control charting and similar process control techniques be used to take advantage of the collected data to improve the consistency of operation, encourage fine-tuning of processes, reduce variability of water quality within the distribution system and detect and manage excursions.

In addition, these data should be reviewed whenever there is a change in source or treatment (see 4.3 above); and, when a system or state primacy agency sees significant changes in WQP data, it should initiate a "find and fix" process, looking for what changed and why, and requiring the PWS make any needed adjustments or corrections. This provides one type of reality check and correction not explicitly in the current LCR.

In addition, the LCRWG recommends that systems which are not currently practicing CCT under the LCR but have been under the lead action level by virtue of either naturally non-aggressive source water or by virtue of other aspects of treatment in use, be required to conduct a WQP monitoring program to

continue to demonstrate that the characteristics which caused them to be non-corrosive are continuing to be in place.

3.4.2 Tap Sampling for Lead

The LCRWG also recommends that a voluntary customer-initiated sampling program based on the more robust and targeted public education efforts being recommended elsewhere in this report be substituted for the current LCR tap sampling requirements. .

The results of the voluntary tap sampling program will be used for three separate purposes:

- informing and empowering individual households to take action to reduce risk,
- reporting to health officials when monitoring results exceed a “household action level” (see section 3.5) and
- ongoing information to the utility to assess effectiveness of CCT.

Information for Households

Data from customer-initiated sampling will be valuable in informing and empowering individual households and thus provide greater customer service. All data provided to customers would need to include appropriate information about the variability of lead levels, that a single sample does not represent all water quality, and that levels at a particular tap at a particular time might be higher or lower. The transmittal should also provide appropriate information about the risks of lead exposure, sensitive populations, and actions the consumer can take to minimize risk.

This type of sampling is currently discouraged by the current rule because water systems are often concerned that “complaint” or “customer “ samples would be included into the required 90th percentile calculation with potential mandatory response actions if it exceeded the action level. This resulted in system not offering sampling or having the samples be analyzed through a private lab (and therefore the data would not be available for any utility management or regulatory purpose). Currently, PWSs are mandated to return to the same locations which, while it may have value for other reasons, means that many other households do not get the opportunity to understand their lead exposure. Voluntary customer-initiated sampling can also capture data from multi-family residences, which is not included in the mandatory LCR sampling in most cases. A new approach could achieve greater customer service and more data to understand and manage lead corrosion.

Outreach to encourage customers to sample will likely involve many different customer contact opportunities including the CCR, outreach related to having a LSL, outreach related to construction contracts, new customer contact, community meetings, other educational outreach efforts, and whenever a customer contacts the CWS for a water quality question or complaint.

Customers should be given the opportunity to determine the type of information they are interested in, thus should be offered a menu of sampling protocols, e.g. a random daytime sample to determine typical exposure levels, first draw to determine the effects of a brass faucet, or a timed or temperature determined sample from within a service line. The National Clearinghouse should include templates with instructions for each type of sample.

Information for Public Health Officials

Data from customer samples which exceeded the “household action level” recommended in section 3.5, would be required to be forwarded to health officials. While LCR tap water results are currently provided to the collecting household, the LCR does not require any action for individual high samples, and there is

no mandate to refer to health authorities. While the LCR cannot guarantee actions by health departments, this recommendation provides direct health intervention in those cases where sampling indicates high lead levels.

Information for Assessing the Effectiveness of CCT

The third use of the customer tap sampling data is to provide on-going information to the utility of potential changes in the effectiveness of CCT. Under the current rule, most systems are sampling for one four-month period every three years. Any changes or variability in lead levels at the tap during the other 32 months of that period are missed. Under this proposal, it is anticipated that there would be a more regular stream of data from more locations, providing information which can be used to understand system performance. The data would be provided to the state primacy agency and presented as time series data to facilitate identifying any changes in the data over time. Small systems might report the data on something as simple as a spreadsheet chart, while larger systems might use more sophisticated analytical methods to understand and use the data.

Unexpected or unexplained changes in the tap sampling data can be used in a “find and fix” approach to identify and respond to potential problems. This could be system initiated or in response to periodic review of the system data by the primacy agency, such as during a sanitary survey. This provides a reality check on whether something unexpected is happening within the distribution system, even though consistent treatment was maintained. The more robust (in both temporal and geographic distribution) of the customer sample data set provides a more powerful check on treatment than the current episodic sampling does.

Specifically the LCRWG recommends that the revised rule require that:

- any customer sampling data be reported to the state on a routine basis and include which of the menu of sampling protocols referenced above was used;
- data be provided as soon as possible and no later than within 30 days to the customer and, if over the household action level, to the health department (as discussed above and in section 3.5);
- the PWS maintain the data set for analysis and review, taking type and location of each sample into consideration, to identify trends and changes in the data;
- the data be available for public review as described in section 3.2.4;
- the PWS and the state review the data and trend analysis during sanitary surveys;
- annually, at the discretion of the primacy agency, the PWS provide the primacy agency with a data summary report of the three most recent years of all tap sampling data, the specific details of which should be determined by EPA;
- if the three most recent years of customer sampling data show that the 90th percentile (running three-year calculation) is above the System Action Level, then the PWS must analyze any changes or trends in the data to evaluate whether they are based on system-wide, local, or household-based conditions, and provide the report and analysis to the state for their review and determination if additional analysis, re-evaluation of CCT, or other actions such as household-based actions (LSL removal, education about lead-free faucets and flushing after non-use of water, etc.) are appropriate.
- if the system makes any source or treatment changes, the PWS and state should use the customer sampling data in the consultation, review and approval by the State currently required by the LCR.

The LCRWG also recommends that EPA provide guidance to states and PWSs on additional forms and types of data analyses which can be conducted on sampling data to provide more detailed understanding

of trends and to support system decision making on customer actions, treatment evaluations or development of system plans and priorities for LSL replacement programs.

It seems appropriate to include some sort of floor to the number of customer samples. Some members of the group suggested that systems should be required to collect no fewer samples in a three year period than they would under the current three-year reduced monitoring requirement.

When a system changes its source or treatment, and is required to consult with the state, the state primacy agency also may choose to require additional one-time monitoring to evaluate those changes if the degree of the change warrants.

Some members suggested that some small systems might want the opportunity to maintain the current home tap water monitoring program. The revised LCR should allow this, while not discouraging customer sampling.

3.4.3 Sample Invalidation Criteria

Under the existing regulation (141.86 (f)(1)), "The State may invalidate a lead or copper tap water sample if at least one of the following conditions is met.

- (i) The laboratory establishes that improper sample analysis caused erroneous results.
- (ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.
- (iii) The sample container was damaged in transit.
- (iv) There is substantial reason to believe that the sample was subject to tampering."

These are all good and necessary reasons for invalidating a sample and should be retained, but because this list is limited, samples must be accepted that are obvious "outliers" and don't represent the water that is normally consumed and should not be used as a basis for treatment changes or public education. This is especially true for small systems where the limited number of samples required means that a single, unusually high, value can cause the Action Level to be exceeded. This could lead to installation of expensive treatment when treatment is not needed or adequate corrosion control is already being provided. While probably not as frequent, non-representative samples could also cause water systems to be below the action level when treatment changes really are needed. Good invalidation criteria can help states address both problems.

The purpose of the invalidation is to make sure that decisions are based on the most representative set of samples possible and to do so through a process that provides adequate information to make good invalidation decisions and assures documentation of the reasoning behind the invalidation.

The following is a proposal from states that will serve those two functions.

States believe that the essential criteria for invalidation are already well stated in the Revised LCR Monitoring and Reporting Guidance (EPA 816-R-10-004, March 2010) or the October 2006 memorandum on Management of Aerators During Collection of Tap Samples to Comply with the Lead and Copper Rule. The LCRWG recommends that EPA take the following into account when revising the proposed rule and expand the invalidation criteria accordingly:

- Make sure the sample is taken at a tap that is used regularly, and not an abandoned or infrequently used tap."
- "If first-draw samples are collected at single-family residences, the sample must always be drawn from the cold-water kitchen tap or bathroom tap."

- “If first-draw samples are collected from buildings other than single-family homes, the sample must always be drawn from an interior tap from which water is typically taken for consumption.”
- “Public water systems should not recommend that customers remove or clean aerators prior to or during the collection of tap samples for lead.”

3.4.4. Monitoring Compliance

PWS must monitor and report based on water quality parameters and schedule set by state primacy agency, and use the data for on-going treatment process control (3.4.1)

Violations:

- Failure to monitor as per schedule
- Failure to maintain data, and use in process monitoring (to be evaluated by state during sanitary survey inspections or as state primacy agency requests)
- Failure to report data to state
- Monitoring results outside the WQP range established in the PWSs CCT plan along lines similar to current rule requirements

PWS also must include an offer to customers in all LCR related outreach to collect a sample, including in all LSL outreach efforts. PWS must also:

- collect sufficient number of samples, either by customer request or utility initiated sampling, i.e. no fewer samples in a three year period than under the current three-year reduced monitoring requirement, assuming the PWS qualifies for such reduced monitoring;
- promptly report the data to the customer, the state and local PH (if above health action level); and
- use the data as part of on-going evaluation of CCT performance, monitoring for changes in lead levels at the tap over time, geographic trends in levels, and interaction with distribution system water quality.

Violations:

- Failure to offer to sample
- Failure to collect minimum number of required samples within 3-year window
- Failure to report data to:
 - Household
 - State
 - Local public health agency (if above household action level) no later than 30 days after the result was received
- Failure to provide rule-required information in sampling offer materials, or in household reporting of the data
- Failure to use household tap sampling data in on-going evaluation of CCT and maintain record of having done so, (as determined by state during sanitary survey inspections or as state primacy agency requests)

3.5 Establish a Household Action Level

The current lead action level is based on the 90th percentile of the collected samples. Without a maximum limit, some users may be exposed to levels of lead in the drinking water that presents a potentially significant health threat, especially to children, without exceeding the action level.⁹ If the levels are high enough and state and local authorities do not act, EPA could determine that the levels pose “an imminent and substantial endangerment to the health of persons” pursuant to section 1431 of the Safe Drinking Water Act. (40 USC 300i)

3.5.1 Household Action Level Recommendations

To avoid the possible need to invoke section 1431 of the SDWA, the LCRWG recommends that EPA establish in a revised rule a “household action level” and require the PWS to notify the local health department and state drinking water authority of sample results over that level. The requirement would be triggered by any sample results that the PWS receives from a user or from its own monitoring. However, the PWS would not be required to make the notification until it has investigated the sample in a timely manner to eliminate sampling or assay errors.

The existing rule already requires the PWS to notify residents of the results of water system conducted lead sampling. We would anticipate that the PWS would alert the resident to possibility that the health department may be notified when the sample was taken or the resident provided the PWS with the sample results. While this notice may have the unintended consequence of discouraging some customers from testing, it is important for the customer to make an informed choice.

In response to the notification, the PWS and the health department would consider the situation and take action that they deem appropriate (e.g., testing children’s blood, recommending a filter, discussing lead service line replacement with the resident or landlord, advising grandparents about risk to visiting children, or continuing to monitor the situation). We anticipate that the health department be the lead agency, and that the rule would not prescribe actions other than notice as the situations are too diverse and complicated for prescription actions. The LCRWG encourages EPA to work with the Centers for Disease Control and Prevention on recommended approaches and make this information available through the clearinghouse discussed in section 4.2.

This requirement would be somewhat similar to the regulatory approach taken by the Department of Housing and Urban Development which mandates that public housing authorities notify the local health department within five days when it receives information from any source that a child of less than six years of age living in an assisted dwelling unit may have an environmental intervention blood lead level. (24 CFR 35.1225)

⁹ The LCRWG discussed the relationship between the household action level and the current lead AL (to be renamed the system action level). These levels have two distinct purposes. The LCRWG assumed during its discussions that the household action level would be significantly greater than the system action level. It recognized, therefore that, depending on what level is set, the household action level may have impacts on other recommendations in this report.

We recommend that EPA set the household action level based on the amount it would take for an infant to have a blood lead level greater than five micrograms per deciliter ($\mu\text{g/dL}$) based on consumption by an average, healthy infant of infant formula made with water. When a child's blood lead level exceeds five $\mu\text{g/dL}$, the Centers for Disease Control and Prevention (CDC) recommends that laboratories and health care providers notify local and state health departments and that action be taken to identify and prevent further exposure.¹⁰

3.5.2 Household Action Level Compliance

If household sample exceeds the household action level, PWS must promptly notify the household and the local public health agency; certify that this has been done, and maintain records of having done so.

Violations:

- Failure to report data no later than 30 days after the result was received, to
 - Household
 - Local public health agency
- Failure to certify to state that data was reported to the household and to the local public health agency within 30 days
- Failure to maintain records of correspondence between PWS and the local public health agency,

3.6 Establish Separate Monitoring Requirements for Copper

The current LCR does not deal effectively with copper. Generally speaking, the current rule focuses on the health benefits associated with lead risk reduction, with the result that the currently required in-home sampling is often done in locations with old copper that has passivated. Thus, the possibility may be missed that a system's water chemistry could result in copper releases. Further, the current rule does not require public education for copper, which can have broad benefits.

The LCRWG has concluded that the regulatory approach should separate lead and copper risk management, refocusing attention to where there may be a problem with copper without increasing the burden on systems where there is not a problem. This can be achieved in a cost effective manner by targeting copper monitoring requirements to those PWSs where there may be exposures.¹¹

Elevated exposures to copper generally result from new copper plumbing¹² where water chemistry is aggressive to copper. It is technically possible to identify water chemistries that are aggressive versus not aggressive to copper. Thus, the LCRWG recommends that the requirements for copper monitoring focus first on sampling for basic finished water quality parameters such as pH, alkalinity, and orthophosphate in a way that is representative of the distribution system to identify waters that are aggressive to copper. Systems that can demonstrate that their finished waters are not aggressive to copper or that their

¹⁰ http://www.cdc.gov/nceh/lead/ACCLPP/blood_lead_levels.htm

¹¹ The LCRWG recommends this approach, assuming EPA determines that the health benefits of regulating copper justify the costs. A full health risk assessment for copper was beyond the scope of the LCRWG's charge, however; and, thus, EPA's analysis of whether benefits justify the costs may have implications for these recommendations.

¹² New copper is generally understood to be between six months to three years of use.

distribution systems contain no copper should have no further copper monitoring requirements. This could be written into the rule, rather than require a monitoring “waiver.”

3.6.1 Copper Recommendations

Further, the LCRWG recommends that the LCR be revised based on the following concepts:

1. Instead of basing action on the results of routine, in-home copper sampling, actions should be based on the aggressiveness of the water to copper. Systems can determine if their water is aggressive to copper by doing WQP monitoring in the distribution system. All PWSs should be assumed to have water that is aggressive to copper unless they demonstrate that it isn't.
2. EPA should develop criteria to define water that is not aggressive to copper for the purpose of establishing whether a system falls into that category (or “bin”) for the purposes of the LCR. EPA should consider the accuracy and potential variability of pH and alkalinity monitoring as well as corrosivity to copper in establishing pH and alkalinity ranges. The criteria also should include consideration of passivation time. Examples of bins (for verification by EPA) would be:
 - a. if alkalinity is < 35 pH must be > 7.0 (no upper pH limit)
 - b. if alkalinity is 36 to 100, pH must be > 7.2
 - c. if alkalinity is 101 to 150 , pH must be > 7.5
 - d. if alkalinity is 151-250 , pH must be > 8

If orthophosphate is used, examples of bins would be:

- a. if alkalinity <150, PO4 must be >1 mg/L
 - b. if alkalinity is 150 to 200, PO4 must be > 2 mg/L
 - c. if alkalinity is 200 to 240, PO4 must be > 3 mg/L
 - d. if alkalinity is greater than 240, PO4 must be > 3.3 mg/L
3. PWSs can choose one of several approaches to demonstrate that their water is not aggressive to copper:
 - a. Conduct water quality parameter monitoring to assess whether their water meets the definition established by EPA.
 - b. Conduct a one-time evaluation with copper sampling at vulnerable houses (houses < 2 years old with new copper plumbing) to demonstrate that water chemistry is non-aggressive (copper levels fall under the AL/SMCL). EPA may want to consider:
 - i. Limited number of sample sites needed given copper chemistry
 - ii. Provision for sample invalidation based on site-specific conditions such as biologically-induced corrosion.
 - c. Conduct a pipe loop study to demonstrate the water chemistry is non-aggressive
 - d. Change water chemistry to within the range established for non-aggressive water quality
 4. PWSs with water **classified as non-aggressive to copper** must continue to demonstrate that the water is non-aggressive. PWS's can choose to:
 - a. Maintain those WQPs that demonstrate it maintains non-aggressive water under (2) above, or

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- b. Conduct copper sampling at vulnerable houses (houses < 2 years old with new copper plumbing) to demonstrate that water chemistry is non-aggressive (copper levels fall under the AL/SMCL)

PWSs that are not able to maintain their WQPs must implement a public education program as described in the next section.

5. PWS's with water **classified as aggressive to copper** must initiate and maintain a public education program. The public education program must either provide:
 - a. Information to all new homes (new construction or change of service) upon initiation of new service
 - AND
 - b.
 - i. Information to newly renovated homes at time of renovation
 - OR
 - ii. Information to all customers on a routine basis

In addition, in guidance, EPA should encourage PWSs to notify contractors, plumbing suppliers, and plumbers of copper corrosivity and to work with relevant officials and organizations to consider building and plumbing code changes that would prohibit copper piping in new construction if the corrosive water conditions cannot be eliminated. EPA also should provide guidance and/or templates, particularly for small systems, for public education messages and modes of delivery.

6. EPA should consider whether or under what circumstances CCT should be required for a PWS **classified as aggressive to copper**. Not all systems with water aggressive to copper necessarily will have homes with new copper, so treatment might not be necessary or perhaps even advisable, particularly for small systems that can control plumbing materials used or for systems in communities that modify their plumbing codes. Passivation time of copper varies considerably, and CCT may not be necessary or advisable when passivation time is short if interim actions to protect public health other than CCT are feasible. In determining when CCT should be required and any associated monitoring requirements, EPA also should take into consideration that a PWS may not have access to information about renovations where new copper has been installed and, even when such information is available, can't control whether the customer will participate in a monitoring program. Setting the correct level and establishing a regulatory approach that triggers CCT only when necessary will require a complex assessment and is beyond the scope of this workgroup.
7. In the revised LCR, systems should continue to be required to notify the primacy agency if they are making any long-term treatment change or addition of a new source. This section of the rule should be made clear that for copper, the system may be required to demonstrate that its finished water continues to be non-aggressive to copper (per 4 above).
8. Additional information needs to be gathered on the current distribution of pH, alkalinity, and phosphate residual among systems nationally to fully understand the implications of this approach.

3.6.2 Copper Compliance

Violations:

- Failure to implement public education, for PWSs that have not demonstrated their water chemistry is not aggressive to copper.
- Failure to maintain a monitoring program representative of the distribution system that demonstrates the system has water chemistry not aggressive to copper.
- Failure to provide notice to and, if required, consultation with the primacy agency, when a PWS makes a significant change in source or treatment (as in the current LCR).
- Failure to implement CCT or other risk reduction actions prior to CCT as determined by the primacy agency.

4 Complementary Actions Critical to the Success of the National Effort to Reduce Lead in Drinking Water

The LCRWG urges EPA not only to promulgate a revised LCR, but also to play a leadership role in educating, motivating, and supporting the work of other agencies, where EPA does not have the authority to act. The LTR LCR is very important. However, removing lead from drinking water systems and reducing exposure to lead from drinking water in the meantime will require renewed commitment, cooperation and effort by government at all levels and by the general public.

Specific recommendations for action in addition to the LTR LCR include (grouped generally by who might take such actions):

EPA Actions

- EPA working across all offices to take an integrated approach to action and education on lead from all sources (paint, air, site clean-up, etc.), with proper emphasis on lead in drinking water; especially in relation to the populations most vulnerable to this source (pregnant women, infants and young children). For example, OGWDW should coordinate with EPA's lead-based paint program so lead hazards are communicated consistently.
- Work with other federal agencies including HUD in terms of lead programs including but not limited to expanding federal funding from those programs to include lead service line replacement; HUD/DOT in terms of efficiency in possible coordination of lead service line replacement with road projects and other construction projects; and CDC in terms of childhood lead poisoning prevention, screening, and protection programs
- Enhanced cooperation with state, county, and local health departments to promote an integrated approach to childhood lead poisoning screening, prevention, and protection that emphasizes drinking water and its potential as a primary lead source (e.g. infants dependent on reconstituted formula).
- EPA needs to work with agencies at all levels of government to support financial assistance programs for LSL removal. Building costs into a PWS's capital budget planning should also be a consideration.
- EPA should include diverse perspectives in its stakeholder engagement programs, including affected consumers (who should not be required to be members of formal organizations), lead poisoning prevention/clean water advocates, EJ advocates, lead/copper corrosion experts, and

representatives from PWSs, States, and federal agencies with Healthy Homes and childhood lead poisoning prevention programs.

Other Federal Actions

- A federal tax deduction to support replacement of the customer portion of LSLs.
- EPA should work with CDC and HHS to ensure that the standard protocol for investigation of any child with elevated blood lead levels or of a home with lead levels above the HAL include determination of whether there is a lead service line.
- EPA should work with HHS and HUD to modify funding guidelines for the Healthy Homes and other federal funding programs to explicitly authorize and prioritize the use of those funds for lead service line removal programs targeting the privately owned portion of any lead service line. The current situation of having tens of thousands of dollars spent by a local Healthy Home or lead poisoning prevention program to remove lead paint, and leave behind a lead service line because of arbitrary funding guidelines is unacceptable.

State or Local Actions

- Local or state building and plumbing codes, including possibility of prohibiting copper plumbing where water is aggressive to copper.
- State Actions to support customer lead service line replacement, e.g.
 - State legislation requiring inspection or replacement on sale of home
 - Disclosure requirements at sale of home
 - Requirements for LSL removal as part of school and day care licensing
 - Building code requirements for LSL removal upon substantial renovation (could be national action as well)
 - Priority in DWSRF funding, especially if increased funding is available. (Criteria states might wish to consider include: PWSs where there is a high incidence of elevated BLLs for children, a high percentage of homes with LSLs, a high percentage of low income families, the PWSs prior efforts to replace LSLs, etc)¹³
- States should consider including requirements for lead in drinking water in state child care licensing rules.

Public Water System Actions

- Options EPA may want to describe in guidance and PWSs could consider include but are not limited to:
 - a. Rate design considerations:
 - i. Low rates for low volumes
 - ii. Household size-based rates

¹³ Good examples of programs which facilitate and enable private action include a Massachusetts program which provides a state income tax credit for the replacement of failing private wastewater treatment systems (septic tanks and leaching fields) coupled with a requirement for inspection and compliance with stricter rules upon property transfer; and many local housing rehabilitations programs funded by Federal Community Development Block Grants (CDBG) which provide low or no interest loans for health and safety related improvements, payable upon property transfer, often with loan sunsets where repayment is not required or the balance is reduced over a period of continued occupancy by an income-eligible homeowner. A similar loan program could be authorized by EPA under the Drinking Water SRF program.

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- b. Non-rate policies
 - i. Budget billing
 - ii. Fixture retrofits and plumbing assistance by the PWS
 - iii. Service line replacement and insurance programs not provided by PWS
 - iv. Direct assistance, emergency bill payment relationships
 - v. Fixture retrofits and plumbing assistance by NGO organizations providing affordable housing
 - vi. Subsidies including LSL / connection replacement costs associated with street, sidewalk, and other repairs not related to drinking water infrastructure
 - vii. On-bill financing provided by the PWS
- c. Funding guidance
 - i. EPA's Financing for Environmental Compliance – Water
 - ii. Tools for Financing Water Infrastructure
- d. Funding sources beyond rate revenue:
 - i. EPA's Drinking Water State Revolving Fund (DWSLF)
 - ii. EPA Targeted Grants to Reduce Childhood Lead Poisoning
 - iii. USDA's Water and Environmental Programs, U.S. Department of Agriculture, Rural Development
 - iv. HUD's Community Development Block Grant Program – U.S. Department of Housing and Urban Development
 - v. HUD Healthy Homes Technical Studies
 - vi. HUD Office Healthy Homes and Lead Hazard Control Lead Hazard Reduction Demonstration Program
 - vii. HUD Health Homes Initiative Lead Elimination Action Program
 - viii. HUD Office of Healthy Homes and Lead Hazard Control Lead Hazard Control Lead Technical Studies Grant Program
- PWSs should educate and encourage partnerships with healthcare providers and health departments even when levels are below the AL.

Research

- Additional technical review and/or additional study is needed on how to conduct household and service line flushing to remove particulate lead.
- Published, peer reviewed research explaining that water in plumbing systems with leaded materials and LSLs can have sufficient levels of lead in the water to be a risk to those consuming the water. This paper is important to gaining support from the public health agencies and others and to placing water in context with other sources of lead.
- Considering that lead remains a complex issue and that research and information gaps still exist, the EPA should establish a Research and Information Collection Partnership to encourage the filling of these gaps in knowledge. The RICP should be initiated once the EPA begins working on the revised rule and continue for three years or more into the promulgation of the revised rule.
- The EPA and other agencies, such as the Water Research Foundation, should conduct research (such as bench scale and limited system case studies) to confirm the bins selected to define aggressive waters for copper. The bins are based on theory and need some level of confirmation prior to promulgating an actual regulation. This work can be done within the timeframe of developing a final rule.

5 Conclusion

The LCRWG appreciates the opportunity to provide these recommendations to the NDWAC, offers our thanks to the experts and members of the public who made presentations to the work group, and wishes particularly to acknowledge EPA for the extensive commitment of staff time and expertise to this process.

ATTACHMENT A**NDWAC Lead and Copper Working Group**

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Table 1: Elements of utility reports by dates in three-year cycle (*based on EPA adoption of rule in 2017)											
Action	2020*	2023	2026	2029	2032	2035	2038	2041	2044	2047	2050
Confirm broad and targeted education programs underway ¹	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.
Status of consumer sampling ²	NA	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered	# done & # offered
Confirm communication of sampling results ³	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.
Confirm operation policies in place ⁴	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.	Yes. If not, then explain.
Replacement Progress ⁵	Initial Baseline	85% remaining	70% remaining	55% remaining	40% remaining	25% remaining	17% remaining	10% remaining	6% remaining	3% remaining	0% remaining
If replacement goals not met, number of checklist items confirmed completed (See Table 2) ⁶	Basic requirements [see Section 3.1.2]	Basic requirements	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)	TBD (by EPA)
¹ See Section 3.1.2 (item 4 “targeted outreach” EPA to provide a checklist; PWS to contact customers with LSLs individually at least every three years and when there is a new customer at that address. ² Number of customers offered opportunity to conduct at-tap samples and number of samples taken. Confirmation that results were provided to the customer. Number exceeding the household action level and confirmation that the results were submitted to health department. Maintain records for review by the primacy agency. ⁴ Program to ensure that emergency, maintenance and renovation operations consider risks of disruption to service line increasing lead exposure to residents. .See Section 3.1.2 item 7 (operations). ⁵ A service line is presumed lead unless installed after date installation of lead service line prohibited or records or tests by utility confirm entire service line is not lead. Confirming that a service line is not lead counts toward replacement progress. ⁶ This is a two-fold concept, the details of which the LCRWG suggests be determined by EPA: 1) provide the PWS the flexibility to select outreach methods and other efforts appropriate to that community and 2) increase the number of required efforts to be completed if replacement goals are not met. See Table 2 for checklist of options for additional effort (in addition to the basic outreach requirements).											

Report of the Lead and Copper Working Group to the National Drinking Water Advisory Council - Final

Table 2 Options (in addition to the basic outreach requirements) to be accomplished by utility if replacement progress goals in Table 1 not met. ¹		
Basic outreach requirements:		
- Individually notify customers with known or possible LSLs describing the risks of lead in drinking water, specifically inviting them to participate in the LSLR program, offering to have the customer's tap water analyzed, and clearly describing the terms of the program and how to follow up. If the customer does not respond or chooses not to participate, the PWS must follow up with another invitation at least every three years and always when there is a new customer at that address. (see Section 3.1.2 for additional details) - Provide a written offer to replace the LSL when work is being done on the water main in the street (with the same information above).		
Resident engagement	System policies	Other
1. Notice to new customers of need	1. Plumbing code requires full replacement if service line will be disturbed.	1. Local health agency contact with resident.
2. Written offer to replace when main in street rehabbed (customer pays)	2. Grants or low-interest loan funds identified to cover customer costs sufficient to maintain progress for period.	2. Local health agency funding for removal as part of remediation
3. Written offer to volunteer (customer pays)	3. Financing options such as liens on home provided to customers or tax deductions for property owner costs.	3. Media campaign launched
4. Written refusal from customer(s)	4. MOU or other arrangement to implement notification of customers/property owners by other utilities about replacement options if LSL is disturbed	4. Homeowner association(s) send letters to members supporting replacement.
5. Certified letters sent	5. Capital improvement plans target system pipe rehab and replacement to areas with more LSLs	5. Real estate organizations notified of requirement for replacement of LSL on sale or transfer of title
6. In-person call or visit made	6. Service line insurance program revised to include replacement LSLs if damaged or leaking	6. Cooperative outreach efforts with non-profits
7.	7. More aggressive flushing in areas with LSLs to manage iron related lead particles	7. Coordinated outreach with WIC
8.	8.	8. Outreach to plumbers/contractors
9.	9.	9. Outreach to ob/gyns and pediatricians
10.	10.	10. Local ordinance requiring inspection/notification/replacement of LSLs upon sale or transfer of title
11.	11.	11. LSL identification added to home inspector standard operating procedures
12.	12.	12.
¹ EPA will provide guidance on the options and update them periodically as best practices evolve.		

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, August 10, 2015 1:27 PM
To: 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: RE: Response to Questions from 8/4 Meeting on Flint

Sorry, last quarter WQP pH monitoring numbers are now added in.

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: Busch, Stephen (DEQ)
Sent: Monday, August 10, 2015 1:24 PM
To: 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: Response to Questions from 8/4 Meeting on Flint

Brad,

Here is what I have been able to gather in response to the questions from our meeting with members of the Flint community at the Governor's Office on Tuesday August 4th.

Why Are There Different 2014 Consumer Confidence Reports for City of Flint Water System?

The City of Flint issued two separate Consumer Confidence Reports (CCR's) in 2015 covering the water quality data from 2014.

One report for the period of January – April 2014 when the City was obtaining water from Detroit (DWSD).
 A second report for the period April – December 2014 when the City was using the Flint River and its own Water Treatment Plant.

The CCR for DWSD water was mailed to customers in June. The Flint River based CCR was mailed to customers in mid-July, delayed due to issues with the printing contractor. We will work with the City to ensure both reports are posted to the City's website and both are made available when requested by customers. Should the City choose to create separate CCR's during the year that the City of Flint connects to the Karegnondi Water Authority we will work with the City to provide more clarity and try to have all material included in a single mailing.

The DWSD based CCR is the one community members had at the meeting, while the DEQ had brought a copy of the Flint River based CCR. As separate sampling was done under each source, this explains the discrepancy in the values and monitoring periods being reported in the respective CCR's.

Why Were Some Samples Not Included In The Flint Lead and Copper Monitoring January – June 2015 Period, and Are Sampled Customers Being Provided Their Results?

The City has confirmed that all lead and copper samples collected through the City, whether routine sites or customer requests, were sent to the State of Michigan lab for analysis. Individual sample results are provided to the property owner within 30 days of receiving the lab results in accordance with the Michigan Safe Drinking Water Act (Public Act 399, 1976 Administrative Rule 410(5)).

Results of any lead and copper samples collected by EPA staff were not provided to the City of Flint or Michigan Department of Environmental Quality. It is also unclear whether any such samples would meet the sample site and collection protocol requirements of the Safe Drinking Water Act to be used for compliance determination during this monitoring period.

The lead 90th percentile calculation of 11 parts per billion is based on 69 samples that met the appropriate sampling location site criteria, and met the sample collection site and collection protocol requirements of the Safe Drinking Water Act for this monitoring period. A minimum of 60 samples were required for this monitoring period. As indicated during the meeting, the City's sampling for lead complies with the Action Level standard of 15 parts per billion, but based on the population served the City and these results, the City will need to make a recommendation to the MDEQ on how they will fully optimize their corrosion control treatment. These next steps continue to follow the requirements of the Lead and Copper Rule.

Why Was Sampling From 212 Browning Avenue For Lead and Copper Not Included For Compliance?

The residence at 212 Browning Avenue utilizes a whole home filter. As stated in the Michigan Safe Drinking Water Act (Public Act 399, 1976 Administrative Rule 710a, Lead and Copper in tap water; monitoring requirements) "Sampling sites may not include faucets that have point of use or point of entry treatment devices designed to remove inorganic contaminants." Such treatment alters the water chemistry and water quality such that it is no longer representative of public water from the City's distribution system. Therefore, it cannot be used to determine public water system compliance with the action level standard.

An additional concern regarding water quality conditions at this residence is that the City of Flint has no record of a plumbing permit being obtained when the home was fully re-plumbed. Thus any plumbing work completed was not inspected and cannot be determined to comply with requirements of the Michigan Plumbing Code and Michigan Residential Code. As a result there may be conditions within the household that are contributing to some of the water quality issues experienced by the owner.

What Are The pH Conditions In The City's Water? Concerns over low, 4-5 pH values

Since late April 2014 – June 2015, the following pH conditions have been reported by the City.

Water Treatment Plant – Finished Water plant tap pH range = 7.07 minimum to 9.9 maximum, overall average 7.7, measured daily. The 9.9 is a one- time anomaly from softening treatment.

Distribution System – Water Quality Parameters 25 sample sites location throughout monitored quarterly

July – Sept. 2014 pH 7.71 average, range 7.56 – 7.86

Oct. – Dec. 2014 pH 7.88 average, range 7.62 – 8.10

Jan. – March 2015 pH 7.81 average, range 7.60 – 7.99

April – June 2015 pH 7.63 Average, range 7.48 – 7.80

I believe this addresses questions from the meeting directed to the MDEQ.

I did want to add that the DEQ Office of Drinking Water and Municipal Assistance has been in contact with the Department of Health and Human Services, Environmental Health Division, Healthy Homes Section and had some preliminary discussions about a public education and assistance campaign regarding household lead issues, guidance and abatement.

Please let me know if I missed something or if any additional information is needed.

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: Busch, Stephen (DEQ)
Sent: Wednesday, February 25, 2015 12:32 PM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ)
Subject: RE: results from recent Flint TTHM samples?

Jennifer,

As we discussed on the phone, samples are at the lab now, but no results yet. I will pass them along as soon as we have them.

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 25, 2015 12:19 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: results from recent Flint TTHM samples?
Importance: High

Mike/Steve--Yes, I have another controlled correspondence from the White House. I thought I'd update my last letter, in case you have these results—I'm hoping that all 8 locations are below 80 this time?

Jennifer

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 01, 2015 8:31 AM
To: Pallone, Maggie (DEQ)
Subject: RE: Sample Sites
Attachments: Flint lead-copper history.xlsx

Attached.

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: Pallone, Maggie (DEQ)
Sent: Thursday, October 01, 2015 8:30 AM
To: Busch, Stephen (DEQ)
Subject: RE: Sample Sites

Thanks, do you have it in a non pdf so WRD can pull the addresses off?

From: Busch, Stephen (DEQ)
Sent: Thursday, October 1, 2015 8:29 AM
To: Pallone, Maggie (DEQ) <PalloneM@michigan.gov>
Subject: Sample Sites

This covers the whole history but the far right columns for 2014 and 2015 show which addresses were sampled under the Flint WTP/Flint River.

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: Busch, Stephen (DEQ)
Sent: Wednesday, August 05, 2015 8:44 AM
To: Shekter Smith, Liane (DEQ)
Subject: RE: schedule meeting

Yes.

I have some concern about them running analysis if they are not a certified lab. We also need to make sure they do actually understand the concerns and the regulatory requirements.

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: Shekter Smith, Liane (DEQ)
Sent: Wednesday, August 05, 2015 8:41 AM
To: Busch, Stephen (DEQ)
Subject: RE: schedule meeting

Today?

From: Busch, Stephen (DEQ)
Sent: Wednesday, August 05, 2015 8:40 AM
To: Shekter Smith, Liane (DEQ)
Cc: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: RE: schedule meeting

After 2:00 is open.

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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Sent: Wednesday, August 05, 2015 8:30 AM
To: Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: FW: schedule meeting

Steve -

I'd like to respond today, if possible. My preference would be for you to participate in any call. What is your availability?

From: Lutgarde Raskin [<mailto:raskin@umich.edu>]
Sent: Wednesday, August 05, 2015 12:10 AM
To: Shekter Smith, Liane (DEQ)
Cc: Krista Wigginton
Subject: Fwd: schedule meeting

Dear Liane,

I had sent the email below to you last week, and just resent it because I may have used the wrong email address in my original email. Would you have time to talk to us this week?

Best regards,
 Lut

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

From: Lutgarde Raskin <raskin@umich.edu>
Date: Tue, Aug 4, 2015 at 11:52 PM
Subject: schedule meeting
To: shekterl@michigan.gov
Cc: Krista Wigginton <kwigg@umich.edu>

Dear Liane,

My colleague Krista Wigginton and I would like to set up a skype meeting or conference call with you. We have been approached to perform water quality analyses for Flint residents. We have learned about the situation in Flint through various sources and have a good idea of the complexity of the problem. Rather than working with residents only, we would also like to involve the utility and appropriate MDEQ personnel. Brian Steglitz recommended we talk to you before approaching others. Would you be able to discuss this with us on short notice? We are available tomorrow and Monday.

Thank you in advance for your help,
 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), which showcases high quality research and innovative technologies relevant to engineered systems and the built environment that promote sustainable water resources. Publications in ES:WRT are available for free through a [registered account](#).



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Subject: RE: schedule meeting

After 2:00 is open.

Stephen Busch, P.E.
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Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
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Cc: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Devereaux, Tracy Jo (DEQ)
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To: shekterl@michigan.gov
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*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
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 1351 Beal Ave., 107 EWRE Bldg.
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Check out the new Royal Society of Chemistry Journal: *Environmental Science: Water Research & Technology* (ES:WRT), which showcases high quality research and innovative technologies relevant to engineered systems and the built environment that promote sustainable water resources. Publications in ES:WRT are available for free through a [registered account](#).



Rennaker, Joanne (DEQ)

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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: Busch, Stephen (DEQ)
Sent: Wednesday, September 10, 2014 12:50 PM
To: 'Michael Glasgow'
Subject: RE: September 2014 Boil Water Notice Timeline

At this time I will not be able to attend. Thanks for letting me know.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Tuesday, September 09, 2014 2:24 PM
To: Busch, Stephen (DEQ)
Subject: Re: September 2014 Boil Water Notice Timeline

Steve,

Mr. Croft would like to know, at the request of EM, if you or Mike, or both of you could be in Flint (9/11) Thursday morning @10:00 am. It looks like they have planned a press conference.

Mike Glasgow
City of Flint Water Plant

On Tue, Sep 9, 2014 at 10:00 AM, Busch, Stephen (DEQ) <BUSCHS@michigan.gov> wrote:

Mike,

Thanks for the information.

Given these valve issues, would low pressure conditions less than 35 psi, 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, tuberculation on the pipe walls, and/or phosphate coating.

Please continue with your investigation and let us know how the valve repair/replacement goes.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Michael Glasgow [mailto:mglasgow@cityofflint.com]

Sent: Tuesday, September 09, 2014 9:47 AM

To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)

Cc: Brent Wright; Daugherty Johnson; Howard Croft

Subject: September 2014 Boil Water Notice Timeline

Gentlemen,

Attached is a timeline of events that led us to the recent boil water notice. It shows all sampling and results from 9/2 thru today.

FYI:

I was just talking with a couple of employee's from the Water Service Center who have been helping us with our investigation of the the distribution system. It seems that they have found one of the possible causes of our recent issues. A 36" transmission main not far west of the treatment plant had a valve that was closed, and the 24' transmission main that leads west also has a valve that is closed. The 36" valve was opened, however the valve on the 24" is inoperable. With these valves closed, it appears the water leaving the plant has no direct route to the west side of the city (or the West Side Reservoir)

Mike Glasgow

City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 09, 2014 10:00 AM
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Please continue with your investigation and let us know how the valve repair/replacement goes.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
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Mike Glasgow
 City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Wurfel, Brad (DEQ)
Sent: Tuesday, May 13, 2014 9:13 PM
To: Busch, Stephen (DEQ)
Subject: Re: sewage spill reporting

I'm aware, thanks. He wanted you to reassure folks the flint river would still be safe to drink.

Sent from my iPhone

> On May 13, 2014, at 4:31 PM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

>

> Brad,

>

> WRD handles sso's and cso's. Cheryl Bartley is the Lansing DS. I haven't received any notification from flint about impacts from the river on treatment nor from Mike.

>

> The WTP's are designed to handle fluctuations in raw water quality from rain events.

>

> 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 May 13, 2014, at 3:47 PM, "Shekter Smith, Liane (DEQ)" <SHEKTERL@michigan.gov> wrote:

>>

>> Steve Busch or Mike Prysby. Steve is not in, but will answer his phone if he can.

>>

>> From: Wurfel, Brad (DEQ)

>> Sent: Tuesday, May 13, 2014 3:43 PM

>> To: Shekter Smith, Liane (DEQ)

>> Cc: McClellan, Michael (DEQ)

>> Subject: FW: sewage spill reporting

>>

>> Who can help Flint Journal?

>>

>>

>> From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]

>> Sent: Tuesday, May 13, 2014 3:04 PM

>> To: Wurfel, Brad (DEQ)

>> Subject: RE: sewage spill reporting

>>

>> Hey Brad: Any word on my best contact? Sorry. We're getting hammered by rain again today and so I'm hoping to check today.

>> Thanks again,

>>

>> Ron Fonger

>> MLive Media Group

>> Reporter

>>

>> mobile 810.347.9963

>> email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>

>> address 540 S. Saginaw St. #101, Flint MI 48502

>>

>>

>>

>>

>> From: Wurfel, Brad (DEQ) [<mailto:WurfelB@michigan.gov>]

>> Sent: Tuesday, May 13, 2014 11:37 AM

>> To: Fonger, Ronald

>> Subject: RE: sewage spill reporting

>>

>> Hey, Ron.

>> I'll get you both. I'm not sure how fast the reporting gets put to the database.

>> b

>>

>> From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]

>> Sent: Tuesday, May 13, 2014 11:14 AM

>> To: Wurfel, Brad (DEQ)

>> Subject: sewage spill reporting

>>

>>

>> Hi Brad:

>> Is there a resource online that I can check for any reported sewage spills reported by local communities?

>> If not, is there a person you could suggest I check with on the same subject.

>> With Flint drawing water from the river for drinking now, I'd just like to keep an eye on that and last night's heavy rains reminded me to check.

>> Hope all is well there, and thanks,

>>

>>

>> Ron Fonger

>> MLive Media Group

>> Reporter

>>

>> mobile 810.347.9963

>> email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>

>> address 540 S. Saginaw St. #101, Flint MI 48502

>>

>>

>>

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, May 13, 2014 4:32 PM
To: Shekter Smith, Liane (DEQ); Bartley, Cheryl (DEQ)
Cc: Wurfel, Brad (DEQ); McClellan, Michael (DEQ); Prysby, Mike (DEQ)
Subject: Re: sewage spill reporting

Brad,

WRD handles sso's and cso's. Cheryl Bartley is the Lansing DS. I haven't received any notification from Flint about impacts from the river on treatment nor from Mike.

The WTP's are designed to handle fluctuations in raw water quality from rain events.

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 May 13, 2014, at 3:47 PM, "Shekter Smith, Liane (DEQ)" <SHEKTERL@michigan.gov> wrote:

>
 > Steve Busch or Mike Prysby. Steve is not in, but will answer his phone if he can.

> _____

> From: Wurfel, Brad (DEQ)
 > Sent: Tuesday, May 13, 2014 3:43 PM
 > To: Shekter Smith, Liane (DEQ)
 > Cc: McClellan, Michael (DEQ)
 > Subject: FW: sewage spill reporting

>
 > Who can help Flint Journal?

>
 >
 > From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]

> Sent: Tuesday, May 13, 2014 3:04 PM
 > To: Wurfel, Brad (DEQ)
 > Subject: RE: sewage spill reporting

>
 > Hey Brad: Any word on my best contact? Sorry. We're getting hammered by rain again today and so I'm hoping to check today.

> Thanks again,

>
 > Ron Fonger
 > MLive Media Group
 > Reporter

>
 > mobile 810.347.9963
 > email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>

> address 540 S. Saginaw St. #101, Flint MI 48502

>

>

>

>

> From: Wurfel, Brad (DEQ) [<mailto:WurfelB@michigan.gov>]

> Sent: Tuesday, May 13, 2014 11:37 AM

> To: Fonger, Ronald

> Subject: RE: sewage spill reporting

>

> Hey, Ron.

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> b

>

> From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]

> Sent: Tuesday, May 13, 2014 11:14 AM

> To: Wurfel, Brad (DEQ)

> Subject: sewage spill reporting

>

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>

> Ron Fonger

> MLive Media Group

> Reporter

>

> mobile 810.347.9963

> email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>

> address 540 S. Saginaw St. #101, Flint MI 48502

>

>

>

Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, May 13, 2014 3:47 PM
To: Wurfel, Brad (DEQ)
Cc: McClellan, Michael (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: sewage spill reporting

Steve Busch or Mike Prysby. Steve is not in, but will answer his phone if he can.

From: Wurfel, Brad (DEQ)
 Sent: Tuesday, May 13, 2014 3:43 PM
 To: Shekter Smith, Liane (DEQ)
 Cc: McClellan, Michael (DEQ)
 Subject: FW: sewage spill reporting

Who can help Flint Journal?

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 Sent: Tuesday, May 13, 2014 3:04 PM
 To: Wurfel, Brad (DEQ)
 Subject: RE: sewage spill reporting

Hey Brad: Any word on my best contact? Sorry. We're getting hammered by rain again today and so I'm hoping to check today.

Thanks again,

Ron Fonger
 MLive Media Group
 Reporter

mobile 810.347.9963
 email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>
 address 540 S. Saginaw St. #101, Flint MI 48502

From: Wurfel, Brad (DEQ) [<mailto:WurfelB@michigan.gov>]
 Sent: Tuesday, May 13, 2014 11:37 AM
 To: Fonger, Ronald
 Subject: RE: sewage spill reporting

Hey, Ron.

I'll get you both. I'm not sure how fast the reporting gets put to the database.

b

From: Fonger, Ronald [<mailto:RFONGER1@mlive.com>]
 Sent: Tuesday, May 13, 2014 11:14 AM

To: Wurfel, Brad (DEQ)
Subject: sewage spill reporting

Hi Brad:

Is there a resource online that I can check for any reported sewage spills reported by local communities?

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With Flint drawing water from the river for drinking now, I'd just like to keep an eye on that and last night's heavy rains reminded me to check.

Hope all is well there, and thanks,

Ron Fonger
MLive Media Group
Reporter

mobile 810.347.9963

email rfonger1@mlive.com<<mailto:rfonger1@mlive.com>>

address 540 S. Saginaw St. #101, Flint MI 48502

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, April 06, 2015 4:31 PM
To: Shekter Smith, Liane (DEQ)
Cc: Richard Benzie P.E. (BENZIER@michigan.gov)
Subject: RE: SMT Paragraphs for April 6 meeting

I think your note should cover it at this point.

Here is some other info FYI.

- No movement from DCH/GCHD on Legionella to my knowledge
- The EM transition is anticipated to begin this month.
- The WTP is having issues with plant tap Bromate levels. The RAA won't be calculated until end of June, but the average to this point is hovering just above the MCL of 10 ppb.
- Mike just issued a construction permit for a replacement of 8400 feet of 24 inch transmission main (a multi-million dollar project) that should help with some distribution issues.
- The City's consultant is also preparing a construction permit application to revamp WTP filters with GAC.
- The PN for TTHM MCL violation went out last week, so we may see more calls, next samples are in May.
- The resident with high lead levels was found to have a lead service line connected to an older parallel main. The service line has been completely replaced.
- The City has been given info to prepare an LT2 sampling plan, due 7/1 with monitoring to start 10/1.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Monday, April 06, 2015 3:59 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Butler, Sonya (DEQ); Crooks, Jennifer (crooks.jennifer@epa.gov); Green, Kelly (DEQ)
Cc: Devereaux, Tracy Jo (DEQ)
Subject: RE: SMT Paragraphs for April 6 meeting

There were a number of questions this morning during our SMT meeting about what is new in Flint. I'm proposing to include the following paragraph in the SMT summary. Please let me know if you have concerns or think we need to add additional information.

ODWMA shared that we are still working with and following the situation in the city of Flint. It was reported that the city council voted to return to water supplied by DWSD. However, the emergency manager and the mayor indicated that they will be continuing to use the Flint River. DEQ staff continues to provide oversight to ensure that water provided by the city of Flint meets drinking water standards. As a result of elevated trihalomethane (TTHM) levels last summer, the city continues to exceed the locational running annual average for TTHMs at one sampling site. However, all samples this quarter were low. It appears that operational changes implemented by the plant are managing previous water quality concerns. On another note, the city has requested U.S. EPA provide principal forgiveness for past low-interest SRF (State Revolving Fund) loans and DWRF (Drinking Water Revolving Fund) loans. We are awaiting an official response from EPA.

Liane

From: Thelen, Mary Beth (DEQ)
Sent: Monday, April 06, 2015 10:56 AM
To: DEQ-EXE-MGMT-TEAM; DEQ-District-Coordiators
Cc: DEQ-EXE-MGMT-TEAM-Secretaries
Subject: SMT Paragraphs for April 6 meeting
Importance: High

Please send your SMT paragraph(s) to Carrie Barr and me by Tuesday noon of this week. If you didn't have anything to report but would like to include something, please feel free to send it to us.

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: Busch, Stephen (DEQ)
Sent: Friday, February 06, 2015 11:39 AM
To: Berndt, Jason (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: Source Wster assessment Flint River

Mike,

You may want to inquire why they don't have a copy of this record as it is a requirement. In addition, per the required CCR language they are supposed to make it available to their customers upon request.

We should also have a copy of this somewhere in the basic data files.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Berndt, Jason (DEQ)
Sent: Friday, February 06, 2015 11:35 AM
To: Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: RE: Source Wster assessment Flint River

See the attachment.

From: Prysby, Mike (DEQ)
Sent: Friday, February 06, 2015 11:04 AM
To: Berndt, Jason (DEQ)
Subject: Source Wster assessment Flint River

Jason,

Has a source water assessment been performed for the Flint River watershed...spec. for the Flint WTP intake? If so, the city of Flint would like to obtain a copy of source water assessment report.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 10, 2014 1:14 PM
To: London, Bob (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Bloemker, Jon (DEQ); Lachance, Amy (DEQ); Donaldson, Kristina (DEQ); Thomas, Chuck (DEQ)
Subject: RE: Stage 2 DBPR, Operational Evaluation Level Exceedances (OEL)
Attachments: CC-Flint-OEL.pdf

FYI. Attached is what we have prepared for our OEL situation. As we don't have 3 full quarters we had to modify the approach.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: London, Bob (DEQ)
Sent: Monday, September 08, 2014 10:01 AM
To: Benzie, Richard (DEQ); Philip, Kris (DEQ); Bloemker, Jon (DEQ); Lachance, Amy (DEQ); Busch, Stephen (DEQ); Donaldson, Kristina (DEQ); Thomas, Chuck (DEQ)
Subject: Stage 2 DBPR, Operational Evaluation Level Exceedances (OEL)

Saginaw Bay District has dealt with a few systems that have exceeded the OEL during their Stage 2 monitoring. I have been asked by Steve Busch to share a copy of the correspondence we sent. I have created a new folder named "OEL Exceedance Info" on the Lansing server under *Community Drinking Water Unit, Standard Documents and Forms, DDBP Rules*. In that folder are three documents, one related to Kochville Township and two related to Tittabawassee Township:

- 1) **KochvilleOELMeeting6-13** – Kochville Township exceeded the OEL last year. When a water system exceeds an OEL, they must (within 90 days) submit a report to us identifying possible causes and potential corrective measures. They must evaluate the following factors, if applicable: Source, Treatment, Distribution, and Storage. Kochville purchases water and does not have storage; therefore, only the Distribution category directly applies to them. When this occurs, we ask the wholesale supplier to provide some supplementary information. There does not appear to be a SDWA requirement that the water system meet with us to discuss an OEL exceedance – they can just proceed with the report if they wish; however, I offer to meet with each system that exceeds the OEL to explain what is expected of them, and to go through the EPA's guidance manual for completing an OEL report. Kochville Township wanted to have a meeting. After the meeting, I wrote the follow-up letter that I placed on the server. You are welcome to share it with your staff. Note – I have, on other occasions, provided the equivalent information to water systems via email rather than a formal letter such as Kochville's (since there does not appear to be a SDWA requirement that we notify them of the OEL).
- 2) **OELReport02470** – A copy of Tittabawassee Township's completed OEL report (except for one part that didn't scan correctly). I chose to include Tittabawassee's report because they purchase water but have storage and distribution facilities, so their report contained more information than Kochville's.
- 3) **OELReport02470Pt2** – The remainder of Tittabawassee's completed report.

Bob London
 Office of Drinking Water and Municipal Assistance

Saginaw Bay District Office
989-450-7834



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

September 10, 2014

Mr. Brent Wright
City of Flint Water Treatment Plant
4500 North Dort Highway
Flint, Michigan 48505

SUBJECT: Compliance Communication
Total Trihalomethane Operational Evaluation Requested

Under the Stage 2 Disinfectants and Disinfection Byproduct Rule, the City of Flint has been required to collect samples for the analysis of Total Trihalomethane (TTHM) and Haloacetic Acids (HAA5) at eight sites within the City's water distribution system. The City has completed two quarterly monitoring periods since changing its source water to the Flint River effective April 25, 2014.

Normally an Operational Evaluation Level (OEL) would be calculated in accordance with the Michigan Safe Drinking Water Act, Public Act 399, 1976, as amended, Administrative Rule 7196 (R 325.107196), each quarter once three quarters of results have been obtained and compared with the respective maximum contaminant level (MCL) for TTHM. Normally the calculation would be made as follows:

$$(2 \times \text{current quarter} + \text{sum of 2 previous quarters}) \text{ divided by } 4$$

As the City of Flint currently has only two quarters of data, the calculation has been modified as follows:

$$(2 \times \text{current quarter} + \text{previous quarter}) \text{ divided by } 4$$

The resulting OEL for each site is listed in the table below. All results are in parts per billion (ppb):

	5/21/14	TTHM 8/21/14	Mod. OEL		5/21/14	HAA5 8/21/14	Mod. OEL
DBP1 McDonalds 3719 Davison	162.4	145.3	113		64	43	38
DBP2 Liquor Palace 822 S. Dort Highway	111.6	112	84		52	40	33
DBP3 North Flint Auto 3302 S. Dort Highway	96.5	127.2	88		48	31	28
DBP4 University Market 3606 Corunna	106.4	181.3	117		55	24	26
DBP5 B&P Gas Station 2501 Flushing	75.1	196.2	117		38	17	18
DBP6 Salem Housing 3216 MLK Boulevard	82.2	112.4	77		41	25	23
DBP7 Kroger 5018 Clio Road	88.2	144.4	94		49	30	27
DBP8 Taco Bell 6204 N. Saginaw	79.2	118.3	79		50	37	31

Mr. Brent Wright

2

September 10, 2014

As shown in the table above, even with this less restrictive modified method, six of the City's eight sites already exceed the OEL limit of 80 ppb for TTHM. In addition, the City's two other sites are both more than 95% of the TTHM OEL limit.

The MCL for TTHM and HAA5 is based on a locational running annual average for each site, essentially the average at each site over the four previous quarterly monitoring periods. However, with TTHM levels of this magnitude, it is likely the MCL will be exceeded for at least one of these eight sites from just three quarters of monitoring results. For TTHM, four quarters at the MCL of 80 ppb (4 x 80) would provide 320 ppb allowable. As an example, site DBP1 through just two quarterly monitoring periods has a total of 307 ppb (162+145), leaving only 13 ppb over two more quarterly monitoring periods to maintain compliance with the MCL.

Therefore, this office is requesting the City of Flint complete an Operational Evaluation in accordance with Administrative Rule 719I (R325.10179I). The Operational Evaluation Report shall be submitted to this office no later than November 28, 2014. The report shall not be limited in scope and shall include the following:

Examination of Treatment Operational Practices

- Changes in source water quality
- Treatment changes
- Storage tank operations
- Excess storage capacity
- Treatment problems that contribute to TTHM formation

Examination of Distribution Operational Practices

- Storage tank operations
- Excess storage capacity
- Distribution system flushing

The report shall also include steps the City could consider to minimize future exceedances.

Additional guidance on completing the Operational Evaluation Report, including a number of forms that can be used to gather and evaluate water system information is provided in the United States Environmental Protection Agency's (U.S. EPA) Operational Evaluation Guidance Manual. This document is available on the U.S. EPA's website at the following link:

http://www.epa.gov/ogwdw/disinfection/stage2/pdfs/draft_guide_stage2_operationalevaluation.pdf

Be advised, failure to submit an Operational Evaluation Report by this deadline is a reporting violation subject to Tier 3 Public Notification.

The OEL is an indicator of operational performance. The water system must take proactive steps to be able to comply with the MCL's for TTHM and HAA5. While it is recognized that removal of Total Organic Carbon disinfection byproduct precursors as part of the treatment process has performed above minimum removal requirements under the treatment technique, around 4 parts per million of organic carbon are still present in the treated water and may be leading to additional TTHM formation in the City's distribution system.

While health effects associated with disinfection byproducts contaminants are based on chronic exposure, the City has available alternatives that must be considered to achieve compliance with this drinking water public health standard.

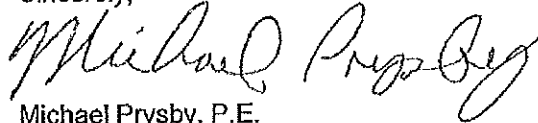
Mr. Brent Wright

3

September 10, 2014

If you have any questions regarding this information, please contact me at the number below.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Prysby".

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

cc: Mr. Darnell Early, City of Flint
Mr. Daugherty Johnson III, City of Flint
Mr. Howard Croft, City of Flint
Mr. Robert Blonsik, City of Flint
Ms. Liane Shekter Smith, P.E., DEQ
Mr. Richard Benzie, P.E., DEQ
Mr. Stephen Busch, P.E., DEQ
Genesee Co. Health Dept.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, February 23, 2015 10:41 AM
To: Wurfel, Brad (DEQ); Prysby, Mike (DEQ)
Subject: RE: Steve Carmody interview. Can you do Friday?

Brad,

Mike and I are around today if you want to discuss this.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Wurfel, Brad (DEQ)
Sent: Friday, February 20, 2015 11:05 AM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: FW: Steve Carmody interview. Can you do Friday?

Hey, all. Michigan Radio's Steve Carmody is looking to do a piece with us next Tuesday on Flint's water. The angle is looking at the Flint River as a source. I've been parsing this out with Mike Alexander in WRD – looking at the waters, what they flow through upstream of the intake, what that means for the quality of the source. Carmody also wants to look at it comparatively. As in, what other municipalities around the state are using rivers? I'm aware of Manistique, Blissfield, Alma (?), and ... ??? What is the quality of those sources, comparatively? I know, tough story to do. I need some counsel from Drinking water people, collaborating with WRD counterparts, to get us prepped. And I think we'll need one of you three to be part of this interview on Tuesday. Let me know when the drawing of straws is over. Thanks! ☺
 b

From: Alexander, Michael (DEQ)
Sent: Friday, February 20, 2015 10:56 AM
To: Wurfel, Brad (DEQ)
Subject: RE: Steve Carmody interview. Can you do Friday?

We are all set for Tuesday afternoon at 3 PM. Let me know if that time doesn't work and where should we have it? I can get a conference room if you want me to.

Michael Alexander, WRD
 Department of Environmental Quality
Phone 517-449-7971
alexanderm2@michigan.gov

From: Wurfel, Brad (DEQ)
Sent: Friday, February 20, 2015 10:10 AM

To: Alexander, Michael (DEQ)

Subject: RE: Steve Carmody interview. Can you do Friday?

Hmmmm. Not what he imparted when I talked to him, but I get what you're saying. Drinking water intake, or drinking water source? Blissfield, Manistique and (I think) Alma use surface water as sources. Is that what he's looking for? Comparative water quality discussion?

From: Alexander, Michael (DEQ)

Sent: Friday, February 20, 2015 9:54 AM

To: Wurfel, Brad (DEQ)

Subject: RE: Steve Carmody interview. Can you do Friday?

Just got off the phone with Steve Carmody. He wants to know how the Flint River water quality is as it relates to a drinking water intake, which is not necessarily the type of water quality assessment we conduct in WRD. We can certainly be part of the discussion if the topic of typical types of inputs to the Flint compared to other Michigan watersheds, but we wouldn't be able to make any statements as to how it compares to other drinking water intakes around MI. I would think someone from Office of Drinking Water and Radiological Protection would be better to answer that question. Thoughts?

Michael Alexander, WRD
Department of Environmental Quality
Phone 517-449-7971
alexanderm2@michigan.gov

From: Wurfel, Brad (DEQ)

Sent: Friday, February 20, 2015 8:55 AM

To: Alexander, Michael (DEQ)

Subject: RE: Steve Carmody interview. Can you do Friday?

You in today? Call my cell or tell me where you're sitting and I'll come see you.

b

From: Alexander, Michael (DEQ)

Sent: Friday, February 20, 2015 8:17 AM

To: Wurfel, Brad (DEQ)

Subject: RE: Steve Carmody interview. Can you do Friday?

Hi Brad,

Sometime later this afternoon would be best. It will give us a little more time to prep. I was home with a sick child and the rest of WRD was in training yesterday. Can you please verify for me that he wants to talk about water quality for Flint River, not drinking water treatment? Are there any particular items other than Flint's treatment system you want us to stay away from?

Michael Alexander, WRD
Department of Environmental Quality
Phone 517-449-7971
alexanderm2@michigan.gov

From: Wurfel, Brad (DEQ)
Sent: Thursday, February 19, 2015 2:55 PM
To: Alexander, Michael (DEQ)
Subject: Steve Carmody interview. Can you do Friday?

Hey, Mike. Steve wants to do the interview in person. He can be here Friday, optimally any time between 10 a.m. and 4 p.m.

Can this work for you (and whomever you want to join the conversation)?

b

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, August 08, 2014 4:02 PM
To: Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: RE: Steven Bush comment (Metro Times)

Sorry Brad. I have been tied up.

Mike is responding now.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Friday, August 08, 2014 3:58 PM
To: Wurfel, Brad (DEQ)
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: RE: Steven Bush comment (Metro Times)

Mike Prysby

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Wurfel, Brad (DEQ)
Sent: Friday, August 08, 2014 3:26 PM
To: Shekter Smith, Liane (DEQ)
Subject: FW: Steven Bush comment (Metro Times)

Hi. Who can talk Flint water if Steve is out?

From: Ryan Felton [mailto:rfelton@metrotimes.com]
Sent: Friday, August 08, 2014 3:17 PM
To: Wurfel, Brad (DEQ)
Subject: Steven Bush comment (Metro Times)

Hi Brad,

I reached out to Steven, but couldn't get in touch with him. I have an appointment at 4 p.m., so I'll be out of commission afterwards. If he can be reached, the reports I was referring to can be found here: http://www.mlive.com/news/flint/index.ssf/2014/07/flint_starting_to_flush_out_di.html

If possible, I'd be happy to receive comments by email. I'm looking to see if there's any understanding as to what caused the discoloration.

As always, I appreciate your help.

Thanks,

Ryan Felton
Investigative Reporter, Metro Times
C: 734-353-2221
O: 313-961-4060 EXT. 8019
rfelton@metrotimes.com

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 23, 2015 9:31 AM
To: Wurfel, Brad (DEQ)
Cc: prysbym@michigan.gov
Subject: RE: Talked with Ambrose.
Attachments: City of Flint VN - MCL TTHM 12_16_14.pdf; TTHM - OEL letter.pdf

Brad,

Under the Act 399 Rules, the City is required to conduct an Operational Evaluation and make adjustments to their system to reduce TTHM levels. They have 90 days from the violation to complete the report (due date is March 1). This was outlined in the violation notice (attached).

When results from August continued to show high levels of TTHM and the likelihood that a violation of the standard would occur in the future, the City was asked to proactively complete an Operational Evaluation at that time to try and reduce levels (see attached September OEL compliance communication). The City did complete the evaluation, and this, in part, is why levels from November showed such a significant reduction. A copy of this Operational Evaluation can be provided.

It should also be noted that the Operational Evaluation from one monitoring period to another are separate required reports. An Operational Evaluation for a subsequent period can utilize information from a previous report, but can't be a resubmittal of the same report. It must take into account the most current data.

The City has contracted with LAN Engineering to conduct the Operational Evaluations and produce the reports.

It is the City's responsibility to evaluate their system and provide solutions.

Also keep in mind that the long term solution will continue to be connection to KWA. Such long term solutions have been acceptable for other communities to address this type of standard violation.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

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



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

December 16, 2014

Mr. Brent Wright, Operation Supervisor
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, MI 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice – Maximum Contaminant Level for Total Trihalomethanes
Operational Evaluation – Total Trihalomethanes
4th Quarter 2014 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the City of Flint is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels (MCL) for disinfection byproducts*, of the 1979 Administrative Code.

In accordance with R.325.10610, *MCLs for disinfection byproducts*, of the 1979 Administrative Code, the MCL for disinfection byproduct total trihalomethanes (TTHM) is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City of Flint's highest TTHM locational running annual average (LRAA), based on the last three quarters, ending November 30, 2014, is 0.099 mg/l which exceeds the standard, and that two of the eight sample site locations exceed the standard of 0.080 mg/L.

Further, in accordance with R325.10719I, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, when an operational evaluation level (OEL) at a monitoring location for TTHM exceeds 0.080 mg/L, a supply shall conduct an operational evaluation and submit a written report of the evaluation to the department not later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. As listed in the table below, our records show that TTHM operational evaluation levels for the City of Flint exceed 0.080 mg/L at four of the City's eight sample site locations.

TTHM Results (mg/L)	5/21/14	8/21/14	11/20/14	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.162	0.145	0.059	0.092	0.106
DBP2 Liquor Palace 3302 S. Dort Highway	0.112	0.127	0.033	0.068	0.076
DBP3 North Flint Auto 6204 N. Saginaw St.	0.097	0.118	0.041	0.064	0.074
DBP4 University Market 2501 Flushing Road	0.106	0.196	0.094	0.099	0.122
DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.074	0.082
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.088	0.144	0.054	0.072	0.085
DBP7 Salem Housing 3216 MLK Boulevard	0.082	0.112	0.050	0.061	0.074
DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.056	0.065

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on December 1, 2014, and will continue until TTHM LRAA is below the MCL at all sample sites.

We acknowledge and appreciate the city's cooperation with our recommendation to preemptively conduct an Operational Evaluation following the City's second quarterly round of monitoring in August. That Operational Evaluation report has identified possible causes and corrective measures for the elevated TTHM levels which we encourage the City continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported in the most recent quarter, and suggest the City may be able to achieve compliance with the TTHM standard.

Our office is continuing to review the Operational Evaluation report that was submitted on December 1, 2014, and will provide the City and their consultant comments as needed to help address this MCL violation.

Water systems that exceed the OEL must complete and submit an Operational Evaluation in accordance with Administrative Rule 719I (R325.10719I) within 90 days of being notified of the violation. **An updated Operational Evaluation report, which incorporates the most recent sample results, must now be completed and received by our office by no later than March 1, 2015.**

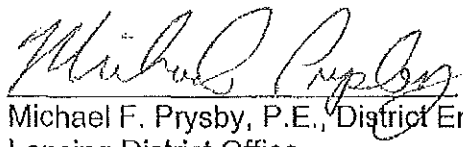
If you have any other factual information you would like us to consider regarding the violation identified in this Violation Notice (VN), please provide them in a written response by January 16, 2015.

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery and by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN

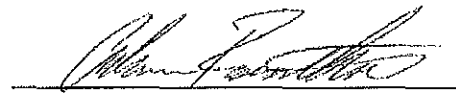
which contains the minimum required language. The City is encouraged to include additional information regarding its response to this violation. **Please notify your consumers by January 10, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the public notice.** This violation must also be included in your 2014 Consumer Confidence Report (CCR), due by July 1, 2015. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below.

Sincerely,



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



Adam Rosenthal, EQA
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-284-6644

mfp/ar/jlr
Enclosure

cc: Mr. Darnell Early, Emergency Manager, City of Flint
Mr. Daughtry Johnson, City of Flint
Mr. Howard Croft, City of Flint
Mr. Robert Bincsik, City of Flint
Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Genesee County Health Department
Ms. Liane Shekter Smith, P.E., DEQ
Mr. Richard Benzie, P.E., DEQ
Mr. Stephen Busch, P.E., DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (May 21, August 21, and November 20 of 2014). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the Maximum Contaminant Level (MCL). The standard for TTHMs is 80 µg/L. The location reporting the highest TTHM level was 99 µg/L; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem by 2015.

For more information, please contact Mr. Brent Wright at 517-787-6537 or the Flint Water Plant at 4500 North Dort Highway, Flint, MI 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

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

Signature

Title

Date Distributed

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



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

September 10, 2014

Mr. Brent Wright
City of Flint Water Treatment Plant
4500 North Dort Highway
Flint, Michigan 48505

SUBJECT: Compliance Communication
Total Trihalomethane Operational Evaluation Requested

Under the Stage 2 Disinfectants and Disinfection Byproduct Rule, the City of Flint has been required to collect samples for the analysis of Total Trihalomethane (TTHM) and Haloacetic Acids (HAA5) at eight sites within the City's water distribution system. The City has completed two quarterly monitoring periods since changing its source water to the Flint River effective April 25, 2014.

Normally an Operational Evaluation Level (OEL) would be calculated in accordance with the Michigan Safe Drinking Water Act, Public Act 399, 1976, as amended, Administrative Rule 7196 (R 325.107196), each quarter once three quarters of results have been obtained and compared with the respective maximum contaminant level (MCL) for TTHM. Normally the calculation would be made as follows:

$(2 \times \text{current quarter} + \text{sum of 2 previous quarters}) \text{ divided by } 4$

As the City of Flint currently has only two quarters of data, the calculation has been modified as follows:

$(2 \times \text{current quarter} + \text{previous quarter}) \text{ divided by } 4$

The resulting OEL for each site is listed in the table below. All results are in parts per billion (ppb):

		TTHM			HAA5		
	5/21/14	8/21/14	Mod. OEL		5/21/14	8/21/14	Mod. OEL
DBP1 McDonalds 3719 Davison	162.4	145.3	113		64	43	38
DBP2 Liquor Palace 822 S. Dort Highway	111.6	112	84		52	40	33
DBP3 North Flint Auto 3302 S. Dort Highway	96.5	127.2	88		48	31	28
DBP4 University Market 3606 Corunna	106.4	181.3	117		55	24	26
DBP5 B&P Gas Station 2501 Flushing	75.1	196.2	117		38	17	18
DBP6 Salem Housing 3216 MLK Boulevard	82.2	112.4	77		41	25	23
DBP7 Kroger 5018 Clio Road	88.2	144.4	94		49	30	27
DBP8 Taco Bell 6204 N. Saginaw	79.2	118.3	79		50	37	31

Mr. Brent Wright

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September 10, 2014

As shown in the table above, even with this less restrictive modified method, six of the City's eight sites already exceed the OEL limit of 80 ppb for TTHM. In addition, the City's two other sites are both more than 95% of the TTHM OEL limit.

The MCL for TTHM and HAA5 is based on a locational running annual average for each site, essentially the average at each site over the four previous quarterly monitoring periods. However, with TTHM levels of this magnitude, it is likely the MCL will be exceeded for at least one of these eight sites from just three quarters of monitoring results. For TTHM, four quarters at the MCL of 80 ppb (4 x 80) would provide 320 ppb allowable. As an example, site DBP1 through just two quarterly monitoring periods has a total of 307 ppb (162+145), leaving only 13 ppb over two more quarterly monitoring periods to maintain compliance with the MCL.

Therefore, this office is requesting the City of Flint complete an Operational Evaluation in accordance with Administrative Rule 719I (R325.10179I). The Operational Evaluation Report shall be submitted to this office no later than November 28, 2014. The report shall not be limited in scope and shall include the following:

Examination of Treatment Operational Practices

- Changes in source water quality
- Treatment changes
- Storage tank operations
- Excess storage capacity
- Treatment problems that contribute to TTHM formation

Examination of Distribution Operational Practices

- Storage tank operations
- Excess storage capacity
- Distribution system flushing

The report shall also include steps the City could consider to minimize future exceedances.

Additional guidance on completing the Operational Evaluation Report, including a number of forms that can be used to gather and evaluate water system information is provided in the United States Environmental Protection Agency's (U.S. EPA) Operational Evaluation Guidance Manual. This document is available on the U.S. EPA's website at the following link:

http://www.epa.gov/ogwdw/disinfection/stage2/pdfs/draft_guide_stage2_operationalevaluation.pdf

Be advised, failure to submit an Operational Evaluation Report by this deadline is a reporting violation subject to Tier 3 Public Notification.

The OEL is an indicator of operational performance. The water system must take proactive steps to be able to comply with the MCL's for TTHM and HAA5. While it is recognized that removal of Total Organic Carbon disinfection byproduct precursors as part of the treatment process has performed above minimum removal requirements under the treatment technique, around 4 parts per million of organic carbon are still present in the treated water and may be leading to additional TTHM formation in the City's distribution system.

While health effects associated with disinfection byproducts contaminants are based on chronic exposure, the City has available alternatives that must be considered to achieve compliance with this drinking water public health standard.

Mr. Brent Wright

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September 10, 2014

If you have any questions regarding this information, please contact me at the number below.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Prysby".

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

cc: Mr. Darnell Early, City of Flint
Mr. Daugherty Johnson III, City of Flint
Mr. Howard Croft, City of Flint
Mr. Robert Bincsik, City of Flint
Ms. Liane Shekler Smith, P.E., DEQ
Mr. Richard Benzie, P.E., DEQ
Mr. Stephen Busch, P.E., DEQ
Genesee Co. Health Dept.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 01, 2015 8:31 PM
To: Wyant, Dan (DEQ); Wurfel, Brad (DEQ); Tommasulo, Karen (DEQ); Pallone, Maggie (DEQ)
Subject: RE: talking points
Attachments: City of Flint PbCu15 8_17_15.pdf

See the second paragraph on page 2 of the attached for the technical definition. Since the WTP level was Non-detect, in this situation saying the 90th percentile must be less than 5 ppb I believe is correct.

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: Wyant, Dan (DEQ)
Sent: Thursday, October 01, 2015 7:51 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Tommasulo, Karen (DEQ); Pallone, Maggie (DEQ)
Subject: Fwd: talking points

Brad/Karen. Please add to my talking points.

Sent from my iPhone

Begin forwarded message:

From: "Hedman, Susan" <hedman.susan@epa.gov>
Date: October 1, 2015 at 7:26:59 PM EDT
To: "Wyant, Dan (DEQ)" <WyantD@michigan.gov>
Subject: RE: talking points

Further to our conversation, please note that lead and copper monitoring is used to determine:

- 1) Whether corrosion control is optimized. Under 141.81(b)(3), a water system is deemed to have optimum corrosion control if it submits results of tap water monitoring that demonstrates for 2 consecutive six-month periods that the 90th percentile level is below 5 ug/L (ppb). Because Flint exceeded this level, the City is required to implement corrosion control – as noted in MDEQ's August 17th letter to the City of Flint which states: "Since the City did not meet these criteria in both the July–December 2014, and January–June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment"
- 2) Whether the lead action level (15ug/L) has been exceeded. Under 141.84(a), systems that fail to meet the lead action level in tap samples after installing corrosion control treatment must replace lead service lines – 7% of the lead service lines in its distribution system.

From: Wyant, Dan (DEQ) [<mailto:WyantD@michigan.gov>]
Sent: Thursday, October 01, 2015 5:02 PM
To: Hedman, Susan
Subject: Fwd: talking points

Talking points. I will make the adjustment you and I talked about. Thanks for your help.

Sent from my iPhone

Begin forwarded message:

From: "Tommasulo, Karen (DEQ)" <TommasuloK@michigan.gov>
Date: October 1, 2015 at 4:27:53 PM EDT
To: "Pallone, Maggie (DEQ)" <PalloneM@michigan.gov>, "Minicuci, Angela (DHHS)" <MinicuciA@michigan.gov>, "Eisner, Jennifer (DHHS)" <EisnerJ@michigan.gov>, "Hertel, Elizabeth (DHHS)" <HertelE@michigan.gov>, "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>, "Wurfel, Sara (GOV)" <Wurfels@michigan.gov>, "Murray, David (GOV)" <MurrayD1@michigan.gov>, "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov>, "Wyant, Dan (DEQ)" <WyantD@michigan.gov>, "Paciorek, Josh (GOV)" <Paciorekj@michigan.gov>, "Lasher, GERALYN (DHHS)" <lasherg@michigan.gov>
Subject: talking points

Here's the talking points we've been working from. Feel free to add DHHS' info.

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



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

August 17, 2015

Mr. Brent Wright
City of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

SUBJECT: Flint, City of WSSN: 02310
Lead and Copper Monitoring of Drinking Water Taps

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), received your report for the monitoring period January 1, 2015, through June 30, 2015.

Action Levels	Results this monitoring period			
	90th Percentile	# of Samples Above Action Level	# of Samples Required	# of Samples Collected
Lead 15 parts per billion (ppb)	11 ppb	6	60	69
Copper 1.3 parts per million (ppm)	0.16 ppm	0	60	69

Ninety percent or more of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). These results must be reported on your 2015 Consumer Confidence Report (CCR) due to our office, your customers, and the local health department, by July 1, 2016. Also include the following statement in the CCR, regardless of the lead and copper levels:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.water.epa.gov/drink/info/lead>.

Mr. Brent Wright

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August 17, 2015

Recent changes to the Lead and Copper Rule (LCR) require the water supply to provide individual lead tap results to people who receive water from sites that were sampled, even if lead was not detected, within 30 days of learning of results. You must also send us a certification that you met all the delivery requirements along with a sample copy of your customer notice by three months after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice of Lead Result Certificate* in Microsoft Word or PDF format, visit <http://www.michigan.gov/deq>. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms under the Manuals, Forms and Brochures heading. Water supplies that fail to distribute the Consumer Notice of Lead Results must include the following statement in their CCR, "During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule."

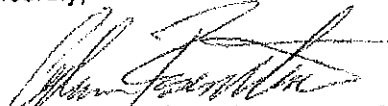
While the City's LCR compliance monitoring has continued to meet action level requirements, the LCR also requires all large systems (those serving over 50,000 people) to optimize corrosion control regardless of their 90th percentile lead concentration. One way to demonstrate fully optimized corrosion control treatment is through two consecutive six month rounds of LCR compliance monitoring in which the difference between the 90th percentile level and the highest source water lead concentration is less than the Practical Quantitative Level for lead (0.005 milligrams per liter). Since the City did not meet these criteria in both the July – December 2014, and January – June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment within six months in accordance with requirements under Act 399, Administrative Rule 604f (R 325.10604f). **This recommendation must be provided to our office as soon as possible, but no later than January 1, 2016.**

However, given the past use of phosphate treatment by the Detroit Water and Sewerage Department (DWSD) to fully optimize corrosion control treatment when the City was a wholesale customer of DWSD, the ODWMA recommends the City select this as its recommended treatment option, and begin implementation as soon as possible to address ongoing concerns by customers regarding lead levels within their premise plumbing systems. Under the second step of this Rule, the DEQ can specify optimal corrosion control treatment.

Our office will inform you when monitoring needs to be conducted as part of the optimization of the implemented corrosion control treatment. Customer requested samples for lead shall continue to be collected and analyzed. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria.

Please contact me at 517-284-6644 or rosenthala@michigan.gov at your earliest convenience to discuss how the City will be complying with the above requirements.

Sincerely,



Adam Rosenthal, Environmental Quality Analyst
Lansing District Office
Office of Drinking Water and Municipal Assistance

cc: Mr. Michael Glasgow, City of Flint

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 16, 2015 12:19 PM
To: Prysby, Mike (DEQ)
Subject: RE: tally of Flint calls

Ok. I will call her now.

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, January 16, 2015 12:18 PM
To: Busch, Stephen (DEQ)
Subject: Re: tally of Flint calls

Did not get a chance yesterday to call her back

Sent from my iPhone

On Jan 16, 2015, at 12:15 PM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

Mike,

The tally sheet indicated you contacted Ms. Blasdeel but were cut off and going to call her back on Thursday. Did you ever get back with her? She has called and left a message.

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: Wednesday, January 14, 2015 3:58 PM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ); Rennaker, Joanne (DEQ)
Subject: tally of Flint calls

See updated list....

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 16, 2015 12:16 PM
To: Prysby, Mike (DEQ)
Subject: RE: tally of Flint calls

Mike,

The tally sheet indicated you contacted Ms. Blasdeel but were cut off and going to call her back on Thursday. Did you ever get back with her? She has called and left a message.

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: Wednesday, January 14, 2015 3:58 PM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ); Rennaker, Joanne (DEQ)
Subject: tally of Flint calls

See updated list....

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 08, 2015 2:19 PM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Ticket #23002-490657 Response Sent

I got this from chuck Bennett late yesterday. We will email the ccr for the period in question and offer contact for further assistance as needed

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 May 8, 2015, at 2:15 PM, Benzie, Richard (DEQ) <BENZIER@michigan.gov> wrote:

I don't know if you have had any contact with this person and I am unsure that a response is necessary, as it was forwarded as an FYI.

It is difficult to determine what is being requested, but it looks like a customer of Flint asked EPA for drinking water quality and when EPA told her to contact her water system, she tried to get the information from the state but contacted WRD. It also sounds like she questions relying upon the local supplier to report monitoring results.

You could contact her to see if we can be of assistance or send her a message indicating that we (you) are the source of drinking water information if she doesn't want to get it from the city.

From: Devereaux, Tracy Jo (DEQ)
Sent: Friday, May 08, 2015 8:22 AM
To: Philip, Kris (DEQ); Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

fyi

Thanks,

Tracy Jo

From: Smith, Laura (DEQ)
Sent: Thursday, May 07, 2015 5:39 PM
To: Devereaux, Tracy Jo (DEQ)
Cc: Hill, Charles (DEQ); Selden, Barry (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

Please forward to the appropriate staff in the Office of Drinking Water and Municipal Assistance.

Thanks,

Laura

From: Sheila Bailey-Waddell [<mailto:sheila.bw@hotmail.com>]
Sent: Thursday, May 07, 2015 5:17 PM
To: Hill, Charles (DEQ); Selden, Barry (DEQ); Smith, Laura (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

From: sheila.bw@hotmail.com
 To: safewater_support@supportportal.com; bartholi@msu.edu; info@cityofflint.com;
senator@stabenow.senate.gov; bennettc4@michigan.gov
 Subject: RE: Ticket #23002-490657 Response Sent
 Date: Thu, 7 May 2015 16:41:38 -0400

Hello,

It is unfortunate that you don't track local drinking water information. So in essence your tracking efforts are limited to the auspices of NRCS Water Division only for the conservation of farming and other natural (non-human) resources. What if, by chance, the local water source is not being accurate in their reporting of safe drinking water and source supply?

Thank you,
 Sheila

<http://mi.water.usgs.gov/pubs/MISC/RTSMI-0121/pdf/WTO222b.pdf>

From: safewater_support@supportportal.com
 To: sheila.bw@hotmail.com
 Date: Thu, 20 Feb 2014 08:25:04 -0500
 Subject: Ticket #23002-490657 Response Sent

The Safe Drinking Water Hotline has responded to your question(s).

Hello,

Thank you for contacting the Safe Drinking Water Hotline. You had some concerns regarding your local water quality. Please review the information included below:

The Safe Drinking Water Hotline does not track local drinking water information. The best source of specific information about your drinking water is your water supplier. Water suppliers that serve the same people year-round are required to send their customers an annual water quality report called a Consumer Confidence Report (CCR). The CCR describes any contaminants that have been detected in your drinking water, how these detection levels compare to health-based national drinking water standards, and the source of your drinking water. To obtain a copy of your CCR, you may search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>. If your water system's report is not online, you should contact your local water provider to obtain

a copy of this report. To find the telephone number for your local water provider, please check your water utility bill, your local phone book, or search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

If your city has a population in excess of 100,000, they are obligated to publish the reports online. Many local governments have sites where reports can be posted, even if a system itself does not have a site. EPA will make links from its Web site (<http://water.epa.gov/drink/index.cfm>) to all the reports of which it is aware (Preparing Your Drinking Water Consumer Confidence Report: Revised Guidance for Community Water Suppliers), EPA816-R-05-002).

If your city has not made the 2012 report available, please contact your state water program. They are the regulatory and enforcement agency for all public water systems in your state. The state water program should help you find the data. You can find contact information to your state by following the link below:

<http://water.epa.gov/drink/local/index.cfm>. <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

EPA's Safe Drinking Water Hotline answers questions about the regulations and programs developed in response to the Safe Drinking Water Act. The Safe Drinking Water Hotline provides information, including access to publications, on EPA's drinking water standards, source water protection, and underground injection wells. The Hotline also provides referrals to state public water supply supervision programs, state underground injection control programs, and state laboratory certification programs.

If you have additional questions, you may contact the Safe Drinking Water Hotline at the following number:

(800) 426-4791 -- Toll Free

For more information, please visit EPA's Office of Ground Water and Drinking Water Internet web site:

<http://water.epa.gov/drink/index.cfm>.

Thank you for your interest in safe drinking water.

Ticket Information:

Ticket #: 23002-490657

Date Created: 2/19/2014 02:18 PM EST

Subject: Water Quality Assessment

Question: I live in Flint Michigan. What I have learned is Michigan appears to have 2012 and 2014 reports but neither are being reported by EPA. On this side of reporting for this data, we have no information as to the status of the 2012 or 2014 data. There are automotive plants in my area and the water quality is suspected to be less than satisfactory for residents.

To update or check the status of this Ticket:

1. Go to: <http://safewater.supportportal.com/link/portal/23002/23015/Ticket/490657>
2. Log in, and you will be automatically taken to the Ticket page.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 08, 2015 9:44 AM
To: Bennett, Charles (DEQ)
Subject: RE: Ticket #23002-490657 Response Sent

Thanks for forwarding this Chuck. We'll respond to her.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Bennett, Charles (DEQ)
Sent: Thursday, May 07, 2015 4:50 PM
To: Busch, Stephen (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

Steve, I don't know if this is a legit email or not, but if it is, you should've been cc'd rather than me, it seems...

chuck

Charles Bennett, PE
 DEQ Water Resources Division
 Lansing District Office
BennettC4@michigan.gov
 ph 517-284-6659; fax 517-241-3571

From: Sheila Bailey-Waddell [<mailto:sheila.bw@hotmail.com>]
Sent: Thursday, May 07, 2015 4:42 PM
To: EPA Safe Drinking Water Hotline; bartholi@msu.edu; info@cityofflint.com; Senator Debbie Stabenow; Bennett, Charles (DEQ)
Subject: RE: Ticket #23002-490657 Response Sent

Hello,

It is unfortunate that you don't track local drinking water information. So in essence your tracking efforts are limited to the auspices of NRCS Water Division only for the conservation of farming and other natural (non-human) resources. What if, by chance, the local water source is not being accurate in their reporting of safe drinking water and source supply?

Thank you,
 Sheila

<http://mi.water.usgs.gov/pubs/MISC/RTSMI-0121/pdf/WTO222b.pdf>

From: safewater_support@supportportal.com
 To: sheila.bw@hotmail.com
 Date: Thu, 20 Feb 2014 08:25:04 -0500
 Subject: Ticket #23002-490657 Response Sent

The Safe Drinking Water Hotline has responded to your question(s).

Hello,

Thank you for contacting the Safe Drinking Water Hotline. You had some concerns regarding your local water quality. Please review the information included below:

The Safe Drinking Water Hotline does not track local drinking water information. The best source of specific information about your drinking water is your water supplier. Water suppliers that serve the same people year-round are required to send their customers an annual water quality report called a Consumer Confidence Report (CCR). The CCR describes any contaminants that have been detected in your drinking water, how these detection levels compare to health-based national drinking water standards, and the source of your drinking water. To obtain a copy of your CCR, you may search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>. If your water system's report is not online, you should contact your local water provider to obtain a copy of this report. To find the telephone number for your local water provider, please check your water utility bill, your local phone book, or search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

If your city has a population in excess of 100,000, they are obligated to publish the reports online. Many local governments have sites where reports can be posted, even if a system itself does not have a site. EPA will make links from its Web site (<http://water.epa.gov/drink/index.cfm>) to all the reports of which it is aware (Preparing Your Drinking Water Consumer Confidence Report: Revised Guidance for Community Water Suppliers), EPA816-R-05-002).

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<http://water.epa.gov/drink/local/index.cfm>. <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

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For more information, please visit EPA's Office of Ground Water and Drinking Water Internet web site:

<http://water.epa.gov/drink/index.cfm>.

Thank you for your interest in safe drinking water.

Ticket Information:

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Date Created: 2/19/2014 02:18 PM EST

Subject: Water Quality Assessment

Question: I live in Flint Michigan. What I have learned is Michigan appears to have 2012 and 2014 reports but neither are being reported by EPA. On this side of reporting for this data, we have no information as to the status of the 2012 or 2014 data. There are automotive plants in my area and the water quality is suspected to be less than satisfactory for residents.

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1. Go to: <http://safewater.supportportal.com/link/portal/23002/23015/Ticket/490657>
2. Log in, and you will be automatically taken to the Ticket page.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, August 27, 2015 8:50 AM
To: Ostrander, Debbie (DEQ)
Subject: RE: TTHM removal by aeration

Clearwell aeration was one of the options the City considered. The improvements they made in distribution operations and tweaks at the WTP have gone a long way. The last sample over 80 ppb was 9 months ago. They just finished replacing filter media with GAC instead of anthracite and this has had an even bigger impact removing precursors.

Waiting for sample results from the lab for August TTHM's but to give you an idea of the GAC impact, TOC removal in August was 8.5 ppm raw to 1.1 ppm treated. Prior they were removing around 40-60 %, now 87%. We expect compliance will be achieved this month.

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

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

From: Ostrander, Debbie (DEQ)
Sent: Wednesday, August 26, 2015 4:45 PM
To: Busch, Stephen (DEQ)
Subject: TTHM removal by aeration

Hey Steve. I just listened to a presentation on post treatment aeration techniques to remove TTHMs. It made me wonder about Flint. Has that been discussed at all for them? The professor talked about aeration in storage tanks and in in-line diffused aeration. He ended by saying they are looking for a small scale field study, which this probably wouldn't be, but if you're interested at all I can get you the slides and the presenter's contact info.

Debbie

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, December 29, 2014 11:23 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ); Benzie, Richard (DEQ)
Subject: Re: TTHM Violation Notification

From what I see it says both section i and ii unless otherwise directed by the department in writing. I'm not sure if the dwac has some write up on this in their database. Ccrs could be different since it is generally used for tier iii notices. They may not be able to include in their bills by the 30 day deadline but could put in newspaper and web followed by the bill later. They will need to reissue every 3 months for a while anyway so they should prepare to mail it out.

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 Dec 29, 2014, at 11:09 AM, Prysby, Mike (DEQ) <PRYSBYM@michigan.gov> wrote:

Steve,

According to R 325.10403 (3), a (i)

Community water supplies shall provide notice (Tier 2) by using both of the following forms of delivery

- (i) Mail or direct delivery to each customer receiving a bill

As far as I see in the rules Flint needs to send the TTHM PN via direct mail.....and is stated in the Dec. 16th Violation Notice letter.

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

From: Brent Wright [<mailto:bwright@cityofflint.com>]
Sent: Monday, December 29, 2014 10:58 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)

Cc: Howard Croft; Daugherty Johnson; Michael Glasgow

Subject: TTHM Violation Notification

Mike, Steve

Concerning the violation notification for TTHM's the city needs clarification on the delivery of notification. In the last violation notification for Total Coliform the City published it in the local paper and posted it on the city website, this satisfied the DEQ requirements. Would this be adequate for the TTHM notification? Thank you for your prompt reply concerning this matter.

--

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: Busch, Stephen (DEQ)
Sent: Thursday, July 16, 2015 11:04 AM
To: Benzie, Richard (DEQ); Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: RE: TTHMs in Flint

I think it is important to point out that the standard is based on water representative of what is in the public distribution system, not site plumbing systems. I had a similar discussion with UofM Flint about levels analyzed in their plumbing system. While the MCLG's for the various forms is in some cases 0, my understanding is that exposure at 80 ppb is not directly tied to specific health effects, but rather what is essentially feasible for water systems to achieve at the current time while balancing the need for disinfection.

Per EPA,

EPA has regulated DBPs since 1979 to address health risks posed by a potential association between chlorinated drinking water and cancer, particularly bladder cancer. **Current reproductive and developmental health effects data do not support a conclusion at this time as to whether exposure to chlorinated drinking water or disinfection byproducts causes adverse developmental or reproductive health effects, but do support a potential health concern. Although uncertain, the combined health data warrant EPA's promulgation of the Stage 2 Disinfection Byproduct Rule to provide an incremental step towards mitigating potential risks.**

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Wednesday, July 15, 2015 1:25 PM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: TTHMs in Flint

Just had a call from a resident of Flint whose neighbor was told yesterday by the city to not drink the water because the TTHM level at her home was 95 ppb. The caller wanted to know if animals should be consuming the water. I told her she would have to consult with a toxicologist or someone familiar with veterinary medicine. I told her animals are less susceptible to some contaminants but more so to others, but as engineers and analysts, we were not the ones that would make that decision – we just pass it on if we find out.

She asked about other TTHM sampling locations and where they were in the city. I told her to contact one of you, starting with Adam.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, March 11, 2015 9:57 AM
To: Benzie, Richard (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: RE: Update: Call with White House Flint Liaison

Jennifer was cc'd on the VN letter.

I had also previously emailed her the latest table of results following the monitoring in February for a letter she was responding to.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Tuesday, March 10, 2015 6:15 PM
To: Busch, Stephen (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: FW: Update: Call with White House Flint Liaison

I meant to ask you today if we (you) should forward a copy of the March 5th violation notice sent to Flint about their TTHM RAAs to Region 5 EPA to keep them informed. I did not see where they would otherwise receive a copy of that letter and I thought it might help Region 5 EPA staff to relay correct information when asked about the current status of this violation.

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Tuesday, March 10, 2015 5:52 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Update: Call with White House Flint Liaison

Update on what's been happening here regarding Flint:

Paul Joice is the White House Flint Liaison for HUD, living in Flint and working in the mayor's office. He needed some background on the Flint drinking water issues, so Tom and I—along with 4 managers from Headquarters, briefed him. Tom prepared a summary of notes taken at the meeting FYI—see below.

Becki Clark for the Office of Ground Water and Drinking Water at HQ, requested that Dr. Michael Wright, toxicologist/epidemiologist, from Office of Research and Development, sit on the Flint Technical Advisory Counsel. I believe Mike Prysby is sitting on the committee too. Since Mike is out of the office until April, did you sit in on the first meeting of this Advisory Council, Steve? What did you think of the meeting?

I have also been inundated with controlled correspondence emails referred to me from the White House. Several have had some questions about the health effects, so I have been including a paragraph explaining the health effects, which I think provide exactly the right info related to TTHMs being a chronic contaminant. I have cc'd Mike and Steve on the letters, so you all will get them, but here is the paragraph FYI:

“In your e-mail, you noted concerns regarding the health effects of TTHMs. By law, the City must inform consumers of health standard exceedances. The TTHM health standard was exceeded so the City must let consumers know the potential risk, to give consumers the opportunity to make informed decisions. The risk of developing long-term health problems, such as liver, kidney, central nervous system, and cancer, is low for those in general good health and the concern for these illnesses are only after years of ingestion. The risk of developing health problems is higher for some sub-populations, such as the immune-compromised and pregnant women; therefore, this group may want to seek alternative sources of water, such as bottled water, or purchase a home water treatment device. Consumers may want to talk with their doctors to help them make individual health decisions.”

Thank you all for keeping us in the loop from your seat in Lansing.

Jennifer

From: Poy, Thomas
Sent: Monday, March 09, 2015 3:10 PM
To: Hyde, Tinka; Henry, Timothy
Cc: Crooks, Jennifer
Subject: Call with White House Flint Liaison

Tinka/Tim: We (R5 and OGWDW) had a call with the White House Strong Cities/Strong Communications Flint Liaison this morning. Below are my notes of the discussion.

Flint Drinking Water Conference Call – 3/9/15

Participants: R5/GWDWB – Tom Poy, Jennifer Crooks
 HQ/OGWDW – Eric Burneson, Elizabeth Corr, Becki Clark, Roy Simon
 White House Strong Cities/Strong Communications Flint Liaison – Paul Joice (HUD) (works directly with Flint's mayor)

Tom Poy summarized what has gone on with Flint's Drinking Water:

- Switching from finished Detroit water (Lake Huron source) to Flint River in April 2014.
- Karegondi pipeline will provide Flint with raw water from Lake Huron when completed in 2016.
- MDEQ has been working with Flint from the start to get their treatment plant running properly.
- Summer 2014, Flint had an E coli detect because of distribution system issues (broken valves causing stagnation of water).
 - o Chlorine levels increased which increases potential of forming disinfection byproducts when chlorine reacts with organic carbon.
 - o Flushing increased which can stir up sediment in the water mains.
- December 2014, Flint exceeded the MCL for TTHM which is based on a running annual average (RAA) (avg of 4 quarterly samples).
- MDEQ has worked with Flint since August 2014 when chlorine levels were increased, to tweak operations to reduce TTHM formation.
- February 2015 sampling has TTHM concentrations well below the MCL but since compliance is based on an RAA, it will take another quarter or two of lower concentrations to make the average go down below the MCL.
- Flint has hired a consultant to help with their PWS.
- Flint has formed a Technical Advisory Committee (TAC) to help with their PWS; Dr. Michael Wright (ORD toxicologist) is EPA's representative.
- The Technical Advisory Committee met last week for the first time.

Paul Joice said that he was at the TAC meeting but did not participate as there were not enough seats for the large crowd. He heard that it was a good meeting. Paul said that he would like Dr. Wright to be able to make a public statement about health effects. The public notice for the TTHM violations say that sensitive subpopulations should consult their physicians but the physicians don't have any info on TTHMs.

Paul had questions about Flint's drinking water:

- 1) What are the health effects of TTHMs and what level of exposure is a concern?
- 2) What message should be provided on TTHMs?
- 3) What can be done about Flint's aging infrastructure and falling population base?
- 4) What about citizen complaints about their water looking funny, tasting funny, and smelling funny?

Paul said that having Dr. Wright on the TAC will help resolve Q1 and Q2.

Paul said on Q4, that he lives in the city and his water looks and tastes fine. I said that taste and odor issues could be the result of the flushing that Flint had done due to the bacteria and TTHM problems. Flushing can stir up sediment in the pipes. I said that there have also been complaints about rashes from using the water but that this may not be solely due to high TTHM levels. It could be because of increased chlorine in the water, changes in water chemistry (pH, hardness, etc.). It would take some investigative work to determine what part of the distribution system is having these problems and would need additional health/medical data to try to figure out a cause. Paul said that many of the people who complained did not want to give out their home addresses.

On Q3, I said that many systems across the country have aging infrastructure and while there is SRF monies available, this money does not cover the needs out there. Paul asked about regionalization. Eric Burneson acknowledged that there are economies of scale with regionalization but the benefits are realized more for smaller systems than ones the size of Flint. We could not generalize whether regionalization was a good idea for Flint and other communities in Genessee County because it is a very site specific issue.

Paul said that our conference call helped him under the Flint situation better.

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, February 06, 2014 3:35 PM
To: Craig, John (DEQ); Arduin, Jim (DEQ); Brim, Richard (DEQ)
Subject: RE: update regarding Bray Road consent order
Attachments: Flint 2-11.docx

Thanks John.

I believe the City will want to add the attached language or something similar as a new paragraph/subsection under the findings (Section 2). If we could add it now to the draft that would be helpful, but we can try to negotiate it on Monday if necessary.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Craig, John (DEQ)
Sent: Thursday, February 06, 2014 2:42 PM
To: Busch, Stephen (DEQ); Arduin, Jim (DEQ); Brim, Richard (DEQ)
Subject: FW: update regarding Bray Road consent order
Importance: High

Steve and Jim, I have attached a draft consent order related to the city of Flint Bray Road site pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451. This is a rough draft based on the information available to the Office of Waste Management and Radiological Protection, but is a good starting point for development of the consent order. This draft has not been internally distributed for review and comment by DEQ staff, OWMRP and ODWMA management, or the Department of Attorney General, so it is subject to additional changes. However, in the interest in moving the project along, you may share it with the City and their representatives, with the above caveat, in order to continue what I hope will be fruitful discussions next Monday.

Unfortunately, I will be out of the office tomorrow, Friday, February 7th, so I will not be available to discuss my revisions or respond to questions you may have. I'll be back in the office on Monday at 10:00 AM. Thanks. John

John Craig, Chief,
 Enforcement Section* | Office of Waste Management and Radiological Protection | Department of Environmental Quality | Constitution Hall – Lansing
 ☎ Phone: 517-284-6546 | 📠 Facsimile 517-373-4797

** Supporting the Office of Drinking Water and Municipal Assistance | Office of Oil, Gas, and Minerals | Office of Waste Management and Radiological Protection*

From: Robinson, Michael [<mailto:MRobinson@wnj.com>]
Sent: Thursday, February 06, 2014 10:42 AM
To: Busch, Stephen (DEQ)
Cc: Arduin, Jim (DEQ); Brim, Richard (DEQ); Craig, John (DEQ)
Subject: Re: update regarding Bray Road consent order

Great. I think we can make progress even without a " final" draft. Thanks

Sent from my iPhone

On Feb 6, 2014, at 7:25 AM, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov> wrote:

I agree on Monday. It will be the only day next week I will be available to meet on this.

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: Thursday, February 06, 2014 9:26 AM
To: Arduin, Jim (DEQ)
Cc: Busch, Stephen (DEQ); Brim, Richard (DEQ); Craig, John (DEQ)
Subject: Re: update regarding Bray Road consent order

We need to keep our meeting on Monday. Please send me what you have with the understanding that it still needs review within the DEQ. Can you also briefly identify any issues in an email to me today? We really must move things along. I appreciate your efforts. Thanks, mike

Sent from my iPhone

On Feb 6, 2014, at 4:11 AM, "Arduin, Jim (DEQ)" <ARDUINJ@michigan.gov> wrote:

Mike,

Due to the fact that this order significantly involves two divisions within the DEQ, it is taking longer to coordinate and incorporate internal comments and concerns. In addition, as I understand it, you have asked Steve Busch to add in additional stipulations/findings which are apparently going through appropriate staff review within the Drinking Water Division and have yet to work their way back to me for incorporation into the order. I honestly don't have a timeframe for you, as much of what is happening in this process is no longer in my control. I will forward the draft to you as soon as I can.

I will be out in the field all day today but will make the rounds around the office tomorrow to see where things stand. Even if we get you a copy tomorrow, it leaves you little time to prepare for Mondays meeting. We may need to reschedule.

Jim

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

Please note the new phone number.

From: Robinson, Michael [<mailto:MRobinson@wnj.com>]
Sent: Wednesday, February 05, 2014 11:35 PM
To: Arduin, Jim (DEQ)
Subject: RE: update regarding Bray Road consent order

Any chance you can send me a draft on Thursday?

From: Arduin, Jim (DEQ) [<mailto:ARDUINJ@michigan.gov>]
Sent: Monday, February 03, 2014 8:48 AM
To: Robinson, Michael
Cc: Busch, Stephen (DEQ)
Subject: update regarding Bray Road consent order

Mike,

We are still addressing several comments that were made during our review process.

I hope to get you a copy of the draft order later today.

Jim

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

Please note the new phone number.

2.11

COF is planning on participating in the Karegnondi Water Authority (KWA) to receive water from Lake Huron for its drinking water supply and using its water treatment plant to meet treatment requirements under Act 399. It will be approximately four years before the KWA infrastructure is built and water is available to the COF from KWA. The COF plans to use the Flint River as its water supply until KWA water is fully available. Public improvement projects under Act 399 are required to be completed for COF to receive water from KWA.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, September 19, 2014 12:28 PM
To: Shekter Smith, Liane (DEQ)
Subject: RE: UPDATED - SMT Agenda 9-22-14

Obviously Flint may be discussed. Mike and I had a discussion regarding their TTHM issues with Dir. Wyant and Dep. Dir. Sygo last Thursday. When the violation occurs, prior to a VN going out on this he would like to be able to discuss the TTHM issue with the local legislature and locals. We also discussed how this should be communicated from DEQ beyond the normal PN process.

On the HAB issue, Jean was able to setup a whole "HAB and DW" page under the CWS page based on the links and information I provided on a Water Works News article I put together on the same issue.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Shekter Smith, Liane (DEQ)
Sent: Thursday, September 18, 2014 3:43 PM
To: DEQ-ODWMA-Supervisors-All
Cc: Willard, Veronica (DEQ)
Subject: FW: UPDATED - SMT Agenda 9-22-14

SMT meeting this coming Monday. Any office issues you want me to share with the group? You have until COB tomorrow....

From: Patterson, Leigh (DEQ)
Sent: Thursday, September 18, 2014 3:30 PM
To: DEQ-EXE-MGMT-TEAM; DEQ-District-Coordinators
Cc: DEQ-EXE-MGMT-TEAM-Secretaries; Olszewski, Rosemarie (DEQ)
Subject: UPDATED - SMT Agenda 9-22-14

Please see the updated agenda. Thank you.

Tracy Jo Devereaux acting for Leigh M. Copen Patterson
 Assistant to Ms. Madhu R. Anderson, Director
 and Staff of the Office of Policy | Executive Division
 Michigan Department of Environmental Quality
 ☎ 517-284-6702 | PattersonL1@michigan.gov
www.michigan.gov/deq

From: Patterson, Leigh (DEQ)
Sent: Thursday, September 18, 2014 3:08 PM
To: DEQ-EXE-MGMT-TEAM; DEQ-District-Coordinators

Cc: DEQ-EXE-MGMT-TEAM-Secretaries; Olszewski, Rosemarie (DEQ)

Subject: SMT Agenda 9-22-14

Dear SMT and District Coordinators:

Attached is the final SMT agenda for Monday, September 22, 2014, 8:30 a.m.

Thank you.

Tracy Jo Devereaux acting for Leigh M. Copen Patterson

Assistant to Ms. Madhu R. Anderson, Director

and Staff of the Office of Policy | Executive Division

Michigan Department of Environmental Quality

☎ 517-284-6702 | PattersonL1@michigan.gov

www.michigan.gov/deq

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, September 28, 2015 12:28 PM
To: Dykema, Linda D. (DCH)
Subject: RE: VA Tech study

Mr. Edwards has provided no such information regarding his research to DEQ.

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: Dykema, Linda D. (DCH)
Sent: Monday, September 28, 2015 11:53 AM
To: Busch, Stephen (DEQ)
Subject: VA Tech study

Hi Steve,

I've been charged with understanding the VA Tech study and how it compares to the testing done by the city of Flint and the state. Do you have a copy of the VA Tech protocol and/or findings, or have you developed a document comparing the two, and can you share those with 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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 15, 2015 12:10 PM
To: Graham, Lois (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Adam Rosenthal (rosenthala@michigan.gov)
Subject: RE: Voice message about Flint - please return the call

I have spoken to Ms. Dotson and answered her questions. She is planning to contact the City as they are in charge of the water system.

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: Graham, Lois (DEQ)
Sent: Tuesday, September 15, 2015 8:05 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Voice message about Flint - please return the call

I received a voice message overnight and request you return the call.
 Delores Dotson, of Flint, pleads there is an emergency about cutting off Detroit water and believes the city needs to get back on the Detroit water system. Her telephone number is 810-785-7335. She seemed upset and was quite firm.

Thanks,

Lois Elliott Graham, R.S., M.S.A.
 Office of Drinking Water & Municipal Assistance
 Field Operations Section
 Contamination Investigation Program
 P.O. Box 30241
 Lansing, Michigan 48909-7741
 Office: 517-284-6530
 Fax: 517-241-1328
grahaml@michigan.gov
 4-South, Pillar N8



Subscribe to our Environmental Health Email List by clicking on the red envelope

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, January 22, 2015 12:05 PM
To: Looney, Carolyn (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: Voicemail from Ms. Ann Newell, 810-262-9459

I called and left a voicemail for her to call me back.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Looney, Carolyn (DEQ)
Sent: Thursday, January 22, 2015 11:14 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Voicemail from Ms. Ann Newell, 810-262-9459

I received a voicemail yesterday at 1:17 pm from Ms. Ann Newell, 810-262-9459. She is the Infection Control Manager at Hurley Medical Center in Flint. She would like a call back to let you know about the issues and concerns they are dealing with at the hospital regarding the bad water in Flint. Please give her a call. Thanks!!

Carolyn Looney
Secretary for the Environmental Health Section
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
Phone: 517-284-6535
Fax: 517-241-1328
Email: looneyc@mi.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, January 07, 2015 9:40 AM
To: Looney, Carolyn (DEQ); Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: RE: Voicemail from Ms. Cheryl Winston, 810-724-2536

I spoke with her yesterday and have addressed her concerns. (I also thought from my message that her last name was Winston, but when calling back it is actually Wormsman.)

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Looney, Carolyn (DEQ)
Sent: Wednesday, January 07, 2015 9:37 AM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: Voicemail from Ms. Cheryl Winston, 810-724-2536

I received a voicemail yesterday from Ms. Cheryl Winston, 810-724-2536. Ms. Winston is calling, on behalf of Ms. Susan Payne who lives in Flint, regarding the unsafe water in Flint and a letter Ms. Payne received regarding the water.

Please give Ms. Winston a call.

Thanks!

Carolyn Looney
Secretary for the Environmental Health Section
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
Phone: 517-284-6535
Fax: 517-241-1328
Email: looneyc@mi.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, January 16, 2015 10:33 AM
To: Looney, Carolyn (DEQ)
Cc: Richard Benzie P.E. (BENZIER@michigan.gov); prysbym@michigan.gov
Subject: RE: Voicemail from Ms. Jacklyn Pemberton (sp?), 810-252-3732

I have spoken with Ms. Pemberton.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Looney, Carolyn (DEQ)
Sent: Thursday, January 15, 2015 7:59 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Voicemail from Ms. Jacklyn Pemberton (sp?), 810-252-3732

Yesterday, I received a voicemail from Ms. Jacklyn Pemberton (sp?), 810-252-3732 regarding the water in Flint. Please give her a call.

Carolyn Looney
Secretary for the Environmental Health Section
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
Phone: 517-284-6535
Fax: 517-241-1328
Email: looneyc@mi.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 20, 2015 4:15 PM
To: Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Water Forum

We'll try to find out. We didn't see any reference to her attendance until this email less than an hour ago.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Tuesday, January 20, 2015 3:49 PM
To: Busch, Stephen (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Water Forum

Do you want to have a conversation with Dr. Rose before the meeting about what she plans to say about the health risk posed by TTHMs? Will she be addressing the issue generically (why did EPA originally set and recently lower the MCL for DBPs) or will she be specifically addressing the levels being reported in Flint?

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, January 20, 2015 3:35 PM
To: Benzie, Richard (DEQ)
Subject: FW: Water Forum

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 20, 2015 3:33 PM
To: Howard Croft; Prysby, Mike (DEQ)
Cc: Elizabeth Murphy; Gerald Ambrose; Flint Mayor; Shekter Smith, Liane (DEQ)
Subject: RE: Water Forum

Howard,

Please revise the DEQ bullet points to as follows:

- Role of the DEQ
- Explanation of TTHM violation

Delete all others. Thanks.

Based on the calls we have been getting from your water customers, our Office strongly recommends someone from the City discuss the City's water rate structure and what the City's water rates are being used to support.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Tuesday, January 20, 2015 3:13 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Green, Warren; John O'Brien; djansen@gcdcwws.com; rosejo@msu.edu
Cc: Elizabeth Murphy; Gerald Ambrose; Flint Mayor
Subject: Water Forum

Here is the current agenda that I have assembled for our Wednesday night forum. I am looking for everyone to speak for about 10 minutes at the opening and then we will move to written questions. I have attempted to highlight each persons area of expertise as it relates to initial comments and I will moderate through the questions. We do not plan to have an open microphone.

Starting time is 7:00 in the Dome, I will be available in City Hall for those that arrive early.

Thank you all for participating,

--

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: Busch, Stephen (DEQ)
Sent: Thursday, January 15, 2015 8:34 AM
To: 'Howard Croft'
Subject: RE: Water Forum

I will need to be done before 11:00.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Wednesday, January 14, 2015 5:05 PM
To: Joshua Freeman
Cc: Flint Mayor; Gerald Ambrose; Elizabeth Murphy; Daugherty Johnson; Jason Lorenz; Green, Warren; Prysby, Mike (DEQ); Busch, Stephen (DEQ); John O'Brien; djansen@gcdcwws.com
Subject: Water Forum

All,

In looking ahead to next weeks forum on water I am planning to host a conference call this Friday morning with the participants to get everyone on the same page and discuss details of how the forum should be structured. We have participation commitments from LAN engineering, Genesee County Drain Commissioners office, and MDEQ but we are leaving the door open for others.

The meeting is scheduled for Wednesday January 21st and we are contemplating what time it should be held. Currently we think 7:00 pm is the best time slot.

Please forward me your best availability for Friday morning, and I will establish the call. We would like to begin informing the public of the time, place, and participants of the forum on Friday afternoon.

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

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, January 20, 2015 3:33 PM
To: 'Howard Croft'; Prysby, Mike (DEQ)
Cc: Elizabeth Murphy; Gerald Ambrose; Flint Mayor; Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: RE: Water Forum
Attachments: City of Flint_Public Forum (1).pdf

Howard,

Please revise the DEQ bullet points to as follows:

- Role of the DEQ
- Explanation of TTHM violation

Delete all others. Thanks.

Based on the calls we have been getting from your water customers, our Office strongly recommends someone from the City discuss the City's water rate structure and what the City's water rates are being used to support.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Howard Croft [<mailto:hcroft@cityofflint.com>]
Sent: Tuesday, January 20, 2015 3:13 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Green, Warren; John O'Brien; djansen@gcdcwws.com; rosejo@msu.edu
Cc: Elizabeth Murphy; Gerald Ambrose; Flint Mayor
Subject: Water Forum

Here is the current agenda that I have assembled for our Wednesday night forum. I am looking for everyone to speak for about 10 minutes at the opening and then we will move to written questions. I have attempted to highlight each persons area of expertise as it relates to initial comments and I will moderate through the questions. We do not plan to have an open microphone.

Starting time is 7:00 in the Dome, I will be available in City Hall for those that arrive early.

Thank you all for participating,

--

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 Public Forum

Wednesday January 21, 2015
7:00 pm City Hall Dome

AGENDA

Opening COF – DPW Director - Howard Croft

- Forum Ground Rules
- Overview of Format (each guest to speak for ~10 minutes, written questions afterward)
- Introduction of Guests

1st Speaker DEQ – Local Representative - Mike Prysby, Steve Busch

- Water safety
- Explanation of violations (impact of being over MCL)
- Another violation coming in March due to the calculation method (what that means)
- Role of DEQ
- Other places in Michigan with violations?

2nd Speaker LAN – Lead Engineer - Warren Green

- Discuss Engineering role
- Discuss evaluation of Treatment Plant and Distribution system (as reflected in report)
- They are working with KWA and coordinate with DEQ regularly

3rd Speaker Health Expert – MSU Microbiologist – Dr. Joan Rose Ph.D.

- Risk Assessment (what do the numbers mean?)
- What to do if someone suspects they are at risk
- What about the elderly and those with a weak immune system
- What will the next violation mean (water is still safe)

4th Speaker GCDC – Jeff Wright

- What to expect from KWA raw water as source
- Update on KWA timeline

Final COF – DPW Director – Howard Croft

- Summary (Next Steps – Action Plans)
 - Hiring a consultant
 - Increasing communication
 - Strategic goals in Utility Dept. (importance of community supported CIP as it relates to infrastructure)
 - Funding (state funding through the DWRF, Federal opportunities)
- Questions (Expected to have an hour of panel response time)
- Conclusion - Thank the panel, (Additional follow up at next Public Works Committee meeting)

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, January 26, 2015 10:23 AM
To: Wurfel, Brad (DEQ); Prysby, Mike (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: RE: Wnem 5 re flint

Mike will be calling him back shortly. He has the corrected number.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance MDEQ
517-643-2314

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

From: Wurfel, Brad (DEQ)
Sent: Monday, January 26, 2015 10:14 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: Wnem 5 re flint

Who can call Jim Wyatt?
989-258-2044

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, March 19, 2015 10:50 AM
To: Prysby, Mike (DEQ)
Subject: RE: WRD - PEAS - Oil Sheen

I got the latest note from Chuck.

Good follow up with Flint.

(My original message was just "FYI", but autocorrect on the phone sent it as "Dying")

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: Thursday, March 19, 2015 9:53 AM
To: Busch, Stephen (DEQ)
Subject: RE: WRD - PEAS - Oil Sheen

Steve,

Joanne gave me a head-up on this and I am contacting the WTP since this is not far upstream from their intake...

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

From: Busch, Stephen (DEQ)
Sent: Thursday, March 19, 2015 9:10 AM
To: Prysby, Mike (DEQ)
Subject: Fwd: WRD - PEAS - Oil Sheen

Dying

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

Sent from my iPhone

Begin forwarded message:

From: "Gutting, Karen (DEQ)" <GUTTINGK1@michigan.gov>
Date: March 19, 2015 at 8:44:02 AM EDT
To: DEQ-PEAS-Lansing <DEQ-PEAS-Lansing@michigan.gov>
Subject: WRD - PEAS - Oil Sheen

PEAS Form		revised July 23, 2014	
First Response please "Reply All" to receipt of this PEAS Notification ASAP. Media: Water County: Genesee Ticket # 1498			
Incident Description: There is a sanitary sewer that runs parallel with the Flint river that has had several line breaks. This is causing a sheen on the water. Some of this has solidified along the river bank and is white in color. This is approximately ¼ mile down the bike trail where Bray Rd. ends S of Carpenter. Whatever is coming out of the line, is coming out steady. Caller has photos if needed.			
Complainant (C)		Party Involved (PI) – Company	
Name	James Joseph	Person Name	
Street Address		Company Name	
City or Township		Street Address	
State		City or Township	
Phone	810-820-5526	State	
Alt Phone		Phone	
Type		Alternate Phone	
Incident Street Address	S. of Carpenter and Bray Rd (where Bray Rd. stops and now it's a bike path)		
Cross Streets		Name of Pollutant	unsure
City or Township	Flint	Release to Water (g)	unknown
County		Release to Ground (g)	
Water Body Impacted	Flint River	Release to Air (lbs)	

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 23, 2015 4:53 PM
To: Pallone, Maggie (DEQ); 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: Feuerstein, Heather (DEQ)
Subject: Rep. Neeley Requested Docs
Attachments: Flint lead-copper history.xlsx; 2310FlintCertOpReport2015-09-23.pdf; CWS with L sample categories Periods I-II.docx

Attached are what we have put together for Rep. Neeley.

The full lead copper sampling history

List of Certified Operators (Anyone with F certification can be a shift operator at the WTP)

A partial list of community water systems known to have or have had lead service lines. Mostly from SE Michigan. It will take more effort to put together a comprehensive list from around the state.

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

1150 Woodside Dr	1	1	P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

CEC Report within Renewal Period - By WSSN

WSSN: 2310

DISTRICT: 11

OPERATOR: Nicole D. Alexander

OPER ID: 13291

CERTIFIED: ISSUE DATE: 07/16/2013

EXPIRATION DATE: 07/15/2016

CLASSIFICATION(S) HELD: F-3, S-4

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Jessica E. Ashley

OPER ID: 18582

CERTIFIED: ISSUE DATE: 11/05/2014

EXPIRATION DATE: 01/15/2018

CLASSIFICATION(S) HELD: F-4

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Scott A. Ball

OPER ID: 18394

CERTIFIED: ISSUE DATE: 11/05/2014

EXPIRATION DATE: 01/15/2018

CLASSIFICATION(S) HELD: F-4

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Chris S. Beatenhead

OPER ID: 18594

CERTIFIED: ISSUE DATE: 11/05/2014

EXPIRATION DATE: 01/15/2018

CLASSIFICATION(S) HELD: F-4

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Melissa A. Beckelic **OPER ID:** 14931
CERTIFIED: ISSUE DATE: 10/17/2012 EXPIRATION DATE: 01/15/2016
CLASSIFICATION(S) HELD: F-2, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
08/04/2015	Basic Environmental Chemistry	on line	1.1		
02/04/2015	Joint Expo	Lansing			0.2
06/19/2013	MDEQ Water Security Tabletop Exercises -	Montrose		0.2	
CEC's Earned:			1.1	.2	.2
Total CEC's Earned:			1.5		

OPERATOR: Michael G. Beckley **OPER ID:** 13782
CERTIFIED: ISSUE DATE: 06/01/2015 EXPIRATION DATE: 07/15/2018
CLASSIFICATION(S) HELD: F-4, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Timothy J. Bednarski **OPER ID:** 18595
CERTIFIED: ISSUE DATE: 05/06/2015 EXPIRATION DATE: 07/15/2018
CLASSIFICATION(S) HELD: F-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Robert J. Bincsik
CERTIFIED: ISSUE DATE: 01/16/2014
CLASSIFICATION(S) HELD: F-4, S-1

OPER ID: 13784
EXPIRATION DATE: 01/15/2017
WSSN: 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
02/05/2014	Joint Expo	Lansing			0.2
CEC's Earned:			.0	.0	.4
Total CEC's Earned:			0.4		

OPERATOR: Timothy A. Bratton
CERTIFIED: ISSUE DATE: 12/18/2013
CLASSIFICATION(S) HELD: F-4

OPER ID: 4214
EXPIRATION DATE: 01/15/2017
WSSN: 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
01/14/2014	Electrical Training: Advanced	Lapeer	0.5		
CEC's Earned:			.7	.0	.0
Total CEC's Earned:			0.7		

OPERATOR: Thomas A. Childs
CERTIFIED: ISSUE DATE: 05/06/2015
CLASSIFICATION(S) HELD: F-3

OPER ID: 12737
EXPIRATION DATE: 07/15/2018
WSSN: 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Todd C. Church
CERTIFIED: ISSUE DATE: 11/09/2011
CLASSIFICATION(S) HELD: S-4

OPER ID: 12192
EXPIRATION DATE: 01/15/2015
WSSN: 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other

CEC's Earned: .0 .0 .0
 Total CEC's Earned: 0.0

OPERATOR: Jeffrey S. Church **OPER ID:** 12559
CERTIFIED: ISSUE DATE: 04/16/2014 EXPIRATION DATE: 04/15/2017
CLASSIFICATION(S) HELD: S-3 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
06/24/2015	NUCA Excavation Safety & Competent	Flint			0.6
CEC's Earned:			.0	.0	.6
Total CEC's Earned:			0.6		

OPERATOR: Scott A. Dungee **OPER ID:** 5550
CERTIFIED: ISSUE DATE: 12/01/2013 EXPIRATION DATE: 01/15/2017
CLASSIFICATION(S) HELD: F-4, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.2
Total CEC's Earned:			0.4		

OPERATOR: Donald G. Echlin **OPER ID:** 17279
CERTIFIED: ISSUE DATE: 11/05/2014 EXPIRATION DATE: 01/15/2018
CLASSIFICATION(S) HELD: F-3, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/18/2015	Technical Maintenance for W&VW Treatment	Davison	0.5		
02/04/2015	Joint Expo	Lansing			0.2
CEC's Earned:			.5	.0	.2
Total CEC's Earned:			0.7		

OPERATOR: Michael B. Glasgow**OPER ID:** 13684**CERTIFIED:** ISSUE DATE: 01/01/2014

EXPIRATION DATE: 01/15/2017

CLASSIFICATION(S) HELD: F-1R, F-2, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Rodney L. Jackson**OPER ID:** 16056**CERTIFIED:** ISSUE DATE: 11/06/2013

EXPIRATION DATE: 01/15/2017

CLASSIFICATION(S) HELD: F-3, S-2**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Christopher J. Koryciak**OPER ID:** 4653**CERTIFIED:** ISSUE DATE: 12/01/2013

EXPIRATION DATE: 01/15/2017

CLASSIFICATION(S) HELD: F-4, S-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Matt T. McFarland**OPER ID:** 5575**CERTIFIED:** ISSUE DATE: 01/16/2014

EXPIRATION DATE: 01/15/2017

CLASSIFICATION(S) HELD: F-3, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	AWWA Membership				0.1
CEC's Earned:			.0	.0	.1
Total CEC's Earned:			0.1		

LATHAM

OPERATOR: Kevin S. McLeod **OPER ID:** 18598
CERTIFIED: **ISSUE DATE:** 11/05/2014 **EXPIRATION DATE:** 01/15/2018
CLASSIFICATION(S) HELD: F-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: John M. Monsees **OPER ID:** 3622
CERTIFIED: **ISSUE DATE:** 07/01/2014 **EXPIRATION DATE:** 07/15/2017
CLASSIFICATION(S) HELD: F-2, S-1 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	MRWA Membership				0.1
09/12/2014	MI-AWWA Annual Conference Exhibits	Manistee			0.1
09/12/2014	MI-AWWA Annual Conference Exhibitor	Manistee	0.1		
09/12/2014	MI-AWWA Section Meeting	Manistee	0.6	0.4	0.1
CEC's Earned:			.7	.4	.3
Total CEC's Earned:			1.4		

OPERATOR: Jeffrey N. Murray **OPER ID:** 16103
CERTIFIED: **ISSUE DATE:** 11/09/2011 **EXPIRATION DATE:** 01/15/2015
CLASSIFICATION(S) HELD: S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Paul O. Simpson

OPER ID: 4849

CERTIFIED: ISSUE DATE: 01/16/2015

EXPIRATION DATE: 01/15/2018

CLASSIFICATION(S) HELD: S-2

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
06/25/2015	NUCA Excavation Safety & Competent	Flint			0.6
06/11/2015	Confined Space	Flint			0.4
03/20/2015	MRWA Annual Conference	Acme	0.6	0.4	0.1
03/20/2015	Michigan Rural Water Association Annual	Acme			0.1
CEC's Earned:			.6	.4	1.2
Total CEC's Earned:			2.2		

OPERATOR: Howard W. Swickard

OPER ID: 5091

CERTIFIED: ISSUE DATE: 12/16/2012

EXPIRATION DATE: 01/15/2016

CLASSIFICATION(S) HELD: S-2

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/20/2015	MRWA Annual Conference	Acme	0.6	0.4	0.1
03/20/2015	Michigan Rural Water Association Annual	Acme			0.1
09/25/2013	Basic Math/Hydraulics	Higgins Lake	1.8		
07/23/2013	Permit Required Confined Space	Flint			0.6
07/10/2013	Arsenic in Drinking Water	Mt Pleasant	0.4		
06/05/2013	NUCA Excavation Safety & Competent	Flint			0.6
05/30/2013	Municipal Safety Day	Mason			0.4
CEC's Earned:			2.8	.4	1.8
Total CEC's Earned:			5.0		

OPERATOR: Bobby G. Vaughn

OPER ID: 14565

CERTIFIED: ISSUE DATE: 02/20/2014

EXPIRATION DATE: 04/15/2017

CLASSIFICATION(S) HELD: S-3

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Christopher C. Wilcox**OPER ID:** 18586**CERTIFIED:** ISSUE DATE: 11/05/2014**EXPIRATION DATE:** 01/15/2018**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/18/2015	Technical Maintenance for W&WW Treatment	Davison	0.5		
CEC's Earned:			.5	.0	.0
Total CEC's Earned:			0.5		

OPERATOR: Brent F. Wright**OPER ID:** 3676**CERTIFIED:** ISSUE DATE: 07/16/2013**EXPIRATION DATE:** 07/15/2016**CLASSIFICATION(S) HELD:** F-2, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	AWWA Membership	Varies			0.1
04/28/2014	Applied Hydraulics	Lansing	3.0		
01/14/2014	Electrical Training: Advanced	Lapeer	0.5		
12/31/2013	AWWA Membership	Varies			0.1
CEC's Earned:			3.5	.0	.2
Total CEC's Earned:			3.7		

OPERATOR: Charles V. Yanta**OPER ID:** 3678**CERTIFIED:** ISSUE DATE: 11/09/2011**EXPIRATION DATE:** 01/15/2015**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
03/06/2014	Chlorine Safety Training Seminar	Flint	0		
06/27/2013	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.2
Total CEC's Earned:			0.4		

OPERATOR: Michael J. Young

OPER ID: 15877

CERTIFIED: ISSUE DATE: 01/16/2012

EXPIRATION DATE: 01/15/2015

CLASSIFICATION(S) HELD: S-4

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
07/24/2013	Permit Required Confined Space	Flint			0.6
07/10/2013	Arsenic in Drinking Water	Mt Pleasant	0.4		
06/05/2013	NUCA Excavation Safety & Competent	Flint			0.6
05/30/2013	Municipal Safety Day	Mason			0.4
CEC's Earned:			.4	.0	1.6
Total CEC's Earned:			2.0		

CWS with L sample categories Periods I & II for Southeast Michigan

Allen Park 0130
Ash Twp. 0245
Bloomfield Twp. 0790
Brownstown 0940
Centerline 1290
Dearborn Heights 1740
Dearborn 1730
Eastpoint 1950
Ecorse 2050
Farmington 2230
Ferndale 2280
Flat Rock 2300
Flint 2310
Garden City 2550
Gibraltar 2630
Grosse Ile 2870
Grosse Pointe Park 2900
Grosse Pointe Woods 2920
Hamtramck 2970
Harper Woods 3020
Hazel Park 3100
Huron Twp. 3320
Inkster 3360
Lincoln Park 3870
Livonia 3930
Madison Heights 4000
Melvindale 4420
Oak Park 4880
Plymouth Twp. 5420
Plymouth 5400
Pontiac 5440
Redford Twp. 5640
River Rouge 5690
Riverview 5710
Rockwood 5750
Romulus 5785
Roseville 5820
Southgate 6170
St. Clair Shores 6280
Taylor 6545
Trenton 6650
Troy 6690
Utica 6760
Warren 6900
Wayne 6950
Westland 7470/7040

Ypsilanti Twp. 7260
Berkley 0630
Beverly Hills 0690
Birmingham 0730
Clawson 1440
Huntington Woods 3310
Lathrup Village 3800
Pleasant Ridge 5390
Royal Oak 5830
Southfield 6160
Greater Genesee County Water Supply Systems 2615
Detroit 1800

Lansing BWL 3760
Bay City 0470

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 29, 2015 3:57 PM
To: 'burke.thomas@epa.gov'
Cc: 'lytle.darren@epa.gov'
Subject: requested information
Attachments: Flint lead-copper history.pdf; Flint PbCu-AfterJuly1-2015.pdf

Tom,

Here is the information you requested during our call today.

Attached

- Lead and copper compliance monitoring history
- Lead and copper customer samples collected on or after July 1

DEQ Sampling instructions, link below

http://www.michigan.gov/documents/deq/Lead_Copper_Sampling_Instructions_329915_7.pdf

Here is more info on our website regarding LCR stuff if you need it. The reporting forms page has some of the additional templates

http://michigan.gov/deq/0,4561,7-135-3313_3675_3691-9677--,00.html

Let me know if you have questions or need any other info. Thanks.

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

[illegible]

[illegible]

Flint PbCu sample results 7/1/15 - 12/31/15

Sample Date	Location	Sample Point	Pb in ppm	Cu in ppm
7/2/2015	212 Browning	refridgerator water line	0	0
7/2/2015	628 Frost St	kitchen	0.009	0.06
7/2/2015	202 Browning	kitchen	0.002	0.07
7/6/2015	625 S. Grand Traverse	utility sink	0.003	0
7/6/2015	2110 Mountain Ave	kitchen	0.006	0.05
7/6/2015	413 Burrough Ave	kitchen	0	0
7/9/2015	2106 Pierce St	kitchen	0.007	0.06
7/9/2015	818 Lyon St	kitchen	0.005	0
7/11/2015	1150 Woodside Dr	kitchen	0.03	0.06
7/13/2015	604 Chalmers St	kitchen	0.002	0.06
7/13/2015	3710 Fox Croft Cr.	kitchen	0.002	0
7/13/2015	2107 Calumet St.	bathroom	0.005	0.08
7/14/2015	341 Robbie Ln	kitchen	0.003	0.14
7/15/2015	2553 Swayze	bathroom	0.006	0.15
7/16/2015	421 Lyon St	kitchen	0.007	0.21
7/17/2015	1509 E. Court St 2	small sink	0.033	0.17
7/17/2015	1509 E. Court St	kitchen	0.003	0.3
7/21/2015	3125 Dakota Ave	kitchen	0.003	0
7/21/2015	3131 Dakota Ave	kitchen	0.002	0
7/22/2015	2909 Brownell Blvd	kitchen	0.007	0.08
7/28/2015	2112 Sherff	kitchen	0.011	0.05
7/31/2015	1311 Woodlawn Pk.	bathroom	0.006	0.37
7/31/2015	3311 Hawthorne Dr.	kitchen	0	0
7/31/2015	1019 E. Fork Dr.	kitchen	0	0.07
8/2/2015	1911 Tuscola	kitchen	0	0.06
8/7/2015	1623 Neome Dr.	bathroom	0.028	0
8/25/2015	2023 Miller Rd.	kitchen	0	0
8/26/2015	1201 Maxine St.	kitchen	0.002	0.08
9/1/2015	2553 Swayze	main bathroom	0.005	0
9/9/2015	1001 Dupont St.	kitchen	0.002	0.05
9/10/2015	914 Maxine St. 1	kitchen	0.004	0
9/10/2015	914 Maxine St. 2	kitchen	0.001	0
9/16/2015	2761 Chicago Blvd.	bathroom	0.001	0
9/16/2015	1422 Clancy	bathroom	0.007	0
9/17/2015	1614 Woodlawn Park Dr.	other	0.02	0.13
9/18/2015	1025 Kensington Ave.	kitchen	0.002	0.07
9/21/2015	2616 Hillcrest	kitchen	0.005	0

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, September 24, 2015 2:20 PM
To: 'sheldonneeley@house.mi.gov'
Cc: 'latanyagarrett@house.mi.gov'; Pallone, Maggie (DEQ); 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'; Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov); Thelen, Mary Beth (DEQ) (THELENM2@michigan.gov); Feuerstein, Heather (DEQ)
Subject: Requested MDEQ Drinking Water Information
Attachments: Flint lead-copper history.pdf; 2310FlintCertOpReport2015-09-23.pdf; CWS-LeadServiceLines-List-partial.pdf

Dear Representative Neeley:

I am writing in response to our meeting at your office on September 22, 2015, discussing the recent concerns by you and your constituents regarding lead levels in their tap water. Your interest in this matter is appreciated. During the meeting you requested additional information which we are providing to you as follows and attached.

1. A summary of all lead and copper compliance samples for the City of Flint is attached (Flint lead-copper history.pdf). This compilation was just completed by DEQ staff based on our records. For easier reading we have color coded the lead sample results. Those in green are 15 parts per billion or less. Those in red are over 15 parts per billion. While the City has indicated difficulty in obtaining and keeping customer participants, you will note as we explained during our meeting that lead results vary both higher and lower for addresses where monitoring has been conducted multiple times. Please note that due to the large volume of data, this document has been formatted to print on 11x17 paper.
2. A list of certified operators for the City of Flint is attached (2310FlintCertOpReport2015-09-23.pdf). This information comes from our operator certification and training database. All operators listed with an "F" certification meet the Administrative Rule requirement for the City of Flint Water Treatment Plant that "A shift operator shall be on site and in charge of each operating shift at a community supply in the F classification when the operator in charge is not on site."
3. A list (partial) of communities in Michigan, mostly from Southeast Michigan, that have reported having at least some lead service lines as part of their historical lead and copper compliance monitoring is attached (CWS-LeadServiceLines-List-partial.pdf). Again, please note that this is a partial list of community water systems statewide, based on the records we have been able to review to date. As noted during our meeting, a complete list, if still desired will take longer to compile.

We hope that this information will meet your needs. If you should have additional questions, please contact me at the number below.

Sincerely,

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

[illegible]

CEC Report within Renewal Period - By WSSN

WSSN: 2310

DISTRICT: 11

OPERATOR: Nicole D. Alexander**OPER ID:** 13291**CERTIFIED:** ISSUE DATE: 07/16/2013**EXPIRATION DATE:** 07/15/2016**CLASSIFICATION(S) HELD:** F-3, S-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Jessica E. Ashley**OPER ID:** 18582**CERTIFIED:** ISSUE DATE: 11/05/2014**EXPIRATION DATE:** 01/15/2018**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Scott A. Ball**OPER ID:** 18394**CERTIFIED:** ISSUE DATE: 11/05/2014**EXPIRATION DATE:** 01/15/2018**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Chris S. Beatenhead**OPER ID:** 18594**CERTIFIED:** ISSUE DATE: 11/05/2014**EXPIRATION DATE:** 01/15/2018**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Melissa A. Beckelic **OPER ID:** 14931
CERTIFIED: ISSUE DATE: 10/17/2012 EXPIRATION DATE: 01/15/2016
CLASSIFICATION(S) HELD: F-2, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
08/04/2015	Basic Environmental Chemistry	on line	1.1		
02/04/2015	Joint Expo	Lansing			0.2
06/19/2013	MDEQ Water Security Tabletop Exercises -	Montrose		0.2	
CEC's Earned:			1.1	.2	.2
Total CEC's Earned:			1.5		

OPERATOR: Michael G. Beckley **OPER ID:** 13782
CERTIFIED: ISSUE DATE: 06/01/2015 EXPIRATION DATE: 07/15/2018
CLASSIFICATION(S) HELD: F-4, S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Timothy J. Bednarski **OPER ID:** 18595
CERTIFIED: ISSUE DATE: 05/06/2015 EXPIRATION DATE: 07/15/2018
CLASSIFICATION(S) HELD: F-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Robert J. Bincsik **OPER ID:** 13784
CERTIFIED: ISSUE DATE: 01/16/2014 EXPIRATION DATE: 01/15/2017
CLASSIFICATION(S) HELD: F-4, S-1 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
02/05/2014	Joint Expo	Lansing			0.2
CEC's Earned:			.0	.0	.4
Total CEC's Earned:			0.4		

OPERATOR: Timothy A. Bratton **OPER ID:** 4214
CERTIFIED: ISSUE DATE: 12/18/2013 EXPIRATION DATE: 01/15/2017
CLASSIFICATION(S) HELD: F-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
01/14/2014	Electrical Training: Advanced	Lapeer	0.5		
CEC's Earned:			.7	.0	.0
Total CEC's Earned:			0.7		

OPERATOR: Thomas A. Childs **OPER ID:** 12737
CERTIFIED: ISSUE DATE: 05/06/2015 EXPIRATION DATE: 07/15/2018
CLASSIFICATION(S) HELD: F-3 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Todd C. Church **OPER ID:** 12192
CERTIFIED: ISSUE DATE: 11/09/2011 EXPIRATION DATE: 01/15/2015
CLASSIFICATION(S) HELD: S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other

CEC's Earned: .0 .0 .0
 Total CEC's Earned: 0.0

OPERATOR: Jeffrey S. Church OPER ID: 12559
 CERTIFIED: ISSUE DATE: 04/16/2014 EXPIRATION DATE: 04/15/2017
 CLASSIFICATION(S) HELD: S-3 WSSN: 2310 DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
06/24/2015	NUCA Excavation Safety & Competent	Flint			0.6
CEC's Earned:			.0	.0	.6
Total CEC's Earned:			0.6		

OPERATOR: Scott A. Dungee OPER ID: 5550
 CERTIFIED: ISSUE DATE: 12/01/2013 EXPIRATION DATE: 01/15/2017
 CLASSIFICATION(S) HELD: F-4, S-4 WSSN: 2310 DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.2
Total CEC's Earned:			0.4		

OPERATOR: Donald G. Echlin OPER ID: 17279
 CERTIFIED: ISSUE DATE: 11/05/2014 EXPIRATION DATE: 01/15/2018
 CLASSIFICATION(S) HELD: F-3, S-4 WSSN: 2310 DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/18/2015	Technical Maintenance for W&WW Treatment	Davison	0.5		
02/04/2015	Joint Expo	Lansing			0.2
CEC's Earned:			.5	.0	.2
Total CEC's Earned:			0.7		

OPERATOR: Michael B. Glasgow**OPER ID:** 13684**CERTIFIED:** ISSUE DATE: 01/01/2014**EXPIRATION DATE:** 01/15/2017**CLASSIFICATION(S) HELD:** F-1R, F-2, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Rodney L. Jackson**OPER ID:** 16056**CERTIFIED:** ISSUE DATE: 11/06/2013**EXPIRATION DATE:** 01/15/2017**CLASSIFICATION(S) HELD:** F-3, S-2**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Christopher J. Koryciak**OPER ID:** 4653**CERTIFIED:** ISSUE DATE: 12/01/2013**EXPIRATION DATE:** 01/15/2017**CLASSIFICATION(S) HELD:** F-4, S-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/06/2014	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.0
Total CEC's Earned:			0.2		

OPERATOR: Matt T. McFarland**OPER ID:** 5575**CERTIFIED:** ISSUE DATE: 01/16/2014**EXPIRATION DATE:** 01/15/2017**CLASSIFICATION(S) HELD:** F-3, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	AWWA Membership				0.1
CEC's Earned:			.0	.0	.1
Total CEC's Earned:			0.1		

Larrea

OPERATOR: Kevin S. McLeod **OPER ID:** 18598
CERTIFIED: ISSUE DATE: 11/05/2014 EXPIRATION DATE: 01/15/2018
CLASSIFICATION(S) HELD: F-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: John M. Monsees **OPER ID:** 3622
CERTIFIED: ISSUE DATE: 07/01/2014 EXPIRATION DATE: 07/15/2017
CLASSIFICATION(S) HELD: F-2, S-1 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	MRWA Membership				0.1
09/12/2014	MI-AWWA Annual Conference Exhibits	Manistee			0.1
09/12/2014	MI-AWWA Annual Conference Exhibitor	Manistee	0.1		
09/12/2014	MI-AWWA Section Meeting	Manistee	0.6	0.4	0.1
CEC's Earned:			.7	.4	.3
Total CEC's Earned:			1.4		

OPERATOR: Jeffrey N. Murray **OPER ID:** 16103
CERTIFIED: ISSUE DATE: 11/09/2011 EXPIRATION DATE: 01/15/2015
CLASSIFICATION(S) HELD: S-4 **WSSN:** 2310 **DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Paul O. Simpson

OPER ID: 4849

CERTIFIED: ISSUE DATE: 01/16/2015

EXPIRATION DATE: 01/15/2018

CLASSIFICATION(S) HELD: S-2

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
06/25/2015	NUCA Excavation Safety & Competent	Flint			0.6
06/11/2015	Confined Space	Flint			0.4
03/20/2015	MRWA Annual Conference	Acme	0.6	0.4	0.1
03/20/2015	Michigan Rural Water Association Annual	Acme			0.1
CEC's Earned:			.6	.4	1.2
Total CEC's Earned:			2.2		

OPERATOR: Howard W. Swickard

OPER ID: 5091

CERTIFIED: ISSUE DATE: 12/16/2012

EXPIRATION DATE: 01/15/2016

CLASSIFICATION(S) HELD: S-2

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
03/20/2015	MRWA Annual Conference	Acme	0.6	0.4	0.1
03/20/2015	Michigan Rural Water Association Annual	Acme			0.1
09/25/2013	Basic Math/Hydraulics	Higgins Lake	1.8		
07/23/2013	Permit Required Confined Space	Flint			0.6
07/10/2013	Arsenic in Drinking Water	Mt Pleasant	0.4		
06/05/2013	NUCA Excavation Safety & Competent	Flint			0.6
05/30/2013	Municipal Safety Day	Mason			0.4
CEC's Earned:			2.8	.4	1.8
Total CEC's Earned:			5.0		

OPERATOR: Bobby G. Vaughn

OPER ID: 14565

CERTIFIED: ISSUE DATE: 02/20/2014

EXPIRATION DATE: 04/15/2017

CLASSIFICATION(S) HELD: S-3

WSSN: 2310

DISTRICT: 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
CEC's Earned:			.0	.0	.0
Total CEC's Earned:			0.0		

OPERATOR: Christopher C. Wilcox**OPER ID:** 18586**CERTIFIED:** ISSUE DATE: 11/05/2014**EXPIRATION DATE:** 01/15/2018**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/18/2015	Technical Maintenance for W&WW Treatment	Davison	0.5		
CEC's Earned:			.5	.0	.0
Total CEC's Earned:			0.5		

OPERATOR: Brent F. Wright**OPER ID:** 3676**CERTIFIED:** ISSUE DATE: 07/16/2013**EXPIRATION DATE:** 07/15/2016**CLASSIFICATION(S) HELD:** F-2, S-3**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
12/31/2014	AWWA Membership	Varies			0.1
04/28/2014	Applied Hydraulics	Lansing	3.0		
01/14/2014	Electrical Training: Advanced	Lapeer	0.5		
12/31/2013	AWWA Membership	Varies			0.1
CEC's Earned:			3.5	.0	.2
Total CEC's Earned:			3.7		

OPERATOR: Charles V. Yanta**OPER ID:** 3678**CERTIFIED:** ISSUE DATE: 11/09/2011**EXPIRATION DATE:** 01/15/2015**CLASSIFICATION(S) HELD:** F-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
02/04/2015	Joint Expo	Lansing			0.2
03/06/2014	Chlorine Safety Training Seminar	Flint	0		
06/27/2013	Chlorine Safety Training Seminar	Flint	0.2		
CEC's Earned:			.2	.0	.2
Total CEC's Earned:			0.4		

OPERATOR: Michael J. Young**OPER ID:** 15877**CERTIFIED:** ISSUE DATE: 01/16/2012**EXPIRATION DATE:** 01/15/2015**CLASSIFICATION(S) HELD:** S-4**WSSN:** 2310**DISTRICT:** 11

DATE	COURSE	LOCATION	Tech	Mgr	Other
07/24/2013	Permit Required Confined Space	Flint			0.6
07/10/2013	Arsenic in Drinking Water	Mt Pleasant	0.4		
06/05/2013	NUCA Excavation Safety & Competent	Flint			0.6
05/30/2013	Municipal Safety Day	Mason			0.4
CEC's Earned:			.4	.0	1.6
Total CEC's Earned:		2.0			

Michigan Community Water Supplies that have previously listed lead service line materials as part of Lead and Copper compliance monitoring – partial list

Supply Name and Water Supply Serial Number

Allen Park 0130	Pontiac 5440
Ash Twp. 0245	Redford Twp. 5640
Bloomfield Twp. 0790	River Rouge 5690
Brownstown 0940	Riverview 5710
Centerline 1290	Rockwood 5750
Dearborn Heights 1740	Romulus 5785
Dearborn 1730	Roseville 5820
Eastpoint 1950	Southgate 6170
Ecorse 2050	St. Clair Shores 6280
Farmington 2230	Taylor 6545
Ferndale 2280	Trenton 6650
Flat Rock 2300	Troy 6690
Flint 2310	Utica 6760
Garden City 2550	Warren 6900
Gibraltar 2630	Wayne 6950
Grosse Ile 2870	Westland 7470/7040
Grosse Pointe Park 2900	Ypsilanti Twp. 7260
Grosse Pointe Woods 2920	Berkley 0630
Hamtramck 2970	Beverly Hills 0690
Harper Woods 3020	Birmingham 0730
Hazel Park 3100	Clawson 1440
Huron Twp. 3320	Huntington Woods 3310
Inkster 3360	Lathrup Village 3800
Lincoln Park 3870	Pleasant Ridge 5390
Livonia 3930	Royal Oak 5830
Madison Heights 4000	Southfield 6160
Melvindale 4420	Greater Genesee County Water Supply Systems 2615
Oak Park 4880	Detroit 1800
Plymouth Twp. 5420	
Plymouth 5400	Lansing BWL 3760
	Bay City 0470

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, February 24, 2015 9:04 AM
To: 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'; 'Alexander, Michael (DEQ)'
Cc: Thomas, Chuck (DEQ); Richard Benzie P.E. (BENZIER@michigan.gov); Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov)
Subject: River Source Water Quality Comparison for Drinking Water
Attachments: MichiganDW-RiverSource-WQ.pdf

Brad and Mike,

In preparation for the interview with Steve Carmody this afternoon, attached is raw water quality information from the 7 community water systems in Michigan that use river water for at least some portion of their source water. These are generally basic physical and chemical parameters. Keep in mind the data is not over the same period of time. For Flint the data represents less than one year so a true average that takes into account seasonal variations cannot be made at this time.

As most of our monitoring takes place after treatment, results for things like metals, VOC, pesticides, herbicides, etc., were not included as they would not be representative of raw water quality.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Michigan Drinking Water River Source Water Quality		Turbidity (NTU)		Total Organic Carbon (mg/L)		pH		Alkalinity (mg/L as CaCO ₃)		Hardness (mg/L as CaCO ₃)		Nitrate (mg/L)		LT2 Bin	Basis
Water System	Source Water	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range		
City of Adrian	Wolf Creek (Lake Adrian) + Groundwater Wells	5.5	0.1 - 117	2.6	0.92 - 8.3	7.6	6.9 - 9.4	288	30 - 334	357	180 - 442	0.87	0 - 5.1	1	(2014 Sanitary Survey; 2010 - 2013 Data)
City of Alma	Pine River + Groundwater Wells	8.64	1.7 - 163	7.1	6.6 - 8	7.8	7.1 - 8.4	215	129 - 249	276	181 - 323	NS	NS	1	(2012 Sanitary Survey; 2011 Data)
City of Ann Arbor	Huron River + Groundwater Wells	1.46	0.1 - 15.5	5.37	3 - 8.25	7.8	7.1 - 8.9	229	140 - 250	327	260 - 465	0.45	0.2 - 1.04	1	(2013 Sanitary Survey)
Village of Blissfield	River Raisin	25.7	2 - 405	5.23	3.1 - 7.4	8.08	7.5 - 8.4	227	85 - 293	327	190 - 452	2.24	0 - 11.8	2	(2014 Sanitary Survey; 2011 - 2013 Data)
Village of Deerfield	River Raisin	23	2 - 247	5.28	2.8 - 16	7.9	7.2 - 8.3	280	104 - 288	244	148 - 528	3.59	0.6 - 32	4	(2013 Sanitary Survey; 2010 - 2012 Data)
City of Flint	Flint River	8.1	1.6 - 73.4	8.09	6.5 - 10.3	8.22	7.99 - 8.43	216	149 - 270	264	221 - 334	NS	NS		(2014 Data since on Flint River May - Dec)
City of Manistique	Indian River	1.7	0.5 - 12.0	5.8	4 - 9.0	7.78	7.12 - 8.87	86	24 - 114	129	98 - 154	NS	NS	1	(2011 Sanitary Survey Inspection)

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 01, 2015 8:29 AM
To: Pallone, Maggie (DEQ)
Subject: Sample Sites
Attachments: Flint lead-copper history.pdf

This covers the whole history but the far right columns for 2014 and 2015 show which addresses were sampled under the Flint WTP/Flint River.

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: Busch, Stephen (DEQ)
Sent: Thursday, March 05, 2015 9:39 AM
To: 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Subject: Tap Filters

Brad,

Regarding point of use and point of entry water filters:

ANSI NSF Standard 42 Covers bacteriostasis, taste and odor (associated only with chlorine removal), and other aesthetic conditions

http://standards.nsf.org/apps/group_public/download.php/19895/NSF_42-11%20-%20watermarked.pdf

ANSI NSF Standard 53 Covers health effects removal

http://standards.nsf.org/apps/group_public/download.php/19896/NSF_53-11a%20-%20watermarked.pdf

It is important to note that the filters are not required to meet all aspects of the standard, only the portions they want to make claims for. So product information for each filter must be reviewed to determine its applicability.

Most of these point of use filters are basic activated carbon filters that simply remove taste and odor specifically associated with chlorine, not other things like iron, manganese, hydrogen sulfide, etc. that can also impact taste and odor as well as color.

It is important to recognize that taste and odor is generally an individual preference and such standards have for the most part not been developed because groups of individuals may still consider taste and odor issues to exist even after levels for such a standard have been met.

Other considerations are that the test water for such filters attempting to meet the standard uses hardness levels of 170 mg/L or less. Flint's water at times may be above this level, which could then impact filter performance and longevity.

Most of these filters are designed to be replaced after 100 gallons or less of use, a period of about 3 months for most households. In addition the tests allow for initial pressure drops of up to 15 psi. This may limit use in households that already rely on minimum pressure within their household plumbing.

Regarding the health effects standards, as the Flint water system already meets such requirements, with the exception of the current TTHM locational running annual average, there is little point to the use of these filters for such a purpose.

If you need additional information or have other questions please let me know.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 2:11 PM
To: Shekter Smith, Liane (DEQ) (SHEKTERL@michigan.gov); Richard Benzie P.E. (BENZIER@michigan.gov); 'Wurfel, Brad (DEQ) (WurfelB@michigan.gov)'
Cc: prysbym@michigan.gov; Adam Rosenthal (rosenthala@michigan.gov)
Subject: Updated Flint TTHM Results
Attachments: FLINT TTHM RESULTS.docx

Updated TTHM results from Flint are attached, and are as we expected.

The highest sample individual result from February 2015 was 28.5 ppb, less than half the standard of 80 ppb.

The same two sites still exceed the LRAA MCL standard of 80 ppb due to high results from last summer, but the other 6 comply with the LRAA.

(FYI, if we were still under Stage 1 this wouldn't have ever been a standard violation, the RAA would have calculated out to 78 ppb.)

We are in the process of preparing a violation notice to the City and will have a copy to review and distribute to legislative members and other departments early next week.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

FLINT TTHM RESULTS

TTHM Results (mg/L)						
	5/21/14	8/21/14	11/20/14	2/17/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.162	0.145	0.059	0.0162	0.096	0.059
DBP2 Liquor Palace 3302 S. Dort Highway	0.112	0.127	0.033	0.0168	0.072	0.049
DBP3 North Flint Auto 6204 N. Saginaw St.	0.097	0.118	0.041	0.0149	0.068	0.047
DBP4 University Market 2501 Flushing Road	0.106	0.196	0.094	0.0245	0.105	0.085
DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.0151	0.078	0.063
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.088	0.144	0.054	0.0192	0.076	0.059
DBP7 Salem Housing 3216 MLK Boulevard	0.082	0.112	0.050	0.0285	0.068	0.055
DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.0199	0.061	0.047

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 2:02 PM
To: 'jrhansen@lan-inc.com'
Subject: Updated TTHM results for Flint
Attachments: FLINT TTHM RESULTS.docx

Jeff,

See the attached table with updated February results, LRAA's, and OEL's.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

FLINT TTHM RESULTS

TTHM Results (mg/L)						
	5/21/14	8/21/14	11/20/14	2/17/15	LRAA	OEL
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DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.0151	0.078	0.063
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DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.0199	0.061	0.047

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, March 17, 2015 2:02 PM
To: Howard Croft (hcroft@cityofflint.com); Brent Wright (bwright@cityofflint.com); mglasgow@cityofflint.com; Daugherty Johnson (djohnson@cityofflint.com)
Cc: Gerald Ambrose (gambrose@cityofflint.com); 'nhenderson@cityofflint.com'; prysbym@michigan.gov
Subject: Water Quality Optimization Strategy

Howard,

As Mike Prysby and I mentioned during our phone call earlier today, the City should be taking action to optimize water quality in the City's distribution system which will in turn provide the City's water customers with water quality that helps limit the potential for legionella occurrence in premise plumbing. It is recognized that contraction of Legionnaires' Disease is not from ingestion of potable water and not regulated under Safe Drinking Water Act requirements. Further, there is currently no direct evidence of legionella in the City's public water system. However, actions by the City of Flint water system can help minimize the potential for an outbreak in customer plumbing systems.

These actions include the following:

- Water main pigging and flushing to remove biofilm, tuberculation, and sediment throughout the distribution system. Failure to remove such material will limit the effectiveness of any disinfectant. Pigging is the preferred process and equipment can be obtained at minimal cost. As the growth range for legionella starts at 68 degrees F, conducting this work as soon as possible in the spring and early summer with cooler temperatures would help reduce the potential for formation under warmer water conditions.
- Maintain pH levels of 7.2-7.8 in finished water and distribution system when possible to maximize the disinfection and oxidation potential of the hypochlorous acid residual (versus the less potent hypochlorite ion). Any optimized corrosion control plan practices regarding pH levels must be taken into consideration.
- Maintain a minimum free chlorine residual of 0.5 mg/L throughout the distribution system when possible. Continuous residual at this level has been shown to be effective in control of legionella. (This will need to be balanced with requirements to limit TTHM formation and comply with the TTHM standard.)
- Continuous operation and optimization of the ozone treatment equipment to treat raw source water. Ozone is highly effective in the destruction of legionella bacteria.
- Conduct routine monitoring for legionella bacteria at the water treatment plant tap and at locations in the distribution system. Note: sample locations must take water directly off the main and not be from premise plumbing systems. Distribution locations could include storage tank inlets or pumping stations. Monitoring at the WTP plant tap would demonstrate removal of any legionella present in raw source water. A private laboratory that specializes in water sample analysis for legionella would need to be used.
- Optimize water treatment plant operation for pathogen reduction under surface water treatment rule requirements. Optimizing the removal for similar pathogens can help reduce the potential for legionella.

A conference call with City staff would probably be best to facilitate further discussions of these actions in more detail. Mike and I can make ourselves available this week to discuss and answer any questions.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314