



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

May 11, 2015

Mr. Howard Kroft, Director of Public Works
City Of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 02310

Dear Mr. Kroft:

SUBJECT: Flint Cross Connection Control Program

This letter confirms my site visit on April 29, 2015, with Mr. Glen Thomas, Utilities/Cross Connection Division Inspector for the city of Flint. Mr. Stephen Busch from our office was also present. The purpose of the visit, in part, was to discuss the city's Cross Connection Control Program (CCCP).

The city of Flint has made significant progress in recent years regarding the implementation of the city's approved CCCP. This effort has included identification of accounts, inspection and re-inspection of accounts at the approved frequencies, and ensuring the testing of backflow prevention assemblies in accordance with approved frequencies. However, the city's most recent report of annual CCCP activities for 2014 indicates a significant decrease in these activities below minimum requirements, and this deficiency must be address.

Our office fully recognizes the recent staffing loss of the city's previous plumbing inspector and the importance of these plumbing inspection services in providing public health protection, but these activities should not be borne at the cost of the city's CCCP and the protections it provides. Given the bacterial detections that occurred in the city's water distribution system in August and September 2014, along with customer complaints regarding aesthetic water quality, the need for protection through cross connection control are very evident.

We also realize that implementing a CCCP of for a community water system of this magnitude requires a significant commitment of time and personnel. We encourage the city to review CCCP staffing needs and authorize the workforce necessary to comply with the city's approved CCCP requirements.

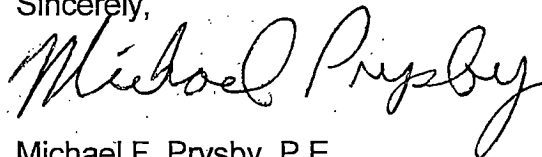
Mr. Howard Kroft

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May 11, 2015

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Environmental Quality, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



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

mfp/jlr

cc: Mr. Glen Thomas
Mr. Stephen Busch, P.E.



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

May 20, 2014

Mr. Brent Wright, Water Plant Superintendent
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear: Mr. Wright

Subject: Water Treatment Plant (WTP) Fluoridation

This letter, per your request, is being written to confirm the Department of Environmental Quality's (DEQ) position concerning the suspension of the application of fluoride until June 2014. Fluoridation was instituted in Flint approximately 50 years ago in order to increase the level of dental health protection.

While the DEQ supports fluoridation as the primary means to provide optimal dental health protection, we concur with the temporary interruption in fluoridation. This will allow WTP operators to focus on meeting the regulated drinking water standards and to increase proficiency in full-time WTP operation. The public health benefit of fluoridation is gained with long-term use and is not immediately compromised by a short-term interruption in application.

The focus on WTP operation is essential in meeting the regulated drinking water standards; thus, the city may suspend fluoridation until June 1, 2014. Please contact our office if fluoridation cannot resume by this date.

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

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

Mr. Daugherty Johnson

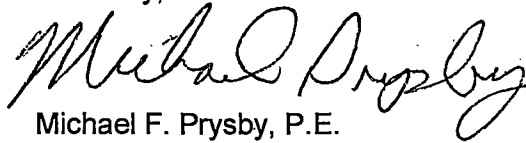
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April 29, 2014

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



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



DEPARTMENT OF UTILITIES
Water Plant & Facilities

CITY OF FLINT & MDEQ
DISCUSSIONS OF FUTURE USE OF THE
FLINT WATER TREATMENT PLANT

AGENDA

MAY 1, 2012

9:00 a.m. to 11:00 a.m.

1. Welcome / Introductions / Agenda Review
2. Co-mingling of treated Flint River water with water from DWSD
3. Co-mingling of Flint River water with raw water from KWA
4. Treating Flint River water full time and Flint going on it's own
5. Flint Water Treatment Plant being an emergency back-up for KWA

DEQ to comment

Kick down the hood
Moto Cost

1st choice - sub plan
to DEQ - cap. exp.
etc.

* upgrade to WTP CAP
to 45 MGD if KWA

sig. as

* we encourage water from
whichever source to
be comparable

Prysby, Mike (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, February 07, 2013 4:16 PM
To: Benzie, Richard (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ)
Subject: RE: City of Flint emergency services contractor

Mike,

I didn't review the RFP, but the contractor should have to demonstrate some long term history of doing this type of work and having some other municipal references. (No good ol' boys club, or brothers-cousins-boyfriends contractors)

The City may also want to do a comparison of what their internal costs would be for the work. (I'm sure the DPW union will already be requesting this)

I am also in agreement with the responses from Pat and Richard.

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: Thursday, February 07, 2013 3:57 PM
To: Cook, Pat (DEQ); Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: City of Flint emergency services contractor

I pretty much agree with Pat except I would expect that the OIC for a distribution system would be providing oversight for the repair/maintenance crews even if they are "contract employees." That may not necessarily mean he's standing over the ditch in every case, but he should be there for major jobs and there should be periodic reviews of procedures and protocols that are being followed in the field. And he is certainly there to answer any questions or deal with unusual circumstances. I would also say that you could make that a point of emphasis in your discussions with the city about contractual services. Either the contractor should have an S-1 operator or they agree to follow city spec's and be subject to unannounced onsite inspections.

From: Cook, Pat (DEQ)
Sent: Thursday, February 07, 2013 2:00 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: RE: City of Flint emergency services contractor

Hi Mike,

I'm not aware of any large water supplies like Flint that contract with outside companies for main/hydrant repairs and shut-off services. However, you may wish to post this question on the Team Room page to see if any other engineers have experience in this type of arrangement.

I think you raise some valid concerns about outside parties being able to repair breaks, especially about the testing (flushing, disinfection, sampling, etc.) that may be necessary after a main repair. As you know, it's not a one-size fits-all protocol and greatly depends on if the main was repaired under pressure or no pressure.

I don't think we can require the contractors to have licensed operators since the Operator Cert rules of Act 399 only require the OIC and designated backup to be licensed. DWSD has several crews that their only job is to find and repair main leaks/breaks. I'm not 100% sure, but I bet that very few if any one those guys have distro licenses and its highly unlikely that the OIC is providing oversight on each job.

I think we can raise the question to Flint about proving oversight by a city employee/licensed operator when the outside contractor is on site to see what they say, but my guess is that they are going to balk since that will cost them staff time and money.

pat

From: Prysby, Mike (DEQ)

Sent: Wednesday, February 06, 2013 4:22 PM

To: Cook, Pat (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)

Subject: FW: City of Flint emergency services contractor

I am a bit concerned about the city of Flint considering the idea of privatizing water distribution system repairs. I am not aware of other communities that utilize outside contractors on the scale of systems like Flint. I have a few very small rural communities (ie village of Metamora) who contract with a company (United Water in Metamora's case) to operate and maintain the water system. United Water provides certified contractors. These independent contractors may have some limited ability to conduct emergency repairs but it has been my experience that they contract out watermain repairs. The contract operator's role is to oversee the work to insure that proper procedures are followed (isolation, flushing, disinfection, sampling, notification, etc.).

Back to Flint.....my first take is that any outside vendor who will be conducting emergency services such as repairing broken mains and appurtenances should hold some level of water distribution certification. Although requiring them to hold an S-1 license may be asking too much.....some level of certification makes it more likely that contractor is aware of the proper procedures and the need to protect public health.

Other items:

- Require oversight of repairs by certified Flint water utility operator
- Security issues – vendor must constantly have access to as-built plans, general plan, access to Water Service Center
- Conformance to Flint standard specs – again verified by proper oversight
- Changes the city's focus trying to re-establish a "well-operated" water utility

If you are aware of other utilities of this scale that privatize emergency repairs, please share that with me. Also, if there are other items or concerns that this could raise, feel free to add them. Thanks.

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

From: Daugherty Johnson [<mailto:djohnson@cityofflint.com>]

Sent: Wednesday, February 06, 2013 1:50 PM

To: Prysby, Mike (DEQ)

Subject: City of Flint emergency services contractor

Hello Mike. I have been directed to develop an RFP to have outside vendors under contract with the City for emergency services. The work could include anything from residential emergency turn offs to Main break repairs. Among the questions I have is what standards or qualifications would the State require of vendors? Also, how do other communities ensure adherence to State drinking water standards when vendors are performing the services. I have attached a general scope of services we intend to put out for bid. Your input would be greatly appreciated. Give me a call when you get a chance (810) 577-8906 or email your thoughts.

Thanks

Daugherty 'Duffy' Johnson
Utilities Administrator



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

May 7, 2012

Mr. Howard Kroft, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2320

Dear Mr. Kroft:

SUBJECT: Flint Water Treatment Plant – Future Operation

This letter confirms our May 1, 2012, meeting with you, Mr. Daugherty Johnson III, Utilities Administrator, Mr. Brent Wright, Water Plant Superintendent, and other water utility operators. Mr. Patrick Cook, Treatment Specialist, from the Department of Environmental Quality (DEQ), also attended the meeting.

The purpose of the meeting was to discuss options for blending treated water from the Flint River with water purchased from the Detroit Water and Sewerage Department (DWSD) or blending Flint River water with raw water purchased from the Karegnondi Water Authority (KWA) and subsequent treatment at the Flint Water Treatment Plant (WTP).

The city of Flint may elect to utilize their WTP for the blending of treated water from the Flint River with water purchased from DWSD or KWA provided that all applicable drinking water standards are maintained. Also, the city is encouraged to produce and distribute treated water that is comparable to the aesthetic quality of water purchased from DWSD. Various treatment parameters discussed in the meeting that the Flint WTP will be required to meet are listed in the bulleted items below.

- CT (disinfectant concentration times total contact time through the treatment process) must be maintained to provide not less than 99.9% (3-log) removal of giardia and not less than 99.99% (4-log) removal viruses.
- The residual disinfectant concentration in the water entering the distribution system shall not be less than 0.2 milligrams per liter for more than 4 hours.
- Filter effluent turbidity (combined filter effluent); Not less than 95% of the measurements taken each month shall be less than or equal to 0.3 ntu. Also, at no time shall the turbidity level exceed 1 ntu.

Prysby, Mike (DEQ)

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

Mr. Howard Kroft

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May 7, 2012

- The fluoride concentration in Flint's finished water must remain comparable to the fluoride concentration in DWSD's water.
- Suggested Practices recommends, and we fully endorse, monitoring WTP filters and plant tap for total coliform bacteria on a daily basis. In addition to plant tap monitoring, a protocol should be established for monitoring both treated water components prior to blending.
- Finished water must meet all other applicable Maximum Contaminant Levels for organic and inorganic parameters.

Based upon the 2007 Water Treatment Plant Sanitary Survey and the results of the most recent WTP test runs, we are confident that the WTP can meet the operational parameters discussed above. Given the installation of intermediate chlorination and improved ozone residuals, Flint's CT calculation will need to be updated.

Since Flint was not required to conduct the initial round of source water monitoring for cryptosporidium, treatment classification as part of the Long Term 2 Enhanced Surface Water Treatment Rule requirements has not been determined for the WTP. The next round of cryptosporidium monitoring begins in 2015 and subsequent bin treatment classification for Flint will be determined by 2017 (after completing 24 months of monitoring). Additional treatment for cryptosporidium may be required depending on the monitoring results.

Also, since DWSD would no longer be Flint's sole source of water, various water distribution system programs including Flint's Bacteriological Monitoring, Lead and Copper, and the Stage 2 Disinfectants and Disinfection Byproducts monitoring programs will change. Specific changes to these monitoring programs will be discussed in more detail after the city identifies the future operation of the Flint WTP.

The DEQ has no objection to blending Flint River water with water purchased either from DWSD or the KWA. This type of operation will place Flint's WTP into service on a full-time basis and be of benefit in several ways. Fulltime operation will help to ensure proper function and optimization of treatment while allowing WTP operators to accrue additional experience at operating and monitoring all unit processes. Fulltime operation also helps to keep treatment equipment and their components in a reliable state of operation.

Finally, a question was raised as to the extent that the city of Flint will be required to provide a full-time back-up water supply to the city and Genesee County. As we discussed, the average day demand (with restrictions on nonessential water use) for the combined needs of Flint and Genesee County will need to be met. Both capacity and hydraulics (transmission capabilities to Genesee County) need to be determined, as part of a basis of design towards proposing a full back-up water supply for both Flint and Genesee County.

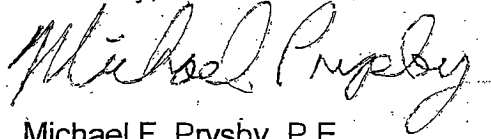
Mr. Howard Kroft

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May 7, 2012

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Environmental Quality, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E.,
District Engineer
Resource Management Division
Lansing District Office
517-335-6122

mfp:jir

cc: Mr. Daugherty Johnson III, City of Flint, Utilities Administrator
Mr. Brent Wright, City of Flint, Water Treatment Plant
Mr. Lonnie Lee, DEQ
Mr. Patrick Cook, DEQ



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYATT
DIRECTOR

December 21, 2011

Mr. Michael K. Brown, Emergency Manager
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Brown:

SUBJECT: Water Distribution System Operator Certification;
City of Flint; WSSN 02310

The purpose of this letter is to inform you of an operator certification deficiency that the City of Flint (the City) has not resolved concerning oversight of the city's water distribution system. Specifically, the Flint water distribution system must be overseen by a water distribution system Operator-in-Charge (OIC) having an S-1 drinking water certification. This deficiency began on July 31, 2011, when the city's S-1 certified OIC, Mr. Michael Brown (Utilities Administrator) retired.

The City was informed in our August 11, 2011, letter (copy enclosed) of the need to designate a new S-1 certified OIC for the water distribution system. The water distribution system OIC would be in overall charge of the water distribution system and would be responsible for making decisions regarding the daily operational activities of the water distribution system. Under standard operation, the water distribution system OIC shall be employed and available on a daily basis to oversee records maintenance and analysis, planning, monitoring, construction, and maintenance and to supervise and direct staff responsible for daily operations.

The City was offered the option to retain a temporary OIC, for short term operation, in the event that an S-1 certified OIC was not available. The temporary OIC would allow the City to remain in compliance with the S-1 certification requirement while the City either recruited a replacement or promoted an existing staff member to the OIC position. If the City was to retain a temporary OIC, we were to review a proposed scope of services prior to the City entering into a contract. If the City did not desire to promote a staff member to the position of OIC, then the City was to immediately pursue hiring a full-time OIC, such that the OIC was on staff within 6 months (February 11, 2012). To date, we have not received any communication from the City indicating that corrective action has been taken to resolve this deficiency.

Mr. Michael K. Brown

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December 21, 2011

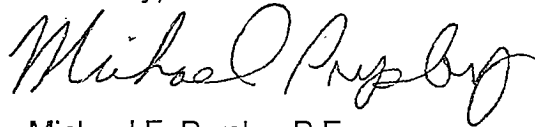
In accordance to Section 9 (5) of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399) and the Administrative Rules, "A public water supply shall be under the supervision of a properly certified operator as specified in the rules."

R 325.11905 (1) of the Administrative Rules states "Any waterworks system or a portion of a system which has been classified in accordance with R 325.11901 or R 325.11902 shall be under the supervision of an operator in charge certified in the system classification as specified in these rules." In accordance with R 325.11902, the City's water distribution system has an S-1 classification.

We are requesting that the City provide us a written response to this letter by January 15, 2012, as to how the deficiency in the operator certification requirements will be corrected by the February 11, 2012, deadline. The response should include a schedule by which compliance is to be achieved. Finally, we must also affirm our position that if the City does not intend to promote an existing staff member (currently holding an S-1 certification or able to obtain an S-1 certification within the next exam cycle) to the OIC position, then the City must have a newly hired S-1 OIC on staff by no later than February 11, 2012. Failure to correct this deficiency may result in escalated enforcement action.

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Environmental Quality, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E.,
District Engineer
Resource Management Division
Lansing District Office
517-335-6122

mfp:jir

cc: Mr. Howard Croft, City of Flint, Director of Infrastructure
Mr. Phil Mathews, City of Flint, Water Service Center
Mr. Rick Freeman, City of Flint, Acting City Engineer
Mr. John Craig, DEQ
Mrs. Bethel Skinker, DEQ

2310



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

August 11, 2011

Mr. Gregory A. Eason, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

*Not w. G. Eason
& M. Brown on
10/13/2011 to
J. Brown temp OK
Regis.*

Dear Mr. Eason:

SUBJECT: Water Distribution System Operator Certification, City of Flint

It was brought to our attention that the city of Flint's water distribution system Operator-in-Charge (OIC), Mr. Michael Brown (Utilities Administrator), has retired from the city effective July 31, 2011. Mr. Brown's retirement raises the issue of operation and maintenance oversight of the Flint water distribution system by an S-1 certified operator.

By definition, the water distribution system OIC is a properly certified operator who is designated by the city as the responsible individual in overall charge of the water distribution system and who makes decisions regarding the daily operational activities of the water distribution system that will affect the quality or quantity of drinking water. Under standard operation, the water distribution system OIC shall be employed and available on a daily basis to oversee records maintenance and analysis, planning, monitoring, construction, and maintenance and to supervise/direct staff responsible for daily operations. Specifically, the city of Flint is required to have an S-1 certified operator be designated as the OIC and oversee the operation and maintenance of the water distribution system.

The city will need to designate a new water distribution system OIC with an S-1 certification. The city also needs to designate a back-up operator. Enclosed is an Operator and Back-up Operator Designation Form. Please complete the form and return it to our office.

Next, in the event that an OIC is not available to meet the standard operation criteria, it will be acceptable, for short-term operation, for the city to recruit a replacement or promote a staff member to the OIC position. During this interim period, the city must retain a temporary OIC having an S-1 certification to visit the water supply system at least twice a week, to be on-call 24 hours per day, and supervise/direct staff responsible for daily operations. The following conditions also apply:

Mrs. Gregory A. Eason

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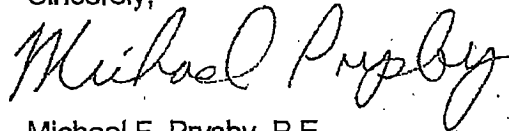
August 11, 2011

- If the city wishes to promote a staff member to be the OIC after the staff member has achieved proper certification, this individual must first qualify to write the S-1 certification examination when it is next offered (November 2011). If this individual fails the examination, the city must immediately pursue the hiring of a full-time OIC.
- If the city does not desire to promote a staff member to be the OIC, then the city must immediately pursue hiring a full-time OIC. The OIC must be on staff within 6 months.

Finally, if the city retains a temporary OIC, we would appreciate an opportunity to review the scope of services if the city enters a new contract.

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Environmental Quality, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E.,
District Engineer
Resource Management Division
Lansing District Office
517-335-6122

mfp:jir

cc: Mr. Phil Mathews, City of Flint, Water Service Center
Mr. Peter Bade, City of Flint
Mr. Mark Joseph, DEQ



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

June 20, 2011

Mr. Brent Wright, Plant Supervisor
City of Flint, Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

SUBJECT: City of Flint Water System

This letter confirms my visit you and Mr. Michael Glaskow on June 9, 2011. The purpose of the visit was to conduct routine water system surveillance and to observe a routine water treatment plant (WTP) test-run. The status of various water related concerns were discussed during the visit and these are discussed in more detail below.

1. A routine WTP test-run was being conducted and, based upon the site visit, finished water turbidity and total coliform treatment objectives were being achieved. Specific operating parameters along with an overall summary of the test-run will be provided to us in the test-run report. Finally, we have not received the reports for the WTP test-runs completed since 2010. It is our understanding that three test runs were performed in 2010 and two (including the current test run) in 2011. Please provide us with a copy of these WTP test run reports. Finally, we are pleased with the commitment put forth to conduct routine WTP test-runs and we encourage the city to maintain this level of commitment.
2. WTP staff are continuing to work on the WTP Standard Operating Procedure (SOP) for routine test-runs and pipeline emergencies. Please provide us with a copy of the SOP after it is completed.

Next, WTP staff and Water Service Center (WSC) staff are working to complete the water system Emergency Response Plan (ERP). Again, please provide us with a copy of the ERP for our review and approval.

Finally, a mock Improved Explosive Device (IED) Attack on the Flint WTP was conducted on May 12, 2011. The mock exercise tested the response, coordination and communications between the City of Flint, Genesee County first responders, and state departments. The DEQ, however, was not notified of the mock incident due to a breakdown in communication during changes in

emergency oversight at the WTP. It is our understanding that WTP staff are making further changes to the water system ERP to include specific instructions confirming that all critical contacts have been notified.

3. Based upon our discussion, Phase II of the reliability study is nearly complete. We look forward to reviewing the second phase of Flint's reliability study when it becomes available. Finally, it is also our understanding that the amended Phase I report will be included with the Phase II report.
4. The 2011 Drinking Water Infrastructure Needs Survey was sent to the city in March 2011. It is our understanding that WTP and WSC staff are working to complete the survey by the end of June. We encourage the city to complete and return the survey to our office within the next several weeks.

Finally, the city of Flint continues to investigate its long-term source for drinking water. Options for future water supply source include; continued service from Detroit, establishing a new surface water source from Lake Huron – Karegnondi project (as a joint venture with other communities), or utilization of Flint's existing resources. As we discussed in our previous letter, each option will require a certain level of WTP and pumping station operation. Please keep us updated concerning the city's progress towards identifying the most practical alternative for its long-term source for drinking water. We will also to continue to meet with you and your water department staff on a quarterly basis to review the issues and the efforts concerning the city's water system.

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Environmental Quality, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Environmental Resource Management Division
Lansing District Office
517-335-6122

mfp:jir

cc: Mr. Gregory Eason, City of Flint
Mr. Mike Brown, City of Flint



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING



February 17, 2011

Mr. Gregory A. Eason, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Eason:

SUBJECT: City of Flint Water System

This letter confirms our meeting on February 10, 2011, with Mr. Mike Brown, Mr. Brent Wright, Mr. Rick Freeman from Rowe Incorporated, and yourself at the Flint Water Treatment Plant (WTP). The purpose of the meeting was to conduct routine water system surveillance. The status of various water related concerns discussed in our meeting and further actions necessary to correct them are discussed in more detail below.

- **Water system Emergency Response Plan (ERP)/WTP Standard Operating Procedure (SOP)** – A draft copy of the city's water distribution system contingency plan and the WTP SOP for routine test-runs and pipeline emergencies was provided to us. Several questions/comments were noted during our review of each plan and were discussed during the meeting. The questions/comments were noted on each document and provided to Mr. Wright. The questions/comments should be answered as part of preparing final versions of each plan.

Next, changes to the Administrative Rules of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, now require an ERP in place of the contingency plan. The ERP provides an outline to follow in the event of a water related emergency (loss of pressure, contamination, etc.). The ERP is similar to a water system contingency plan; however, various types of programs/plans pertaining to water utility operation need to be referenced in the ERP. An electronic copy of the ERP template was sent to Mr. Wright and can be used for preparing Flint's ERP. We will review the completed ERP during our next routine surveillance visit.

Finally, we concur with the idea of dividing the WTP SOP into two separate SOPs for each mode of WTP operation. Specifically, a separate SOP will be established for routine test-run operation and emergency plant production. Please provide us with a copy of each SOP when they are completed.

- **Reliability study** – Based upon our discussion, Phase II of the reliability study is nearly complete. Phase II is to include various alternatives for recommended capital improvements. Asset management principals will also be included. We look forward

to reviewing the second phase of Flint's reliability study when it becomes available. It is also our understanding that the Phase I report was amended following our review comments. Please provide us with a copy of the amended Phase I study.

- **Booster pumping station deficiencies** – Based upon our discussion, improvements to the Torrey Road and Cedar Street pumping stations will be resubmitted as part of Flint's 2011 Drinking Water Revolving Fund (DWRF) application. A revised project plan that clearly identifies the need for the station upgrades, along with all of Flint's other 20-year water system needs, will need to be prepared. The project plan will also include some distribution system improvements. The city should also take the opportunity to utilize the reliability study for additional documentation in support of the projects that are included in the project plan. Finally, given the uncertainty of Flint's long-term pumping needs at Pump Station No. 4, no immediate improvements are planned for this facility.

While there is uncertainty over the degree of long-term use of Pump Station No. 4, this station is critical for today's water supply operations. Continued effort is needed now to ensure adequate reliability of Pump Station No. 4 and its respective storage reservoirs, especially during emergency operation.

- **WTP Test Runs** - Routine WTP test runs continue to be conducted on a quarterly basis. Each test run increases the experience and confidence of plant operators to further assure that plant production water meets all applicable drinking water standards. Based upon our discussion, treatment continues to improve with each test run. Given the importance of maintaining the familiarity with treatment plant operation, and the potential of needing to place the WTP into emergency operation to distribute treated water to the public, WTP test runs need to continue on a quarterly basis. Finally, please provide us with copies of the 2010 WTP test run reports
- **Operator Certification** – WTP operator Mr. Mike Glaskow has obtained the F-1 certification and has been designated as the Operator-In-Charge (OIC). As OIC, Mr. Glaskow will be responsible for reviewing and signing the following monthly/annual reports:
 - Monthly Operation Reports
 - Consumer Confidence Report and Certification Form
 - Lead/Copper Reporting Form
 - Annual Pumpage Report

Next, with Mr. Glaskow obtaining the F-1 certification, the city has achieved full compliance with the F-1 certification requirement. It is also our understanding that the city has discontinued their mutual aid agreement with Genesee County for operator assistance during routine test runs; however, the county is available to assist, as needed, during emergency operation. We encourage the city to maintain the availability of assistance from Genesee County during emergency operation.

- **Infrastructure Needs Survey** - The 2011 Drinking Water Infrastructure Needs Survey will be sent to Flint in March 2011. We encourage the city to complete and return the survey to our office. As always, we are available to meet with you to discuss various water related projects that could be included in the survey as part of

Mr. Gregory Eason

3

February 17, 2011

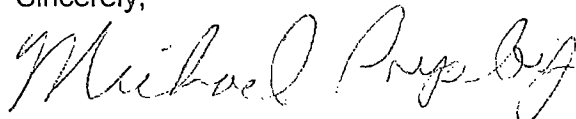
Flint's overall 20-year needs. The city should also take the opportunity to utilize the reliability study for additional documentation in support of the projects that are included in the needs survey. Finally, our department will be providing several training sessions to assist in completion of the 2011 survey. The city will be provided with additional information pertaining to the training sessions when it becomes available

- **Future Water Source** – The city of Flint is faced with the challenge of determining its long-term source for drinking water. Options for future water supply source include; continued service from Detroit, establishing a new surface water source from Lake Huron – Karegnondi project (as a joint venture with other communities), or utilization of Flint's existing resources. Each option will require a certain level of WTP operation. The level of treatment and scope of improvements at the WTP will need to be carefully evaluated as part of selecting the most suitable option. Other important factors include; short-term source(s) of supply, residuals management (correcting the violations at the Bray Road sludge lagoons vs. on-site treatment), and available source capacity (Lake Huron supply and Flint River watershed).

We appreciate having the opportunity to meet with you to discuss the status of Flint's water system and the challenges that lie ahead. Finally, we will continue to meet with you and your water department staff on a quarterly basis to review the issues and the efforts concerning the city's water system.

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Natural Resources and Environment, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Environmental Resource Management Division
Lansing District Office
517-335-6122

mfp:jir

cc: Mr. Mike Brown, City of Flint
Mr. Brent Wright, Flint Water Plant
Mr. Rick Freeman, P.E., Rowe Incorporated
Mr. Brian McKenzie, Genesee County Health Department



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING



February 17, 2011

Mr. Michael Brown, Utilities Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Brown:

SUBJECT: Customer Site Piping

The Department of Natural Resources and Environment, Environmental Resource Management Division (DNRE), has received a schematic from Alpine Engineering, Inc., detailing a proposed watermain relocation within the city of Flint. An existing 8-inch main is to be relocated to allow for construction of the proposed Department of Human Services (DHS) office building. The question was raised as to whether a construction permit would be needed to relocate the existing main.

Based upon the schematic, and that the size of the main is not being changed, a permit would not be required by our office. However, it was brought to our attention that the relocated watermain (approximately 555 feet) will be privately owned. Also based on the drawing, the private main (referred to as "customer site piping") will be connected to the city of Flint's water distribution system at both ends. Our primary concern with customer site piping with more than one connection to the municipal water system is establishment of a "flow through" situation. As water enters a private main, the utility gives up control of the water and it has the potential to re-enter the municipal system at the other connection(s). There is the potential for the degradation of water quality in a privately owned system, thus the DNRE does not allow private ownership of watermains where flow-through situations can exist. Finally, failure of the utility to acquire ownership of customer site piping where a "flow through" condition exists, is a violation of Section 325.1005a, Sec. 5a (1) of the Michigan Safe Drinking Water Act 1976 PA 399, as amended, Michigan Compiled Law 325.001 *et seq.*

The watermain proposed to serve the DHS building needs to become publically owned and maintained by the city of Flint. This will call for the establishment of a public watermain easement or right of way in this area. Any easements that are obtained need to be documented and a copy provided to us.

Mr. Michael Brown

2

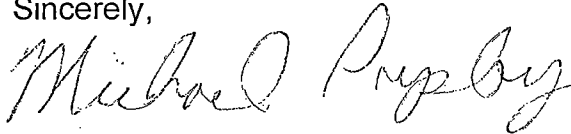
February 17, 2011

Next, if the city of Flint is unable or unwilling to assume ownership of this watermain, then it will remain customer site piping. We are in the position to allow a utility to make more than one connection to customer site piping provided that double check valve assemblies are installed at each point of connection. These devices will need to be located within a concrete vault to ensure proper operation and protection. We would also suggest that a master meter be installed in the vault. Adequate valving must be installed to allow for removal of the device during maintenance.

Finally, in lieu of installing double check assemblies, the city of Flint may elect to establish an operating/maintenance agreement with the owner of the customer site piping. The contract would allow the city to have sufficient control of the main in terms of maintenance and repair without actually owning it. Enclosed is an example of an operating agreement established between the owner of customer site piping and a municipality. If the city elects to establish an operating agreement, a copy of the operating/maintenance contract needs be sent to us for review and comment.

Should you require further information, please contact me at the telephone number below; via e-mail at prysbym@michigan.gov; or Department of Natural Resources and Environment, P.O. Box 30242, Lansing, Michigan 48909.

Sincerely,



Michael F. Prysby, P.E.
District Engineer
Environmental Resource Management Division
Lansing District Office
(517) 335-6122

mfp:jir

Enclosure

cc: Ms. Shiloh Dahlin, Alpine Engineering, Inc,



STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING DISTRICT OFFICE

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

March 31, 2010

Mr. Gregory A. Eason, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Eason:

SUBJECT: City of Flint Water System

This letter confirms our meeting on March 30, 2010 with you, Tom McCabe, Michael Brown and Brent Wright. Mike Prysby from our office was also present. The purpose of the meeting was to discuss the overall status of the city of Flint water system and some of the items of immediate concern. An information packet containing a summary outline, recent correspondence, and copies of the Flint Water Treatment Plant and Distribution System Sanitary Surveys was provided to you during the meeting.

We appreciated the opportunity to meet with you, and we look forward to working with you and your water utility staff toward accomplishing additional water system improvements. The city has made good progress over the last year or so, and we hope the ongoing efforts will continue.

Finally, we discussed the possibility of meeting with you and available members of the Flint city council at the Flint Water Treatment Plant during a routine test run to help reinforce the importance of the treatment plant and to answer any questions about the facility or the water system. Please let us know if you wish to pursue this type of visit.

Please feel free to call if you have any questions concerning the topics that were discussed during the meeting. You may contact Mike Prysby at 517-335-6122 or you may contact me at the number provided below.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy A. Benton".

Timothy A. Benton, P.E., District Supervisor
Lansing District Office
Field Operations Section
517-335-4523

tab:smb

cc: Mr. Tom McCabe, DPW Director, City of Flint
Mr. Michael Brown, City of Flint
Mr. Brent Wright, City of Flint
Mr. Michael Prysby, DNRE



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

December 21, 2009

Mr. Tom McCabe, DPW Director
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2310

Dear Mr. McCabe:

SUBJECT: City of Flint Water System
Sanitary Survey Update
Water Treatment Plant, Water Distribution System

This letter confirms our meeting on December 2, 2009 with you, Michael Brown and Brent Wright. Jeff Bryson from the Genesee County Drain Commissioner's office and Rick Freeman from Rowe, Incorporated were also present. Mr. Timothy Benton from our office was also present. The purpose of the meeting was to update the City of Flint 2007 Water Treatment Plant Sanitary Survey and the 2008 Water Distribution System Sanitary Survey.

In general, each survey covers the major aspects of Flint's water system including: stand-by facilities, distribution, source capacity, and storage. The purpose of this letter is to emphasize the water related items posing the most concern. These items are discussed in more detail below.

WATER TREATMENT PLANT

1. Hamilton Dam – The city's consultant, Stantec has recommended replacement of the Hamilton Dam with construction of a new concrete spillway. Prior to completing the spillway's design, the minimum pool depth upstream of the dam necessary to allow operation of the Water Treatment Plant (WTP) at its rated capacity (36 million gallons per day (MGD) needs to be determined. It is our understanding that WTP staff will be coordinating efforts with their consultant in performing pump tests at the low service (LS) pumping station in conjunction with various levels in the Flint River to determine the minimum pool depth elevation. WTP staff also needs to either obtain or prepare the pump curves for each of the LS pumps. The pump tests at LS need to be completed since this information plays a vital role in establishing the design height of the new spillway. Also, we encourage WTP staff to take the opportunity to operate all of the LS pumps during the test to further determine the reliability of the LS pumping station. Finally, we look forward to reviewing the results of the pump test and the amount by which the river can be lowered without impacting the WTP's ability to operate at its rated capacity.

2. High Service (HS) Pumping – HS pumps #1 and #2 at Pump Station No. 4 are not available for service. The remaining pumps (HS Pumps #7, #8, and #9) provide a total and firm (available capacity with the largest pump out of service) HS pumping capacity of 46 and 26 million gallons per day (MGD) respectively. Based upon our discussion, HS Pumps #7, #8, and #9 are in good operating condition.

We are comfortable with the total and firm HS pumping capacity to meet Flint's water usage in the event of an emergency repair to the 72-inch pipeline. The firm HS pumping capacity, however, falls somewhat short in meeting the combined needs of Flint and Genesee County during a pipeline emergency.

While we all agree that additional HS pumping capacity would be needed to meet the combined needs of the city and Genesee County, HS pumping capacity will be a function of the station's future level of use. The station's future level of use is uncertain at this time due to Genesee County's plan to utilize Lake Huron as their future source of water (Karegnondi Project) and Detroit's plan to provide a second transmission main from Detroit (Flint Transmission System – FTS and North Oakland Transmission System – NOTS projects). When the outcome and design of these projects become more certain, the intended future use level of HS pumping needs to be evaluated to determine the amount of HS pumping capacity that will be needed.

3. Operator Certification – We are pleased that the city has taken corrective action to address the deficiency in operation certification at the WTP. Specifically, a "memo of understanding" has been established with Genesee County that authorizes an F-1 operator from Genesee County to oversee operation of the WTP during emergency operation. It is our understanding that Dave Jansen and/or Jeff Bryson are the designated operators-in-charge (OIC) during emergency operation. Please provide us with a copy of the memo of understanding with Genesee County regarding operator oversight at the WTP. Also, operation reports specific to emergency operation of the WTP need to be signed by the designated OIC. Next, we are also supportive of F-1 oversight from the county during routine WTP test-runs and we encourage the city to continue this practice. Routine WTP operation during plant downtime can be covered with the city's current certification status. Finally, the routine monthly operation report may continue to be signed by Brent Wright.
4. Water System Contingency Plan – Based upon our discussion, WTP staff are preparing a contingency plan specific to emergency operation of the WTP. The plan identifies the parameters necessary for implementation of WTP operation and will establish a set of standard operating procedures. The plan should also take into consideration the different types of pipeline emergencies that could arise and how each scenario will affect operation of the WTP. Coordination of remedial activities between the WTP, Water Service Center (WSC), and Genesee County operators should also be outlined in the WTP contingency plan.

Next, a separate water system contingency plan specific to other types of distribution system emergencies (contamination, backflow, pressure loss, etc.) is also being prepared. This plan is being based on our contingency plan format that was provided to city earlier this year.

Finally, both contingency plans are expected to be completed by early 2010. Please send us a copy of each plan for our review.

5. Intermediate Chlorination – During 2009, the WTP was placed into emergency operation twice and treated water was distributed to Flint's water distribution system. Intermediate chlorination was added on a temporary basis in order to provide a higher level of assurance that the drinking water being supplied to the city met the drinking water standards for coliform bacteria. The benefits of intermediate chlorination were especially realized during the WTP's August – early September 2009 emergency operation. The presence of chlorine through the majority of the treatment process provided the level of assurance needed to avoid having to issue a system-wide boil water advisory.

We strongly support WTP staff with their intent to provide intermediate chlorination on a permanent basis. Various options for intermediate chlorination including a tablet feed system (pellet or erosion type) or a small scale chlorine gas system are being investigated. Prior to installing an intermediate chlorine feed system, a completed permit application along with a proposal (plans, specs, basis of design) needs to be sent to our office. Following our review and approval, a construction permit will be issued for the proposed work.

Finally, intermediate chlorination will require provisions for dechlorination of the filter to waste effluent. Dechlorination is necessary in order to maintain compliance with the NPDES discharge limits for the discharge of treated water to the Flint River during routine WTP test runs. WTP staff is investigating options for a dechlorination system. Finally, prior to installing a dechlorination system, a construction permit will be issued for the proposed work.

WATER DISTRIBUTION SYSTEM

1. Water System Reliability Study – Based upon our discussion and the Water System Reliability Study Project Summary, Phase I of the reliability study is expected to be completed in January 2010. Items that were completed in Phase I included a detailed water system general plan showing the locations of hydrants, valves, storage facilities, pumping stations, etc. Also completed are the updated hydraulic model and the flow tests to calibrate the model. Finally, a 6-year capital improvements plan (CIP) is being prepared as part of the first phase of the study. We look forward to receiving a copy of the first phase of study for our review and comment.

The second and third phases of the reliability study include distribution system and WTP asset management and establishment of a 20-year CIP. We encourage the city to continue to put forth the effort with their consultant towards completing the reliability study and following through with the recommended improvements.

2. Valve Program – We are pleased with the effort put forth by the WSC towards improving the water system valve program. The approximate location of all water system distribution system valves have been entered into city's GIS system and are also noted on the base map. Also, the exact location of each valve is nearly two-thirds complete.

The next major step towards improving the valve program is to determine the operating condition of each valve and enter this information into the database system. This step will be initiated after all of the valve locations have been confirmed. Finally, the second phase of the reliability study will establish a valve maintenance program.

We encourage the city to continue working with their consultant towards obtaining the critical information that is needed to establish a complete recordkeeping system for distribution system valves. The city will also need to determine the level of staffing that will be needed in order to maintain an adequate valve maintenance program.

3. Pumping Stations – The city has not proceeded with rehabilitation of the electrical system at the Cedar Street pump station or replacement of the Torrey Road pump station. Although the objective was to finance the project with drinking water revolving funds (DWRF) and a construction permit was issued, these projects did not proceed due to the city's current bond debt.

While we understand the city's concern of increasing their bond debt, the condition of both stations and their limited operating reliability raises concern. The Cedar Street station's electrical switchgear is clearly outdated and needs to be replaced. Also, provisions for stand-by power were provided as part of the DWRF project. Next, the Torrey Road pump station has only one reliable pump for operation and this facility plays a critical role in providing adequate water service to the western portion of the city including the Hospital Hill area. Finally, stand-by power was also included in the Torrey Road project.

It is our understanding that the city intends to replace the electrical switchgear at the Cedar Street PS next summer. The city is also considering rehabilitating the existing pump station at Torrey Road as opposed to constructing a new facility. The upgrades would include new pumps and motors, controls, and valving. We would be agreeable to an upgrade of the existing station based on the scope of work that was discussed. Upgrades to the Torrey Road pump station would proceed in 2011.

Mr. Tom McCabe

5

December 21, 2009

Finally, discharge piping and valving improvements have not been completed at the Westside PS. This work needs to be completed in order to reduce water hammer and subsequent main breaks in areas downstream from the station. It is our understanding that work on the Westside PS will be proceed following completion of the work at the Cedar Street and Torrey Road PSs.

We are agreeable to the approximate timeframes to correct the deficiencies at each of the pumping stations. We would be interested, however, in receiving a schedule for each project.

It is evident that the city has taken some serious steps towards identifying various water system deficiencies and investigating corrective action options. We are also pleased with the improvement in WTP operation during 2009 and the ability of the WTP and its staff to provide an emergency supply of drinking water to the city that met all of the applicable drinking water standards.

We also wish to remind the city that much work remains to be completed. The city needs to meet the financial challenges in completing water system infrastructure projects and improving utility operations. Given the improvements made in WTP operation, operator certification, valve program, and the progress made with the reliability study, Flint's water system has improved to a "**Marginal**" rating. The amount of effort and progress that is put forth over the next 24 months, especially in the key areas discussed in this letter, will determine whether Flint's water system rating improves further or declines.

We appreciate the time taken to meet and discuss the current status of the city water system and we look forward to working with you on these water related issues. If you have any questions concerning these items or on any other water related matter, please don't hesitate to call me at the number provided below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Water Bureau
Field Operations Section
517-335-6122

mfp:smb

cc: Mr. Michael Brown, City of Flint
Mr. Brent Wright, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

CORR file - 508

DEPARTMENT OF UTILITIES



Michael K. Brown
Acting Mayor

Brent Wright
Water Plant Supervisor

June 2, 2009

Kurt Swendsen
Municipal Facilities Section
Environmental Assistance Division
P.O. Box 30457

RECEIVED

JUN 08 2009

Environmental Science &
Services Division

Kurt:

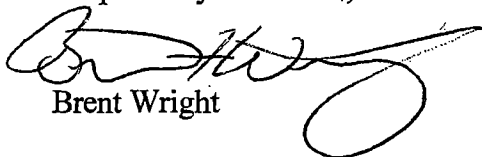
Enclosed please find an executed change order number four (4) adopted February 23, 2009. Change order number four reduces the Sorenson Gross contract by \$25,000.00. The reduced amount was the cost to provide ozone electronic/computer upgrades and remote operation for the Ozonia installed ozonation system.

The City of Flint in part has contracted professional services from Motor City Electric Technologies Inc. (MCETI), to provide emergency services to the Ozonia equipment on an as needed basis. As needed services were required by the City of Flint to resolve safety emergency issues on the Ozonia equipment by a certified Ozonia contractor. In the State of Michigan, MCETI is the only certified professional service provider.

The use of the deducted \$25,000.00 by the City of Flint, is to provide electrical/computer upgrades and remote operation on the installed Ozonia equipment. These changes are required for the efficient operation and Sorenson Gross couldn't provide the service. In addition, City staff will provide assistance to MCETI, on a force account basis to ensure transfer of knowledge. The total cost of the City force account and MCETI will not exceed \$25,000.00

We hope to have the work completed by the end of August 2009. If you have any questions feel free to contact me at (810) 787-6537. We thank you for your attention in this matter.

Respectfully submitted,



Brent Wright

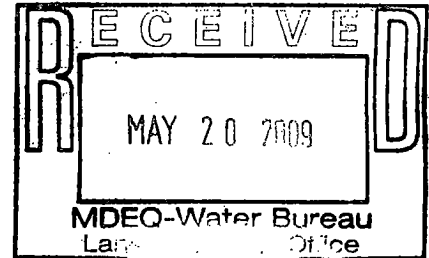
Enclosure: Change Order #4

cc: DLZ



Michael K. Brown
Acting Mayor

CITY OF FLINT
WATER TREATMENT PLANT



May 14, 2009

Mike F. Prysby, P.E.
MDEQ
525 W. Allegan St.
P.O. Box 30242
Lansing, MI. 48909-7742

Dear Mr. Prysby:

SUBJECT: City Of Flint WTP OIC

In response to your letter of April 24, 2009, the City Of Flint is in the process of drawing up a contract with Genesee Co. WWS to obtain the use of an F1 operator. The F1 operator will oversee and advise the operation of the plant during scheduled test runs. If an emergency exists and water is introduced to the distribution system, the WTP staff will be under the direction of the OIC. The OIC will also review and sign the MOR. I believe an agreement and or contract will be signed before the June 1st dead line you imposed. The City Of Flint will send a confirmation letter and copy of the agreement upon its implementation.

Sincerely,

Brent F. Wright, Supervisor
City Of Flint Water Plant
4500 N. Dort Hwy.
Flint, MI 48505



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

April 24, 2009

Mr. Michael K. Brown, Acting Mayor
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2310

Dear Mr. Brown:

SUBJECT: City of Flint Water System – Operator Certification

We have been alerted to the decision by the City of Flint to end the contact with Carlyon Consulting effective May 8, 2009. The purpose of the contract was to provide the Flint Water Treatment Plant (WTP) with an interim operator in charge (OIC) having the required F-1 complete treatment certification. The service contract was established in order to allow the city to remain in compliance with the requirement for a properly certified operator at the Flint WTP pursuant to the Michigan Safe Drinking Water Act, Act 399 P.A. 1976, as amended, and the Administrative Rules.

We have worked closely with the city and WTP staff over the past few years towards obtaining a properly certified OIC. The certified OIC plays a major role in assisting the plant operators in demonstrating the WTP's ability to produce drinking water that meets the applicable state and federal drinking water standards. The ability of the WTP to produce quality drinking water is critical in the event of an interruption in supply from the Detroit Water and Sewerage Department transmission line. The city has invested over \$40 million in the standby water treatment plant but highly qualified and experienced operators are absolutely essential to make the facility function satisfactorily.

We have noted that with the assistance of Carlyon Consulting WTP performance has improved during the most recent plant test-run. We have also noted that the frequency of repairs to the 72-inch diameter transmission pipeline have increased, thus the need for adequate WTP operation will always remain a concern provided that the pipeline remains the only source of drinking water for Flint.

If the city terminates the contract with Carlyon Consulting, a new OIC having a current F-1 certification should be retained as soon as possible but by no later than June 1, 2009. In addition, we would appreciate an opportunity to review the scope of services if the city enters a new contract.

If you have any questions regarding this issue or any other drinking water related matter, feel free to call me at the number provided below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

cc: Mr. Brent Wright, Flint Water Plant
Mr. Robert Carlyon, Carlyon Consulting
Mr. Brian McKenzie, Genesee County Health Department



CITY OF FLINT

Michael K. Brown
Acting Mayor

April 7, 2009

Mr. Robert Carlyon, President
Carlyon Consulting
12418 Carpenter Road
Flushing, Michigan 48433

Dear Mr. Carlyon:

Please allow this communication to serve as the official thirty day written notification to end your current contract with the City of Flint. As such, your contract with the City will end effective Friday, May 8, 2009 at 5:00 p.m.

On behalf of the City of Flint, I would like to thank you for your service and wish you much success in your future endeavors. Please make arrangements with Deirdre G. Pitts, Human Resources and Labor Relations Director to return all City property within your possession. Thank you in advance for your professional cooperation.

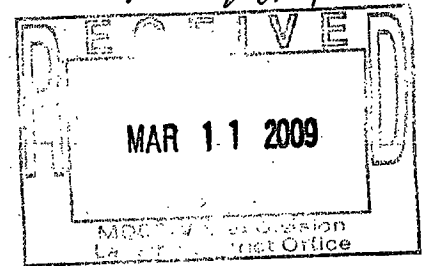
Sincerely,

Michael K. Brown
Acting Mayor

MKB:mm



**DEPARTMENT OF UTILITIES
Water Plant & Facilities**



Michael Brown
Mayor

Brent Wright
Provisional Supervisor

Mr. Michael Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
PO Box 342
Lansing, MI 48909-7742
March 6, 2009

Dear Mr. Prysby;

SUBJECT: City of Flint Water System

This letter contains responses to several issues discussed in your letter dated February 5, 2009. A number of items have been impacted by the recent change in Administration of the City of Flint. The City no longer employs Mr. Lyle Hippensteel. Mr. Darryl Buchanan has been reassigned within the administration. For some unknown reason, your letter dated February 5, 2009 was not delivered to Mr. Mike Brown or Mr. Brent Wright. They only became aware of its existence late last week when Mr. Rick Freeman mentioned the subject.

Mr. Brent Wright and Mr. G. Robert Carlyon have scheduled test operations of the Water Plant beginning on Monday, March 9, 2009 and concluding on Saturday, March 14, 2009. The ozone system has undergone recent reprogramming and this will be the first opportunity to familiarize the staff with the revised operational parameters. As itemized in the recent Water Plant Sanitary Survey, the two larger low service pumps (those rated at 25 MGD and 30 MGD) will be operated to determine their readiness for service. Mr. Brent Wright has successfully revised job descriptions at the Water Plant that will create an ongoing class of dual-purpose employees whose job duties will encompass both operational and maintenance activities. Several employees engaged in this training series will be applying to test for F-4 certification in May. In a continuing and expanding program of encouragement of operator training and certification, several other staff members who currently hold certifications have applied to take more rigorous exams this spring.

With the above news, Mr. Brown, Mr. Wright and Mr. Carlyon would like to invite both you and some staff member from Operator Certification and Training to accompany you during the test operation. The unique status of the Flint Water Plant in dividing its time as a treatment facility and a distribution facility spanning the conventional boundaries between Class F and Class S water facilities needs to be considered when reviewing applications for certification testing.

With regard to the water system reliability study, a City Council resolution to enter into a contract to conduct such a study and provide written reports of the results has been prepared. The initial signature and approval process is currently underway prior to submittal to the Council for approval.

The bids for the relocation and expansion of the Torrey Road Pump Station have been reviewed. The low bidder was nearly double the engineer's estimate of project cost, creating a review of the plans and specifications to trim costs. Other members of the Utilities Department staff and Rowe Professional Services have been involved in revising the plans and specifications for rebidding the project. The City of Flint remains optimistic that this project can be completed within the 2009 construction season.

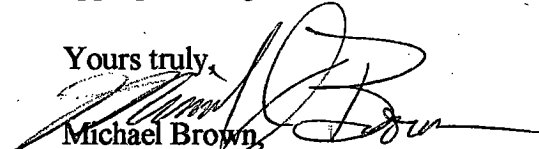
The Water Service Center continues to have one employee dedicated to inputting the data collected by other members of the staff with regard to the location and condition of valves within the system.

We have attached a copy of a document prepared and provided by MDEQ to the City of Flint regarding the scope of services to be provided by the "Interim" Operator-In-Charge of the Flint Water Treatment Plant. Please use Mr. Brent Wright as your contact as the provisional Water Treatment Plant Supervisor. Mr. Wright is applying for certification as an F-2 Water Treatment Systems Operator by taking the test in May of this year. He has actively pursued the education requirements suggested by the MDEQ and is currently scheduled to take another MDEQ course next month. Because he has over nineteen years experience in the maintenance and operation of the Flint Water Plant, we feel confident in his ability to gain the appropriate certification level soon. In the meantime, Mr. Carlyon visits the facility one or more times per week routinely. He reviews the MOR, and has recently taken over a greater role in the Hamilton Dam replacement project by assisting in the development and review of a formal "Request for Qualifications" document, review criteria and a scoring matrix to allow the City to choose an engineering firm to finalize the scope of services and develop plans and specifications of the resulting construction project.

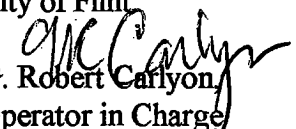
We remain confident of your assessment during the January 21, 2009 meeting that the City seemed to be making considerable progress toward upgrading the status of the water system from a regulatory compliance standpoint.

We remain likewise confident that our efforts will result in a comprehensive review of the system within the upcoming year that will minimize the deficiencies previously noted and restore Flint to compliance with the appropriate regulations.

Yours truly,


 Michael Brown,
 Utilities Administrator
 City of Flint


 Brent Wright,
 Provisional Water Plant Supervisor
 City of Flint


 G. Robert Carlyon,
 Operator in Charge
 Flint Water Plant
 MDEQ Certification S-1, F-1



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

February 5, 2009

Mr. Darryl Buchanan, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Buchanan:

SUBJECT: City of Flint Water System

This letter confirms my meeting on January 21, 2009 with Lyle Hippensteel, Mike Brown, Brent Wright, Robert Carlyon, and representatives from Rowe Incorporated. The purpose of the meeting was to discuss the progress that is being made by the city towards addressing the water system deficiencies outlined in the Violation Notice sent to the city on July 7, 2008 and further discussed at a meeting with you at city hall on July 28, 2008.

We received your written response to the Violation Notice on December 22, 2008. Your response which includes a summary prepared by your water department staff and consultant demonstrates that the city has made some progress towards addressing the water system deficiencies. The status of these deficiencies and further actions necessary to correct them is discussed in more detail below.

- Water system contingency plan – Based upon your response and my most recent meeting, a water system contingency plan is being developed that will reflect potential water system emergencies. In addition to addressing typical water related emergencies (power outage, large watermain break, contamination, equipment failure), the plan also needs to address emergencies associated with the 72-inch transmission pipeline and emergency operation of the stand-by water treatment plant (WTP). Finally, enclosed is a water system contingency plan format that was requested Mr. Carlyon.
- Reliability study – Rowe Incorporated has prepared a Scope of Services (SOS) for the reliability study. Based upon our review, the SOS addresses all of the suggested reliability study criteria and is acceptable. We encourage city administration to approve the SOS such that the first phase of the study can be completed by the target date of July 2009.

- Distribution operator training and certification – The city has committed to promote operator training and certification at all levels of distribution certification. We encourage the city to maintain this level of commitment.
- Booster pumping station deficiencies – The Torrey Road pump station project is out to bid and a Notice to Proceed is expected to be granted this spring. The city needs to approve the bids such that construction of the pump station can proceed this year. Next, a cost estimate is being obtained for pump discharge piping modifications at the West Side pump station to address water hammer problems. Again, this improvement at West Side needs to proceed in order to help resolve the issue of frequent main breaks that occur in the surrounding area.

Next, while we might agree that some uncertainty may exist regarding the future long-term use of pump station No. 4 and Cedar Street pump station; these are critical, important, facilities for today's water supply operations. Additional effort is needed now to ensure adequate reliability of the both pump stations and their respective storage reservoirs, especially during emergency operation. Although we are not opposed to the idea of installing a solar powered mixing system at the Cedar Street reservoir, all options to increase the station's reliability and efficient use of the reservoir need to be investigated.

- Water system valve program – It is our understanding that the Water Service Center has located approximately 80-85 percent of the distribution system valves, and has established a database for hydrants and valves. Approximately 25 percent of the located valves need to be replaced. The city needs to continue working toward establishing a satisfactory valve program. Finally, the status of the distribution system valves and other distribution system appurtenances need to be provided to your consultant as part of the water system reliability study.
- F-1 Operator-in-Charge (OIC) – According to your letter, the city of Flint has retained the services of Robert Carlyon as the F-1 certified OIC for the stand-by WTP. Please provide us with a scope of services for this contract. The scope of services should clearly identify the OIC responsibilities in overseeing WTP test runs, emergency operation, on-going operator training, and physical oversight of the stand-by WTP. Finally, the frequency of the OIC attendance or oversight should be detailed.

We appreciate the city's efforts so far to address the water system deficiencies that were listed in the Violation Notice; however, the city must remain committed towards fully correcting the problems with the public water system. Much continued effort and expenditure will be required to bring the water system back into compliance with the Michigan Safe Drinking Water Act.

Next, a method to track the corrective steps of all the water system deficiencies noted in the distribution system sanitary survey and the water treatment plant survey needs to be developed. Based upon our meeting, a spreadsheet that will list specific projects along with a milestone schedule is being developed. This spreadsheet will also update the

Mr. Darryl Buchanan

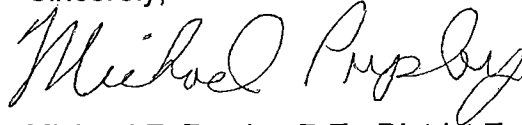
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February 5, 2009

preliminary schedule that was provided to us last fall. Please provide us with a copy of the project spreadsheet for our review and comment.

Finally, we will to continue to meet with you and your water department staff on a quarterly basis to review the issues and the efforts concerning the city's water system. If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

Enclosure

cc: Mr. Lyle Hippensteel, City of Flint
Mr. Mike Brown, City of Flint
Mr. Brent Wright, Flint Water Plant
Mr. Rick Freeman, P.E., Rowe Incorporated
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

August 18, 2008

Mr. Darry Buchanan, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Buchanan:

SUBJECT: City of Flint Water System

This letter confirms our meeting on July 28, 2008 with you, Lyle Hippensteel, Mike Brown, Brent Wright, and representatives of Rowe Incorporated. The purpose of the meeting was to discuss the water system deficiencies referenced in Flint's July 7, 2008 Violation Notice. The Violation Notice also included Flint's 2008 Water Distribution System Sanitary Survey.

It was good to hear that you are committed to taking action to address the water system deficiencies that were listed in our agenda for the meeting. We are requesting that you or someone from the staff provide us with a written summary outlining the initial steps that the city will be taking to address these items. It is important that we hear from the city in writing, and especially that you notify us as to meeting the requirement for an F-1 certified operator at the water treatment plant.

Next, the city will need to develop a method to track the many items of not only the distribution system sanitary survey but also the water treatment plant survey. We also need to discuss the many items and come to agreement on a schedule for the city to address them.

Finally, a package of previous correspondence discussing Flint's water system deficiencies was provided to you.

As was also discussed, we believe it would be helpful to meet with you and your water department staff on a quarterly basis to review the issues and the efforts concerning the city's water system. If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

cc: Mr. Lyle Hippensteel, City of Flint
Mr. Mike Brown, City of Flint
Mr. Brent Wright, Flint Water Plant
Mr. Rick Freeman, P.E., Rowe Incorporated
Mr. Brian McKenzie, Genesee County Health Department

Corr file - yes



Donald J. Williamson
Mayor

July 16, 2008



Jeffrey Wright
Drain Commissioner

Anthony Adams
Deputy Mayor
City of Detroit
Water and Sewerage Department
735 Randolph Street, Room 506
Detroit, MI 48226-2830

2310

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Dear Mr. Adams:

This letter is a follow-up to the County of Genesee's letter to the Department on June 3, and Mr. Mercado's response of June 12, 2008.

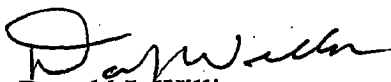
The City of Flint in concert with Genesee County is requesting to begin the process for a new water contract with the City of Detroit. It is our expectation that we will explore all options for water supply between the communities. The following is a list of items we wish to cover:

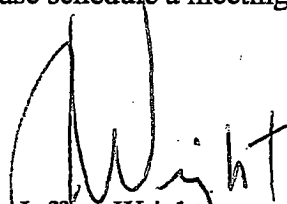
1. New contract with options to have a mutual aid agreement.
2. Option to purchase pipeline from Imlay City to Genesee County.
3. Option to purchase raw water from Port Huron.
4. Option to purchase capacity in the Detroit system.

As you know, our biggest hurdle to a renewed agreement is the distance and elevation multiplier that is applied in the rate model. We believe the multiplier as applied does not reflect a true cost of service and, therefore, increases our costs significantly higher than the benefit received.

As we are working in concert with Genesee County and since they have been working with your Department over the last two years on this issue, we have no objections to you continuing this process through their office. I have confidence that they will work in the best interest of all county residents including the City. Therefore, please schedule a meeting through the County.

Sincerely,


Donald J. Williamson
Mayor
City of Flint


Jeffrey Wright
Genesee County Drain Commissioner

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



JENNIFER M. GRANHOLM
GOVERNOR



STEVEN E. CHESTER
DIRECTOR

July 7, 2008

CERTIFIED MAIL

VIOLATION NOTICE

Mr. Daryl Buchanan, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2310

Dear Mr. Buchanan:

SUBJECT: City of Flint Water System
2008 Water Distribution System Sanitary Survey Update

This letter confirms my visits on April 11, 2008, April 15, 2008, and April 22, 2008 with Michael Brown, Brent Wright, and Glen Thomas. The purpose of the visits was to update the City of Flint (City) 2006 Water Distribution System Sanitary Survey.

In accordance with Section 15 (1) of the Michigan Safe Drinking Water Act, Act 399, P.A. 1976, as amended (Act 399) and the rules promulgated pursuant to Act 399, the City is hereby notified of the need to make water system improvements. Section 15 (1) states: "When considered necessary for protection of the public health, the department shall notify a supplier of water of the need to make changes in operations, to provide treatment, to make structural changes in existing systems, or to add additional capacity as necessary to produce and distribute an adequate quantity of water meeting the state drinking water standards."

Since the 2006 survey, the City has failed to make adequate progress in addressing critical water system improvements. The City is hereby notified to correct the following water system violations.

1. Prepare a water system contingency plan that includes a protocol for placing the stand-by water treatment plant (WTP) into emergency operation.
2. Retain a consultant to perform a water system reliability study. Develop a capital improvements program based upon transmission and distribution system needs revealed in the reliability study and implement asset management principles.
3. Improve distribution system operation and maintenance.
 - A. Promote operator certification and training for distribution system operators.

July 7, 2008

- B. Address booster pumping station deficiencies and prepare a schedule.
- C. Develop and implement a water system valve program.

Given the number of water system deficiencies that remain un-resolved, the City's water distribution system has declined to a "**Deficient**" rating. Until significant progress is made, the distribution system rating will not improve. Also, for a more thorough discussion of the City's updated survey, please reference the Conclusions and Recommendations section of the 2008 Water Distribution System Sanitary Survey.

Finally, Mr. Robert Misekow is no longer with the City. This leaves the City of Flint without an F-1 certified operator-in-charge (OIC) to oversee operation and maintenance activities at the stand-by WTP as required in Administrative Rule 325.11905 (1), of the Michigan Safe Drinking Water Act (Act 399).

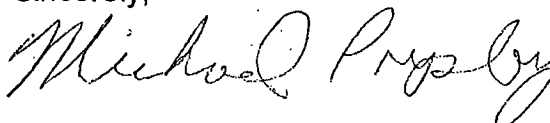
Since no other WTP operators have obtained the F-1 license, the City will need to retain another OIC holding an F-1 license. As a minimum, the OIC needs to maintain an active role in various WTP operations listed below:

- WTP test runs
- Emergency operation
- Continuing education and operator training

We would like to meet with the City to discuss the development of a schedule that addresses the items from the survey and the requirement to obtain an F-1 certified operator. Please contact me at your earliest convenience to arrange a meeting.

If you have any questions regarding these issues or any other water related matter, please feel free to call me at the number listed below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Water Bureau
Field Operations Section
517-335-6122

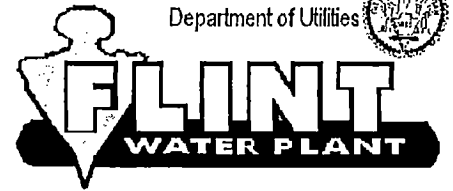
mfp:smb

cc: Mr. Michael Brown, City of Flint
Mr. Brent Wright, City of Flint
Mr. Brian McKenzie, Genesee County Health Department



Donald J. Williamson
Mayor

DEPARTMENT OF UTILITIES
Water Plant & Facilities



Brent Wright
Water Plant Supervisor

To: Mike Prysby PE.
District Engineer MDEQ

February 27, 2008

From: Brent Wright
Water Plant Supervisor

Subject: Plant effluent to 3mg well

Mike per are conversation the 48" gate valve from plant effluent to the 3mg well is damaged and inoperable. The city has hired Rowe Engineering to redesign the piping through the clear well under the office area at the plant. This clear well in the past was used for backwash water. The well is not needed any more so the piping from the filters to the effluent line will be connected and bypassing the clear well. The design and cost should be in my office the week of march 3rd. I will keep you up to date as the project moves forward.



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

January 4, 2008

Mr. Robert Misekow, Utilities Director
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Misekow:

SUBJECT: 72-inch Transmission Main Emergency

This letter confirms completion of an emergency repair of the 72-inch transmission main in December of 2007. The emergency repair began on December 18, 2007. The repair involved complete replacement of two 20-foot sections of transmission piping due to a significant leak in the pipe joint. Emergency procedures were concluded on December 23, 2006 following completion of the repair and confirmation of no bacteriological contamination within the Flint water distribution system.

We would like to commend the city of Flint for their role in coordinating the remedial activities that minimized interruption in water service. The effort put forth minimized potential impacts to water quality and played a key role in protecting the public health of residents of Flint.

As we discussed, the city will need to file a written report (90-day report) with our office detailing the discovery, cause, remedial measures taken to meet the emergency, and the procedures by which customers were notified. The report also needs to outline the extent of the emergency, its duration, and alternate sources of water supplied during the emergency. The shutdown of the 72-inch transmission main was a real-time event that helped to determine the ability of the city to execute emergency procedures as a means to maintain adequate water service. The report should be prepared in a manner such that it can be used as a reference to assist the city in the event of a similar emergency in the future. Please provide our office with a copy of the 90-day report by no later than April 15, 2008.

Mr. Robert Misekow

2

January 4, 2008

Finally, Flint's stand-by water treatment plant was unable to provide an emergency supply of water to the city due an inoperable valve in the plant discharge piping between the treatment plant and Pump Station 4. This valve must be repaired or replaced as soon as possible. Please confirm with us, in writing, as to how this problem will be corrected by no later than January 21, 2008. We would also like to discuss additional chlorination capabilities at the water treatment plant.

If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

cc: Mr. Brent Wright, Flint Water Plant
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

July 16, 2007

Mr. Robert Misekow, Utilities Director
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Misekow:

SUBJECT: City of Flint, Water Treatment Plant

This letter confirms my visit with Mr. Brent Wright and you on July 3, 2007, at the Flint Water Treatment Plant (WTP). The purpose of the visit was to discuss security provisions on plant grounds, preparing a WTP test-run protocol, and reviewing process monitoring during the treatment plant test-runs. The status of the 72-inch transmission main leak was also discussed. Finally, additional information needed in order to complete the WTP Sanitary Survey and the 2007 Needs Survey was discussed. These items are discussed in more detail below.

The recent fire at WTP No. 1 caused by repeated vandalism raises the issue of security provisions on plant grounds. In spite of a security fence surrounding the WTP site, vandals have been able to gain access to plant grounds. The ability of vandals to gain access to plant grounds increases the vulnerability of WTP No. 2, Pump Station No. 4, Control Station No. 2, and other vital water system structures. Additional security measures including installation of motion sensors and/or intrusion alarms at Pump Station No. 4 and Control Station No. 2 appear necessary in order to enhance security at these locations.

The possibility of razing WTP No. 1 was also discussed as a means to reduce vandalism at this location. We concur with the idea of razing WTP No. 1 since the structure, in its current condition, has been an attraction for vandals. Finally, security cameras have been purchased for the dams along the Flint River and both ground storage reservoirs; however, the cameras are not connected to the WTP's Supervisory Control and Data Acquisition system and are not operational. These security cameras need to be placed into operation.

Next, the next WTP test-run has been scheduled for the week of July 16, 2007. We have also received a WTP test-run proposal that outlines the proposed operation. The proposal was reviewed and our comments were sent to you and Mr. Wright on July 11, 2007. A copy of our comments is also enclosed with this letter.

Next, process monitoring was reviewed. As we discussed, ozone residuals need to be monitored at all three monitoring points along the ozone contactor basin in order to

Mr. Robert Misekow

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July 16, 2007

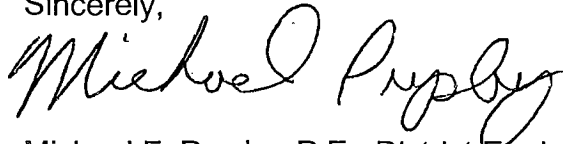
determine the amount of concentration x time (CT) credit achieved during ozone treatment. Next, chlorine demand and breakpoint chlorination tests need to continue such that additional operating nomographs representing chlorine dosages for varying operating conditions can be prepared. It is vitally important that sufficient CT be achieved in order to ensure that water being sent to the distribution system meets the surface water treatment requirements. Finally, staff needs to continue performing jar tests to determine coagulant feed rates under different operating conditions. Operating nomographs should also be prepared for the other chemical feed applications.

Next, the utilities department has placed a purchase order with a contractor for investigation and possible repair of another leak occurring from the 72-inch transmission main. The leak is located in the vicinity of the Potter and Gale Road intersection. It appears that the investigation and any necessary repair will be delayed until this fall after water usage decreases. We are in concurrence with delaying this work until this coming fall.

Finally, additional information pertaining to the WTP Sanitary Survey and the 2007 Infrastructure Needs Survey has been completed and sent to our office. This information will be used towards finalizing each of these documents.

If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau, 517-335-6122

Enclosure

cc: Mr. Brent Wright, Flint Water Plant



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

June 8, 2007

Certified Mail

Ms Peggy Cook, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

NOTICE LETTER
WSSN: 2310

Dear Ms. Cook:

SUBJECT: Stand-by Water Treatment Plant (WTP), Ozone Facility

It has recently been brought to our attention that the Flint stand-by Water Treatment Plant (WTP) no longer has full operating capability. Specifically, the WTP ozone treatment process is not in service due to a computer software problem that is preventing the ozone generators from functioning. The software problem was first identified in March 2007, but for whatever reason, has not been corrected.

Section 325.1015 (2) of the Michigan Safe Drinking Water Act, Act 399. PA 1976 states; "If upon inspection the department determines that the waterworks system to be inadequate or so operated as to not adequately protect the public health, the department may order the supplier of water to make alterations in the waterworks system or its method of operation as may be required or considered advisable by the department to assure the public supply is adequate, healthful, and in conformance with state drinking water standards."

The purpose of this letter is to notify the City of Flint of the inability for their stand-by WTP to operate as designed as an emergency stand-by facility due to the lack of ozonation. The loss of ozone as a pretreatment step compromises the WTP's ability to provide potable drinking water in the event of an outage from Detroit. This situation further prohibits the staff of the WTP from conducting comprehensive test-runs to allow operators to effectively operate the plant and produce water meeting the state drinking water standards.

Ms. Peggy Cook

2

June 8, 2007

The city is directed to correct the ozone equipment problem as soon as possible.

If you have any questions regarding these issues or any other drinking water related matter, please feel free to call me at the number listed below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Field Operations Section
Water Bureau
517-335-6122

cc: Mr. Robert Misekow, Director of Public Works
Mr. Brent Wright, City of Flint
Mr. Mike Brown, City of Flint
Ms. Inez Brown, Clerk, City of Flint
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

March 22, 2007

Ms Peggy Cook, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2310

Dear Ms. Cook:

SUBJECT: Water System Reliability
City of Flint – Genesee County

Over the last few years staff of the Michigan Department of Environmental Quality (DEQ) has had several discussions and correspondence with various officials of both the City of Flint (City) and Genesee County (County) regarding water system reliability. The primary issue is the inability to readily supply water from the City's newly rehabilitated water treatment plant to the County's water system.

In April of 1998, the City submitted a Project Plan to the DEQ requesting consideration under the Drinking Water Revolving Fund (DWRP) program for funding to rehabilitate the City's existing standby water treatment plant (WTP). The Project Plan makes several statements indicating that rehabilitation of the WTP was necessary in order to provide a reliable second source of potable water for Flint and Genesee County.

The Summary of Project Need contained within the Project Plan contains the following statement: "Substantial plant upgrades are necessary to meet long-term reliability and water quality requirements as per U.S. EPA and MDEQ Safe Drinking Water Standards. A reliable second source of water continues to be a grave concern to the City of Flint, Genesee County and the Michigan Department of Environmental Quality (MDEQ)."

The Project Background section also states: "Based on our evaluation we conclude that the existing Flint water treatment plant should be rehabilitated to a Phase I firm capacity of 36 MGD, treating Flint River water for an extended period of time (months if needed) to provide the uninterruptible water supply as a reliable back-up to meet the Flint City water needs when the DWSD single pipeline to Flint City/Genesee County fails."

Finally, the City's cover letter that accompanied the Project Plan, signed by then City Administrator David Ready, states: "We are committed to providing the appropriate reliability incumbent upon all water supply utilities should the single transmission main

Ms. Peggy Cook

2

March 22, 2007

from DWSD fail." Approval for funding through the DWRF program was granted to Flint based upon the project need and with the understanding that reliability would also be provided to Genesee County. The rehabilitation project was complete as of June 2006.

As far back as September 2004, Genesee County sought to formalize the standby service arrangements, and they proposed a water supply mutual aid agreement. Furthermore, since that time, Genesee County has made several additional requests to meet and negotiate emergency water service from the City with no response. Enclosed is a chronology of the overtures by the County regarding stand-by water service.

Based on this information, the City of Flint has not met a major component of their DWRF Project Plan, and they have reneged on their commitment to provide the appropriate water system reliability.

Water utility officials from both the City and the County have concluded that additional infrastructure (a booster station and some transmission main) is likely needed to readily provide water to the County system. The County has made numerous good faith efforts to begin discussions on how to address these needs plus develop a contract for service. It is time for the City to sit down with the County and move forward on this important public health issue.

Failure to address this reliability issue, and meet the objectives of your original Project Plan may jeopardize approval of any future DWRF proposals.

If you have any questions regarding these issues or any other water related matter, please contact me immediately.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

Enclosure

cc: Ms. Inez Brown, Clerk, City of Flint
Mr. Robert Misekow, Director of Public Works
Mr. Brian McKenzie, Genesee County Health Department
Mr. Jim Cleland, DEQ
Mr. Clifford Heckathorn, DEQ

Negotiations for Stand-by Water Source Flint – Genesee County Chronology

**Prepared by: Michael F. Prysby, P.E.
March 21, 2007**

- 9/14/04 - Genesee County proposes an Emergency Water Supply Mutual Aid Agreement that contains the following: provisions for an emergency interconnect, a commitment to cover construction costs, and emergency use provisions.**
- 3/30/05 - Genesee County sends a letter to Flint expressing their interest to meet and negotiate stand-by water service.**
- 8/18/05 - Genesee County updates the MDEQ on the progress of various options for stand-by water service. The county states that stand-by water service from Flint is the most desirable option however, there has been no progress towards reaching any type of agreement.**
- 8/31/05 - Genesee County sends a letter to Flint with a stronger emphasis regarding repeated efforts to meet with the city to negotiate stand-by water service. The city is encouraged to open the door for negotiations otherwise the county will have no choice but to pursue other stand-by water service options as required by the MDEQ.**
- 12/9/05 - Genesee County staff meet with interim water treatment plant operator Bill Daniels to discuss building an improved working relationship between Genesee County and Flint. Genesee County also proposes a team approach to assist Flint operators in operating the WTP during an emergency. Genesee County proposes a draft Temporary Operating Agreement in a 12/12/05 follow-up letter.**
- 2/7/06 - Genesee County resends the Temporary Operating Agreement to the city of Flint. Flint's lack of response towards discussing the draft document is also acknowledged in the cover letter.**
- 2/14/06 - MDEQ's comments are sent to Flint regarding the Genesee County's draft Temporary Operating Agreement. The**

MDEQ also requested an update on the status of the draft agreement.

9/19/06 - In the wake of the 72-inch transmission main emergency, Genesee County sends another letter to the city of Flint expressing the interest and need to obtain stand-by water service. The letter also enclosed previous letters sent to Flint from Genesee County on this matter.

MDEQ note – according to our records, we have not received any information or feedback from the city of Flint regarding their intentions to negotiate stand-by water service to Genesee County. Also, based upon the information received from Genesee County, the city of Flint has not made an official response to Genesee County on any of their requests to meet and negotiate stand-by water service.



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

January 30, 2007

Mr. Joe Conroy, Governmental Relations Director
City of Flint
Department of Utilities
1101 South Saginaw
Flint, Michigan 48502

Dear Mr. Conroy:

SUBJECT: Flint Water Treatment Plant (WTP)

We have reviewed your letter of January 5, 2007, informing us of the near completion of the rehabilitation plan for the WTP agreed to by the city of Flint (City) and the Department of Environmental Quality (DEQ) in August of 1999, and as amended in May of 2003.

In your letter, you also inquire as to our support for a project to finish the necessary upgrades to the WTP to allow for continuous operation beyond the plant's present status as an emergency or standby facility. As we discussed in our phone conversation, it is not the DEQ's position to support a proposal or project, but to ensure that the appropriate environmental and public health regulations are complied with and any required permits are obtained.

There are several very important considerations that must be adequately addressed for DEQ to approve the continuous use of the Flint River as the City's source for public water supply, and to issue construction permit(s) for additional WTP equipment and facilities. The major issues are as follows:

- The City will need to submit a complete description of the Flint River as source of supply. Specifically, hydrological data, safe yield, description of the watershed with a discussion of the sources of potential contamination, and a summary of raw water quality. Ultimately a source water protection plan will also need to be prepared.

It is acknowledged that the City previously used the Flint River as a source; however, switching from purchased water from Detroit is a step back in source water quality. The City will need to address the perception of lower water quality directly if it expects the water customers and citizens to support the project.

Mr. Joe Conroy

3

January 30, 2007

date negotiations between the City and the County have not resulted in an agreement for standby service. In addition, there is also some infrastructure (pump station and transmission piping) needed for the WTP to be able to serve the County. These issues need to be addressed as soon as possible so the County also has an emergency source of drinking water.

It should also be noted that a project plan for phase two of the WTP rehabilitation will need to be a comprehensive planning document. Restoring the WTP to continuous service is a significant undertaking and an environmental impact study or at least an assessment may be required as part of a project plan

- Other impacts. A return to continuous service of the WTP will mean contractual issues with Detroit Water and Sewerage Department (DWSD). In addition, as the supplier of Detroit water to Genesee County there are also contractual or political issues there as well. Would Genesee County continue to receive Detroit water from the City or would the County become a direct customer of DWSD? Would DWSD become an emergency source for the City? These issues and questions should be addressed as the part of the City's evaluation of returning the WTP to continuous service.

If the City decides to move ahead with the phase two project, it will be critical for the City and the DEQ to communicate well. Please contact me when you have additional questions. If you have specific Drinking Water Revolving Fund program questions, I would recommend that you call Mr. Clifford Heckathorn directly at 517-373-4725.

Sincerely,



Timothy A. Benton, P.E.
Lansing District Supervisor
Field Operations Division
DEQ - Water Bureau
517-335-4523

cc: James Cleland, DEQ
Clifford Heckathorn, DEQ
Michael Prysby, DEQ



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

January 22, 2007

Mr. Joe Conroy, Governmental Relations Director
City of Flint
Department of Utilities
1101 South Saginaw
Flint, Michigan 48502

Dear Mr. Conroy:

SUBJECT: Flint Water Treatment Plant (WTP)

We have reviewed your letter of January 5, 2007, informing us of the near completion of the rehabilitation plan for the WTP agreed to by the city of Flint (City) and the Department of Environmental Quality (DEQ) in August of 1999, and as amended in May of 2003.

In your letter, you also inquire as to our support for a project to finish the necessary upgrades to the WTP to allow for continuous operation beyond the plant's present status as an emergency or standby facility. As we discussed in our phone conversation, it is not the DEQ's position to support a proposal or project, but to ensure that the appropriate environmental and public health regulations are complied with and any required permits are obtained.

There are several very important considerations that must be adequately addressed for DEQ to approve the continuous use of the Flint River as the City's source for public water supply, and to issue construction permit(s) for additional WTP equipment and facilities. The major issues are as follows:

- The City will need to submit a complete description of the Flint River as source of supply. Specifically, hydrological data, safe yield, description of the watershed with a discussion of the sources of potential contamination, and a summary of raw water quality. Ultimately a source water protection plan will also need to be prepared.

It is acknowledged that the City previously used the Flint River as a source; however, switching from purchased water from Detroit is a step back in source water quality. The City will need to address the perception of lower water quality directly if it expects the water customers and citizens to support the project.

- Hamilton Dam. The issues regarding this dam have been discussed for a couple years. However, the importance of the dam to WTP operations has yet to be quantified. The dam creates pool depth at the WTP to allow for proper raw water pump operation but the exact operating conditions at the dam and the impact on WTP operations have not been determined. If the dam needs to be removed and replaced, significant costs will be incurred.

It should also be noted that the dam would not be eligible for funding under the Drinking Water Revolving Fund (DWRF). The DWRF was the funding mechanism for the original rehabilitation plan for the WTP.

- Sludge disposal. If the WTP is returned to continuous operation, provisions for dealing with the residuals of water treatment will need to be addressed. Specifically, ferric sludge from clarification processes, and lime sludge from softening will need to be disposed of properly.

The two disposal options that have been discussed are: 1) filter press and landfilling or land application, and 2) re-use of the Bray Road Sludge Lagoon. Filter presses are routinely used for this type of waste, but the equipment is fairly expensive and two units would be needed to provide adequate reliability.

Re-use of the old sludge lagoon poses a number of questions and/or problems. The facility does not meet today's standards for this type of storage facility. In addition, there may have been impacts from previous activities on the groundwater in the vicinity of the lagoon. Therefore, a comprehensive hydro-geological investigation into the site to determine whether groundwater contamination has occurred is needed. If the City wishes to pursue re-use, a complete proposal would need to be submitted that would resolve any contamination that may have occurred, address the fate of the existing solids at the lagoon, and propose a design of any new sludge storage structures including perhaps a surface water or groundwater discharge permit application.

- Drinking Water Revolving Fund. If the City is planning to use this low interest loan program for financing the second phase of WTP rehabilitation, there are a couple of items that need to be addressed. First, the contract for the first phase should be closed out. There are contract issues that should be completed as soon as possible.

Second, the project to restore the WTP as a standby facility was originally proposed to be able to supply Genesee County Division of Water and Waste Services (County) with a back-up source of drinking water as well. However, to date negotiations between the City and the County have not resulted in an agreement for standby service. In addition, there is also some infrastructure (pump station and transmission piping) needed for the WTP to be able to serve the County. These issues need to be addressed as soon as possible so the County also has an emergency source of drinking water.

Mr. Joe Conroy

3

January 22, 2007

It should also be noted that a project plan for phase two of the WTP rehabilitation will need to be a comprehensive planning document. Restoring the WTP to continuous service is a significant undertaking and an environmental impact study or at least an assessment may be required as part of a project plan

If the City decides to move ahead with the phase two project, it will be critical for the City and the DEQ to communicate well. Please contact me when you have additional questions. If you have specific Drinking Water Revolving Fund program questions, I would recommend that you call Mr. Clifford Heckathorn directly at 517-373-4725.

Sincerely,

Timothy A. Benton, P.E.
Lansing District Supervisor
Field Operations Division
DEQ - Water Bureau
517-335-4523

cc: James Cleland, DEQ
Clifford Heckathorn, DEQ
Michael Prysby, DEQ

— High Service Pumping Improvements needed
needed *condition & Availability of pumps limit* → Total cap 46 MGD
Firm cap 26 MGD

— Op cart.
* PLAN to op/stop WTP @ most levels
— when to enter hire on Full WTP supp.
* change our policy relative to existing WTP operators with Full Based on constr. of phase II & ~~at~~ test-runs, new equip. shake-downs, Antic start-up of permanent op. of WTP

JAN-08-07 09:30

FROM-

T-769 P.02/02 F-164

CORR P/c - 1/2



**CITY OF FLINT
DEPARTMENT OF UTILITIES**

MFP/F7I

**Donald J. Williamson
Mayor**

January 5, 2007

Timothy Benton, P.E.
Dept. of Environmental Quality
Lansing District Supervisor
Field Operations Division
Constitution Hall
525 W. Allegan Street
PO Box 30242
Lansing, MI. 48909

Dear Mr. Benton:

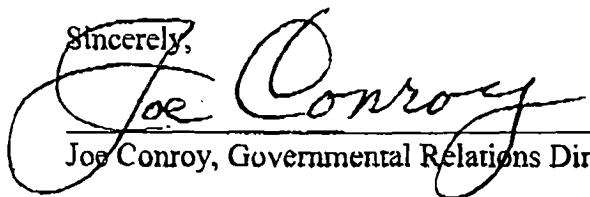
As you know, the City of Flint is nearly complete with its Phase I, Segment IV of the Water Plant rehabilitation plan as agreed upon with the State of Michigan, DEQ in August, 1999.

While the current Water Plant and Facilities can produce water for the short-term duration on a test run basis it is our desire to produce clean, safe water on an on-going basis, if needed. It would be appropriate for the City of Flint to complete the Water Plant rehabilitation to allow the City to be able to produce the projected capacity of 36 million gallons per day in the future. This would allow us more options for the City to decide how they will proceed in the future.

Please confirm your support for the final rehabilitation of the Flint Water Plant to us.

(X)

Sincerely,

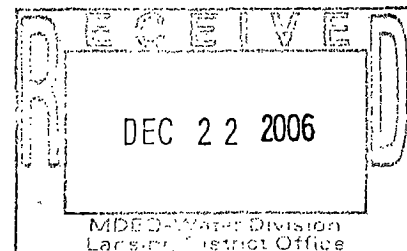

Joe Conroy, Governmental Relations Director



CITY OF FLINT

Donald J. Williamson
Mayor

December 19, 2006



Mike Presby
District Engineer
Constitution Hall
525 W. Allegan Street
Post Office Box 30242
Lansing, MI 48909-7742

Re: Sanitary Survey Update 2006
DEQ Letter April 14, 2006
Conclusions and Recommendations Response

Dear Mr. Presby:

Water System Viability. The present supervisor holds an S-1 Certificate.

Water Distribution. The program for operator certification remains the same as before.

Water Treatment Plant. Robert Misekow has F-1 Certification. We have encouraged both Brent Wright and Mike Glasgow to write for operator certification this coming year. It is difficult for plant employees to obtain the necessary experience points to qualify for higher certification. It is my belief that restrictions applied to backup waterplants should be relaxed. Our laboratory director, Michael Glasgow, is an ideal candidate for a plant supervisory position, but is hindered by minimal points awarded for four (4) weeks per year of plant experience.

As you are aware Mr. William Daniels has been reassigned to Maintenance Supervisor. I'm unsure if Mr. Brent Wright possesses all of the qualifications required to take the F-1 exam this coming year.

Mr. Presby
Page Two
December 19, 2006

Utilities/Cross Connection Division. Mr. Glen Thomas remains in responsible control of the Cross Control Program. He has submitted his 2005 annual report.

System Storage. Discussions on conditions of the facilities have been held. Scheduling inspections will be addressed Spring of 2007.

Elevated Tank. A requisition was submitted just recently for inspection of the tank.

Pumping Stations. The supervisor at the Water Treatment Plant was told this week to write a requisition for replacement of electrical switchgear and controls at the Cedar Street Station.

Transmission Distribution.

- Pierson Road – two (2) miles of transmission main from Highway 475 west.
- Third Avenue plans are complete. From Third Avenue to Saginaw Street, water mains 4" to 24", ductile iron, estimated at \$4,116,000.00 to be completed by October 31, 2007.

Valve Program. Supervisor making plans for upcoming year.

Contingency Plan. This plan is covered in the previously submitted 90 day report on the 72" Transmission Main break.

Closing. We will respond to the conclusions and recommendations in your earlier letter after reviewing same.

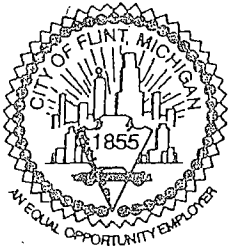
Although we have not addressed all of the items in your Report Summary, it is our opinion that substantial progress has been achieved. All of our supervisors have been made aware of these deficiencies and the next report should see more improvement.

Sincerely,



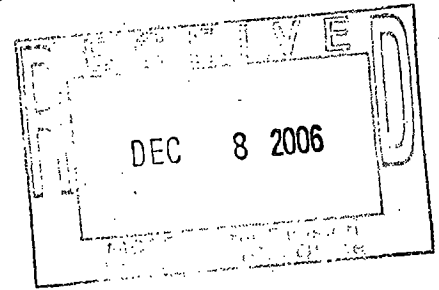
Robert Misekow
Utilities Director

C: Mayor Donald J. Williamson
Peggy Cook, City Administrator



Donald J. Williamson
Mayor

CITY OF FLINT



#2310

December 6, 2006

Timothy Benton
District Supervisor
Constitution Hall
525 W. Allegan Street
Post Office Box 30242
Lansing, MI 48909-7742

Re: Fire Hydrant Program

Dear Mr. Benton:

As of this week, the Water Service Center has serviced 5,200 fire hydrants. This included flow and drainage checks.

Thirty five are out of service. We expect these to be finished at the end of the month, if line breaks, etc. are not excessive.

We know that the Hydrant Program was high on your list of items to be completed by the City. Our Water Service Center has succeeded in accomplishing a major task, our next job will focus on water distribution valves.

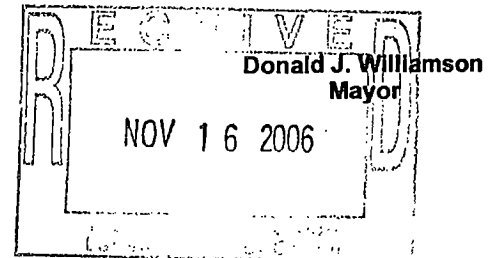
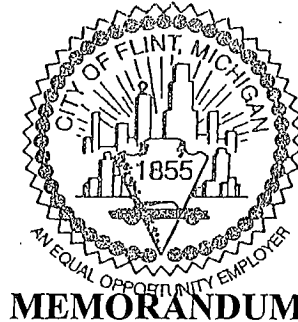
Sincerely,

Robert Misekow
Utilities Director

C: Mayor Donald J. Williamson
Peggy Cook, City Administrator
Mike Brown, Superintendent, Water Service Center

File # 2310 MFP

Peggy Cook
City Administrator



#2310

TO: Mr. Timothy Benton, District Supervisor
MDEQ

FROM: Robert Misekow
Utilities Director

DATE: November 8, 2006

SUBJECT: Genesee County's 60" Sanitary Sewer Crossing(s)
The City's Water 72" at Kearsley Golf Course Concerns

There appears to be some concern amongst the engineers here that tunneling under the 72" Detroit Water line places us in a compromising position. Perhaps the memory of the City's 72" water transmission repair in August is still fresh in our minds.

It is in the interest of the owner, the county and of course the state, that all possible problems that may be encountered on this job be examined by all parties and that job commencement not be initiated until this is done. We believe that such an integral approach is the responsibility of the county, the state and any contractors that might be involved.

A meeting(s) of all concerned, prior to commencing this project, to discuss mutual concerns relating to maintaining the integrity of the 72" is dictated.

I would like to hear of your experiences in like situations.

Thank you.

Robert Misekow
Utilities Director

cc: Donald J. Williamson, Mayor
Peggy Cook, City Administrator
Deirdre Pitts, Human Resources Director



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

September 19, 2006

Mr. Robert Misekow, Utilities Director
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Mr. John O'Brien, Director
Genesee County Drain Commissioner
G-4610 Beecher Road
Flint, Michigan 48532

Dear Mr. Misekow & Mr. O'Brien:

SUBJECT: 72-inch Transmission Main Emergency

This letter confirms our meeting on September 7, 2006 at the Flint Water Treatment Plant. Mr. Timothy Benton from our office also attended the meeting. The purpose of the meeting was to discuss the events that occurred during the 72-inch transmission main emergency. The emergency began on August 12, 2006 upon discovery of a leaking valve just west of M-15. The emergency concluded on August 24, 2006 following completion of the repair and confirmation of no bacteriological contamination within the Flint or Genesee County Water service area.

We would like to commend both the city of Flint and Genesee County for their roles in coordinating the remedial activities that minimized interruption in water service. The effort put forth minimized potential impacts to water quality and played a key role in protecting the public health of residents of Flint and Genesee County.

As we discussed, both utilities will need to file a written report (90-day report) with our office detailing the discovery, cause, remedial measures taken to meet the emergency, and the procedures by which customers were notified. The report also needs to outline the extent of the emergency, its duration, and alternate sources of water supplied during the emergency. The shutdown of the 72-inch transmission main was a real-time event that helped to determine the ability of the city and the county to execute emergency procedures as a means to maintain adequate water service. The report should be prepared in a manner such that it can be used as a reference to assist both utilities in the event of a similar emergency in the future. Please provide our office with a copy of the 90-day report by no later than December 15, 2006.

Mr. Robert Misekow
Mr. John O'Brien

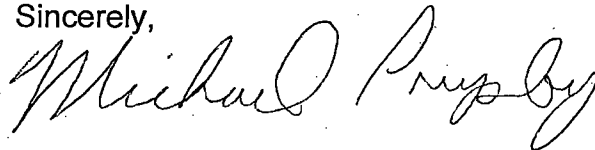
2

September 19, 2006

Finally, it would be worthwhile for both utilities to review and update their water system contingency plans relative to mitigating a 72-inch transmission main emergency. Several scenarios were discussed during our meeting and were included in the outline provided at the meeting. Each utility's role, remedial actions, etc. as outlined in the 90-day report can be incorporated into preparing a contingency plan for each type of transmission main emergency.

If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

cc: Mr. Brent Wright, Flint Water Plant
Mr. Dave Jansen, Genesee County Drain Commissioner
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

April 14, 2006

Ms. Peggy Cook, City Administrator
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 2310

Dear Ms. Cook:

SUBJECT: City of Flint Water System
2006 Sanitary Survey Update

This letter confirms my visits on February 23, 2006 and March 3, 2006 with Bill Daniels, and Michael Brown. The purpose of the visit was to update the city's water system 2004 Sanitary Survey.

The city has addressed certain water-related concerns including; cross connection control and completion of Phase I of the water treatment rehabilitation project. Additional administrative steps are being taken which should set the stage for transmission/distribution system and pumping station improvements during 2006 and 2007.

However, there remain many water system deficiencies of varying concern that have not been adequately addressed, thus, the City of Flint's water distribution system continues to be rated "**Marginal**". Until significant progress in the major areas (summarized below) is made, the distribution system rating will not improve.

1. Obtain an F-1 certified operator for the water treatment plant and continue to promote operator certification and training for distribution system operators.
2. Develop and implement a water system valve program.
3. Revise the water system Contingency Plan that includes a protocol for placing the treatment plant into emergency operation.
4. Address booster pumping station deficiencies and prepare a schedule.
5. Develop a capital improvements program that addresses both transmission and distribution system needs.

Ms. Peggy Cook

2

April 14, 2006

For a more thorough discussion of our updated survey, please reference the attached Conclusions and Recommendations document.

If you have any questions regarding these issues or any other water related matter, please feel free to call me at the number listed below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Water Bureau
Field Operations Section
517-335-6122

mfp:smb

cc: Mr. Bill Daniels, City of Flint
Mr. Glenn Thomas, City of Flint
Mr. Michael Brown, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

WATER SYSTEM REVIEW

GENERAL

Basic Information

WSSN: 2310 Supply: City of Flint County: Genesee

Date: 2/23/2006 Reviewed by: MFP District: 11

Primary Contact: Michael Brown
 Title: Water Distribution Supv
 Telephone: 810-766-7359
 Cell Phone:
 Pager:
 Fax:
 e-mail:

Copy To: William Daniels Glen Thomas
 Title: WTP Supervisor Inspector
 Telephone: 810-787-6537 810-787-6537
 Cell Phone:
 Pager:
 Fax:
 e-mail:

Address: Flint Water Service Ctr
 3310 East Court St
 Flint, MI 48506

Address: Flint Water Plant Utilities/Cross
 4500 N. Dort Hwy Connection Division
 Flint, MI 48505 5400 N. Dort Hwy

Population: 124943 Year: 2000 Basis: 2000 Census

Operator Certification

Distribution Classification: S1

Operator in Charge: Michael Brown Cert.: S1, F3, ABC Wastewater

Other Operators:	Lyle Waddell	S2
	Howard Swickard	S2
	Jeff Church	S3
	Mark Pavwoski	S3
	Steve Spooner	Expecting
	Paul Simpson	Expecting

Treatment Capacity: _____

Treatment Classification: F1

Operator in Charge: William Daniels Cert.: F3/S3

Other Operators:	B. Wright	F3/S3
	C. Koryciak	F4
	R. Duby	F4
	C. Yanta	F3
	T. Brattton	F4
	M. McFarland	F4
	T. Childs	F4
	M. Glasgow	F4/C&D Wastewater
	N. Alexander	F4
	S. Dungee	S4
	J. Kapp	S4
	M. Beckley	S4
	M. Beckelic	Wastewater D

Operator Comments

The City of Flint water distribution system is operated and maintained by the Utilities Department. The Utilities dept is broken down into five operating divisions or cost centers out of which three play a key role in operating and maintaining the water distribution system. These divisions are; The Water Service Center, the Water Treatment Plant and the Utilities/Cross Connection Division. Appendix A illustrates the structure and the Utilities Dept and the various cost centers.

The Water Service Center (WSC) is broken down into two divisions, Water Distribution Division (WDD) and Sewer Maintenance Division. The WDD supervised by Michael Brown is responsible for operating and maintaining the water distribution system piping, hydrants, and valves. The WDD also conducts meter reads, replaces meters and maintains distribution system records and maps. This division is broken down into two main branches. One branch focuses primarily on water main operation and maintenance while the other branch is dedicated to meters.

Both branches have numerous operators at various levels of employee responsibility. Appendix B shows and employee organizational chart for the WDD and the certification status among the employees. The water distribution supervisor and the water distribution foreman positions are required to have S1 and S2 licenses respectively. Operator certification, however, is not required nor promoted for the employees assigned to the positions below the distribution foreman level. Several operators at the distribution maintainer level (level 18 maintainer) have acquired the S4 license, however, they were unable to maintain the continuing education credits thus their licenses have fallen to an inactive status. New regulations will eventually require the WDD to have at least two S1 operators.

The water treatment plant (WTP) staff, supervised by William Daniels, operates and maintains Flint's stand-by water plant. Appendix C illustrates the employee organizational chart at the WTP. WTP staff play an important role in distribution system activities and include; operation and maintenance of the city's distribution system pumping stations, storage facilities, and points of connection to other supplies. WTP staff also maintains some of the key programs including both the bacteriological and lead and copper monitoring programs. Finally, WTP staff are responsible for monthly operating reporting, contingency planning and public relations (receipt of customer complaints).

Next, the Utilities/Cross Connection Division, also supervised by William Daniels, is responsible for implementing the City of Flint Cross Connection Control Program. The division has one employee, Glen Thomas who is responsible for conducting the routine inspections and maintaining records. A second employee, Yolanda Gray, assists with recordkeeping and reporting. The division is working towards dedicating at least one and possibly two additional operators towards cross connection control. Any prospective operators assigned to this program are required to be certified master plumbers and must be familiar with cross connection control.

Construction Permit History:

Below is a listing of projects that were completed to improve the reliability of the distribution system pumping facilities, distribution piping, and stand-by treatment facilities.

<u>CP Number</u>	<u>Date</u>	<u>Project</u>	<u>Description</u>
W891667	1/2/1989	Revisions to P.S. 4	CI Facilites at P.S. 4
W920796	8/12/1992	Dechlorination System	SO2 feed system to de-cl2 filter effluent and backwash water to Flint River.
W931368	11/30/1993	P.S. 4 Improvements	Two 20 MGD high service pumps, one 6 MGD high service pump, valving, appurtenances, etc.
W941607	12/1/1994	Westside Reservoir	Replacement of roofing system, masonry restoration and repairs to expansion joints.
W941678	12/20/1994	C.S. 3 & Dort. Reservoir Inlet	Installation of PRV's at Dort Reservoir and C.S. 3.
W991021	3/23/1999	Cedar St. P.S. Vavle Repl.	Replacement of pump control valves and installation of butterfly valves for each pump.
W991027	3/10/1999	GM	Replacement of 24" trans. Main at GM to
W991208	6/21/1999	Transmission Main Repl.	serve expansion of facility
W991111	6/23/1999	WTP Rehab Ph I, Seg 1	WTP Rehab, incl. rapid mix, flocc. Basins SCADA contr. And boiler building.
W001136	6/22/2000	WTP Rehab Ph I, Seg 2	WTP rehab, incl. primary clarifier, sanitary sewer connections.
W011130	6/21/2001	WTP Rehab Ph I, Seg 3	Softening, 12 filters, chem feed, O3, residuals mgt.
W041019	2/24/2004	Beech and Wellington St. WM Replacement	
W041082	6/1/2004	Pierson Rd WM Replacement	

The city implemented a plan review/approval process for new watermain extensions and the plan has been in effect for several years.

SOURCE**Capacity**

Year	Pumpage & Usage (MGD)		Avg. Day	Min. Day	Date	Max/Avg	G/C/D	% unacct.H2O
	Max Day	Date						
1996	24.940		22.160			1.1255	160	
1997	30.450		19.990			1.5233	144	
1998	27.470		19.680			1.3958	142	
1999	32.170		19.280			1.6686	139	
2000			17.670			0	143	
2001	26.030		18.130			1.4357	146	
2002	26.440		18.400			1.437	148	
2003	30.050		19.900			1.5101	160	
2004	23.040		17.400			1.3241	140	
2005						#DIV/0!	#REF!	
2006						#DIV/0!	#REF!	

			Date
Five Year Max. Day	30.050		
Ten year Max. Day	32.170		
Five Year Avg. Day	18.300		
Peak Hour (Hydropneumatic)			

Max Day for capacity requirements 36.0 MGD

Total Source Capacity >70 mgd

Firm Source Capacity 36.000 mgd *

Firm Source Capacity/Max. Day 100%

Comments: The average and maximum daily demand for the city has decreased approximately 15% since the mid 1990s.

- * The City of Flint has completed Segments 1-4 of Phase I of the WTP rehabilitation project. The WTP is expected to initiate its first comprehensive test run during the month of May 2006.

The city has not determined whether Phase 2 will be pursued.

STORAGE**Construction, Controls & Maintenance**

	Location: <u>Dort Reservoir</u>	Location: <u>WTP</u>	Location: <u>WTP</u>	Location: <u>Cedar St</u>	Location: <u>Westside</u>
Volume	20 MG	2 MG	3 MG	20 MG	12 MG
Type	ground	elevated	ground	ground	ground
O.F. Elevation					
Date Constructed	1966	1952	1948	1948	1970
Date Inspected	1992	1996	1996	1997	2003
Date Painted Inside	na	1996	na	na	na
Paint System	na	epoxy	na	na	na
NSF Std 61 Compliant (Y/N)					
Date Painted Outside	na	1996	na	na	na
Cathodic Protection	na	yes	na	na	na
Tank Isolation Valve					
Tank Drain (Hydrant)					
Altitude Valve					
Mud Valve					
High Alarm	yes	yes	yes	yes	yes
Low Alarm	yes	yes	yes	yes	yes
Type					
Total Head Range (Feet)					
Normal High Water Level					
Normal Low Water level					
Range of Operation ft	730-750	898	708.5-726	737.2-757.2	761.8-779
Normal/Average Pressure					
Chart recorder					
Telemetry System					
Vents Screened					
Overflow Screened					
Access Hatches Locked					
Expansion Collar Lubricated					
Deflection Plate					
Overflow Splash Pad					
Site Fenced/Locked					

Capacity

Usable Storage			
Total Usable Storage	57,000,000 gal	57,000	mgd
Total Usable Storage/Max Day	177%		
Total Usable Storage/Avg. Day	311%		

Comments:

Storage Facility Comments:

Dort:

The Dort reservoir is filled via control station #3. The main to CS 3 tees off the 72" main upstream of CS 2. WTP staff drained and inspected the reservoir in 1992 and found it to be in good condition. The vent structures above the reservoir are screened and in good condition. These structures are checked and maintained as needed (usually once a year).

#3

WTP staff drained and inspected the reservoir in 1996 and found it to be in good condition. One of the sluice Gates needed to be repaired and was completed at that time. The reservoir is equipped with an internal overflow weir and drain at an elevation of 720'. Security locks are not provided for the access hatches.

Cedar:

The cone valve in the 24" transmission main to the Cedar Street reservoir was repaired following our 2000 evaluation. WTP staff inspected the two-celled reservoir in 1997 and found it to be in very good condition. Cracking and spalling of the concrete walls was minimal. There was a very small amount of sedimentation. The baffle walls were composed of ceramic block and were in good condition.

West Side:

WTP staff inspected the reservoir in 2003 in conjunction with the roof restoration project (CP #W941607). The restoration project eliminated damage to the exterior portions of the reservoir's roof. The inspection did not reveal any build up of sediment, and the reservoir appeared to be in good condition. The reservoir's roof is no longer exposed and the problems associated with stratification of the water within the reservoir during hot weather have been minimized. The improvement allows West Side to be operated on a more continuous pumping schedule. The roof drains along the north side of the reservoir have been repaired and allow adequate drainage of the roof. The high and low alarms at both Cedar and West side are wired such that an alarm situation will either activate or shut down a pump depending of the condition.

Ele. Tank:

Pressure downstream from CS #2 to the elevated tank is throttled such that the operating range of the tank is within its upper portion. The tank basically floats on the system. An interior inspection was performed in 1996 and the tank was found to be in relatively good condition. The tank's exterior was recoated at that time. Since 2000, the tank's controls were upgraded and the cathodic protection system was maintained.

DISTRIBUTION**Interconnections with Other Supplies**

Is water purchased from other supplies? (Y/N)

yes

If yes, list WSSN number (s):

DWSD

No. of Emergency Connections:

Location	Main Size	Est. Capacity	Metered?
C.S. 1	72"	>70 mgd	yes
Conn W. Flint			
Donaldson St	12"	*	yes
Person & Clio	not conn	not used	na
Carpenter and Clio	12"	not used	na
Carpenter and Bray	12"	not used	na
Van Slyke Rd	24"	not used	na
Richfield	12"	not used	na
Woodrow and Center	8"	not used	na
East Atherton	12"	not used	na
	9"		

Distribution Piping

Identify distribution piping materials - estimate percentages:

Cast Iron	na %
Ductile Iron	na %
PVC	na %
AC	na %
HDPE	na %
Galvanized	na %
Concrete	na %

Estimated percent of piping with coal tar lining Not encountered %

The majority of Flint's distribution system consists of cast-iron and ductile iron piping up to 24" main sizes. The Percentage of CI and DI main is not known at this time. The majority of the larger transmission mains (>24") consists of steel piping.

Identify distribution pipe sizes - estimate percentages:

2"	0.2 %
4"	3.4 %
6"	50.9 %
8"	23.6 %
10"	0.4 %
12"	8.3 %
16"	1.3 %
18"	2.1 %
24"	4 %
30"	0.5 %
36"	0.4 %
42"	0.1 %
48"	0.1 %

The city has replaced watermain since 2000, however, the overall shift in percentages is less than 1% in all catagories.

DISTRIBUTION**Pump Stations**

Location: Cedar Street
 Function: Provide supply from 20 MG Cedar St reservoir during peak demand

Pump Number	1	2	3
Year Installed	1948	1948	1948
Type	centrif	centrif	centrif
Permit Capacity			
Permit TDH			
Current Capacity	12 mgd	9 mgd	9 mgd
Basis			
Current TDH	160'	160'	160'
HP	500	350	350
Last Complete Inspection			
Last Efficiency Test			

Auxiliary Power

Power Type	NONE
Total Pump Capacity	30 mgd
Firm Pump Capacity	18 mgd
Auxiliary Power Capacity	mgd

Max Day Demand @ this location _____ mgd
 Peak Hour @ this location _____ gpm (Hydropneumatic Stations)
 Avg Day Demand @ this location _____ 1 mgd
 Firm Pump Capacity/Max Day _____ %
 Peak Hour/Firm Pumping Capacity _____ % (Hydropneumatic Stations)
 Aux. Power Capacity/Avg Day _____ %

Comments:

A detailed pump inspection including a pump efficiency test has not been performed within the past five years.

Daily pumpage is estimated and is recorded on the daily sheets.

The Cedar Street pumping station consists of three single stage horizontal centrifugal pumps that takes suction from an adjacent 20 mg reservoir during peak demand periods. The reservoir is re-filled during low demand periods. Pump operation and filling of the reservoir can be controlled at the WTP or manually at the booster station. Pump operation setpoints are located within the distribution system.

The average day demand through this station is determined by the amount of water taken from the storage reservoir. The station operates on a pump and fill cycle and alternates with the westside pump station on an every other day basis. This station is capable of metering total pumpage on a daily basis. The pump status is relayed via the SCADA system to the operations center.

The electrical controls and switchgear, late 40's vintage, remain outdated and most of the replacement parts are no longer available. A complete rehabilitation of the electrical system is still needed at Cedar Street. Also

the building roof is in need of replacement. Soft-starts for each pump may also be included with the improvements. These improvements are planned in Flint's 2006 annual budget.

Pump maintenance consisting of lubrication and inspection is conducted once a month on all pumps at all of the booster pumping stations. Each pump is operated at least once a month.

Two of the existing cone valves were replaced with 14" pump control valves for pumps 2 and 3. Butterfly valves were also installed on the discharge side of all three pumps. Pump 1 is still controlled by the existing cone valve, however, the valve has performed satisfactorily.

The gas chlorination system was removed and replaced with the ability to feed sodium hypochlorite. Three chlorine feed pumps are available at the pumping station. A new chlorine residual analyzer was installed and the information is relayed to the operations center.

The pump station is well maintained and the housekeeping is above average.

Westside Pumping Station (P.S. No. 5)

Location: Westside
Function: Provide supply from an adjacent 12 mg reservoir during peak demand.

Pump Number	3	4	1	2
Year Installed	1970	1970	1970	1970
Type	turbine	turbine	turbine	turbine
Permit Capacity				
Permit TDH				
Current Capacity	8 mgd	8 mgd	4 mgd	4 mgd
Basis				
Current TDH	142'	142'	142'	142'
HP	200	200	100	100
Last Complete Inspection				
Last Efficiency Test				

Auxiliary Power

Power Type	None
Total Pump Capacity	24 mgd
Firm Pump Capacity	16 mgd
Auxiliary Power Capacity	mgd

Max Day Demand @ this location _____ mgd

Peak Hour @ this location _____ gpm (Hydropneumatic Stations)

Avg Day Demand @ this location _____ 1 mgd

Firm Pump Capacity/Max Day _____ %

Peak Hour/Firm Pumping Capacity _____ % (Hydropneumatic Stations)

Aux. Power Capacity/Avg Day _____ %

Comments:

A detailed pump inspection including a pump efficiency test has not been performed within the past five years.

Daily pumpage is not metered at Westside.

The Westside pumping station consists of two three stage turbine pumps and two two stage turbine pumps that take suction from an adjacent 12 mg reservoir during peak demand periods. The reservoir is re-filled during low demand periods during the winter months. During the summer months the station operates on a continuous pump and fill cycle and the operation alternates every other day with the Cedar Street station. Pump operation and filling of the reservoir can be controlled at the WTP or manually at the booster station. Pump operation setpoints are located within the distribution system.

Flow is measured by the elevation changes in the reservoir along with the pumping duration of the operating pumps within the facility. Direct metering to record daily demands is not provided at West Side.

Modifications to the pump-discharge valving is needed. The existing 4 mgd pumps are equipped with swing check valves. This design causes rapid valve operation during pump start-up and bumps the distribution piping downstream and most likely contributes to the main breaks in this area. The larger pumps are equipped with cone control valves, however these are not functional. One butterfly control valve is out of service. The other control valve utilizes a hydraulically operated butterfly valve however, these valves have not worked since 1990. The city has budgeted funds for 2006 and 2007 for new pump control valves at West side. Butterfly valves will also be provided for the two larger pumps.

The gas chlorination system was removed and replaced with the ability to feed sodium hypochlorite. Three chlorine feed pumps are available at the pumping station. A new chlorine residual analyzer was installed and the information is relayed to the operations center.

The switchgear has been re-conditioned and the station piping repainted.

Pumping Station No. 4 (P.S. No. 4)

Location: P. S. #4
Function: Provide supply from 20 mg reservoir during peak demand.

Pump Number	7	8	1	2	9
Year Installed	1994	1994	1949	1949	1994
Type	turbine	turbine	turbine	turbine	centrif
Permit Capacity					
Permit TDH					
Current Capacity	20 mgd	20 mgd	20 mgd	25 mgd	6 mgd
Basis					
Current TDH	185'	185'	185'	185'	185'
HP	800	800	800	1000	
Last Complete Inspection					
Last Efficiency Test					

Auxiliary Power

Power Type	none
Total Pump Capacity	85 mgd
Firm Pump Capacity	60 mgd
Auxiliary Power Capacity	mgd

Max Day Demand @ this location _____ mgd
Peak Hour @ this location _____ gpm (Hydropneumatic Stations)
Avg Day Demand @ this location _____ mgd
Firm Pump Capacity/Max Day _____ %

Peak Hour/Firm Pumping Capacity _____ % (Hydropneumatic Stations)

Aux. Power Capacity/Avg Day _____ %

Comments:

A detailed pump inspection including a pump efficiency test has not been performed within the past five years.

A stand-by power generator exists but is not capable of providing sufficient power. Dual electrical feeds have been provided for P.S. #4 from two separate substations.

Pump Station #4 was rehabilitated in 1994. Three pumping units were added, two 20 mgd pumps and one 6 mgd pump to improve turn over on the 20 mg Dort reservoir. The project also included installation of a second 42" discharge line. This project increased the firm pumping capability of PS 4 to 60 mgd. Pumps 3-6 are low lift pumps and are not utilized for pumping treated water to the distribution system. Pump 9 is used to continuously turn-over the Dort reservoir.

Torrey Road Pumping Station

Location: Torrey Road
Function: Boost pressure to the SW portion of the city

Pump Number	1	2	
Year Installed	1954	1954	
Type	centrif	centrif	
Permit Capacity			
Permit TDH			
Current Capacity	2.8 mgd	4 mgd	
Basis			
Current TDH	65'	100'	
HP	40	125	
Last Complete Inspection			
Last Efficiency Test			

Auxiliary Power

Power Type	None
Total Pump Capacity	6.8 mgd
Firm Pump Capacity	2.8 mgd
Auxiliary Power Capacity	mgd

Max Day Demand @ this location _____ mgd

Peak Hour @ this location _____ gpm (Hydropneumatic Stations)

Avg Day Demand @ this location _____ mgd

Firm Pump Capacity/Max Day _____ %

Peak Hour/Firm Pumping Capacity _____ % (Hydropneumatic Stations)

Aux. Power Capacity/Avg Day _____ %

Comments:

A detailed pump inspection including a pump efficiency test has not been performed within the past five years.

The Torrey Road station functions as an in-line booster pump station and takes suction from a 24" transmission main along Hammerberg Rd. This station boosts pressures in the SW portion of the city. Pump operation is based on a pressure monitor located at Brown St and Brakley Ave.

The larger pump at this station is rarely used due to its high discharge head. A new, smaller pump or a variable frequency drive is needed at this facility for more reliable and efficient operation.

Improvements are planned for the Torrey Road station. Several alternatives are being evaluated and include adding to the existing station or construction of a new station. In either alternative, variable frequency drives, replacement of all pumping and electrical equipment, additional pumping capacity, and establishment of an additional pressure district will be provided. The city has included this project in their 2007 budget.

General Comments:

All pumping stations are visited five times a week and sampled twice a week. All of the stations appear well maintained and the housekeeping is above average.

Pump availability, electrical controls, switchgear and stand-by power are important issues that need to be addressed among all four pumping stations. The city needs to follow through with improvements that are budgeted for during 2006 and 2007.

DISTRIBUTION

Operational Concerns & Maintenance

Are there areas where water main breaks are frequent? (Y/N) yes

If yes, identify locations:

Oxley Dr
Susan St
Flemming Rd
Flushing Rd past Milbourn
Dupont St. From Flushing Rd to Dayton
Area SE of Swartz Creek Valley Park
Boulevard Dr near Army Reserve
Janet Dr and Webster Rd
Avril St

Comments: Main breaks also occur in many other areas of the city. It appears that the most frequent breaks occur in the areas listed above.

Are there areas where aesthetic water quality complaints are frequent? (Y/N) no

Comments: In general, water quality complaints are not received. Occasional complaints do occur from unanticipated flushing following street sweeping work and those associated with watermain repairs.

Do you receive complaints alleging illness due to the water? (Y/N) _____

Is a procedure in place to respond to and track these complaints? _____

Comments:

Are there areas where customers complain of low pressure? (Y/N) no

Comments: Recently there have been no low pressure complaints. Any complaints that are received are usually attributed to failed service or corroded plumbing. Low pressures in the area known as Hospital Hill have been alleviated with the new tie-in along Sunset and discontinuation of the City/Genesee county connection at Beecher Rd.

DISTRIBUTION**Operational Concerns & Maintenance**

Are there areas where fire flows cannot be maintained? no

Comments: The majority of the city's system has adequate transmission piping to convey sufficient flows and pressures for fire protection.

Last ISO report date? could not be found Rating

Which, if any, of the above listed areas has the supply prioritized for main replacement, upgrading, or looping? Also, if a definite schedule for capital improvement has been established, list the proposed completion date.

Previous DWRP project plan proposals identified various distribution and transmission system improvements. These improvements were broken into several phases. The city did not score high enough to qualify for funding, however, these improvements remain as water system needs.

Phase 1: Replace 8200' of 12" main in Flushing Rd from DuPont to Eldorado St.
Replace 1900' of 24" main in DuPont St from Flushing north to Mackin.

Phase 2: Replace 8500' of 24" main in Dupont St from Mackin to Seminole St. This also includes Seminole st, Welch Boulevard, Euclid Ave, Stockdale St Iroquois Ave and Pasadena St.
Install 350' of 8" main in Edgemont from Beecher north to VanBuren

Phase 3: Replace 1100' of 16" main in DuPont St from Chevrolet to West 3rd st. Replace 2900' of 12" main in McClellan St. from Iroquois Ave to Fleming Rd.

Phase 4: Replace 7700' of 16" main on Pierson rd from Clio Rd to MLK Jr Ave.

Comments The city received approx. \$200,000 from community block grant funds in 2004 and utilized these funds for valve replacement in Pierson Rd and Flint Park Areas. The city did not receive grant funding in 2005.

The city anticipates between \$300,000 and \$400,000 in community block grants in 2006 and these funds will be used for hydrant and valve replacement. The WDD would like to see all of the 3 and 4" mains be replaced.

New 16" main was installed along Pierson Road thus completing a portion of phase 4 of the suggested water system improvements.

The city is considering to replace watermain in Flushing Rd in 2007 listed in phase 1 of the water system improvements.

It does not appear that the city has a capital improvements plan in place for WM replacement.

DISTRIBUTION**Hydrants**

Number of Hydrants	4500
Number Without Auxiliary Shut-Off Valves	not aware of any
Number that are Self-Draining	undetermined *
Number of Inoperable Hydrants	5 **

Frequency of Hydrant inspection: 1/yr (fall)

Inspection Staff: L18 Maintainers L19 Equip. Ops.
Dist. Foreman

Comments: * All hydrants are ordered plugged, however, a few are unplugged.
 ** The number of inoperable hydrants is always changing. Hydrants that are found in a state of disrepair are usually repaired within one week.

Are there areas where additional hydrants are needed? some areas

* - Would like to establish a 300-500' hydrant spacing standard.

Hydrant location system yes Accurate? yes

-Records depicting hydrant blueprints and cards are in place and appear to be accurate.

Are hydrants color coded for capacity? yes

- Hydrant caps are coded by main size, but this coding system is not consistent. WDD intends to paint hydrant bonnets according to main size.

Has this information been provided to the fire department yes

-Fair communication with fire dept.

Frequency and seasons of hydrant flushing 1/yr (fall)

-Hydrants are flushed once a year during the fall. Flushing is performed to maintain water quality and upkeep hydrants.

Purpose of flushing aesthetics

Is the public notified prior to flushing? No

Does flushing follow a specific format? somewhat

-Flushing is set-up on a per grid basis with 50-100 hydrants per grid. Usually one operator is assigned to a grid. There is no order in which the grids are flushed.

Is the volume of water used during flushing estimated? no

Is a record maintained of hydrant activities? yes

-Hydrant records and work orders are maintained, however, information from the work order has not been transferred to the hydrant records.

Comments:

Hydrant records consisting of hydrant cards and work orders exist, however, the hydrant cards are not updated to reflect recent repairs and/or maintenance. This information is maintained separately in the work order records. The Utilities Division will request approval to purchase a data retrieval system (GBA system) in 2006 for use towards improving hydrant and valve recordkeeping. The

public is not informed of system flushing.

An improvement in communication between the WPD and the fire dept is needed regarding the status of system hydrants. Specifically, 911 emergency service conveys information concerning broken hydrants to the fire dept. Information on recently repaired hydrants is not conveyed to the fire dept.

DISTRIBUTION**Valves**Number of Valves 8000-10000 MDEQ estNumber of inoperable valves manyAre there areas where additional valves are needed? yes

If yes, list locations:

Along Saginaw St and many other areasThe WDD indicated that many of the city's valves do not work and has resulted in larger than necessary interruptions in water service to make the necessary repairs.Valve location system partial system Accurate? yesValve Turning Frequencies no program in place

Comments:

The reason given for the lack of a valve turning program is an insufficient workforce.

The city has purchased a valve turning trailer. The city is also preparing to bid replacement of two valve trucks.

Records Maintained? < 25% adequate records of distribution system valves.

Comments:

The city's valve program remains deficient. A valve turning program is not in place for either primary and secondary system valves. Many valves are not in working order. It is estimated that the city has between 8000 and 10000 isolation valves, but there has been little or no improvement in valve records since our 1999 survey. The majority of these cards represent valves in mains 16" or larger. Although the location, description, and operating details are accurate much of the information has not been updated.

Little additional work has been made in the past 7 years towards re-establishing an adequate valve recordkeeping system.

If the Utilities Division acquires the GBA system, improvement in the valve program should proceed. Staff will be acquired to operate and input data into the GBA system. It appears that additional staff are needed to address the problems in the valve program.

DISTRIBUTION**Customer Service Information**

Number of service connections	app. 41537
-------------------------------	------------

Number of metered service connections	1497
---------------------------------------	------

Identify service line materials and estimate percentages:

Copper	_____
PVC/PE/PB	_____
Galvanized	_____
Lead	_____

Ownership of Service	(CWS/Customer)
----------------------	----------------

From Corp Stop to Curb Stop	_____
From Curb Stop to Property Line	_____
From Property Line to Meter	_____
Meter	_____

Customer Meters

Types of meters Used

Number of Meters with Touch Pads or Other Remote Reading Devices

Size of Meters

Residential

Industrial/Commercial

Meter Testing/Maintenance Program

Average Age of Meter in System

Residential/Commercial/Industrial

Criteria for Changeout

Number or Percent Changeout per Year

Master Meter Locations

Calibration of Master Meters

Meter Reading Staff/Contract:

Water Office at city hall

Percent By Usage

% Residential

29%

% Commercial

71%

% Industrial

% Other

Comments:

The WDD does not have an exact number of metered service connections, however, a residential meter change-out program is in progress. The city ordered 42000 residential meters (5/8 and 1" meters). The WDD is aware of additional residential meters (1.5" - 2" sizes) that are needed. Approximately 7000 additional meters in this size range are needed for a complete residential meter change-out.

Approx. 3500 small business accounts exist throughout the city. These are noted as small commercial accounts eligible for cross connection inspections.

The Water Office at City Hall keeps track of all active accounts including the number of second meters serving multiple housing units and/or irrigation meters.

% Residential
 % Lg. Commercial & Indust.
 % Lg. Users - List

28.60%
71.40%
6.40%
4.30%
2.20%
1.10%
0.80%

GM Truck
AC Rochester
Delphia
Buick
Hurley Med. Ctr.

DISTRIBUTION**System Growth**

Year	No. of Residential Meters Installed	No. of Comm./Industrial Meters Installed	No. of Construction Permits Issued	Permitted Amount of WM Feet
1995				
1996				
1997				
1998				
1999				
2000				
2001				

Water Rates

What is your current rate schedule? _____ \$/1000gals or \$/qtr, \$/cuM
 Are current rates adequate to support O&M and CIPS? _____
 When was last time rates were adjusted? _____
 Has a water rate study been performed? When? _____
 Is there a meter charge or ready to serve charge? _____
 Is a copy of the water rate schedule and ordinance available? _____

Comments: Proper operation and maintenance cannot be performed without adequate revenue.

Repair Parts Inventory

Extra Mains (Sections for Each Size in Service)
 Repair Clamps (2 or more for each size)
 Tees, Crosses & Elbows
 Hydrants
 Valves
 Services (Corp & Curb Stops, Clamps and Lines)
 Other

Safety Issues

Confined Space Entry Program in Place % Followed (Y/N)
 Trench Safety Program in Place & Followed (Y/N)

Comments:

PROGRAM COMPLIANCE**Cross Connection Programs**

Ordinance No. 3267 Date: 1/24/1994

Approved Program (Y/N)? yes Date: _____

Staff Assigned to Program, (No. Dept and/or who) Utilities Administration/Cross Connections

Is Annual Cross Connection report required (Y/N)? yes

Was previous year's annual report received (Y/N)? yes Date Received: 3/26/2005

Was previous year's annual report acceptable (Y/N)? yes

Inspection Status: Routine inspections have resumed

Device Testing Frequency: 2x/yr (high hazard) 1x/yr (mod. and low hzd)

Recordkeeping: Improving

Private Well Isolation/Abandonment Procedure: _____

Comments: The Utilities Administration Division along with WTP staff are becoming involved with cross connection inspections. Mr. Glen Thomas is now involved with cross connection inspections and back flow prevention on a full-time basis. William Daniels, WTP supervisor, supervises the CCCP.

Annual Pumpage Reports

Is Annual Pumpage Report required (Y/N)? no

Monthly Operator Reports

Are Monthly Operation Reports required (Y/N)? yes

Were all previous year's reports received (Y/N)? yes Timely? yes

Are previous year's reports acceptable (Y/N)? yes

Comments:

Consumer Confidence Reports

Is the annual CCR required? (Y/N) yes

Was the previous year's report received? (Y/N) yes Timely? _____

Was the previous year's acceptable? (Y/N) yes

Was the previous year's certification form received? (Y/N) _____ Timely? _____

Comments: A copy of Flint's CCR and water quality data can be found in appendix D.

PROGRAM COMPLIANCE**Contingency Plan**Date of Most Recent Plan: 8/1/1992 Acceptable? noFiled where? MDEQ, WTP

Comments:

the WTP's 1992 contingency plan discusses the scenario of either an inadequate amount of water or a failure of the 72" pipeline. The contingency plan does not provide sufficient information concerning critical contacts in the event of an emergency. This would include police, fire, critical customers, contractors, suppliers, etc. Other information that was provided also needs to be updated.

Flint prepared an Emergency Operations Plan (EOP) that outlines action to be followed for: source water and distribution system contamination, man made and natural disasters, and enemy attack emergencies. The EOP does not provide an outline to follow in the event of a failure of the 72" transmission main and a widespread power outage. An addendum to the EOP was to be prepared and would include these additional emergency items. Also, the EOP needs to contain a protocol for placing the WTP into service during an emergency.

The city is planning to provide stand-by power provisions at Baxter and Potter.

WTP staff indicated that repair of the 72" transmission main can be completed, however we have yet to receive a plan that outlines how this type of emergency would be mitigated.

Finally, the contingency plan and/or the EOP needs to be updated to reflect changes in emergency contacts. The revised plan also needs to include a protocol for placing the WTP into service for emergency operation.

General PlanDate of Most Recent Plan: 1990 Acceptable? Filed Where? Water Service Center

Comments:

An updated map with 1990 distribution system info is available. The WSC also has a series of individual maps of the distribution system. Finally, the hydraulic model has been completed and contains the entire distribution system.

Reliability StudyDate of Most Recent Study: Acceptable? Filed Where? MDEQ, City

Comments:

The city has several completed reliability studies which discuss the issue of source reliability. The most recent study (DWRP Project Plan by SEG) addresses the issue of source reliability. The project plan also discusses future water usage and distribution system needs. The plan adequately addresses the city's transmission needs, however, much of the city's smaller distribution piping may soon be reaching the end of their service life.

Permits

Applies for and obtains permits prior to construction (Y/N):
 Reviews plans from engineers and/or developers prior to submittal to DEQ (Y/N):
 Standard specifications on file at CWS (Y/N):
 If applicable, adheres to contract with supplier regarding plan submittal (Y/N):
 Follows master plan for any construction (Y/N):
 Actually follows plans as permitted (Y/N):
 Develops as-built plans (Y/N):
 Updates general plans (Y/N):

Capacity Development

	Submitted	Acceptable
Technical Capacity		
Site and/or general plan	_____	_____
System reliability addressed-dual feeds, standby power, storage	_____	_____
Purchase agreement	_____	_____
Financial Capacity		
Acknowledgement of annual fee	_____	_____
Annual budget plan for next 5 years	_____	_____
Sources of revenues (rates, fees, etc.)	_____	_____
Planned expenses (O&M, administrative, engineering, accounting debt service)	_____	_____
Capital improvements costs/account & plans	_____	_____
Capital replacement account and plans	_____	_____
Documentation of acceptance repayment plans from lending and bond authorities	_____	_____
Managerial Capacity		
Chain of command and clear lines of responsibility	_____	_____
Sample site plans	_____	_____
Acknowledgement of monitoring costs	_____	_____
Cross connection control program	_____	_____
Standard Specifications	_____	_____
Plans/Methods for providing legal doctrine (ordinances, policies, plans)	_____	_____
Customer complaint handling format	_____	_____
Operator training program	_____	_____

MONITORING**Bacteriological**Date of Approved Site Sampling Plan 2005Are samples still being collected in accordance with the plan? (Y/N) yes

Number of samples required each month

Basis for Setting Number of Monthly Samples:

Certified Lab Used:

MCL Monitoring or Reporting Violation(s)? (Y/N)

Number & Type of Violations in past 12 months

Public Notice Issued according to regulations? (Y/N)

Comments: The city continues to update the sample site plan due to constant changes in their routine sampling locations.
A revised plan is sent to us following any changes.

Chemical

Date of Monitoring Schedule

Are samples still being collected in accordance with the schedule? (Y/N)

Were nitrate, nitrite and fluoride (or partial chemical) samples collected? (Y/N)

If nitrate detect, what is concentration?

If nitrite detect, what is concentration?

Sample Site

Sample Site

Detects for metals > 50% of MCL? (Y/N)

Metals (list)

Detects for VOCs (Y/N)

Detects for SOCs (Y/N)

Date of Approved Disinfection Byproduct Monitoring Plan:

DBP Sampling Done? (Y/N/Waived)

If yes, done to site sampling plan? (Y/N)

Lead and Copper Monitoring

No. of Samples Required:

33

Semi Annual/Annual/Triennial

Triennial

Exceedance of lead or copper action level (Y/N)

no

If yes, was public education issued (Y/N)

na

Date Issued:

Next Monitoring Period:

Jun-08

Corrosion Control Program, if applicable

Lead service line replacement status, if applicable

Comments:

The city has adequately implemented the lead and copper monitoring program. The city participates in the modified consecutive system plan with Detroit. Their participation allows for a reduction from the full chart value of 100 sampling points to 33 points twice per monitoring period.

Radiological Monitoring

Date of Monitoring Schedule _____

Are samples still being collected in accordance with the schedule? (Y/N) _____

Alpha, beta, radium, uranium _____

Radon _____

Tritium _____

Date Collected _____

Date Collected _____

Date Collected _____

Date Collected _____

Detects for Rads > 50% of MCL? (Y/N) _____

If yes, list _____

Comments:

Conclusions and Recommendations

In general, our survey covers the major aspects of a water supply including: stand-by facilities, distribution, source capacity, and storage. Each of the above categories are evaluated on the basis of adequacy, maintenance, reliability, and operation. The evaluation also includes a check on the status of the operator certification and the cross connection control program. Finally, water quality and the utility's monitoring programs are reviewed.

Overall, the City of Flint's water distribution system continues to be rated **"Marginal"**. Improvements are needed in several key areas including: pumping station improvements, distribution system capital improvements, and in various operational programs. Until significant progress in these major areas is made, the distribution system rating will not improve. Further discussion regarding existing facilities, reliability, operation, and maintenance is provided in more detail below.

Water System Viability

The City of Flint currently serves a population of approximately 125,000 through an extensive network of transmission and distribution mains. Several booster pumping stations and storage facilities are in place to enhance service. A system of this size and complexity must have an adequate number of certified operators to adequately maintain and operate the system.

The Safe Drinking Water Act specifically sets the city's minimum certification requirement to employing at least one S-1 certified operator to oversee the operations of the water utility. The remaining staff at the Water Service Center (WSC) and the Water Treatment Plant (WTP) must also be well qualified to perform water distribution system operation and maintenance in an adequate manner and should hold some level of operator certification.

Water Distribution Division (WDD)

The WDD, supervised by Michael Brown, operates and maintains the water distribution system piping, hydrants and valves. The WDD also conducts meter reads, replaces meters, and maintains distribution system records and maps. The city continues to mandate the S-1 and S-2 certification requirement for the supervisor and foreman positions respectively. Operator certification, however, appears to have declined among the Level 18 Maintainer positions. Several certified operators in this position were unable to obtain their continuing education credits (CECs), thus their licenses have fallen to an inactive status.

Although the WDD meets the minimum operator certification requirement, we encourage the city to promote operator certification in the entry-level positions. Specifically, Distribution Trainees and Maintainers should attain and maintain their S-4 and S-3 certificates respectively. For those who acquire their S-4 or S-3 certificate, CECs must be accrued in order to keep these licenses active. Specifically, these certificates fall into a three-year renewal period during which 1.2 and 2.4 CECs for the S-4 and S-3 respectively must be accrued.

Certified operators help to protect Flint's investment in the drinking water system and to meet the Safe Drinking Water Act's requirements. Other utilities have found it beneficial to institute a bonus incentive program for attaining operator certification. We encourage the city to promote operator certification among all water operator positions. Additional information detailing the requirements for operator certification, available training, exam applications, etc. is enclosed.

Water Treatment Plant (WTP)

The WTP staff, supervised by William Daniels, operates and maintains Flint's stand-by water treatment plant. The WTP staff also maintains certain water utility programs including pipeline operation and the bacteriological and lead/copper monitoring programs. WTP staff are also responsible for monthly operation reporting, contingency planning, and public relations.

However, the city of Flint remains without an operator in charge (OIC) holding the required F-1 license to oversee operation and maintenance activities at the WTP. According to Flint's February 28, 2006 letter from Peggy Cook, City Administrator, there has been no further progress towards negotiating a draft operating agreement with Genesee County. The city has also informed us that a request for proposal to enable engineering firms to provide an interim F-1 operator has been prepared and will be distributed to several consultants. Finally, Mr. Daniels will re-write the F-1 certification exam this spring.

The next F-1 certification exam is on May 3, 2006. In the event that Mr. Daniels does not pass the exam, the city must acquire an interim OIC holding an F-1 certificate by no later than July 1, 2006. Given the time constraints, the city needs to continue negotiating efforts with Genesee County as soon as possible and/or proceed in the selection process of an F-1 contract operator. Finally, even if Mr. Daniels passes the F-1 exam, Genesee County has staff that would provide a significant amount of technical assistance in operating the WTP in the event of an emergency.

Utilities/Cross Connection Division (UCCD) - Cross Connection Control Program

UCCD is responsible for implementing the city's cross connection control program (CCCP). Mr. Glen Thomas continues to perform routine inspections and maintain records. Ms. Yolanda Gray assists with recordkeeping and reporting activities.

The city's CCCP is rated satisfactory in implementation and program administration. Based upon our discussion and review of the 2003 and 2004 annual reports, an adequate number of routine inspections are being completed among Flint's high and low priority establishments. The UCCD has also replaced the local cross connection ordinance (Ordinance No. 3267 with Ordinance No. 46-43.1) The new ordinance is generally acceptable; however, it references various city and state agencies that are outdated. Finally, we have not received Flint's 2005 cross connection annual report.

The UCCD is working towards obtaining an additional operator for CCCP implementation. We encourage the city to review the needs the CCCP with the UCCD and achieve the necessary staffing to meet the annual inspection schedules.

System Storage

Flint has five storage facilities that provide a total storage volume of 57 million gallons (MG). These facilities, based upon our survey and previous inspection records, appear to be in good condition.

Dort Reservoir

The 20 MG Dort reservoir was drained and inspected by the WTP staff in 1992 and found to be in good condition. The exterior structures including vents and overflows are checked and maintained on a yearly basis. The reservoir is due for a re-inspection.

3 MG Reservoir

The 3 MG transfer reservoir upstream of Pump Station #4 was inspected in 1996 and found to be in good condition. Repairs to an existing sluice gate were completed at that time. The reservoir is due for a re-inspection. Provisions for venting and an overflow structure should also be evaluated during the next inspection.

Elevated Tank

The 2.0 MG elevated tank was inspected and repainted both inside and out in 1996. The inspection revealed that the tank was in good condition. The elevated tank is due for a re-inspection.

Westside

The 12 MG reservoir was inspected in 2003 by WTP staff in conjunction with a roof restoration project. As part of the roof restoration project, the roof drain (scuppers) were repaired. The completed work allows for adequate drainage of the roof. The

internal inspection revealed minimal sediment build-up and the reservoir appeared to be in good condition. The reservoir should be re-inspected between 2013 and 2018.

Cedar Street

The 20 MG reservoir was inspected by WTP staff in 1997 and found to be in very good condition. Minor sedimentation was noted and, cracking and spalling of the concrete walls was minimal. Vents and overflow structures were also in good condition as noted in our survey. This facility is due for a re-inspection.

Pumping Stations

The city of Flint has four booster pumping stations. These pumping stations along with various comments and/or concerns are listed below.

Cedar Street Station

The electrical switchgear and controls remain outdated and replacement parts are no longer available. A complete rehabilitation of the electrical system is still needed at Cedar Street. It is our understanding that the city intends to proceed with electrical improvements during FY 06.

Westside Station

Valving modifications on the pump discharge piping are needed. Specifically, the two smaller pumps are equipped with swing check valves. This type of configuration causes rapid valve operation during pump start-up and this condition causes water hammer within the distribution system. This condition has contributed towards some of the main breaks in the area. The two larger pumps are equipped with cone control valves; however, these valves do not function properly. It is our understanding that the city has included new pump control valves for the Westside station in the FY 06 budget.

Pump Station No. 4

This pumping station, located at the WTP, was re-habilitated in 1994. Our inspection revealed that the facility is in good condition. Stand-by power is not provided for this facility; however, dual electrical feeds from separate substations have been provided.

Torrey Road

Improvements are planned for this pump station and are currently being designed. Based upon our discussion, the existing station will be replaced with a new station.

The new pump station will include variable frequency drives and establishment of a new pressure district.

A construction permit will be required prior to proceeding with construction of the new pump station. A set of construction plans, a basis of design for the pump station, and a permit application will need to be sent to our office for review and approval prior to issuance of the construction permit. Finally, any new booster pump station should also include stand-by power.

Transmission/Distribution

Flint's water system consists of an extensive network of distribution and transmission mains. Our main concern with Flint's distribution system is the condition of the piping. The WDD staff continue to indicate that the majority of the three and 4-inch main in the city is in very poor condition and needs to be replaced. Specific areas in need of replacement are listed in the data-gathering portion of the survey.

Some improvements were completed since 2000 and the upgrades included transmission main replacement along Pierson Road and Beech & Wellington Streets. Next, the city is considering replacing transmission mains in Flushing Road in 2007.

Although the city has replaced some transmission main over the past six years, a high percentage of the distribution piping remains over 60 years old and is in serious need of replacement.

The city needs to establish a capital improvements program (CIP) for watermain replacement. The CIP should reference distribution/transmission improvements that are recommended in the 1999 distribution system study and hydraulic model prepared by the Snell Environmental Group, Inc. The CIP should also coordinate other distribution system improvements with sewer and road replacement projects and be based upon WDD's recommendations.

Valve Program

The WDD is responsible for maintaining and keeping track of distribution system valves; however, this program remains **deficient**.

Listed below (in a decreasing level of importance) are the elements that are essential towards establishing an acceptable valve program:

- Locate valves in critical areas, verify proper operation, and establish adequate records
- Locate remaining valves in less critical areas and establish records

- Institute valve turning program – beginning with critical valves.

Next, it is our understanding that the WDD will request approval to purchase a data retrieval system in 2006 for use in improving hydrant and valve records.

It is essential that the city approve the software package that would allow the WDD to establish an adequate recordkeeping system for valves and other distribution system appurtenances. An adequate recordkeeping system is an essential component of the valve program and is vital in allowing WDD operators properly operate and maintain this infrastructure.

Finally, any valve exercising activities should also be included with individual valve records. Although it would not be possible to turn all system valves on a yearly basis, we would suggest that an exercising schedule be established especially for valves in critical locations. This should consist of reviewing all valves and determining what percentage of valves could be exercised each year.

Contingency Plan

The city of Flint needs to prepare an accurate water system contingency plan that reflects potential water system emergencies. Flint's Emergency Operations Plan (EOP) prepared in 2003 contains some of the elements of a water system contingency plan; however, much of the information (emergency contacts) is becoming outdated. In addition, the EOP addresses only a limited number of potential water system emergencies that could confront the city.

The water system contingency plan needs updated to reflect all current emergency contacts. The plan also needs to be expanded to include, but not limited to, the following water system emergencies: failure of the 72-inch transmission main, widespread power outage, large transmission main break, source water and distribution system contamination, critical equipment failures (treatment components, pumping station, storage facilities, etc). Finally, the contingency plan needs to contain a protocol for placing the WTP into service in the event of an interruption in water service from Detroit. Emergency operation of the WTP is a crucial part of the city's water system contingency plan and the plan needs to be updated to include WTP operation under this type of emergency.

Closing

Some of the items in this survey including: operator certification, treatment plant operation, and distribution system improvements were discussed in our most recent correspondence. We are requesting the city to respond to us in writing on each topic discussed in the Conclusions and Recommendations portion of the survey. Following our review of the city's response, we will schedule a meeting to discuss these issues in more detail.

Report Summary

The following is a list of items discussed in this report which must be addressed by the city of Flint. No priority is implied by the order in which the issues are presented. Page references are noted in parentheses.

1. Continue to inspect and maintain the water storage facilities. Improved security should be taken for the facilities at the WTP. (5,6,28,29)
2. Address booster pumping station deficiencies including: electrical upgrades at Cedar Street, pump discharge valving at Westside, stand-by power at each pumping station, and new pumping station at Torrey Road. (9-13,29,30)
3. Develop a capital improvements program that addresses both transmission and distribution system needs. (15,30)
4. Establish an adequate O&M program and recordkeeping system for hydrants and valves. (17,30,31)
5. Revise the water system Contingency Plan. (22,31)
6. Promote operator certification and training. (2,26,27)



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

DIVISION OF:

WATER & WASTE SERVICES

G-4610 BEECHER ROAD • FLINT, MICHIGAN 48332-2617

PHONE (810) 732-7870 • FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

DEC 16 PM 1:53

December 12, 2005

Joe Conway - Dir of Genesee Co.

Peggy Cook
City Administrator
City of Flint
1101 S. Saginaw Street
Flint, MI 48502

Re: F-1 Licensed Operator
Water Plant

Dear Ms. Cook:

On December 9, 2005, David Jansen and I met with Bill Daniels, in his office, to review and discuss an improved working relationship between the two water departments.

In review of the request for an F-1 licensed operator, the County is proposing to offer a team approach to assist Mr. Daniels in operation of the facility. The team would consist of licensed operators, engineers, and a safety officer. While this seems like a lot of personnel, it really is not anymore than offering one person based upon time required to perform the work. The operators would assist Mr. Daniels in start-up and running of the plant. The engineers would assist Mr. Daniels in closing out the construction projects, and the safety officer would assist Mr. Daniels in maintaining the facility in compliance with all current regulations, both Federal and State. At the request of Mr. Daniels, I have prepared a draft agreement as a starting point to our endeavors (enclosed).

1. water 18 MED, PL

The second item we discussed was that of an emergency backup supply plan between the City and County. While it is in its infancy, I have also proposed an agreement for proceeding down this path of cooperation. *what is the plan?*

The third item discussed was a study by the County for raw water supply. As you know, the County is trying to determine our long-term water supply options. One option considers bringing raw (untreated) Lake Huron water to Genesee County and treating it to drinking water standard. The County personnel believe that this option would also benefit the City of Flint. It is recognized that the City would save money by completing the treatment plant and using Flint River water as its source of water. We believe that using the Flint Treatment Plant and treating raw lake water would increase these savings to the City of Flint through reduced construction costs and reduced operations cost. The County proposes to fund a study to calculate this option; all we are asking of the City is to provide accurate data for the study.

Based upon the above, we believe the following are the next steps:

1. Finalize a temporary operating agreement. *we have*
2. Finalize an emergency back-up operating agreement. *75 + here a study April?*

Peggy Cook
December 12, 2005
Page 2

3. Authorization to Mr. Daniels to share information for the raw water study.
4. Presentation of the agreements to the Mayor and Drain Commissioner for their consideration.

Knowing the time constraint the City is under, the County staff and I are available at your convenience. Should you have any questions, do not hesitate to contact this office.

Sincerely,



John F. O'Brien, P.E., Director
Division of Water and Waste Services

JFO:kt

Enclosures

CC: Jeff Wright
Don Williamson
David Jansen
Bill Daniels

② Daily Monitoring
 1-3 cp. (DIC)

Group shake down

① Completion of these items

Draft

Temporary Operating Agreement
between City of Flint Water Department (Flint) and
Genesee County Drain Commissioner's office
Division of Water and Waste Services (County)

F-1 q.

The purpose of the temporary operating agreement is for the County to provide a licensed operator for the water treatment plant until such time the City has a permanent operator on staff or under contract. The terms of the agreement are as follows.

1. The County will provide the following services to the City:

- Provide qualified personnel to assist the plant manager in overseeing the ongoing construction at the City water plant.
- County will participate in progress meetings. — and w/ — 2-9 hrs typ
- County will observe construction installation. — sk. readown
- County will review completion records. —
- The County will make all recommendations and comments to the contractor through the City of Flint.

Product: The County will prepare quarterly reports, which will contain the status of the project, for the City Mayor's office. — DER P

2. The County will monitor test runs of the water treatment plant. The County will observe all test runs of the facility and make recommendations for the operations and efficiency of the facility. All communications will be through the Plant Manager, Bill Daniels.

Product: The County will prepare a report after each test run with recommendations and provide a copy to the Mayor's office. This report will include standard operating procedures for start-up, operations, shut down, and maintenance. — Hours/wk during LWS? — include a MER - fix ment

3. Upon declaration of a water emergency by the Mayor of the City of Flint, the County will take operational control of the facility. The County will issue all communications through the Plant Manager, Mr. Daniels.

PRELIMINARY

proposed OIC

The City will perform the following:

1. The City will perform all day-to-day activities of the facility. Mr. Daniels will continue to sign monthly reports when the plant is not operating (test or emergency).
2. The City of Flint will maintain personnel records including records of operator training and continuing education reports.
3. The City shall provide the County with its water plant test run schedule 30 days prior to commencement of the test operation. This schedule shall include dates and hours of test operation, schedules of personnel dedicated to the test operation, and ~~an inventory of chemicals on hand~~ *good!*
4. The City shall maintain the facility in a state of readiness for emergency operations. This shall include but not be limited to:
 - ~~maintain sufficient (two weeks) quantity of chemicals onsite for emergency and test operations.~~ *good!*
 - maintain all equipment in accordance with manufacturers' requirements and as identified in the Standard Operating Procedures (SOPs).
 - financial commitment by the City to the maintenance of the facility in a state of operational readiness. *Full agreement that plant WRT Normal, Chem, Proficiency*
5. The City shall maintain all necessary permits and programs as required by State and Federal government. This includes, but is not limited to, source water protection plan, process safety management plan, laboratory certification.
6. The City shall maintain all communications with their residents including communications, reports, and questions and answers.

PRELIMINARY

Again, the purpose of this agreement is for the temporary operation of the water plant during test runs and emergency operations.

Cost: The County has agreed to perform the above services based upon the following fee schedule:

(Item 2) → Test runs \$2,000.00 per week
 (Item 3) → Emergency operations \$2,000.00 per week
 No charge for Item #1 ?

Item # 2 (First page of draft)
 per

Item # 1 on first page of Draft

There are no other charges contemplated in this agreement.

Insurance: The City shall provide the necessary insurance coverage for activities on their property.

Termination: The agreement may be terminated under one of the following conditions:

1. The City hires or retains an F-1 licensed operator.
2. Upon 30 day written notification to the County that the City has not fulfilled their requirements of the agreement.

OUR reading that the agreement is open ended & continues till terminated
 no infer

Date: _____

City of Flint

Donald Williamson
 Mayor, City of Flint

County Agency

Date: _____

Jeff Wright
 Drain Commissioner

PRELIMINARY



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

November 17, 2005

Mr. Bill Daniels, Acting Water Plant Supervisor
Flint Water Treatment Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 2310

Dear Mr. Daniels:

SUBJECT: City of Flint Water Treatment Plant (WTP)

This letter confirms my visit on October 27, 2005 with you and Brent White. The purpose of the visit was to discuss the following items: status of the WTP rehabilitation project, operator certification, treatment plant operation, investigation of pump submergence at the low lift station with respect to Hamilton Dam, and distribution system improvements for 2006. Each one of these items is discussed below in more detail.

Water Treatment Plant Rehabilitation

Substantial completion of Segment 5, Phase I of the WTP rehabilitation project is expected by March 1, 2006. Unit process testing and equipment shakedown of the ozone facility will begin this January. The treatment plant is expected to be capable of performing a complete test-run by next May. As we discussed, written confirmation stating the date that the WTP is capable of initiating operation needs to be provided to us.

Operator Certification

Mr. Robert Carlyon has tendered his resignation as the interim operator-in-charge (OIC) of the WTP. This latest development leaves the city of Flint without an F-1 certified operator to oversee operation and maintenance activities at the WTP.

Since Mr. Daniels has not achieved his F-1 license, the city will need to retain another interim (OIC) holding an F-1 license. As a minimum, the OIC needs to maintain an active role in various WTP operations listed below:

- Construction oversight of the on-going rehabilitation project
- Equipment shakedown
- Continuing education and operator training
- WTP test runs
- Emergency operation

The interim OIC may no longer be necessary after June of 2006 provided that Mr. Daniels obtains the F-1 license. Also, consensus from the city and the interim OIC that Mr. Daniels can operate the WTP without additional oversight from the OIC needs to be provided; otherwise, the contract with the interim OIC must be extended.

We need to hear from the city, in writing, as to what action is being taken to provide an interim OIC by no later than December 1, 2005.

Treatment Plant Operation

Completion of Phase I of the water treatment plant rehabilitation project marks the ability of the treatment plant to function as an acceptable stand-by treatment facility. To demonstrate and maintain the level of operational reliability required of this facility, some continuing level of operation will be necessary.

A proposal detailing an operating scheme for the facility must be prepared. The following operating ranges need to be established:

- Annual Basis: Propose the number of months/year the plant will be in operation.
- Monthly operation: Propose the number of hours the facility will operate in a given month.
- Weekly basis: Establish the minimum and maximum production rates and propose the number of hours of continuous operation for both these rates.

The operating ranges that the city proposes are negotiable; however, a scheme that tests all equipment, operation, and performance at varying rates is necessary. The test runs also need to be performed during critical times of the year including: peak run-off (high turbidity), summer (low flow, high temperature), and winter (low temperature).

The operating scheme must also include a plan that addresses staffing. Sufficient staffing is essential in order to maintain 24-hour operation (either for test-run or emergency operation) of the treatment facility. Based upon our discussion with plant staff, there has been a significant reduction in the number of available operators since previous plant test-runs. We are concerned whether a sufficient number of operators are available for 24-hour operation.

The city needs to determine the staffing necessary to operate the treatment facility on a 24-hour basis. Additional operators necessary for plant operation and oversight of all shifts need to be provided. Additional position(s) should require least an F-4 complete treatment license.

Following our review of the test-run proposal, we will meet with the city and plant staff to discuss test-run operation in more detail.

(610) 764-7218

Mr. Bill Daniels

3

November 17, 2005

Next, if the treated water is wasted, the water must still meet the bacteriological and turbidity requirements as a condition of operational preparedness.

In addition, the operating budget for the treatment plant will need to be adequate to allow for purchase of treatment chemicals necessary to perform test-runs of the entire treatment plant.

Finally, the operating scheme for plant test-runs and mobilization of operators needs to be addressed in Flint's water system contingency plan. Emergency operation of the WTP is a crucial part of the city's water system contingency plan and the plan will need to be updated to include plant operation under this type of emergency.

Hamilton Dam

Additional field data has been obtained toward completing the low-lift pump submergence investigation; however we have not received a response from the city regarding this issue. Adequate low lift pump submergence during low flow conditions while meeting the drawdown requirements at Hamilton Dam needs to be confirmed.

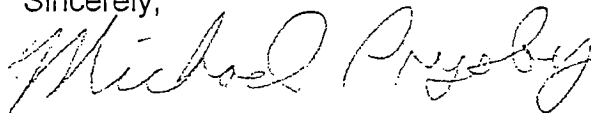
Based upon the investigation, it appears that the drawdown requirements can be met; however, what is the status of the investigation and are there any conclusions? Please provide us with a summary.

Distribution System Improvements

Distribution system improvements completed since 2004 included replacement of transmission piping along Pierson Road. Major improvements planned in 2006 include: installation of new transmission main along Flushing Road and replacement of the Torrey Road pumping station. We will review distribution system issues with staff from both the Water Service Center and the WTP in more detail during our upcoming Sanitary Survey.

There are many issues noted above that the city needs to take action on. We are requesting the city to respond to us, in writing, on the Treatment Plant Operation and Hamilton Dam issue by no later than February 1, 2006. If you have any questions regarding these issues or any other water related matter, please feel free to call me at the number listed below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Water Bureau
517-335-6122

cc: Ms Peggy Cook, City of Flint
Nr. Michael Brown, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

City of Flint
Site Visit
10/27/2005

Hatcher - coming over back in
Business - on delivery
COC - 192 MGD, PH 24
can run filter off
50 w.

1. WTP Rehabilitation Project -- Status?

Start up - JAN - 60 weeks to completion - and if
start - 400,000 price to 3/1

Test runs & Certificate of Coverage (COC) - Equip started up 1 mo. ago

Status? continuation to shake down - VFO bigger can service

no filter test runs

what will be want for test runs

42/42/week

Budget was cut for CPM

not sure if 1001 - Budget to 1001

2. Certification -- Whose on board? Operator coverage at WTP?

2 - FB - Billy Blint

9 - FAs - 2 points

4 - FAs - 2 points

4 - FAs - 2 points

G. Bob - 10/27/05

D. Adams - 10/27/05

Reg. in 5000 to use 5000

Reg. in 5000 to use 5000

3. Hamilton Dam field data & calculations -- Status?

Is the dam critical for pool depth & adequate pump submergence at low lift during low flow conditions?

Sona field data on 10/27 - 2-3 PM low

at low flow conditions also in low water levels

707.5 usgs dam - DAM safely control 707.5

WTP could op. - 4' of water in

4. LT2 rules

still using relabel of MAN OAM

are caring

5. Distribution system improvements -- what has been completed in 2005?

what's on tap for 2006?

2005 - 10/27/05

2005 - 10/27/05

2005 - 10/27/05

2005 - 10/27/05

6. Sugar Maple Farms -- permit re-issued on 7/25/05

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

Status of project? - Done !!

- CER violation
mailed v.a. downtown
mailed out 10/27 to downtown
can on petty cash

1/3 of
up start
as prior to
project

F06
7/10 - 6/20/06

2 - FB
9 - FAs

send us
7/10 TIP
band

2005 - 10/27/05

2005 - 10/27/05

2005 - 10/27/05

2005 - 10/27/05

2005 - 10/27/05

Continue the need to pursue force-lead op. of WTP
if
Arrival, test at unit (power) into DC, set staff
to get a - to form in WTP op. - Ref old LTR
City of Flint - needs to generate a top

PHASE 2 - Enhanced Protection
if WTP op. - 24 hrs 5/01 - 5/01
NO 85000 on this hill
Biorad problem
* what are chances of gas discharge for bio/kill
city not seeing & chloride on & fun to figure gas

PHASE 2 - Enhanced Protection
if WTP op. - 24 hrs 5/01 - 5/01
NO 85000 on this hill
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JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

August 18, 2005

Ms. Peggy Cook, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

WSSN: 2310

Dear Ms. Cook:

SUBJECT: City of Flint Water System
Operator Certification

We have received a copy of a resolution that establishes a professional services contract with Carlyon Consulting L.L.C. The professional services contract retains Mr. Robert Carlyon as the interim operator-in-charge (OIC) for the Flint Water Plant for fiscal year 2006. Establishment of the service contract allows the city to remain in compliance with the Michigan Safe Drinking Water Act's requirement for operator certification at the treatment plant. The contract is also important in the event that the treatment plant is needed to produce water to mitigate a water system emergency.

Next, we are assuming that Mr. Mike Brown is the distribution system OIC; please verify this. In addition, a class S-1 system shall designate one or more operators holding an S-4 or higher certificate as a back-up operator. Who is the designated back-up operator for the distribution system? An operator designation form is enclosed with this letter and can be used to answer these questions.

Finally, it is our understanding that Mr. Bill Daniels will attempt to obtain the F-1 certification next spring.

If you have any questions regarding this issue or any other water related matter, feel free to call me at the number provided below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Field Operations Section
Water Bureau
517-335-6122

mfp:smb

Enclosure

cc: Mr. Bill Daniels, Flint Water Plant
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

February 7, 2005

Mr. G. Robert Carlyon, Utilities Director
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 2310

Dear Mr. Carlyon:

SUBJECT: City of Flint Water System
Site Visit

This letter confirms my visit on January 24, 2005 with you, Bill Daniels, Michael Brown, Brent White, and Mike Gleason. The purpose of the visit was to discuss the following items: operator certification, status of the revised Certificate of Coverage (COC), investigation of pump submergence at the low lift station with respect to Hamilton Dam, crypto/E Coli monitoring for the LT2 rules under the surface water treatment regulations, distribution system improvements for 2005 and beyond, re-issuance of the Sugar Maple Farms watermain permit, and the updated bacteriological sampling site plan. Each one of these items are discussed below in more detail.

Operator Certification

It has been brought to our attention that Jeffrey Bryson has retired as operator from the city of Flint and that you will again assume the role as the operator-in-charge (OIC) of the water treatment plant (WTP). Next, Mr. Daniels will assume many of the operating responsibilities of the WTP and will pursue the F-1 certification. Mr. Daniels may be eligible to write the F-2 and/or F-1 certification exam provided that he has satisfied the criteria established in our September 7, 1989 memo to the Advisory Board of Examiners and Item #13 from the April 18, 2003 Advisory Board meeting minutes (copies of both documents were provided to you). In addition to completing the F exam application, Mr. Daniels needs to document his plant operating experience including plant test runs and start-up & testing of new equipment installed during the WTP rehabilitation project. Finally, any additional educational requirements specified in the April 18th document must also be completed prior to writing the F-1 certification exam.

Next, the topic of hiring a temporary or (contract) OIC in the event that the current OIC is no longer available was discussed. For short-term operation, it would be acceptable to retain a temporary OIC with an F-1 license to oversee operation of the WTP while Mr. Daniels pursues the F-1 license. Prior to retaining a temporary OIC, we would be interested in discussing operations under the oversight of a temporary OIC and establish contractual responsibilities. Finally, the city will need to provide us a plan of action addressing operator certification in the event that Mr. Daniels fails to obtain the F-1 license after the first attempt.

Change in COC

The Permits Section of the Water Bureau is in the process of re-issuing Flint's COC under the General Permit No. MIG640000. The new COC will allow the City of Flint to discharge 19.2 MGD of treated filter backwash and other wastewater associated with the production of potable water from the Flint WTP.

Hamilton Dam

Field data is being obtained to complete the investigation into whether adequate pump submergence can be maintained at the low lift pump station during low flow conditions in the Flint River while meeting the drawdown requirements at the Hamilton Dam. Several attempts were recently made to induce low flow conditions in the Flint River; however, significant run-off during the month of January has delayed this effort. Please keep us and the Department of Environmental Quality's (DEQ) Dam Safety Unit updated as to the status of this investigation.

Crypto/E-Coli Monitoring

Preliminary monitoring for cryptosporidium/E-Coli monitoring under the future Long-Term 2 Enhanced Surface Water Treatment Rule was discussed. The results of the monitoring performed in accordance to an approved sampling plan prior to promulgation of the LT2 rules would be eligible for grandfathering. The results would help the city to assess the need to install the appropriate treatment based upon bin placement.

We understand that you did not proceed with this monitoring. We will keep you informed about the LT2 rule as we expect promulgation of the rule later this year.

Distribution System Improvements

Distribution system improvements are expected to commence in 2005 and include replacement of watermain along Pierson Road. Next, the city is planning to proceed with valve replacement during 2006 in Flint Park through the use of Community Development

Mr. G. Robert Carlyon

3

February 7, 2005

Block Grant funds. Other water system improvements anticipated in 2006 and beyond include: replacement of transmission main along Flushing Road, additional watermain replacement in the Beech and Wellington Road area, and improvements to the Torrey Road pump station plus others. We would be interested in receiving a schedule that lists these and other distribution system improvements. Finally, has the city updated their 5-year capital improvements program (CIP)? If the CIP has been updated, we would be interested in receiving a copy for our records.

Bacteriological Sampling Site Plan

We have received a copy of Flint's updated bacteriological sampling site plan. The plan was revised to reflect changes in a few of the routine and repeat sampling locations. Also, changes in contacts (local and DEQ) were noted. Based upon our review, the updated sampling site plan is acceptable. The sampling site plan should be updated every two or three years or as needed.

Sugar Maple Farms Development

Installation of watermain to serve the Sugar-Maple Farms development issued under Construction Permit #W021063 on April 29, 2002 to the City of Flint has not been completed. A request for a permit extension was made by the city last summer, however, the request was denied due to possible changes in the design and ownership of the infrastructure.

As we discussed, a new construction permit needs to be issued for this project due to our new permit application process. Please re-submit the plans and specifications with the appropriate permit application. Following our review and approval, a new construction permit will be issued for this project.

We will re-visit these issues during our next site visit this spring. If you have any questions regarding these issues or any other water related matter, please feel free to call me at the number listed below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Water Bureau
517-335-6122

cc: Mr. Bill Daniels, City of Flint
Mr. Michael Brown, City of Flint
Mr. Brian McKenzie, Genesee County Health Department



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

January 23, 2004

Mr. G. Robert Carlyon, Utilities Director
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 2310

Dear Mr. Carlyon:

SUBJECT: City of Flint Water System
2003 Sanitary Survey Update

This letter confirms my visit on December 10, 2003 with you, Jeff Bryson, Michael Brown and Glen Thomas. The purpose of the visit was to review the status of the more critical items from the city's water system 2000 Sanitary Survey.

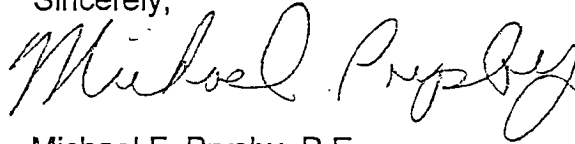
The city has made further improvements in certain programs including; cross connection control, operator certification, customer metering, and contingency planning. Additional administrative steps have been taken which should set the stage for transmission/distribution system and pumping station improvements during 2004 and 2005. Given the improvements completed in the various programs, Flint's water system rating shall improve to "**Marginal**". Further progress, however, must be made in the following areas in order to maintain or improve the water system rating further.

1. Update the local cross connection ordinance and program. Maintain an adequate number of staff to operate the program effectively.
2. Proceed and complete the transmission main replacement projects along Beech & Wellington, Pierson Road, and Flushing Road by 2006.
3. Update the 5-year capital improvements program and provide us with a copy.
4. Complete and implement the distribution system hydraulic model for use.
5. Develop and implement a water system valve program.
6. Re-evaluate booster pumping station improvement needs and prepare a schedule.
7. Finalize Flint's Emergency Operations Plan.

For a more thorough discussion of our updated survey please reference the attached Conclusions and Recommendations document.

If you have any questions regarding these issues or any other water related matter, please feel free to call me at the number listed below.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Prysby". The signature is fluid and cursive, with the first name "Michael" written in a larger, more prominent script than the last name "Prysby".

Michael F. Prysby, P.E.
District Engineer
Field Operations Section
Water Division
517-335-6122

mfp:smb

cc: Mr. Jeffrey Bryson, City of Flint
Mr. Glenn Thomas, City of Flint
Mr. Michael Brown, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

Evaluation of Community Water Supply - Water System Review Summary

Name of Supply:	City of Flint	WSSN:	2310
County:	Genesee	District:	11
Evaluator:	MFP	Date:	12/10/2003
Overall Rating	Satisfactory:	Marginal: X	Deficient:
		Sat.	Marg.
General			
Certified Operators		X	
Capacity Assessment			
Ownership		X	
Permits		X	
Source		X	
Firm Capacity		X	
Isolation / Construction		X	
Treatment		X	
Standby Power		X	
Maintenance		X	
Storage		X	
Capacity		X	
Construction		X	
Controls		X	
Maintenance			X
Distribution			X
Interconnections		X	
Pump Stations		X	
Flows / Pressures		X	
Valves / Hydrants			X
Maintenance			X
Programs and Plans		X	
Cross Connections		X	
MORs		X	
CCR		X	
General Plan			X
Contingency Plan			X
Reliability Study		X	
Sampling Site Plans		X	
Capital Improvements			X
Monitoring / Quality		X	
Bacteriological		X	
Chemical/Radiological		X	

City of Flint
Evaluation Update
12/10/2003

of nikes stuff
imposed S-2
+ continue E Ja.

1. Organizational Structure & Operator Certification

Water Dist Div (WDD) - Number of employees? 44

OIC - Level 28 (S-1)

Level 22A (forman levels) S-2s - three-four positions

Levels 12, 18, & 19 - trainee, maintainer, equip op - S-3 and S-4 certs
reqn for level 18 and 19 positions - status?

Updated Org. chart available? - yes

Promoting operator cert. - job descriptions avail?

Job descr revised to req cert

Maintainer not updated - But will

Meter reading staff - status of cert. requirement?

Meter Tech - S-5

S-2 within
2-3 yrs

2. Transmission/Distribution

Hydraulic model final calibration - inconsistencies resolved? Causes?

Not final CAL - cause this input for DATA TECH

Test protocol of staff prior to hire - one time out dig work

Training of staff - Status?

DATA Tech & Automation etc. will be trained later this FY

Updating of General Plan? Obtain from model, Status?

Planned late FY 04/05 - Full impl in FY 05

Utilities Dept CIP (List of mains) - what's on tap for 04? 05? Copy avail?

Beach/Wall St Flushing Rd

Pearson Rd 04/05

Status of MDOT projects - some were on-hold.....

Pearson Rd was on hold - going ahead now

only 2 MDOT projects - Pearl Flushing

New rate schedule to facilitate start of the CIP - Status? - is in place

Block grant funding - any of these?

- yes - Beach (will) 04/05 Fund

- yes - Pearson Rd

work of staff
HR to
set test

HR
Homer
Per.

Security specialist looking
for matching grant \$
to jump start item #3

Back BLANCH due to WTP
plan focus on WTP plan
phase II report
than west-side

3. Pumping Stations & Storage

P.S. #4 is in
phase II - prelim

Switch-gear upgrades at Cedar Street/ Stand-by Power?

Pump control & replacement of swing-check valves at Westside (smaller pumps)?

Pumping modifications at Torrey Road - larger pump replaced or VFD?

Replace Pump & St. B. / Poulton

- 500 AS part of on

Master Plan for upgrading pumping stations - Status?

PR as priority
if City Approves phase II
of WTP.

Status of CL2 feed at the P.S.? - No, NO, never again

Map plan to re-art gas CL at Cedar (west
P.A. vision for life CL at the street
Inspection at Westside coming due...

MAY be done - got back

4. Hydrants & Valves

- Def - still under development

Valve identification/status - establishment of recordkeeping system, additional

MAP shows all VALVE loc. L. valves....status?

2nd PR - 250k VALVE REPAIR plus contractor for valve exercising
PR at - 200k

Hydrants - inconsistencies in color coding resolved?

VALVE ID - not
VALVE EXER - good

communication with fire department...

AWWA UNDER FLUSHING
TRAINING TAPE

Operation/maintenance - valve exercising schedule/flushing program - status?

Still staff short fall

Staff of 70 in your past
1 WABC program worked

Staffing needs to address these items - being addressed?

Yes - 2 add staff to be reported in FY 85

Contract operations?

- poss. for VALVE turning

79 - 5 fold in needs/day

Radio-read meters - how is this working?

major spinning 99 w. meter
Furnace / Cast-iron, etc.
98% are in meter/reading/Bills

Service order

Main blocks / overtime - brought to ATTN (Innovation)

of short staff / infra problems

- cut / CADR take time

going to add 2 staff in Budget - 1 transfer / truck

- for the cell to council

Back log of 500 service order

30 - 40 high priority

5 lead jobs
to 30 days/MS
to 4 weeks
to 10 days/MS

5. CCCP - Status of program

Program & Ordinance - Status of revisions?

→ SUBMITTER to CTR Admin

Accounts & Inspections:

347 high & medium priority accounts (1471 devices) - 310 inspected in 2002

4,036 low priority accounts - status of inspections?

3930 L-Priority accounts

6. Watermain Review Procedure - approved policy (Jan 03)

How well is the policy working?

Any needs for revision?

Some Depts - still need
Eds as they come up/back up
- Need reminders

7. Contingency Planning

→ DRAFT Cap

Annex to Flint's Emergency Operations Plan received....

Remainder of plan (with details) to follow...

Does plan address loss of supply due to interruption from DWSD?

Power outage...

Transmission main break...

Contamination...

Discuss in the Technological Disaster Procedures section...

Emergency water service to Gen. County ...agreement reachednext step?

Agreed to START DISCUSSING
ON ways to provide water

8. Segment 4 Construction Status

Ability to operate WTP during an emergency - any critical times where WTP will not be available?

Conte school & staged to minimize this
In contract 48 HRS - NOT POSS.

cut 48" RAN WATER LINE to Ozone Plant
pipe will be out 5-6 wks

If change... Fina. MER... + will... he leaves...
if he... the decr to CTR...
it won't change...
Add \$ to hire X-CONN assistance...
(2-MAN JOB) OR (15) there Hs will vary

longed
long to
update
X-CONN and

prop. to change
test the Accts
10-20 filing fee

1500 Low priority
inspected in 03

1423 devices @ 397
High Med. Accts

1/3
199 a sq. ITR
4-CONN
FIR

NEGOTIATING
RE: MICHIGAN A.D.
WATER SUPPLY FROM IN

24 HOUR MON. N. DEPT

GM-Delphi - City of Flint
Enviro. Coop. Committee to discuss Reg. issues

IPP

WA

CCM

Remediation effort
co chaired by Gen Motors D-L/Util D/R

Status of Segment 4 - on schedule? —

FIN. SPR 05

City of Flint – Sanitary Survey 2003 Update
Conclusions and Recommendations
December 10, 2003

In general, our survey covers the major aspects of a water supply including: stand-by facilities, distribution, source capacity, and storage. The update of our 2003 survey shows that the City of Flint's water distribution system rating has improved to a "marginal" rating. The improved rating comes with several primary concerns which are discussed below in more detail.

1. The city of Flint continues to make improvements with their Cross Connection Control Program (CCCP). Annual inspections at high priority accounts are continuing and initial inspections have commenced at low priority accounts. Approximately 400 higher priority accounts (those having reduced pressure zone, RPZ, backflow preventer devices) exist and over 75% have complied with the RPZ testing requirement during 2002. Approximately 4000 low hazard accounts exist and approximately 1,500 of these accounts were inspected in 2003. The city intends to inspect all low hazard accounts at least once every three years.

Flint's CCCP rating shall improve to a satisfactory status and is based upon the improvements made during 2002 and 2003. The Utilities Department, however, has determined that one additional cross connection inspector is needed in order to maintain adequate implementation of the CCCP.

The Utilities Department is in the process of updating the local cross connection ordinance that will include a new fee schedule which will allow for an additional cross connection inspector. A draft ordinance was provided to us and is acceptable for program implementation. We would encourage the city to approve the new fee schedule contained in Sec. 46-43.2, since additional staffing appears necessary in maintaining an acceptable CCCP.

Finally, the Utilities Department is revising the city's most recent CCOP (1989 document).

The remaining CCCP elements need to be completed and are outlined below:

- Complete the revision of the city's most recent CCCP ordinance (Ordinance No. 3267) and provide us with a copy.
- Update the city's most recent CCCP (1989 revision). Provide us with a draft copy of the updated program for our review and comment.
- Achieve the necessary staffing to complete the minimum number of routine inspections, maintain adequate records and reporting, and maintain an acceptable program rating.

2. Operator certification (distribution) continues to show improvement and is evidenced by the increased number of exam applicants pursuing their S-4 and S-3 licenses. The position descriptions for the Water Distribution & Sewer Maintenance Supervisor, Water Distribution Foreman, and the Water Construction Equipment Operator have been updated and now require the S-1, S-2, and S-3 licenses respectively. The position descriptions are also being revised for the Maintainer and Trainee positions and will call for acquiring the S-4 license within two or three years.

It is evident that more attention is being given towards operation certification. Again, the city needs to continue to encourage and promote operator certification among the Utility Department operators who are involved in water system activities.

Finally, the position descriptions for the meter reading staff are also being updated and the requirement for obtaining an S-5 license is still being considered. A review of the exam content, however, shows the majority of the exam questions arise from subjects that the meter reading staff are not involved with. An S-5 certification requirement to maintain a position as a meter reader would not be appropriate.

3. The DLZ Michigan, Inc. hydraulic model is essentially complete with the exception completing a final calibration and hiring the necessary technical and automation position(s) to utilize the model for its intended purpose. The hiring process for the new position(s) is expected to proceed following the completion of a test protocol that will be used in the screening process for prospective jobs applicants. The position(s) is(are) expected to be filled later in FY 04. The hydraulic model will also be completed and implemented for use at this time. As we discussed, the model should be used for verifying hydraulic improvements, input of hydrant and valve information, and generation of system plans and maps.

A primary concern with the Flint water distribution system continues to rest with the condition of the piping. Many mains are in poor condition and in need of replacement. Due to budget constraints the city has not proceeded with the suggested Capital Improvements Program (CIP) for watermain replacement in 2002 and 2003. The city, however, has secured Community Development Block Grant funding and approved a new water rate structure that will allow for distribution system improvements on a yearly basis. Improvements slated for FY 04 include: replacement of distribution main along Beech and Wellington Streets and replacement of transmission main along Pierson Road. Replacement of transmission main along Flushing Road is expected to commence in FY 05.

It is our understanding that the 5-year capital improvements program (CIP) is being updated to reflect the water system improvements that can be completed based upon the available grants and the new rate structure. Please send us a copy of the updated CIP when it becomes available.

4. A major concern continues to lie with Flint's deficient valve program. Funding has been set aside for FY 04 and 05 for repair and exercising of distribution system valves, however, there has been little if any progress towards exercising system valves and establishing an adequate recordkeeping system. The availability of a sufficient sized workforce needed to improve the valve program continues to pose a problem. The Utilities Department will request for additional staff beginning in FY 05 to help address this program need. It would be worthwhile to prepare a schedule that outlines a valve program for implementation.

Next, additional water department staff also appears needed to address concerns regarding repair of main breaks and completing water service orders in a timely basis. The city needs to review the workload and staffing needs that will be described by the Utilities Department and approve the additional positions needed to improve this program.

Finally, the city has replaced the majority of its residential and commercial meters with radio read meters. This is a significant improvement and is allowing the utilities department to conduct more accurate meter reads in a shorter amount of time.

5. The Booster Pumping Station Master Plan discussed during our 2000 survey has not been prepared. However, certain improvements including: replacement of cone valves with check valves, rehabilitation of motors, maintenance of switchgear, installing new transformers, and replacing the roof at the Cedar Street facility were completed.

Other significant pump station improvements need to be completed and include; upgrading the switchgear at Cedar Street, replacing the swing check valves on the smaller pumps at the Westside pump station, and completing pumping modifications at the Torrey Road pump station. It is our understanding that these improvements along with provisions for booster pumping station stand-by power will be included in the report for Phase II of the water treatment plant rehabilitation project. A review of critical customers downstream of the Torrey Road pump station and a determination of the need for stand-by power at this facility prior to Phase II of the water treatment plant project should be performed.

Finally, according to our records, the water storage reservoir at the Westside Pumping Station is coming due for an internal inspection.

6. We have received an Emergency Operations Plan (EOP); Utilities, prepared by the Utilities Department that constitutes a water system contingency plan. The EOP outlines emergency procedures to be followed for the following events; source water and distribution system contamination, man-made and natural disasters, and enemy attack emergencies.

The EOP, however, does not include an outline showing mitigation of the following emergencies; failure of the 72-inch transmission main and a widespread power outage. You indicated that an emergency procedure addressing failure of the 72-inch transmission main will be prepared and included in Appendix 4 of the EOP (Technological Disaster Procedures). As we discussed, the outline needs to summarize the coordination among all parties (Utility & WTP staff, Flint, GCDC, & DWSD officials) as to who will conduct the repair. The availability of repair parts must also be ascertained.

Next, you mentioned that mitigation of a widespread power outage cannot be incorporated into the EOP since provisions for stand-by power will not be addressed until Phase 2 of the water treatment plant rehabilitation project. It may still be worthwhile to outline the procedure(s) of utilizing existing city infrastructure (storage facilities, interconnections, emergency water use reduction, etc.). This section can be left open for further revision when stand-by power issues are addressed during Phase 2.

Next, the EOP should also include a supplement that discusses other types of critical equipment failures (treatment components, pumping station, storage facilities, etc.). An emergency procedure addressing this type of related emergency can also be included in Appendix 4 of the EOP.

Finally, the EOP also needs to contain a protocol for placing the WTP into service during an emergency. Although the WTP is in the midst of Segment 4 construction, an interim procedure should still be established. The start-up protocol will likely change as the rehabilitation project approaches completion. A final protocol should be developed after completion of the treatment plant rehabilitation project.

Please provide us with a copy of any additional supplements for inclusion into our copy of the EOP. We will review these and provide you with any additional comments, suggestions, and/or questions.

Utilities Department accomplishments of note—First Quarter—September, October & November 2003

- Implemented FY 04 Water and Sewer rates as determined by the rate study.
- Successfully applied for \$19,180,000.00 in low interest Drinking Water Revolving Fund loan monies. This will complete Segment 4 and Segment 5 of Phase I of the Water Plant Rehabilitation. Construction is anticipated to be complete by April, 2005.
- Successfully negotiated a water rate reduction with DWSD based upon corrected data on peaking factors that resulted in \$1.9 million in savings to Flint. DWSD additional work in verifying this data will result in an additional credit of a little over \$5,000 per month on the rates charged for FY 05.
- The commercial and industrial water meter replacement program will be completed by calendar year-end. Over 1,400 meters have been replaced to date. Significant revenue increases are expected when the program is complete and entered into the City billing system. The number of estimated water and sewer bills will likewise drop when this is completed. *BY end of JAN* *metering*
- Over one thousand residential water accounts did not have the water meters replaced during the 1997-99 replacement program. The City has been divided into three sections and two of those sections are now complete. Nearly every address in those two sections has either had its meter replaced or has been removed from the records due to having been demolished. The third section (primarily in the North end) is proving somewhat more troublesome, but efforts have begun in that area. The program is on schedule for completion by Spring, 2004. *Body R* *Prog*
- Design of the Beech and Wellington neighborhood water main replacement project, funded by CDBG, is complete and bidding is expected to take place in January with construction to take place in the Spring, 2004. This project replaces aged four-inch water mains with eight-inch mains which will improve water quality and fire-fighting capabilities.
- Planning for the Pierson Road water main replacement and street reconstruction project is underway. The City obtained \$450,000 in federal funding to help offset the costs of the water main work. Design work will be completed within the next quarter and bidding for the construction contract is anticipated in April or May.

Replaces 3 1/2 miles of 16" and of higher priority projects in the DWRF project PLAN

Utilities Department accomplishments of note—June, July, August 2003

- Completed Water and Sewer Rate Study. ✓
- Agreed to an amendment to the water sales contract between Flint and Genesee County to more accurately reflect the actual cost of service. ✓
- Applied for a DWRF low interest loan to complete Segment 4 and 5 of the Flint Water Plant Rehabilitation—loan award to be announced in September. ✓
- Began replacement of commercial and industrial water meters—projected increases in revenue due to increased accuracy of metered sales are guaranteed to more than offset the expenditure of some \$3 million. ✓
- Established a program to replace those residential meters that were missed during the original replacement program—30% of the City has been completed. ✓
I. & there
- Contracted for design of Beech and Wellington Streets water main replacement utilizing CDBG funds for infrastructure replacement.
waiting for SPICER for final plans
- Completed revisions to the proposed Sewer Use Ordinance to address the objections raised by General Motors and Delphi; revised ordinance under review by Law Office, General Motors and Delphi.
- Established an interdepartmental committee to address Stormwater regulatory compliance issues.
- Established a joint General Motors/City of Flint Environmental Cooperation Committee to improve communications and foster better working relationships.

03-059

PRESENTED:
ADOPTED:APR 09 2003
APR 09 2003Submission # 03EFMO203**RESOLUTION AUTHORIZING ENTERING INTO A REVISED CONSENT ORDER
WITH THE MDEQ FOR COMPLETION OF THE REHABILITATION OF THE FLINT
WATER PLANT****BY THE EMERGENCY FINANCIAL MANAGER:**

In 1999, the City of Flint entered into a consent order with the Michigan Department of Environmental Quality for the rehabilitation of the Flint Water Plant. That agreement included a schedule for completion of Phase I of this project. Due to the fact that the City failed to qualify for a Drinking Water Revolving Fund loan last year, it is now impossible to meet the schedule included in the original order. Therefore, the MDEQ has agreed to revise the original consent order to account for the delay and this revised consent order will have a new schedule for completion of the work.

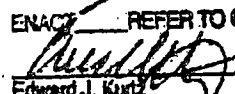
BE IT RESOLVED that the appropriate City officials are hereby authorized to enter into a revised consent order with the MDEQ for the completion of the rehabilitation of the Flint Water Plant.

APPROVED AS TO FORM:

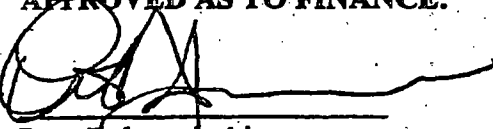
for

Karen Folks
Interim Chief Legal Officer

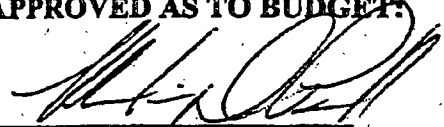
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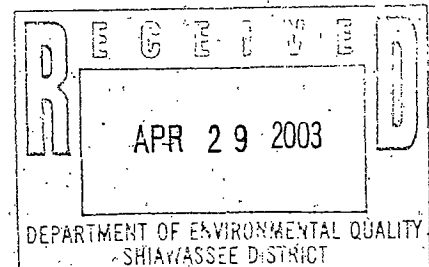
ENACT ☐ REFER TO COUNCIL ☐ FAIL ☐

Edward J. Kurtz
Emergency Financial Manager
DATED: 4-9-03

APPROVED AS TO FINANCE:


Peter Dobrzeniecki
Finance Director

APPROVED AS TO BUDGET:


Melanie Purcell
Budget Director



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION

In the matter of administrative
proceedings against:

City of Flint
Municipal water system

WD Order No. P-99009

MODIFICATION OF CONSENT ORDER

The Department of Environmental Quality ("DEQ"), Water Division (WD) and the City of Flint ("City") entered into Consent Order No. P-99009 ("Consent Order"), which became effective on August 31, 1999. The Consent Order entered between the DEQ and the City included requirements for the upgrade of the City's municipal water treatment plant. On December 13, 2002, the City sent a letter to the DEQ requesting a one year extension of the timelines outlined in Section III. Compliance Program of the Consent Order. The DEQ and its Director are authorized under Section 15 (MCL 325.1015) and Section 16 (MCL 325.1016) of the Michigan Safe Drinking Water Act, 1976 P.A. 399, as amended, Administrative Rule 325.1028, and Section 78(2) of the Administrative Procedures Act (MCL 24.278(2)) to enter into and enforce the conditions of the Consent Order. By entry of this Modification of Consent Order, the DEQ and the City agree and stipulate to the following modifications of the Consent Order:

1. Paragraph 3.1.d and 3.1.e of the Consent Order shall be modified to read as follows:

Except as provided elsewhere in the Consent Order, the City agrees to complete renovations to the water treatment plant according to the following schedule:

- (d) Phase I-Segment 4: Softening with lime feed including ferric bulk storage tanks, filter rehabilitation, raw water pump rehabilitation, filter backwash residual management, locker and lunchroom facilities.

Construction permit issued by DEQ on June 10, 2002

Notice to proceed on or before October 1, 2003

Segment construction completed and capable to initiate operation on or before
March 1, 2005

(e) Phase I-Segment 5: Ozone facilities

Issuance of construction permit on or before June 30, 2004

Notice to proceed on or before October 1, 2004

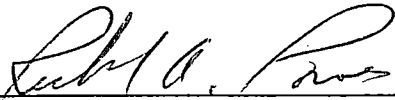
Segment construction completed and capable to initiate operation on or before
June 1, 2006

2. The City shall pay stipulated penalties outlined in paragraph 4.1 of the Consent Order for failure to comply with the modified subsections (d) & (e), paragraph 3.1 above.
3. In addition to penalties required under paragraph 4.1 of the Consent Order, the City shall pay accrued stipulated penalties in the amount of **FIVE THOUSAND TWO HUNDRED (\$5200) DOLLARS** to address and resolve the City's past status of non compliance (September 21, 2002-December 13, 2002) with section III. Compliance Program of the Consent Order. This penalty shall be waived only upon the City's adherence with the modified subsections (d) & (e), paragraph 3.1 above. Payment shall be made within thirty (30) days after a written demand is made by the MDEQ.

The DEQ and the City agree and stipulate that all other terms and conditions of the Consent Order are not altered or amended by the entry of this Modification of Consent Order. The DEQ and the City further agree and stipulate that the enforcement provisions of the Consent Order, including paragraph 4.1, shall apply to the terms and conditions of this Modification of Consent Order. The DEQ and the City stipulate that this Modification of Consent Order shall become effective on the date that it is signed by the Chief of the DEQ, Water Division.

Signatories

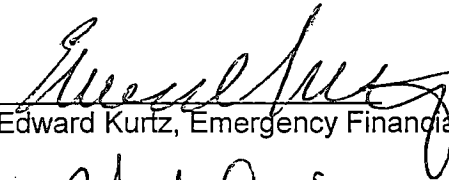
The undersigned CERTIFY they are fully authorized by the party they represent to enter into this Modification of Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it.

DEPARTMENT OF ENVIRONMENTAL QUALITY

Richard A. Powers, Chief
Water Division

5/14/03

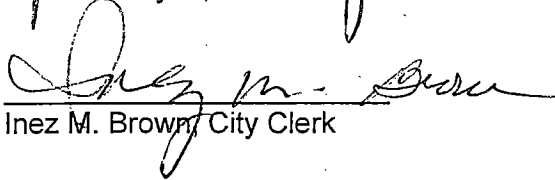
Date

CITY OF FLINT:

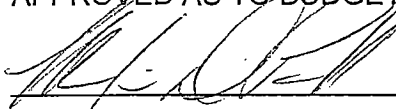
Edward Kurtz, Emergency Financial Manager



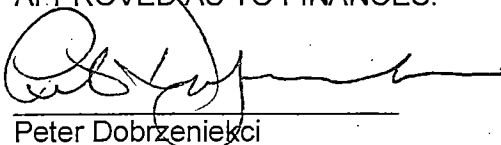
Robert Carlyn, Interim Utilities Director



Inez M. Brown, City Clerk

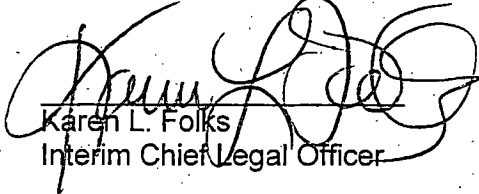
APPROVED AS TO BUDGET:

Melanie Pureel
Budget Director

APPROVED AS TO FINANCES:

Peter Dobrzeniecki
Director of Finance

APPROVED AS TO FORM:


Karen L. Folks
Interim Chief Legal Officer3/18/03
Date

APPROVED AS TO FORM:


By: Alan Hoffman, Assistant Attorney General
For: A. Michael Leffler
Assistant Attorney General in Charge
Natural Resources, Environmental Protection and Agriculture Division
Michigan Department of Attorney General4/30/03
Date



JOHN ENGLER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SHIAWASSEE DISTRICT OFFICE



RUSSELL J. HARDING
DIRECTOR

November 25, 2002

CERTIFIED MAIL

Mr. Edward Kurtz,
City of Flint
1101 South Saginaw
Flint, Michigan

Dear Mr. Kurtz:

SUBJECT: Water Division Program Updates

Enclosed are status reports for several programs administered by the Department of Environmental Quality (DEQ), Water Division, Shiawassee District.

Status reports are provided for the following program areas:

1. Water Treatment Plant
2. Water Distribution System
3. Wastewater Treatment Plant
4. Industrial Pretreatment Program
5. Municipal Storm Water Program

In addition, also enclosed is a copy of a letter from the DEQ Water Division's enforcement unit concerning a contested case hearing regarding the National Pollutant Discharge Elimination System permit for the wastewater treatment plant.

These reports summarize the DEQ's position regarding the program areas. The city has been working diligently in many of these areas, but there are many issues that still need to be addressed.

If questions arise you may contact the DEQ staff person that prepared the report or you may contact me directly.

Sincerely,

Timothy A. Benton, P.E., Supervisor
Field Operations, Shiawassee District
Water Division
517-625-4682

Enclosures

cc: Mr. Jeff Bryson, City of Flint
Mr. G. Robert Carlyon, City of Flint
Mr. Robert Case, City of Flint WPC
Mr. Peter Dobrzeniecki, Finance Director, City of Flint
Mr. Mark Fulks, P.E., City of Flint

**Status Report
City of Flint
Water Treatment Plant**

November 25, 2002

**Prepared By: Michael F. Prysby, P.E.
District Engineer
Water Division
DEQ – Shiawassee District Office**

We understand, based on a September 12, 2002 letter from the Environmental Assistance Division (EAD) that the City of Flint requested Segment 4 of the water treatment plant upgrade to be placed on the FY03 Project Priority List (PPL). A more recent letter from EAD (October 28, 2002) states that the Drinking Water Revolving Loan Fund (DWRF) DWRF Project No. 7010-04 is no longer within the fundable range for Fiscal Year (FY) 2003. The project will remain on the list as a "Contingency Project" pending potential expansion of the fundable range.

The potential delay of Segment 4 may jeopardize the city's ability to maintain the compliance schedule set forth in Section III. Compliance Program of the Consent Order signed on August 31, 1999. There are however, provisions within the Consent Agreement (Sections II., VI., & VII.) that may allow the city to be granted an extension of the deadline(s) contained in Section III. However, it is incumbent upon the city to make a written request for such an extension. The request shall include as a minimum the following items:

- Provide the DEQ with a written notice describing the delay and identifying the specific deadlines that will not be met.
- Make a request for an extension of the deadline (length) and specific date on which the obligation will be met.
- Discuss measure(s) to minimize the delay.

The DEQ is aware of the financial issues that face the city and that this situation will complicate matters when attempting to propose a new compliance date.

It is important to make all attempts to maintain compliance with the Consent Agreement. The request for an extension is the next step to help ensure this, and will also help to avoid penalties as described in Section IV.

Attachment : Consent Order

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION

In the matter of City of Flint
municipal water system

Order No. P-99009
WSSN: 2310

CONSENT ORDER

The City of Flint ("City") and the Michigan Department of Environmental Quality ("MDEQ") agree to the following terms.

I. BACKGROUND RECITALS

- 1.1 The MDEQ has the authority to enforce the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq.; MSA 14.427 (1) et seq.; and administrative rules promulgated thereunder, Michigan Administrative Code 1995 AACRS R325.10101 et seq.; (hereinafter referred to as the Act).
- 1.2 The City operates a community water system to serve the citizens of the City of Flint and other customers. The City purchases water from the Detroit Water and Sewerage Department through a single pipeline. In the event of a failure of the pipeline or other extended interruption in supply from the pipeline, the City would need to use the existing standby facilities.
- 1.3 The MDEQ, its Director, and his authorized designee and City are authorized under Section 15 (MCL 325.1015) and Section 16 (MCL 325.1016) of the Act, Administrative Rule 325.10208, and Section 78(2) of the Administrative Procedures Act (MCL 24.278(2)) to enter into, comply with, and enforce the positions of this Consent Order. The MDEQ acknowledges that this enforcement action embodied by this Consent Order entitles the City to an additional twenty-five (25) points under Section 5406 of the Safe Drinking Water Assistance Act (MCL 324.5406).
- 1.4 This Consent Order shall be considered a Final Order of the MDEQ, and shall become effective on the date it is signed by the Chief of the Drinking Water and Radiological Protection Division (DWRPD), designee of the MDEQ Director.
- 1.5 The City agrees to fully comply with all provisions of the Act, its Administrative Rules, and this Consent Order. The City and the MDEQ acknowledge that the signing of this Consent Order is to provide for the renovation of the Flint Water Treatment Plant (the "Facility"), according to the terms and schedule set forth herein.

In this regard, the City has submitted a project plan to the MDEQ for the purpose of obtaining funding under the Drinking Water Revolving Fund (DWRP) program. Furthermore, the rehabilitation of the Facility as described by the approved project plan will assure the City an adequate and reliable supply of drinking water on a continuous basis. The MDEQ acknowledges that the project set forth in the project plan fulfills the reliability requirements of the Act.

II. EXTENSIONS

- 2.1 The City and the MDEQ agree that the Chief of the DWRPD may, at his sole discretion, grant the City an extension of the specified deadlines set forth in this Consent Order. Any extension shall be preceded by a timely written request, received by the MDEQ no later than forty five (45) business days prior to the pertinent deadline, which shall include:
- (a) An identification of the specific deadlines(s) of this Consent Order that will not be met.
 - (b) A detailed description of what will prevent the City from meeting the deadline(s).
 - (c) A description of the measures the City has taken and/or intends to take to meet the required deadline.
 - (d) The length of the extension requested and the specific date on which the obligation will be met.

The Chief of the DWRPD shall respond promptly to such requests.

- 2.2 No formal advice, guidance, suggestions, or comments by the MDEQ regarding reports, work plans, plans, specifications, schedules, or any other writing submitted by the City will be construed as relieving the City of its obligation to obtain written extensions under this Consent Order, unless such extensions are specifically waived in writing by the MDEQ.

III. COMPLIANCE PROGRAM

- 3.1 Except as provided elsewhere in this Consent Order, the City agrees to renovate the Facility according to the following schedule (although it may proceed more quickly if the City so chooses):

- (a) 1999: Electrical maintenance facility, operations center, boiler facility, distribution SCADA system, dual electrical service, rapid mix facilities, flocculation facilities, and interconnection structure.
 Issuance of construction permit July 1, 1999
 Notice to proceed September 21, 1999
 Segment construction completed by December 22, 2000
- (b) 2000: ~~clarifier structure, plate settlers, flume rehabilitation and chemical feed systems~~
 Issuance of construction permit June 30, 2000
 Notice to proceed September 21, 2000
 Segment construction completed by December 22, 2001
- (c) 2001: Filter rehabilitation, electrical rehabilitation including primary substation switchgear and pump station #4 motor control centers.
 Issuance of construction permit June 30, 2001
 Notice to proceed September 21, 2001
 Segment construction completed by December 22, 2002
- (d) 2002: Upflow softening basins, recarbonation facilities, treatment processes SCADA system and residuals treatment.
 Issuance of construction permit June 30, 2002
 Notice to proceed September 21, 2002
 Segment construction completed December 22, 2003
- (e) 2003: Ozone facilities, raw water pumping improvements and site improvements.
 Issuance of construction permit June 30, 2003
 Notice to proceed September 21, 2003
 Segment construction and any remaining items from previous years completed by December 22, 2004

The City reserves the right to remove items from the compliance program that the Michigan Department of Environmental Quality determines are unnecessary or that are not necessary to protect public health through adequate treatment of water for drinking and household purposes.

- 3.2 The City shall provide third party construction certification by a registered professional engineer when project segments have been completed in accordance with the approved plans.

IV. SETTLEMENT OF VIOLATIONS

- 4.1 For each failure to comply with the provisions of Section III, Compliance Program, of this Consent Order, the City shall be given thirty (30) days in which to correct the violation without incurring a stipulated penalty. Thereafter, the City shall pay to the State of Michigan the sum of \$100 per violation per day for thirty-one (31) to ninety (90) days of violation, and \$500 per violation per day for each day of violation thereafter. Payments shall be paid within thirty (30) days after a written demand is made by the MDEQ.
- 4.2 The City shall make the payments set forth above by certified or cashier's check made payable to the "State of Michigan" and mailed to the MDEQ, Revenue Control Unit, P.O. Box 30657, 300 South Washington Square, Suite 457, Lansing, Michigan 48909-8157. To ensure proper credit, all payments made pursuant to this Stipulation should include Payment Identification Number DWD _____.

V. DISPUTE RESOLUTION

- 5.1 Any dispute that arises under this Consent Order shall initially be the subject of informal negotiations between the parties. The period for informal negotiations shall end when the MDEQ provides a written statement setting forth its proposed resolution of the dispute to the City. The City and the MDEQ agree that the informal negotiation period tolls any statute of limitation or other judicial or administrative court filing period of limitation regarding items particularly in dispute.

VI. FORCE MAJEURE

- 6.1 The City shall perform the requirements of this Consent Order within the time limits established herein, unless performance is prevented or delayed by events which constitute a "Force Majeure." Any delay in the performance attributable to a "Force Majeure" shall not be deemed a violation of the City's obligations under this Consent Order. Furthermore, payments under Section IV, Settlement of Violations, shall not accrue during any period that constitutes "Force Majeure."
- 6.2 For the purpose of this Consent Order, "Force Majeure" means an occurrence or nonoccurrence arising from causes beyond the control of and without the fault of the City, such as: an Act of God; untimely review of permit applications or submissions by the MDEQ or other applicable authority; and acts or omissions of third parties that could not have been avoided or overcome by the City's diligence, that delay the City's performance of an obligation under this Consent Order.

- 6.3 "Force Majeure" does not include, among other things, unanticipated or increased costs, or changed financial circumstances, except as set forth in Section VII, Available Funding, of this Consent Decree.
- 6.4 The City shall notify the MDEQ, DWRPD Supervising District Engineer in Morrice by telephone at 517-625-4682, within forty-eight (48) hours of discovering any Force Majeure event, which causes a delay in its compliance with any provision of this Stipulation. Written notice shall be submitted within ten (10) calendar days and shall describe in detail the anticipated length of delay, the precise cause or causes of delay, and the measures taken by the City to prevent or minimize the delay. The City shall adopt all reasonable measures to avoid or minimize any such delay.
- 6.5 If the parties agree that the delay or anticipated delay was beyond the control of the City, the parties may agree upon an appropriate modification to this Consent Order. The burden of proving that any delay was beyond the reasonable control of the City, and that the City has met all the requirements of this Section, is on the City.
- 6.6 An extension of one (1) compliance date based upon a Force Majeure event does not qualify the City for an extension of subsequent compliance dates, unless the parties agree that subsequent activities and compliance dates are dependant on completion of prior activities.

VII. AVAILABLE FUNDING

- 7.1 The City and MDEQ agree that the City's obligation to meet the schedule of activities set forth in Section III, Compliance Program, is contingent upon the City having accumulated total DWRF super-priority funding in at least the following amounts by the following years:
- (a) 1999: \$4,000,000
 - (b) 2000: \$10,000,000
 - (c) 2001: \$16,000,000
 - (d) 2002: \$22,000,000

However, the City shall only be excused under this paragraph if the City has made a good faith attempt to receive DWRF funding in each year stated above. In the event that the City does not receive and accumulate DWRF funding in at least any of the above-stated amounts, then the MDEQ and the City shall renegotiate the schedule contained in Section III of this Consent Order, although the City shall not be excused from performing the activities set forth therein. The City acknowledges

that the above-stated amounts are not meant to cover the full cost of the contemplated Facility rehabilitation and that it is the City's responsibility to cover such additional amounts.

VIII. GENERAL PROVISIONS

- 8.1 With respect to any violations not specifically addressed and resolved by this Consent Order, the MDEQ reserves the right to pursue any other remedies to which they are entitled for any failure on the part of the City to comply with the requirements of the Act and its Administrative Rules.
- 8.2 Notwithstanding any other provision of this Consent Order, an enforcement action may be brought by the MDEQ pursuant to the Act, its Administrative Rules, or other statutory authority where the City may present an imminent and substantial hazard to the public health or to the environment or is endangering or causing damage to the public health or the environment.
- 8.3 This Consent Order in no way affects the City's responsibility to comply with any other applicable state, federal, or local laws or regulations.
- 8.4 Nothing in this Consent Order shall be construed as an admission of liability or serve as an admission of any fact in any judicial court or administrative court on the part of the City.

IX. TERMINATION

- 9.1 Except as provided elsewhere in the Consent Order, this Consent Order shall remain in full force and effect until expressly terminated by a written Notice of Termination issued by the Chief of the DWRPD. The City may request that the Chief issue a written Notice of Termination at any time after achieving compliance with this Consent Order. Such a request shall consist of a written certification that the City has fully complied with all of the requirements of this Consent Order. Specifically, this certification shall include:
 - (a) The date of completion of each segment of the compliance program in Section III; and
 - (b) A statement that all required information has been reported to the Supervising District Engineer.

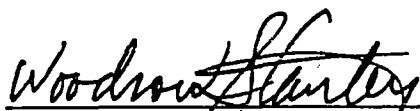
The Chief of the DWRPD may also request additional relevant information.

SIGNATORIES

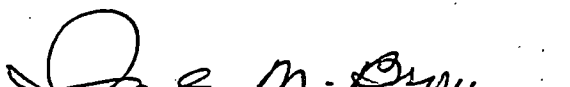
The undersigned certify that they are fully authorized by the party they represent to enter into and execute this Consent Order and to legally bind that party to it, that they have executed this Consent Order solely upon their own judgment and that they have read and fully understand the content and legal consequences of this Consent Order.

City of Flint

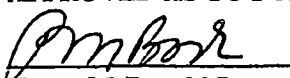
Michigan Department of Environmental Quality
Russell J. Harding
Director


Woodrow Stanley, Mayor
City of Flint
Date: August __, 1999

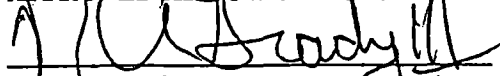

Flint C. Watt, P.E., Chief
Drinking Water and Radiological
Protection Division
Date: August 31, 1999


Inez M. Brown, City Clerk

APPROVED AS TO FORM:


for Karen McDonald Lopez
Chief Legal Officer

APPROVED AS TO FINANCES:


Matthew A. Grady III
Director of Finance

APPROVED AS TO EEO/CONTRACT COMPLIANCE:


Charles Winfrey
EEO/Contract Compliance Officer

ADOPTED: 08/12/1999

cc: Mike Kovach
Tim Benton**Resolution Authorizing Entry into Consent Order
With Michigan Department of Environmental Quality**

DWRK

BY THE MAYOR:

Pursuant to its authority under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq.; MSA 14 427(1) et seq, the Michigan Department of Environmental Quality (MDEQ) has requested that the City renovate the Flint Water Treatment Plant, so as to ensure the Water Plant will continue to provide a reliable source of water in the event of a failure or extended interruption in the water pipeline from Detroit.

The City and MDEQ have negotiated a Consent Order, see attached, whereby the City has agreed to a schedule for renovations of the Water Plant. In exchange for its commitment to the schedule, the City shall receive an additional twenty-five (25) points under the Safe Drinking Water Assistance Act.

The City's obligation to meet the schedule of activities set forth in the Consent Order is contingent upon the City having accumulated total Safe Drinking Water Assistance Act revolving fund super-priority during the years 1999 - 2002.

Further, in the event the City is not awarded funding under Safe Drinking Water Assistance Act during years 1999 - 2002 of the Consent Order, the schedule for renovations is re-negotiable.

RESOLVED, that the appropriate City Officials are hereby authorized to enter into the above described Consent Order with MDEQ. A project will be established for matching estimated revenue and appropriations.

APPROVED AS TO FORM:

Karen M. Lopez
Karen McDonald Lopez
Chief Legal Officer
Date: 8-5-99

APPROVED BY
CITY COUNCIL

AUG - 9 1999

Reviewed by Budget:

Matthew A. Grady III
Matthew A. Grady III
Date: 8/5/99

Status Report
City of Flint
Water Distribution System

November 25, 2002

Prepared By: Michael F. Prysby, P.E.
District Engineer
Water Division
DEQ – Shiawassee District Office

On November 18, 2002, a meeting was held at the Flint Water Treatment Plant between Mr. Robert Carlyon, Mr. Jeff Bryson, Mr. Michael Brown, Mr. Glen Thomas, and staff of the Department of Environmental Quality (DEQ). The purpose was to review the status of the more critical items from the city's water system 2000 Sanitary Survey. The amount of progress made in the areas discussed will help to determine whether an improvement in Flint's overall water system rating shall apply. Specific items are listed and discussed below in more detail:

1. The City of Flint has made significant improvements with their Cross Connection Control Program (CCCP). Based upon the July 12, 2002, letter from the city and our most recent discussion, routine inspections have resumed. A total of 376 higher priority accounts (those having reduced pressure zone, RPZ, backflow preventer devices) have been identified, and over 70% have complied with the testing requirement for this year. Routine inspections are being conducted at least once a year at these locations. Also, routine inspections have commenced among the lower priority accounts (4,160 total). The city intends to inspect these locations at least once every two to three years. This inspection frequency is acceptable, however, it appears that an additional part-time position will be needed to accomplish this.

The Utilities Department will propose a new fee schedule associated with the CCCP that will allow for additional staffing to fully implement the program. We would encourage the city to approve the new fee schedule as this will assist the Utilities Department in adequately implementing the CCCP.

Flint's CCCP's is now rated marginal. Additional program elements are needed in order for the program to obtain a satisfactory rating and are listed below:

- Update the city's most recent CCCP (1989 revision). It may be worthwhile to reference Appendix B – "Outline of Local Program" in our Cross Connection Rules manual when updating the city's program. Please provide us with a draft copy of the updated program for our review and comment.
 - Submit a report detailing accomplishments made in 2002, and what is expected to be accomplished during 2003.
 - Achieve the necessary staffing to complete the minimum number of routine inspections.
2. Operator certification (distribution) has also improved since the time of our survey. This is evidenced by the increased number of exam applicants pursuing S-4 and S-3 licenses. The S-3 and S-4 license is now required by the city for the Water Construction Equipment Operator (Level 19) and the Water Distribution Maintainer

(Level 18) positions and will be incorporated into the job description. Finally, the city may require their meter reading staff to obtain the S-5 license.

It is evident that more attention is being given towards operator certification. The city needs to continue to encourage and promote operator certification among the Utility Department operators who are involved in water system activities.

Please submit a copy of the new employee organizational chart for the Utilities Department.

3. The DLZ Michigan, Inc. hydraulic model is essentially complete with the exception of resolving several inconsistencies noted in various locations. DLZ will assist in training the Utilities Department staff on using the model for verifying hydraulic improvements, input of hydrant and valve information, and generation of system plans and maps.

Our main concern with the Flint water distribution system continues to rest with the condition of the piping network. Many mains are in poor condition and in need of replacement. Due to budget constraints, the city has not preceded with the suggested Capital Improvements Program (CIP) for watermain replacement. It appears that 2004 may be the earliest in which the city may initiate a CIP for watermain replacement.

A new water rate schedule is anticipated and will play a role in determining the timing of the CIP and the amount of main that can be replaced on a yearly basis. Some additional local block grant funding may allow the city to complete additional improvements. The city must prepare a revised CIP for watermain replacement after the new rate schedule is established.

4. Certain segments of Flint's water utility's O&M programs remain in need of improvement and are attributed to an insufficient amount of time, and/or number of qualified operators being committed to various program activities. Of greatest concern is the city's deficient valve program. The Utilities Department will be making a request for additional staffing to address this deficiency. The possibility of retaining a private contractor for valve exercising is also being looked into. The city needs to review the workload and determine the workforce needed by the Utilities Department to improve this program. Any additional positions that are needed should be approved and filled.

Next, the city has replaced the majority of its residential meters with radio read meters and will proceed in replacing commercial accounts with radio reads next year. This constitutes an improvement as it will allow the department to conduct meter reads in a shorter amount of time.

Finally, the Utility Department discontinued chlorination earlier this year at both the Cedar Street and Westside booster pumping stations. Distribution system chlorine residual levels, however, have not been negatively impacted.

5. The Booster Pumping Station Master Plan discussed during our 2000 survey has not been prepared. However, some station improvements were completed. This

included installing new transformers and incoming electrical service at the Cedar Street Pump Station along with replacing the cone valves with power check valves for the second pump. Also, the roof at the Cedar Street facility was replaced.

There are other items that remain to be completed. These include: upgrading the switchgear at the Cedar Street Pump Station; replacing the swing check valves on the smaller pumps at the Westside Pump Station; and completing pumping modifications at the Torrey Road Pump Station. We would like to hear from the city as to when these improvements can be scheduled.

6. The Watermain Plan Review Procedure submitted to us last July has been revised. Please provide us with a copy of the updated procedure.
7. We have not received an updated water system Contingency Plan that addresses other potential distribution system emergencies, in addition to the failure of the 72-inch pipeline. Such emergencies could include a bacteriological contamination episode, a large main break, a significant backflow incident, or (as previously discussed) a loss of water pressure within the Flint distribution system. The revised plan needs to outline the mitigation procedures of these potential emergencies. It was mentioned that the Genesee County Emergency Coordination would be utilized during a water-related emergency. Please send us a copy of this program and/or document describing the procedure(s) that would be followed for our review and comment.

Next, we did not receive discussion (as part of the Contingency Plan) outlining a suggested protocol in the event of an emergency repair of the 72-inch pipeline within Genesee County. This needs to involve coordination among all parties (Utilities Department staff, City of Flint, Genesee County Drain Commissioner, and Detroit Water and Sewerage Department officials) as to who will conduct the repair. The availability of repair parts must also be ascertained.

Finally, it is our understanding that the city has accepted a grant from the U.S. EPA for a vulnerability assessment which will also require having an adequate emergency response plan in place. Your department will also need to address water system security measures as part of the assessment and these issues should be summarized in the Contingency Plan. As we discussed, we would be willing to meet with you to review Contingency Planning in more detail and provide further technical assistance.

The city has completed improvements in certain programs and has taken administrative steps towards addressing others. The water rate study (recently awarded) should recommend a new water rate structure to adequately address the needs of the Flint water system. City administration needs to adjust the water rate accordingly in order to allow a budget that promotes on-going capital improvements and improved operation.

In addition, the city has re-implemented the Cross Connection Control Program and has taken steps towards addressing operator certification, however, other critical water system improvements are needed. Therefore, the overall rating for the distribution system shall remain at "Deficient." In order to improve the rating, significant progress

Status Report – Water Distribution System
Page 4

November 25, 2002

towards addressing Items #3, #4, and #7 are needed. We will plan to re-evaluate Flint's water system again in 2003.

Status Report – Facility Inspection**November 25, 2002****City of Flint****Wastewater Treatment Plant (WWTP)****National Pollutant Discharge Elimination System (NPDES) Permit No. MI0022926****Prepared By: Charles M. Bennett, P.E.****Environmental Engineer****Water Division****DEQ – Shiawassee District Office**

On November 13, 2002, staff of the Department of Environmental Quality (DEQ), Water Division (WD) visited the City of Flint WWTP for the purpose of conducting an inspection of the facility relative to the referenced discharge permit. Mr. Mark Fulks, P.E., Flint Water Pollution Control (WPC) Facilities Engineer, discussed the facility operation with Mr. Charles Bennett of the WD, then led a tour of the plant. Mr. Bennett later met with Mr. Robert Case, WPC Supervisor, and Mr. Fulks to discuss the facility operation in greater detail.

Given the city's current financial situation, our department was concerned that operation and maintenance (O&M) activity at the WWTP could be compromised. Mr. Case indicated that although operation has been difficult the past few months, the WWTP budget has been restored, and money designated for sewer operation is now available for use. The ash lagoon outfall elimination project is now scheduled to begin, and at least two significant O&M projects: the NW Pump Station (PS) Interceptor, and the 3rd Avenue PS repairs will move forward.

The inspection included the incinerator building where repair of a sludge-cake conveyor system was underway due to fire damage. A parallel conveyor system was in operation and sludge incineration was proceeding normally.

There was a strong odor emanating from the grit handling building. Mr. Fulks indicated that the grit containers had not been emptied for some time since it had not rained recently. While we realize that the greatest accumulation of grit occurs during and immediately following rain events, due to scouring of the collection system, grit containers must still be emptied on a regular basis to minimize odor. We recommend emptying grit containment on a regularly scheduled basis rather than only when the containers become full.

All aspects of security at the WWTP should be examined and hardened. We noted that the dechlorination building was unlocked, and a one-ton cylinder was stored outside the building. Also, the WWTP and Genesee County Drain Commissioner (GCDC) share a common entrance on Beecher Road. This gate is open and unattended during business hours. We recommend the city work with the GCDC to strengthen this and other common security weaknesses.

There are housekeeping needs at the plant which are currently not being addressed. Grounds are poorly tended and many building areas are unkempt. Although these things may not directly affect water quality, our experience suggests that pride develops in having well-maintained facilities, which in turn tends to enhance job satisfaction and improve the quality of plant operation.

It was mentioned that approximately 12 operators at the plant need hazardous waste operations (HAZWOPER) training. Please review all personnel training needs and update as appropriate.

The Flint WWTP continues to operate at a lower than normal capacity due in part to the Buick City closure. We understand that the city had previously discussed with the GCDC the

Status Report – Wastewater Treatment Plant
Page 2

November 25, 2002

possibility of selling some available treatment capacity to Genesee County. Please provide an update on the status of those negotiations.

The permit issued September 29, 2000, has been contested by the city and stayed by the Administrative Law Judge. Therefore, the facility operates under the conditions of the former permit, issued October 3, 1988. At the time of the inspection, the effluent was clear and the facility appeared to be in substantial compliance with the permit.

**Status Report
City of Flint
Industrial Pretreatment Program**

November 22, 2002

**Prepared By: Carla Davidson
Environmental Quality Analyst
Water Division
DEQ – Shiawassee District Office**

This report is written to describe the status of the City of Flint's Industrial Pretreatment Program (IPP). Please see the attached District Compliance Agreement (DCA), dated October 14, 2002, which details the outstanding items of noncompliance. The DCA was developed in response to continued noncompliance with state and federal pretreatment requirements verified during a Pretreatment Compliance Inspection (PCI) conducted on August 29, 2002.

To date, the City of Flint has submitted a revised Sewer Use Ordinance (SUO) and attorney certification requested in item 4 by the due date. The SUO includes enforceable local limits as required under Administrative Consent Order ACO-SW99-013 (ACO). The SUO has not yet been fully reviewed to ascertain if it is approvable. The attorney certification is acceptable as submitted.

Please note that significant city resources will need to be devoted towards completing the actions specified in the DCA. Successful completion of these tasks will require maintaining sufficient staffing levels (retaining a minimum of 4.4 FTE IPP employees) and resources. Failure to comply with the DCA may result in further enforcement actions.

Attachment
District Compliance Agreement

City of Flint
Evaluation Update
11/18/2002

1. Organizational Structure & Operator Certification

Water Dist Div (WDD) - 26 employees

OIC - Level 28 (S-1?) *Mike Brown*

Level 22A (former levels) S-2s - three-four positions

Levels 12, 18, & 19 - trainee, maintainer, equip op - Status of certs -

How has the organizational structure changed? New chart available?

Is the city promoting operator cert. for the entry level positions?

Status of Mike Brown's cert? S-3 re-activated? Pursuing S-1? *Yes*

2. Transmission/Distribution

Hydraulic model final calibration - training of staff - Status?

Updating of General Plan? Obtain from model?

Utilities Dept CIP - whats on tap for 03? 04? Copy avail?

MDOT projects on hold- Status?

3. Pumping Stations & Storage

3 MGAL reservoir - venting and overflow determination made?

Master Plan for updating operating components of pumping stations - Status?

- Pump control at Westside
- Valving replacement at Cedar Street - Status
- Electrical upgrade at Cedar Street - Status?
- Roof replacement at Cedar Street - Status?
- Pumping modifications at Torrey Road - Status?

Rate Study

Contract w AB&H changes set
 completed by E 2003
 hos - comm - incl - whole sale rates
 designed to save a Rate structure
 OEM / Best Rate / equip rate / CIP
 submitted 7/8 of data

Budget 15000

will submit to ADM.

Table of Org. → Based on what we need
 (for more employees - (values, kid flow)
 ↳ technical manpower

300K - Black Gents for ~~Looping~~ Looping
 Enrolment

Status of CL2 and flow monitoring at P.S. (via new SCADA)?

Status of CL2 feed at the P.S.?

4. Hydrants & Valves

Data tech. position for hydraulic model and data input - Status?

Contract(s) for valve exercising on the horizon?

5. CCCP - Status of program

Staffing - Glenn Thomas, Jackie Hart (recordkeeping)

Program - Glen is to update 1989 program - status?

Ordinance - Ord. #3267 is being used

Communication - insp. @ food service accts & corr. With LHD to avoid overlap - Status?

Accounts - 343 total (1,400 devices) and inspecting 1/2yrs as per our 7/02 visit. Current status? How many were inspected in 02?
How many high hazard accts were inspected in 02?
Annual report for 02...

Rate schedule was to be looked at - status?

6. Watermain Review Procedure - approved policy (July 02)

Staffing change and/or re-structuring affecting the policy?
Any needs for revision?

7. Contingency Planning

Provision of water to Genesee County - Status of negotiations?

Plan in place for internal emergency? - format left with WDD

- Grant in place for vul assess
- Post will include emerg. plan resp.
- DAM safety resp. prog. emerg. resp.

- not

Genesee County
MAY 2002

DATA Tech for in Budget

8-10 kids/day - 4/2 fishing - drawing
+ maintenance - 30/day

no of yet for who closing - added in
just had a few more who may
want to start in-house

to be
part of model
Public Records

Convince of Admin. that there's a need to
restructure our programs (part of position) to support
efforts needed in the survey

C.H./L.H.

Some removed into Fair Regional W.S.

Act 233 Authority = partners - 6.000 for it

if City were to become a cost. - 6.000 cost against it

* 8. Segment 4 Construction Status

How is the city planning to address the delay or possible loss of DWRP funding for Segment 4 construction in order to stay in compliance with the Consent Order?

We haven't heard back from the city (as required in the Consent Order)....

Is the city considering to provide?

- Written notice describing delay...
- Request for an extension...
- Discussion of measures to minimize the delay...

Talk to Ed

he's not funding anything for seg 4
until approval by the state

Refer to Ed's response to be met on 2nd QTR
schedule

off RCL
city has 45 mil in uncomm. Rev. sharing from MD
" " has a 28 mil. deficit
if state Rev. sharing is comm. as collection for
Budget stabilizing Bond - Plans 17 mil
seg 1-3 - parallel with state Rev. sharing
as collateral
would have nearly enough Rev. sharing to
back as collateral
- ask Ed to break seg 4 & 5
2-10 mill private
closing without state Rev. sharing
to commit the 10 mill.
city fiscal for low int. Bond
but got state

AY 63 very close to get (money) to support
investment grade rating to fund
But didn't because

1. Evil — stole \$ from water/sanitation funds
gone

2... to get for bond must show

- audit shows bleeding stopped
- starting budget adopted can be brought in

∴ 2 years out (from now)

new life study

BAL Budget

Bottom line — Ed Kuits / DARNALL each

Tim/Jim — talk discuss

Sagg. A HR — Ed Kuits
DARNALL

RE: BOB

Attach the copy of Consent
Order

& highlight
the schedules
& EXT.



JOHN ENGLER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SHIAWASSEE DISTRICT OFFICE



RUSSELL J. HARDING
DIRECTOR

October 14, 2002

IN THE MATTER OF:

**MICHIGAN DEPARTMENT
OF
ENVIRONMENTAL QUALITY//
AND
THE CITY OF FLINT//**

**DISTRICT
COMPLIANCE
AGREEMENT**

NPDES Permit No. MI0022926

On August 29, 2002, staff from the Surface Water Quality Division (SWQD), Michigan Department of Environmental Quality (MDEQ) conducted a Pretreatment Compliance Inspection (PCI) at the City of Flint (the City) Wastewater Pollution Control Facility. The MDEQ alleges that the City continues to be in noncompliance with the terms and conditions of Part I.C., Federal Industrial Pretreatment Program (FIPP) National Pollutant Discharge Elimination System (NPDES) Permit No. MI0022926, issued on October 3, 1988, which states that the permittee shall comply with Rules 323.2301 through 323.2317 of the Michigan Administrative Code (Part 23 Rules), the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403), and the approved FIPP. The MDEQ alleges that the City continues to fail to adequately implement the requirements of its approved IPP, and that the City is in noncompliance with state and FIPP requirements.

MDEQ's letter dated September 6, 2002, alleged that the City failed to adequately implement its Enforcement Response Plan (ERP), provide adequate staffing to implement the approved FIPP, reissue permits for significant industrial users (SIUs) within 180 days of expiration, and bring nondomestic users into compliance. In addition, the MDEQ alleged that the City did not meet the requirements of NOV 12 01 01 001 L within the required timeframes, and has not yet submitted a final Sewer Use Ordinance (SUO) and attorney certification for final MDEQ approval.

In response to the allegations made by the MDEQ, the City and the MDEQ agree to the following course of action, with the explicit understanding that the City does not offer or imply any acceptance of these allegations by entering into this agreement:

1. The City hereby agrees that it shall take timely enforcement action as described in its 1993 Enforcement Response Plan (ERP), after properly verifying noncompliance and identifying a suspected perpetrator.
2. The City hereby agrees that it shall take timely enforcement action as described in its proposed ERP after properly verifying noncompliance and identifying a suspected perpetrator. This commitment shall be effective immediately after final MDEQ approval of the proposed ERP and the effective date of the City's proposed SUO following its enactment.
3. The City hereby agrees that it shall establish Special Alternative Limits for benzene, toluene, ethyl benzene, and xylenes in the sanitary sewer use permits for Lockhart Chemical and Oil Chem, Inc., in accordance with the procedures in its proposed SUO, within 30 business days of the effective date of the SUO following enactment.
4. By **October 15, 2002**, the City hereby agrees to submit an approvable, final revised draft of its proposed SUO, along with an attorney certification, regarding its legal enforceability, to the MDEQ for its review.

5. By **November 30, 2002**, the City hereby agrees to provide documentation to the MDEQ of its review and response to the following items submitted to the City on August 29, 2002 by Lockhart Chemical, as required under Part III.A of Lockhart Chemical's sanitary sewer use permit:

- a. Precipitation Runoff Report;
- b. Map of its facility and wastewater collection and drainage systems; and
- c. Slug Discharge Control Plan.

The City shall respond by either approving the submittals or taking appropriate enforcement action to compel this company to achieve compliance with its permit.

6. By **November 30, 2002**, the City hereby agrees to provide documentation to the MDEQ of its review and response to the following items submitted to the City on August 21, 2002, by Oil Chem, as required under Part III.A of Oil Chem's sanitary sewer use permit:

- a. Precipitation Runoff Report;
- b. Map of its facility and wastewater collection and drainage systems; and
- c. Slug Discharge Control Plan.

The City shall respond by either approving the submittals or taking appropriate enforcement action to compel this company to achieve compliance with its permit.

7. By **December 31, 2002**, the City hereby agrees to provide documentation to the MDEQ of its efforts to either cause Oil Chem, Inc., to stop diluting its centralized waste treatment wastewater with other wastewaters or establish fixed alternative limits, using the Combined Waste stream Formula, for the Oils Treatment and Recovery subcategory of the Centralized Waste Treatment category of industry in Oil Chem, Inc.'s sanitary sewer use permit.
8. By **December 31, 2002**, the City hereby agrees to provide documentation to the MDEQ of its efforts to bring Hurley Medical Center into compliance with its sanitary sewer use permit and Erwin Industries (formerly Plastics Research) into compliance with applicable sanitary sewer ordinances.
9. By **December 31, 2002**, the City hereby agrees to provide a written description to the MDEQ of its planned program for regulating restaurants whose sanitary sewer discharges plug receiving sewers.
10. By **December 31, 2002**, the City hereby agrees to submit to the MDEQ a letter either describing its efforts to fill the currently vacant Environmental Compliance Chemist position, in order to maintain an FIPP staffing level of at least 4.4 full-time equivalents, or confirming that this position has been filled.
11. By **December 31, 2002**, the City hereby agrees to provide written confirmation to the MDEQ that it has sampled and tested the discharges of SIUs regulated under applicable pretreatment standards for all relevant parameters at least once during 2002.

If the City will be unable to complete any action by a date agreed to herein, the City may request, with explanation, a mutually agreeable extension of the scheduled completion date by letter to MDEQ.

October 14, 2002

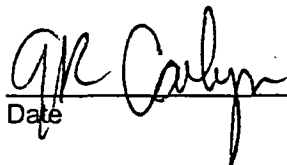
It is understood and agreed by the City and the MDEQ that compliance by the City with this agreement resolves the matters raised in the MDEQ letter, dated September 16, 2002, regarding its PCI conducted on August 29, 2002, and the MDEQ Notice of Violation 12 01 01 001 L.

Except as provided above, it is understood and agreed that compliance with this agreement does not constitute a release or waiver of liability for past or continuing violations of Part 31 of the Natural Resources and Environmental Protection Act, Act 451, PA 1994, as amended, or Part I. C., FIPP, NPDES Permit No. MI0022926, issued on October 3, 1988, which states that the permittee shall comply with Rules 323.2301 through 323.2317 of the Michigan Administrative Code (Part 23 Rules), the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403), and the approved FIPP.

This agreement shall expire on **March 15, 2003**.

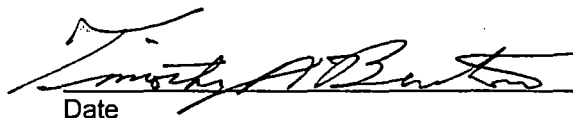
For the City of Flint

Signatories


Date 10/18/02

G. Robert Carlyon, Director
Department of Utilities

For the Department of Environmental Quality


Date _____

Timothy A. Benton, P.E., Supervisor
Water Division

**Status Report
City of Flint
Municipal Separate Storm Sewer (MS4) Permit**

November 25, 2002

**Prepared By: Cheryl Bartley
Environmental Quality Analyst
Water Division
DEQ – Shiawassee District Office**

In 1992, the Federal Regulations began requiring permits for storm water discharges. As part of those regulations, municipalities with separate storm sewer systems which serve a population of 100,000 or more were required to obtain permit coverage.

The City of Flint was issued a National Pollutant Discharge Elimination System (NPDES) Permit (MI0053864) for the storm water discharges on January 29, 1996. This permit was reissued on September 26, 2001. Please review your permit for details regarding the requirements.

Upon reviewing our permit file, it has been noted that the City of Flint has missed a compliance date set forth in NPDES permit. Per Part I.C.1.b., of NPDES Permit No. MI0053864, the City of Flint was required to submit an annual report describing their progress towards compliance with the permit on or before October 1, 2002. In addition, the annual report shall include an approvable storm water management program plan.

The City of Flint is currently non-compliant with the terms and conditions of NPDES Permit No. MI0053864.

MEP



DEPARTMENT OF UTILITIES

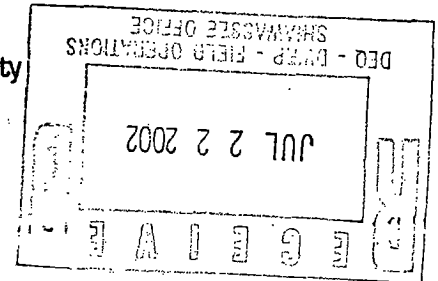
Darnell Earley
Acting Mayor

Mr. Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water & Radiological Protection Division
Shiawassee District, Michigan Department of Environmental Quality
10650 Bennett Drive
Morrice, Michigan 48857-9792

G. Robert Cariyon
Interim Director

Subject: Flint Municipal Water System

Dear Mr. Benton;



In your letter to then City Administrator Darnell Earley dated July 11, 2001, you alleged that some areas of the City of Flint municipal water system were "clearly deficient and need immediate attention". As Interim Utilities Director for Flint, I feel that substantial progress has been made in eliminating those deficiencies and request that you review the information presented in this letter in order to set the record straight.

Addressing those three items in the order in which they were presented in your letter, I submit the following:

1. **Water Main Review Procedure.** The plan review and permit issuance policy for the City of Flint has recently been revised to reflect the recent departmental reorganization. Work continues on the hydraulic model, but hydrant flow tests necessary for final calibration cannot be conducted until the weather cools off and illegal hydrant usage declines. The City and DLZ continue to hold regular monthly progress meetings for this project and final delivery and training in the operation of the model is expected by fall. It continues to be my recommendation that the City avoid private ownership of water mains except under very unusual circumstances.
2. **Source Reliability.** Efforts by the City of Flint continue on schedule for the funding approval and construction of Phase I, Segment 4 of the Water Plant Rehabilitation utilizing the DWRP. Should no unforeseen problems occur, a contract should be finalized and construction activities commence in October/November of this year. Real-time chlorine residual monitoring of the water distribution system is in place and will now be reported in the Monthly Operation Reports. Future issues regarding plant operation remain to be resolved. Likewise, the provision of water to Genesee County remains to be negotiated. At this point in time, the City has not received any such formal requests from the County.
3. **Distribution system.**
 - The Cross Connection Control Program has been transferred to the Utilities Department. Glenn Thomas, who is certified by the State as a cross connection inspector, a licensed plumber and a certified mechanical trades

inspector, heads the program. Mr. Thomas works out of the Utilities Department office. He recently sent you a letter describing the City's program of inspections and enforcement. I trust that you will find it satisfactory.

- Unfortunately, I am unable to report any significant progress regarding improved record keeping for the distribution system valves and hydrants. It is our intention to add a data technician position to the Water Service Center staff whose role will be to maintain and update the hydraulic model. The long-range plan is to incorporate valve and hydrant records into the model and its associated database. We are also investigating the possibility of contracting for valve exercising and data collection services. Budget constraints make it unlikely, however, that any such contract will be entered into this year.
- The Utilities Department has a Capital Improvement Plan (CIP). This plan is divided into four parts, representing the four divisions of the Utilities Department: Water Plant, Water Distribution, Sewer Maintenance and Water Pollution Control Plant. These plans will be updated annually and used to determine budgets and future water and sewer rates.
- Although continuing understaffing of the Water Distribution staff exists, the Administration has approved filling numerous vacant positions over the course of the next few months. Provisional appointments have already been made to fill the Construction Equipment Operator and Water Meter Tech Foreman positions. Full staffing is expected to be in place by the end of the calendar year. The current budget includes over \$200,000 for equipment for the Water Distribution Division. Lease/Purchase agreements are being explored to maximize the number of vehicles that can be put to work during the current fiscal year with financing to extend over three years.
- Water Rates. The current water rate ordinance has been modified to remove the 8% cap on water rate increases in any given year. Proposals for conducting a water and sewer rate study have been received and evaluated. A recommendation has been sent to City Council and they are expected to act later this month. It is anticipated that this rate study will result in water and sewer rates that are based upon the actual expenditures incurred to provide for operation and maintenance of the systems, debt retirement, capital improvement programs and depreciation of facilities and equipment.

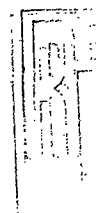
For these reasons, I would request that the "Deficient" rating given to the City of Flint's municipal water supply system be revised and that a letter indicating that revision be sent to the City at your first convenience. Should you require any additional documentation regarding the progress noted in this letter, please feel free to contact me at (810) 787-6537.

Yours truly,

G. Robert Canyon

G. Robert Canyon, Interim Utilities Director
City of Flint, Michigan

Xc: Darnell Earley, Acting Mayor



JUL 1

City of Flint
Routine Site Visit
7/1/2002

1. Monthly Operation Reports

Chlorination @ Cedar St and Westside discontinued late Dec. 2000

Resumed in March 2001 at Cedar Street

Resumed in mid June at West Side

Discontinued @ Cedar St. in late August 2001

Discontinued @ West Side in December 2001

* Distribution residuals appear unchanged according to MORs

Flows in and out of reservoirs vary significantly on a daily basis....ranges? 0-700K

West-Side: Summer operation (stratification) Chlorine being added? No

ON Cl_2 monitoring AS part of SCADA - seg 1
West / Cedar Q also monitored & will be reported
June 02

2. Distribution System Projects (On hold)

MDOT projects on hold - clarification/refinement of plan review procedure

- technical concerns

Conformance with hydraulic model WS Center

Draft plan review procedure (revised)

Randy Clapp
Active

Roger Gove San

3. DBP Monitoring Requirements - see monitoring plan...

TTHM and HAA5 monitoring was to begin in 2002 - Quarterly monitoring

4 samples (one @ max. residence time and 3 @ rep. sites)

Approved DBPR monitoring plan

No monitoring since chlorine boosting has stopped....

DBP
Monitoring

No monitoring

4. CCCP - Status of program

Staffing - ~~Bob Carlyon~~ Bob Carlyon Int Utilities Director
~~Glenn Thomas~~ Glenn Thomas Insp

Program - ? Jackie HART

Ordinance - ?

Information - rules manual

- Hydro Designs Inc. 810 335-3122

Midwest Backflow Prevention 313 532 1964

343 letters RPZ accounts -

~1400 devices

All types 1/2 year

Will be looking at Rmt schedule

City of Flint
Routine Site Visit
7/1/2002

1. Monthly Operation Reports

Chlorination @ Cedar St and Westside discontinued late Dec. 2000

Resumed in March 2001 at Cedar Street

Resumed in mid June at West Side

Discontinued @ Cedar St. in late August 2001

Discontinued @ West Side in December 2001

* Distribution residuals appear unchanged according to MORs

Flows in and out of reservoirs vary significantly on a daily basis....ranges?

West-Side: Summer operation (stratification) Chlorine being added?

not lowering level if no stuff...
do by opening hatch & vials the level

2. Distribution-System Projects (On hold)

MDOT projects on hold - clarification/refinement of plan review procedure
- technical concerns

Conformance with hydraulic model

Draft plan review procedure (revised)

3. DBP Monitoring Requirements - see monitoring plan...

TTHM and HAA5 monitoring was to begin in 2002 - Quarterly monitoring

4 samples (one @ max. residence time and 3 @ rep. sites)

Approved DBPR monitoring plan

No monitoring since chlorine boosting has stopped....

Doing the DBP Mon. stuff in the event that we become a base load out of water/cddc

we will have a DBP Mon. Vis. \$ note as Volant Mf Mon. since

cease to exist - looking for an interim time

why stop Ch. Two things: 1. Unable to generate good data - all over the place regardless of operator B.T. residuals were lower than

0.7 mg/l + west side 1.0 mg/l

to Cedar

- LAB Tech
- Maintainer
- WTP Operator

Or Residuals sub. to DWSD?

(2) Wm. relocation policy from NDOT?

(Plot) We don't have a dist. model, but will soon

(Plot) We do have a trans. model

(Mike Brown will have it)

4. CCCP - Status of program

Staffing - Jacob Hawkins, Glenn Thomas

utilities D.R. ^{C.O.B}
Intermar
Tasha HART - record keeping

Program - ?

Ordinance - ?

Information - rules manual

- Hydro Designs Inc. 810 335-3122

Midwest Backflow Prevention 313 532 1964

E 1400 devices

343 - Assets tented now (one or multiple devices)
LTRs went out → need for compl.
testingOrd. 3267 is the one being used
Investigatory Rate M.H. for (incorporate into the info)Prog → 1989 CCCP → Glenn to generate
any new prog. that is put togetherMike Brown has on 5-3 wants to get
credit to write 5-1 → needs 3-5 hrs
to get 5-3 back

Law HRT

* MAY want to fill in LHD on Ford service backflow
lier - some on that may be compl. - sink Vran
but perhaps not boilers trip to avoid over LAP

Send us a document. that we'll do a letter

MFP Copy

DEPARTMENT OF UTILITIES

#2310

Darnell Earley

Acting Mayor

TO:

Melanie Purcell, Director
 Building & Safety Inspections
 Department of Community Development

Utilities Department Cost Center Managers

FROM: G. Robert Carlyon, Interim Director
 Utilities Department

gmc

DATE: July 1, 2002

SUBJECT: Revised Policy

Please review the attached revision to the policy for water main construction plan review and permit issuance. Each of you have a responsibility to review plans for this work and to provide letters of recommendation regarding those aspects of the plan review process specific to your area of responsibility. Please complete your review and return a marked-up copy or a memo with your comments by July 10, 2002 so that the policy may be distributed in final form

Thank you for your cooperation in this matter.

Post-It® Fax Note	7671	Date	7/2	# of pages	▶
To	TIM BENTON	From	BOB CARLYON		
Co./Dept.	MDCG	Co.			
Phone #		Phone #			
Fax #	517 625 5000	Fax #			

~~WATER~~ REVISION

CITY HALL 1101 S. SAGINAW STREET FLINT, MICHIGAN 48502 (810) 766-7135 FAX: (810) 766-7249





JOHN ENGLER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SHIAWASSEE DISTRICT OFFICE



RUSSELL J. HARDING
DIRECTOR

June 7, 2002

Mr. G. Robert Carlyon, Interim Utilities Director
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 2310

Dear Mr. Carlyon:

SUBJECT: City of Flint, Protocol for Water Main Approval

We have received a number of proposals from the city of Flint requesting a construction permit authorizing installation of water main in various locations. It was our understanding, based on our most recent discussion with you, that further water distribution and/or transmission main projects were on hold. Next, significant staffing changes within the various public works departments (Water Service Center, BSI, Water Treatment Plant, etc.) has resulted in a change in the city's protocol for reviewing and approving water main projects. A revised plan review procedure was recently submitted to us for review.

The revised plan review procedure continues to show two basic tracks and is satisfactory. However, some additional information concerning the city's review protocol is needed. Specifically, at what point in the city's review is the proposed project evaluated for conformance with the city's hydraulic network model. Who will be responsible for using the model to verify the hydraulic design for new projects?

Below is a list of projects submitted to us by the Transportation Department. These projects have been reviewed, and we are prepared to issue a construction permit following your approval and a response from the city pertaining to the items discussed above:

- 5th Avenue Water Main Replacement
- Pierson Road Water Main Replacement (MLK to Horton)
- Pierson Road Water Main Replacement (Fleming to Dupont)

Next, is a list of projects submitted to us by the Transportation Department in which our review reveals technical concerns, in addition to the issues discussed above, that need to be addressed prior to obtaining a construction permit:

- Ballenger Highway Water Main Replacement - inadequate number of isolation valves proposed at street intersections.

Mr. G. Robert Carlyon, Interim Utilities Director
Page 2
June 7, 2002

- Pierson Road Water Main Replacement (Dupont to MLK) – horizontal separation concerns from storm sewer from Station 19+58 to Glenn Avenue.
- MLK Water Main Replacement – cut and plug statements are needed for the tie-in mains at the intersections and the existing 12-inch main along MLK Avenue. There are also several vertical separation concerns with existing storm sewers in the vicinity of Damon Street, Gillespie Avenue, and Myrtle Avenue.

Finally, is the city intending to proceed with the six projects listed above or are they on hold?

If you have any questions regarding this issue or any other water related matter, please feel free to call me at the number listed below.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:LW

cc: Mr. Hans Kulhman, Transportation Department, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

From: Carol Freeman
To: dan_feinberg@levin.senate.gov
Date: 3/18/02 12:40PM
Subject: City of Flint, Water Main Improvement Projects

City of Flint

Water Main Improvement Projects:

The City of Flint is proposing to commence with the construction of several new water main projects in the 2002, replacing water lines that are over 75 years old and to provide potable drinking water for service to existing and new developments/ land use and for fire protection. The projects in order of priority are:

Hamilton Avenue between Saginaw St. and James P. Cole Blvd
Ballenger Hwy between Augusta and the City Limits
Pierson Rd between Fleming Rd and Horton
Fifth Avenue between Prospect St and Chippewa
M.L. King Avenue between Pasadena and Flint Park Blvd
Fenton Rd between Hemphill Rd and Atherton Rd
East Court Street between Dort Hwy and Averill Ave.
Flushing Rd between Prospect and Ballenger Hwy
Third Ave between Chevrolet Ave and Saginaw Street.

CC: Kuhlmann, Hans

FYI
This is the Flint Dist. Projects
that the City plans to boldly go
- also the PNAIR Farm

MEMBER: City of Flint

Flint

STATE: MI

1101 S Saginaw St

PROJECT NAME:

HAMILTON AVENUE WATER MAINREQUESTED AMOUNT: Federal \$550,000.00 Local \$450,000.00STAG SPECIAL PROJECTS INFORMATION

	YES/NO/ Information
1A. Is the proposed project eligible for a loan from its states Clean Water or Drinking Water State Revolving Fund?	No
1B. Have the potential grant recipients applied for an SRF loan?	No
1C. What priority ranking did the state assign to this project as the result of that application?	No
1D. If the community did apply for a loan, how large an SRF loan did the state determine potential grant recipients could afford to repay?	No
2. How will the requested funds benefit low or moderate-income communities?	Provide reliable, continuous potable drinking water supply. Existing water main is 75 yrs. old
3A. Will the requested funds be used for construction, not debt relief?	- Used for construction
3B. Will this be a one-year request that will move a project into construction?	- To be used in current year.
4. What is the purpose of the project? Wastewater treatment or drinking water?	- Drinking water
5. What is the estimated average annual user fee as a percent of the estimated median annual income of households that will be served by the project if the community constructs the proposed project without the requested grant funds? with an SRF loan? with municipal funding at market rates?	Annual average cost of water per household is \$456.00. Annual income is \$10,000.00. $Z=4.6\%$.
6. What are the community's plans for providing the expected 45% match?	Use of City Water Fund.
7. Does the project serve a broad public purpose or is it intended for a more limited (or private) purpose that could more appropriately be funded by a private party or local financing?	Serves to provide potable water to new housing and for fire fighting.
8. Does the project address an immediate need or is it predicated on future growth/development?	Existing water line is 75 yrs old. There is an immediate need.

Hamilton Ave. between N. Saginaw St & James P. Cole Pkwy.

- Replace 75 year old, deteriorating water line.
- Install a new 16 inch diameter water main and connections.
- Water main is important to serve existing and new land development.

MEMBER: _____

STATE: _____

PROJECT NAME: _____

REQUESTED AMOUNT: _____

STAG SPECIAL PROJECTS INFORMATION

	YES/NO/ Information
1A. Is the proposed project eligible for a loan from its states Clean Water or Drinking Water State Revolving Fund?	
1B. Have the potential grant recipients applied for an SRF loan?	
1C. What priority ranking did the state assign to this project as the result of that application?	
1D. If the community did apply for a loan, how large an SRF loan did the state determine potential grant recipients could afford to repay?	
2. How will the requested funds benefit low or moderate-income communities?	
3A. Will the requested funds be used for construction, not debt relief?	
3B. Will this be a one-year request that will move a project into construction?	
4. What is the purpose of the project? Wastewater treatment or drinking water?	
5. What is the estimated average annual user fee as a percent of the estimated median annual income of households that will be served by the project if the community constructs the proposed project without the requested grant funds? with an SRF loan? with municipal funding at market rates?	
6. What are the communitys plans for providing the expected 45% match?	
7. Does the project serve a broad public purpose or is it intended for a more limited (or private) purpose that could more appropriately be funded by a private party or local financing?	
8. Does the project address an immediate need or is it predicated on future growth/development?	



JOHN ENGLER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SHIAWASSEE DISTRICT OFFICE



RUSSELL J. HARDING
DIRECTOR

February 4, 2002

Mr. G. Robert Carlyon, Supervisor
City of Flint Water Treatment Plant
4500 North Dort Highway
Flint, Michigan 48505

Mr. Mark Horgan, P.E.
Genesee County Drain Commissioner
G-4610 Beecher Road
Flint, Michigan 48532

Dear Mr. Carlyon and Mr. Horgan:

SUBJECT: Richfield Township Water Main Extension
Transportation Service Center

We received a set of construction plans from the Michigan Department of Transportation (MDOT) for a water main extension along Potter Road that will serve a new MDOT building.

As we discussed, this project needs to be submitted to us through the Genesee County Drain Commissioner's office and be approved by the city of Flint prior to our issuance of a construction permit.

Finally, it is evident that there are issues pertaining to the location of the distribution main in proximity to the 72-inch transmission main along Potter Road. These issues need to be resolved and will likely require the establishment of a policy between Flint and Genesee County for water main extensions in this area. The policy should establish a procedure that will effectively address these issues for future projects.

If you have any questions regarding this or any other water-related matter, please don't hesitate to call me.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:LW

cc: Mr. Brian McKenzie, Genesee County Health Department

STATE OF MICHIGAN



JOHN ENGLER, Governor

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

July 11, 2001

Mr. Darnell Earley, City Administrator
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Earley:

SUBJECT: Flint Municipal Water System

Over the last several years, the Drinking Water and Radiological Protection Division (DWRPD), of the Michigan Department of Environmental Quality, has been working very closely with city of Flint officials regarding the municipal water system. The efforts have included inspections of waterworks facilities, meetings with staff from different city departments, and written correspondence documenting our findings, conclusions, and recommendations.

This letter is a summary of the status of three main areas regarding water system operation and maintenance. Significant improvements have been made in some areas, but other areas of water system operation are clearly deficient and need immediate attention.

1. Water Main Plan Review Procedure. A procedure has been implemented for the review and approval, by the city engineer, of new or replacement water mains. The plans are then forwarded to the DWRPD for issuance of the required construction permit. This procedure became necessary because projects were being initiated by different city departments or from private developers, and coordination was needed to assure compliance with city and state requirements.

In addition to this new review procedure, the city's standard specifications for laying water mains have been submitted for review and comment. Another design standard that the city needs to establish is that of fire flow requirements. The city needs to determine the level of fire protection that will be provided to its customers. Some communities have different standards for specific service areas, such as residential, commercial, and industrial. The hydraulic network model, to verify that a particular water main design will meet the city fire flow requirements, also needs to be completed. These are issues that the city needs to address so that all proposed projects meet city standards.

Mr. Darnell Earley, City Administrator

Page 2

July 11, 2001

Another related issue is that of ownership of water mains. The city has previously allowed the installation of privately owned water lines. This is an issue that we have reviewed with staff without resolution. It is generally not in the city's best interest to allow privately owned water lines, but there are exceptions. This issue needs further discussion and perhaps a city policy.

2. Source Reliability. The rehabilitation of the water treatment plant is an extremely important project, and the city is to be commended for its progress. We have just recently issued the construction permit for the third segment of the proposed five-segment project. The plant will provide a back-up source of drinking water in the event of a failure of the primary supply pipeline.

Other improvements at the plant have already improved operation of the overall system by upgrading the monitoring, and control of flows and pressures around the system.

Future issues regarding the water plant include when and at what rate will the plant operate, and will it provide water to Genesee County. An engineering study of the pumping stations is also planned, but is on temporary hold due to the amount of time and effort required of staff for the plant rehabilitation project.

3. Distribution System. Despite progress in the first two areas, there are severe deficiencies within the distribution system facilities and operation. In March of 2000, we sent the city a complete evaluation of the distribution system called a "Sanitary Survey." In this document, we noted several areas where there were severe problems. We have met with staff on several subsequent occasions to review the issues, but adequate progress has not been made. The following is a list of the most serious concerns:
 - Cross Connection Control Program. The program for controlling the potential for backflow of contaminants to the distribution system has essentially been discontinued. This represents a clear threat to the public health of your customers and must be addressed as soon as possible. The city's ordinance, program, and designated agent all need to be reviewed and updated.
 - The records for the distribution system valves, hydrants, and meters are in need of attention. The valve records are in the worst condition with the city having records on only 1,500 valves out of a total of 8,000 to 10,000 valves in the system.

Mr. Darnell Earley, City Administrator
Page 3
July 11, 2001

- The city does not have a "Capital Improvement Plan"(CIP). All well run municipal utilities need an on-going CIP to address infrastructure replacement or rehabilitation. The city experiences 300 – 600 water main breaks per year but there is no plan to replace aging, deteriorating water mains.
- Staffing and equipment needs at the Water Distribution Division need to be reviewed. The city cannot address its backlog of work without adequate personnel and quality equipment.
- Water Rates. The deficiencies noted pose an enormous threat to the city and its future. We understand that the city is going through financial difficulties, but the condition of the distribution system cannot be allowed to deteriorate further. A rate study should be performed without delay, and water rates raised to ensure that there are adequate dollars to run the system and address the problems.

Based on these problems, the city's distribution system has been given a "**Deficient**" rating. Once you have reviewed this letter and have had a chance to discuss the issues with staff, we would appreciate an opportunity to meet with you. If you have any questions, please call me.

Sincerely,



Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:LW

cc: Mr. H. Jack Sargent, Director Department of Public Works
Mr. Hans Kuhlmann, Deputy Director/City Engineer, Dept of Public Works
Mr. G. Robert Carlyon, Water Plant Supervisor
Mr. Roger Clapp, Water Distribution Supervisor
Mr. Jacob Hawkins, Building and Safety Inspections
Mr. Brian McKenzie, Genesee County Health Department

STATE OF MICHIGAN



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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

June 20, 2001

Mr. Hans Kuhlmann, P.E., Deputy Director/City Engineer
Department of Public Works & Utilities
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Kuhlmann:

SUBJECT: Water Main Plan Review Policy

This will confirm our meeting of June 19, 2001, and our discussion of the comments and suggestions raised in our March 28, 2001, letter to you regarding this issue.

You indicated that some office names and/or titles would be included in the policy, and that the number of sets of plans to be submitted would also be clarified. In addition, the policy would be put on city letterhead and distributed to appropriate city departments, as well as local consultants.

Adherence to the plan review policy is required. Plans for water main extensions that are sent directly to us without the required approval by your office will be returned to the consultant.

Other important issues related to the installation of new water mains were also discussed and are summarized as follows:

1. The city needs to submit a set of standard water main specifications for review and approval. It is common for construction plans to note that all work shall comply with city standard specifications, however, we do not have your specifications on file. If the city needs to update its standard specifications, we would review a draft and offer comments if requested. It is important to keep city specs current due to changes in water main materials, construction techniques, revisions to American Water Works Standards, etc. For example, ductile iron pipe is now available as "standard pressure class" or "special thickness class," and city specs should reflect whether both are acceptable or if one type is required.
2. The city needs to compile other water main design standards as well. For instance, issues such as minimum pipe diameter (which we just received) and fire flow requirements need to be established. In most situations, fire flow requirements dictate hydraulic design. Therefore, we need to know the community's design standards. The level of fire protection to be provided typically varies from residential to commercial or industrial areas, and represents a significant cost issue.
3. The status of the city's hydraulic network model needs to be clarified. Which city office will be using the model to verify the hydraulic design for new projects? The model outputs should be available for review and discussion for new or replacement water mains. A

Mr. Hans Kuhlmann, P.E., Deputy Director/City Engineer
Page 2
June 20, 2001

functional hydraulic network model is an extremely valuable tool for water system engineers, operators, and managers. We would like to know who at the city will be responsible for the model use and upkeep.

4. The city's lead service replacement policy was discussed. It was learned that when lead services are encountered, the city is replacing the city owned portion of the line from the main to the curb stop with copper. The portion of the service line from the curb stop to the building is the responsibility of the owner. The preparation of an official notification from the city to the owner regarding the work the city performed and recommendations for the owner was then discussed. This notice would also include the names of contractors approved by the city for service line installation. We would appreciate receiving confirmation of the city's policy and procedures for lead service lines.
5. The issue of customer site piping versus water main was briefly reviewed. Copies of our policy regarding this issue were left with you for your use. This issue needs to be addressed, but should be the subject of another meeting due to its complexity. However, as I indicated, if the city's degree of control over the privately owned lines is satisfactory, it would be possible to consider the lines to be water main. It should be noted again that allowing privately owned water lines or customer site piping is not in the city's best interest.

We look forward to receiving a copy of the final plan review policy, and to receive all future plans from your office with a cover letter requesting that a permit be issued. The cover letter will also verify that the plans are acceptable to the Water Distribution Division and meet all applicable city standards and specifications. As we noted previously, our typical review time is generally less than 10 days for most water main projects.

Regarding the other items, we also look forward to hearing from you as these items are prepared.

Sincerely,



Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:lw

cc: Mr. Roger Clapp, City of Flint Water Service Center
Mr. H. Jack Sargent, P.E., City of Flint Director of Public Works & Utilities
Mr. G. Robert Carlyon, City of Flint Water Treatment Plant
Mr. Brian McKenzie, Genesee County Health Department

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

March 28, 2001

Mr. Hans Kuhlmann, P.E., Acting Director
Department of Public Works
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Kuhlmann:

SUBJECT: Water Main Plan Review Procedure

We have reviewed the draft of this procedure that you submitted and have some comments, suggestions, or questions.

Overall the procedure appears logical and straightforward. It might be helpful to include some contact names, phone numbers and possibly some addresses. The number of sets of plans to be submitted to us (Part 1G and Part 2K) should be specified. In general, at least two sets of plans are needed for our review. We retain one approved set for our files and generally send the community an approved set for their files. If the Water Service Center or another party wants an approved set we can easily accommodate that need.

Similarly, in Part 2A, how many sets of plans does the city require to be submitted to BSI? In addition, does BSI want us to send them a copy of the DEQ construction permit for Part 2 and/or Part 1 projects?

It might be helpful to include a Part 3 for city approval of Genesee county projects. At present, we receive the plans directly from the county and generally wait to receive an approval letter from the water plant supervisor prior to issuing a construction permit. We assume that one set of plans has been submitted by Genesee County directly to the water plant supervisor at the Dort Highway location. We do not copy the city with our permits. This procedure seems to working satisfactorily.

After this procedure is finalized it might be useful to put it on city letterhead and distribute it to the different departments charged with project initiation, design, or review and approval.

It should also be noted that the permitting process should be completed before projects go out for bid. This most important for any project that will be installed by private contractors.

Mr. Hans Kuhlmann, P.E., Acting Director
Page 2
March 28, 2001

In a related issue, we have a number of questions concerning the actual design of water main projects.

1. Does the city have current water main specifications? We do not have a set on file here and would appreciate a copy for our use.
2. Does the city have current design standards for minimum main size, fire flow requirements, ownership, etc.? Is the city's hydraulic network model able to be used to design new water mains?
3. When replacing water mains, what is the city's policy on lead service line replacement?
4. How many city departments actually initiate or design projects(Part 1A)?
5. Is there a plan or process for determining which water mains are in need of replacement? We realize that critical road projects, CSO problems, re-development projects, etc., often dictate water main replacement. Nevertheless, existing water mains need to be evaluated based on break history, available flows and pressure; water quality, and reliability of service. There is undoubtedly a backlog of projects that need to be addressed.

Regarding future distribution system projects and according to your draft procedure, we will be receiving plans from your office with a cover letter requesting that a permit be issued. The cover letter will verify that the plans are also acceptable to the Water Distribution Division and meet all applicable city standards and specifications. Our typical review time is less than 10 days for most standard water main projects assuming that the applicable design standards are met.

As we discussed at our meeting on February 20, 2001, it would be most helpful for us to meet more frequently to improve communication. I would like to meet with you the last week in April or the first week in May to discuss the items in this letter as well as the responses we received from you concerning the sanitary survey.

If you have any questions or concerns, please contact me.

Sincerely,

Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:W

cc: Mr. Roger Clapp, City of Flint Water Service Center
Mr. H. Jack Sargent, P.E., City of Flint Director of Public Works & Utilities
Mr. G. Robert Carlyon, City of Flint Water Treatment Plant
Mr. Brian McKenzie, Genesee County Health Department

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RUSSELL J. HARDING, Director

February 23, 2001

Mr. Hans Kuhlmann, P.E., Acting Director
Department of Public Works
City of Flint
1101 S. Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Kuhlmann:

Subject: Water System Construction Permits

Please find two enclosed Water System Construction Permits for the water main replacement in Martin Luther King Boulevard and water main relocation in main in Leith Street and St. John Boulevard ("UPF" project). Both of these projects were recently brought to our attention after construction had commenced. Please note that Water System Construction Permits are required prior to water main installations. Part 13 of Michigan's Safe Drinking Water Act, 1976 PA, Act 399, as amended, addresses the requirement for permits.

R 325.1004 - Sec.4 (3) states in part - Before commencing the construction of a waterworks system or an alteration, addition, or improvement to a system, a supplier of water shall submit the plans and specifications for the improvements to the department and secure from the department a permit for construction of the same...

In addition, a third water main project, the U of M-Flint Professional Studies Classroom Building, was completed without a Water System Construction Permit. Upon review of this project, it was determined that the water main as shown is "customer site piping" as defined by the safe drinking water act. Furthermore, the plans depict two connections to the Flint system and a private 8-inch main owned by U of M-Flint. This design creates a "flow through" situation which is expressly prohibited by the safe drinking water act. In general, private ownership of water mains is strongly discouraged by the department. The plans for the U of M-Flint project have been stamped "Accepted for Record" and will be retained for our files. A construction permit will not be issued for this project.

Based on our meeting on February 20, 2001, it is clear that there are several customer site piping situations within the City of Flint's distribution system. It is also apparent that, although the City of Flint does not "own" this piping, it still maintains some degree of control, and may perform or monitor the repairs of privately owned mains. As we

discussed during our meeting, if the full extent of the city's requirements

for privately owned mains can be ascertained, and the degree of city control is judged to be satisfactory, a flow through design may be allowable.

Regarding future distribution system projects, plans should be submitted to this office with a cover letter from the Director of Public Works requesting that a permit be issued. The cover letter should verify that the plans are also acceptable to the Water Distribution Division and meet all applicable city standards and specifications. The typical review time for our department is less than 10 days assuming that the applicable design standards are met.

We would also appreciate receiving a description or protocol from you that outlines the process whereby a proposed project moves through city government. It would be helpful for us to know where in this process the DEQ permit requirements are addressed. Also, I have included a copy of our division policy regarding construction permits and customer site piping for your use.

Another major issue discussed at our meeting was the city's lack of response to our Sanitary Survey of the Flint distribution system. We understand that our evaluation of the system is a topic new to you and that it will take some time for you to review the document and prepare a response. We look forward to hearing from you.

Should you have any questions or concerns, please contact me.

Sincerely,

Timothy A. Benton, P.E., Supervising
District Engineer
Field Operations Section
Shiawassee District Office
Drinking Water and Radiological Protection
Division
(517) 625-4682

cc: Mr. Roger Clapp, City of Flint Water Service Center
Mr. H. Jack Sargent, P.E., City of Flint Director of Public Works & Utilities
Mr. G. Robert Carlyon, City of Flint Water Treatment Plant
Mr. Brian McKenzie, Genesee County Health Department

STATE OF MICHIGAN



JOHN ENGLER, Governor

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

August 29, 2000

Mr. H. Jack Sargent, Jr., Director
Department of Public Works
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Sargent:

SUBJECT: Flint Sanitary Survey Items

In a June 2, 2000 letter, we requested comments from you addressing the items discussed in the Water Distribution System Sanitary Survey. It is our understanding that Robert Carlyon and Roger Clapp would prepare comments on their specific items and forward them to us through you. Since that time, we have not heard from you.

This letter also confirms our meeting with Jacob Hawkins from BSI on June 16, 2000, to discuss Flint's Cross Connection Control Program (CCCP). Our June 22, 2000, letter (copy enclosed) confirmed this meeting. Improvements that are needed with the CCCP were noted and a summary detailing (proposing) what will be accomplished over the next two years was requested.

Please provide us, at your earliest convenience, your response to the Sanitary Survey items that were discussed in our June 1, 2000, meeting. As we discussed, utility operation needs improvement in several areas. The amount of progress made will play a key role in determining whether Flint's overall water system rating improves or declines.

Please call me if you have any questions regarding this or any other water related matter.

Sincerely,

Michael F. Prysby, District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:lw

cc: Mr. Brian McKenzie, Genesee County Health Department

STATE OF MICHIGAN



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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

June 22, 2000

Mr. Jacob Hawkins, Jr., Senior Code Enf. Officer
City of Flint
Building & Safety Inspections Division, City Hall
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Hawkins:

SUBJECT: Flint Cross Connection Control Program

This letter confirms our meeting on June 16, 2000, with you and Glenn Thomas. The purpose of the meeting was to discuss improvements that are needed with the city's cross connection control program (CCCP). The majority of program improvements that are needed focus on inspection schedules, record keeping, and overall program tracking. An outline of suggested CCCP content was left with you. This outline is again summarized below in the same order.

1. A Cross Connection Control Program needs to be prepared and submitted to our office for review and approval. The program can basically follow the model program outlined in Appendix C of our rules manual. The program should also specify the breakdown of high, moderate, and low priority accounts, and an annual inspection schedule based on designated priorities.
2. Prepare or reconcile your list of accounts that are eligible for routine inspections. This list must include all industrial, commercial, governmental, institutional, and "other" types of non residential accounts. This list should be prioritized according to the degree of risk (high, moderate, low) that each establishment poses. Risk level should be based on both the **potential** for backflow and the degree of **threat or danger** that the backflow poses. This may need to be adjusted after completing inspections at the various locations.
3. A routine inspection schedule needs to be prepared and the frequency would be based on the prioritized list of accounts. As we discussed, high, moderate, and low priority accounts should be inspected at least 1/year, once every 2-3 years, and once every 3-5 years respectively.
4. Inspection records need to be maintained for each account as was noted during our visit. Records may need to be established for some of the establishments. It may be worthwhile to utilize our reporting forms (Appendix D) when updating or adding to your inspection records.
5. Records of corrective action should also be maintained. It was noted that the fines for failure to address cited violations needs to be adjusted. We would agree that the fines need to be increased and would call for a revision of the Cross Connection Control Ordinance (Ordinance No. 3267). Please send us a copy of your draft ordinance for our review prior to being adopted.

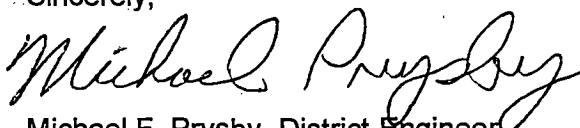
Mr. Jacob Hawkins, Jr.
Page 2
June 22, 2000

6. Maintain an active on-going RPZ device testing program each year. The total number of RPZs tested each year needs to be noted on the annual report. Testing of other types of backflow preventers will eventually be required. We will keep you informed as to the status of this new requirement.
7. Provide continued training in cross connection control in order to conduct the vital program elements effectively. We would suggest sending your operators to our Cross Connection Control Seminar in Lansing. Also, there are other organizations including AWWA, Rural Water, and Midwest Backflow Prevention that offer further cross connection control training. Finally, it may also be worthwhile to retain a consultant who can also offer program training assistance. Additional information listing various training courses in cross connection is enclosed with this letter.

Finally, it appears, based on our discussion, that BSI intends to update the cross connection control program. We realize that a program of this magnitude will take a lot of time, effort, and personnel towards improving the CCCP. It was noted that an additional one or two operators may be needed in order to adequately implement this program. We would encourage the city to review staffing needs with BSI and authorize the additional workforce needed. Finally, we would like to receive a summary detailing (proposing) what will be done in 2000 and 2001 towards improving this program. We will review this and discuss some of the various aspects, as needed, in more detail.

We appreciate your time and assistance during the visit. Please don't hesitate to call me if you have any questions regarding this or any other water related matter.

Sincerely,



Michael F. Prysby, District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:lw

cc: Mr. Jack Sargant, Utilities Director, City of Flint
Mr. Glenn Thomas, BSI, City of Flint
Mr. Brian McKenzie, Genesee County Health Department

STATE OF MICHIGAN



JOHN ENGLER, Governor

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

June 2, 2000

Mr. H. Jack Sargent, Director
Department of Public Works
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2310

Dear Mr. Sargent:

SUBJECT: Sanitary Survey Review

Thank you for the opportunity to discuss the issues raised as part of our Sanitary Survey of the Flint water distribution system. Although we did not have as much time as we would have liked to thoroughly review all the items, it was agreed that Bob Carlyon and Roger Clapp would prepare comments on their specific items and forward them to us through you. In addition, we will contact Jacob Hawkins to set up a meeting to discuss the cross connection program in more detail.

As we noted, the city distribution system has been given an overall "Marginal" rating. However, there are a couple areas of utility operation that are clearly deficient and that need significant attention. Many of the items will take time to correct but a commitment must be made and progress must be forthcoming. The city's efforts over the next 12 to 24 months will determine if the overall system rating improves or declines.

If at any time questions arise concerning the survey or any water system issue, please call me at the number below or Mike Prysby at 517-625-4670.

Sincerely,

Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:lw

cc: Mr. G. Robert Carlyon, Water Plant Supervisor
Mr. Roger Clapp, Water Distribution Supervisor
Mr. Jacob Hawkins, Building & Safety Inspections

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

March 20, 2000

Mr. H. Jack Sargent, P.E., Director of Public Works
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502

WSSN: 2745

Dear Mr. Sargent:

SUBJECT: Sanitary Survey
City of Flint Water Distribution System

Enclosed is a copy of the city of Flint's Water Distribution System Sanitary Survey completed by this department. This report is being submitted for your review and comment.

Your attention should be directed to pages 23 through 33 which details our observations, conclusions, and recommendations. Also, page 34 provides a brief summary of the individual items that need to be addressed and references the pages in the report where those items are discussed.

Items # 1 and 2 pertain to Flint's storage and booster pumping stations. This discusses the need to develop and follow through on a proposed pumping station Master Plan.

Item #3 discusses the need to develop a Capital Improvements Program that addresses both transmission and distribution system needs.

Item #4 discusses the need to establish an adequate operation and maintenance program for hydrants and valves.

Item #5 discusses additional operational details that need to be included as part of Flint's monthly operation reporting.

Items #6, 8, 9, and 10 discuss the various water system programs and plans. This includes improvements needed with the Cross Connection Control Program and preparation of an adequate Contingency Plan. Updating the water system General Plan and a continuation of the Lead and Copper Program are also discussed.

Item #7 discusses the need to formalize the city's water main extension approval process.

Mr. H. Jack Sargent, P.E.

Page 2

March 20, 2000

Item #11 discusses the need and benefits of promoting operator certification and training.

The items vary in priority and are listed without ranking.

We wish to thank your staff for their time and assistance given during the survey and preparation of the report. We will be contacting you to arrange a time to meet and discuss the contents of this report.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-265-4670

MFP:lw

Enclosure

cc: Mr. David Ready, City Administrator
Mr. G. Robert Carlyon, Water Treatment Plant Supervisor
Mr. Roger Clapp, Water Distribution Supervisor
Mr. Kenneth LaBelle, BSI Administrator
Mr. Brain McKenzie, Genesee County Health Department

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RUSSELL J. HARDING, Director

February 14, 2000

Mr. G. Robert Carlyon
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Carlyon:

SUBJECT: Bacteriological Monitoring and Reporting

This letter confirms my visit on January 20, 2000 with you, David Jansen, and Cindy Butcher. The purpose of the visit was to discuss sample results obtained from the city distribution system in December that were positive for total coliform bacteria. Tim Benton from our office also participated in the discussion.

Routine and repeat distribution system bacteriological monitoring during the month of December produced a total of eight results that were positive for total coliform. Since a total of 155 distribution system samples were noted on the Monthly Operation Report (MOR), the number of total coliform positive results exceeds five percent of the total number of samples collected and would constitute a total coliform Maximum Contaminant Level (MCL) violation. A closer review of Flint's bacteriological monitoring program revealed that distribution system monitoring is routinely conducted at Control Station #2, however, they are not reported as distribution samples. Although monitoring at Control Station #2 was never reported on the MOR as distribution system samples, we agree with the concept of adding Control Station #2 samples to the total number of distribution samples that are collected. This will result in a total of 279 distribution system samples for the month of December with nine being positive for total coliform. Since this is less than five percent of the total, an MCL violation did not occur. As we discussed, the monitoring results from the Control Station need to be reported on the distribution system page of the Monthly Operation Report (MOR). Finally, we will update our data tracking system to include Control Station #2 sampling as distribution system samples for the entire 1999 calendar year.

Next, revisions with the city's bacteriological Sampling Site Plan are underway. Specifically, there remains the difficulty of maintaining consistency with some of the repeat sampling locations on the city's north side. Plans are underway to install Eclipse monitoring stations at some of these locations. These changes will be noted on the updated Sampling Site Plan.

Mr. G. Robert Carlyon
Page 2
February 14, 2000

Finally, samples are collected from 14 locations out of which three are from city owned facilities. The concentration of sampling locations, however, may be slightly overdone on the city's west side. Although there is no requirement within the Michigan Safe Drinking Water Act that establishes a minimum number of sampling locations, we would suggest that a minimum of ten routine distribution system sampling locations be utilized.

Please send us a copy of your revised Sampling Site plan after the revisions are completed.

If you have any questions regarding this or any other water related matter, feel free to call me.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:lw

cc: Mr. Dave Jansen, City of Flint Water Plant
Ms. Cindy Butcher, City of Flint Water Plant
Mr. Brian McKenzie, Genesee County Health Department

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

January 18, 2000

Mr. Jack H. Sargent, Director of Public Works
City of Flint
1101 South Saginaw Street
Flint, Michigan 48502-1416

Dear Mr. Sargent:

SUBJECT: City of Flint Water System Sanitary Survey
Draft Report

Enclosed is a draft report of our 1999 Flint Water System Sanitary Survey. Two copies of the draft report were left at the Flint Water Treatment Plant for Robert Carlyon and Roger Clapp. Please review the draft report at your earliest convenience and provide us with any comments as needed.

We anticipate having a final report completed by March 1, 2000.

If you have any questions regarding this or any other water related matter, feel free to call me at the number listed below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:lw

Enclosures

cc: Mr. G. Robert Carlyon, Water Treatment Plant Supervisor
Mr. Roger Clapp, Water Distribution Maintenance Supervisor, Water Service Center
Mr. Kenneth Labelle, Administrator, Building and Safety Inspections
Mr. Brian McKenzie, Genesee County Health Department

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

July 29, 1999

Mr. H. Jack Sargent, P.E., Director
City of Flint - Public Works and Utilities
1101 South Saginaw Street
Flint, Michigan 48502

WSSN 2310

Dear Mr. Sargent:

SUBJECT: Shiloh Commons Water Main Installation

This letter is to acknowledge receipt of the revised set of plans for the Shiloh Commons water main installation that was prepared by GM Engineer and Associates and submitted to this office by you. It is our understanding that the water main for this project is already installed.

As a reminder, Section 4 of Public Act 399, 1976, requires that the water supplier obtain a permit prior to the installation or construction of any water system improvement. In addition, plans submitted for our review need to be signed and sealed by a Licensed Professional Engineer.

As such, the plans have been stamped "Accepted for Record" and will be kept for our files. A water system construction permit will not be issued for this project.

Should you have any concerns or questions, please contact me at the number below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:JAW:lw

cc: GM Engineer and Associates
Mr. G. Robert Carlyon - Water Treatment Plant
Genesee County Health Department

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRIS MI 48857-9792

June 29, 1999

Mr. H. Jack Sargent, P.E., Director
Department of Public Works and Utilities
City Hall
1101 South Saginaw Street
Flint, Michigan 48502

SUBJECT: Water System Construction Permit Application
General Motors Infrastructure Improvements - Phase 2

Dear Mr. Sargent:

As discussed this morning during a telephone conversation with Mr. Jim Watling, of this office, a Water System Construction Permit cannot be issued for the above project until we receive written correspondence from the city of Flint that the project plans and specifications have been reviewed and approved. Part 13 of Michigan's Safe Drinking Water Act, 1976 PA 399, states the following:

R 325.11302 – Rule 1302 (1). For Type I water supplies, before the construction or alteration of any waterworks system, or a portion thereof, plans and specifications shall be submitted to the department by the supplier of water or designated agent for review, approval, and issuance of a permit.

It is our intent to expeditiously issue permits for water main construction. However, we need to be sure the appropriate city official(s) have reviewed and approved the final proposed plans prior to issuance of a permit. If someone other than you will be issuing approval on the city's behalf, we should be notified accordingly.

Should you have any questions or concerns, please don't hesitate to contact me.

Sincerely,

Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:lw

cc: Mr. David DiPietro, P.E., Project Manager - Wade-Trim, Inc.

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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

June 29, 1999

Mr. H. Jack Sargent, P.E., Director
Department of Public Works and Utilities
City Hall
1101 South Saginaw Street
Flint, Michigan 48502

SUBJECT: Water System Construction Permit Application
University Park Estates

Dear Mr. Sargent:

As discussed this morning during a telephone conversation with Mr. Jim Watling, of this office, a Water System Construction Permit cannot be issued for the above project until we receive written correspondence from the city of Flint that the project plans and specifications have been reviewed and approved. Part 13 of Michigan's Safe Drinking Water Act, 1976 PA 399, states the following:

R 325.11302 – Rule 1302 (1). For Type I water supplies, before the construction or alteration of any waterworks system, or a portion thereof, plans and specifications shall be submitted to the department by the supplier of water or designated agent for review, approval, and issuance of a permit.

It is our intent to expeditiously issue permits for water main construction. However, we need to be sure the appropriate city official(s) have reviewed and approved the final proposed plans prior to issuance of a permit. If someone other than you will be issuing approval on the city's behalf, we should be notified accordingly.

Should you have any questions or concerns, please don't hesitate to contact me.

Sincerely,

Timothy A. Benton, P.E.
Supervising District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4682

TAB:lw

cc: Mr. Bob Reh, P.E., Project Manager - Rowe, Inc.



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RUSSELL J. HARDING, Director

REPLY TO:

SHIAWASSEE DISTRICT OFFICE
10650 BENNETT DR
MORRICE MI 48857-9792

February 2, 1999

Mr. Roger Clapp, Supervisor
Flint Water Service Center
3310 East Court Street
Flint, Michigan 48506

Dear Mr. Clapp:

SUBJECT: Flint Water System

This letter confirms our meeting at the Flint Water Treatment Plant on January 27, 1999. The purpose of the meeting was to discuss the completion of the 1999 Infrastructure Needs Survey. Some time was also spent discussing submittal and review of construction plans for water main extensions. Specific items are discussed below in more detail:

1. Items listed on the Infrastructure Needs Survey were discussed with you and Bob Carylton. Some modifications were made in main sizes and the number of valves. Also, the breakdown of costs for several projects associated with serving Genesee County will need to be clarified. Arrangements will be made to meet with the county and the city to resolve the remaining items.
2. As we discussed, the needs survey is very similar to our Distribution System Sanitary Survey. The survey will cover the major aspects of Flint's distribution system including the condition of the distribution and transmission piping, pumping stations, and storage facilities. The survey also includes a check on the status of the operator certification program, water quality, and the utility's record keeping and monitoring programs. Finally, the Cross Connection Control Program (handled by another city department) will also be evaluated. The findings of the survey and recommendations that follow will help provide additional basis to support Drinking Water Revolving Loan (DWRF) projects and the Infrastructure Needs Survey.
3. Our department has recently received requests for permits for water main extensions. However, there was no indication that the city has reviewed and approved these plans. A plan review protocol needs to be developed. The typical procedure would require consultants to submit plans to the city for review and approval. Plans approved by the city would then be sent to our office for our review and issuance of a state construction permit. Also, we should have a copy of the city's current standard specifications. Finally, it appears that a water main project has commenced without the issuance of a construction permit as required by the Michigan Safe Drinking Water Act. Arrangements will be made to meet with you to discuss this project and the entire permitting process in more detail.

Mr. Roger Clapp, Supervisor
Page 2
February 2, 1999

A water system survey form was left with you during our meeting. Arrangements will be made to work with you over the next several months to complete this document. I am looking forward to working with you and other staff from the Water Service Center towards completing the survey.

If you have any questions, please do not hesitate to call me.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Field Operations Section
Drinking Water and Radiological
Protection Division
517-625-4670

MFP:lw
Enclosure

cc: Mr. Jack H. Sargent, P.E., Director, Water Service Center, City of Flint
Mr. Robert Carylton, Water Treatment Plant
Mr. Brian McKenzie, Genesee County Health Department