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Subject: Flint - Dept of Treasury
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I spoke with Mr. Randy Byrne from the Dept. Treasury – Office of Fiscal Resp. concerning the Flint WTP. Below is a brief summary of our discussion. I can fill you on more details this afternoon just prior or immediately after our KWA meeting.

Q1: The city of Flint has considered using the Flint River as a source of drinking water to be treated at their WTP; however,

The city may be somewhat reluctant to use the river as their source, what is your assessment of this issue?

A: The city could utilize the Flint River ranging from 100% utilization – to a certain percent blending (either Detroit or KWA) or

zero percent utilization of the river. I agree that the city should have concerns of fully utilizing the Flint River (100%) for the following; the need to soften, the potential for more advanced treatment after next round of crypto monitoring, available capacity in Flint River at 100-year low flow, residuals management (disposal of lime sludge). As the percent utilization of the river decreases (blending options), the need for softening, residuals disposal, capacity issues do not pose as much of a concern.

Q2: When comparing the treatment of Lake Huron water vs. Flint River water, are more treatment chemicals needed to effectively treat the water?

A2: Flint river water will require a larger amount of primary coagulant (Ferric) due to poorer raw water quality than Lake Huron water. Also, a different type of primary coagulant (Alum) may be more suitable for the treatment of Lake Huron water. I can confirm that based on what the Detroit Lake Huron WTP uses. Also, since softening would need to be employed, treatment compounds including lime, soda ash, and carbon dioxide would be necessary.

Q3: If the city needed to borrow money to be able to operate full time (KWA or

blending), does the DEQ offer funding via the DWRF?

A3: The city could apply for DWRF funding and their eligibility would be based upon how well they score in the overall DWRF ranking process. Also, the total amount of the loan and their ability to repay the loan would be considered.

Q4: Flint has put forth a significant capital investment over the past 10 years to maintain their WTP, is the condition of the WTP sufficient for full time treatment of raw water from Lake Huron ? Are the operators qualified to operate the WTP?

A4: The Flint WTP has demonstrated its ability to treat raw water (Flint River) and meet the drinking water standards based on quarterly test runs since 2009 and two pipeline emergencies that occurred in 2009 where water from the WTP was distributed to the city. Successful operation of the WTP on an intermittent basis is difficult. WTP operators face the constant challenge of maintaining WTP components in good working order while the plant is normally out of service over 90% of the time. The reliability of WTP and its components are better maintained through continuous operation. The operating experience and knowledge of the operators is also better established with full-time operation. WTP operators have the required operator certification and are very familiar with the operation of the Flint WTP, meeting drinking water standards, and troubleshooting operational problems. The Flint WTP is capable of meeting the drinking water standard if the plant was utilized to treat raw water from Lake Huron.

Q5: Do you see any weak links in the WTP or significant improvements if the WTP were to be fully utilized?

A5: I would not see any major treatment changes or additions needed if Lake Huron water was utilized; however, in order for the city to fully utilize its storage capacity, a pumping station would need to be added immediately after the WTP such that treated water can be pumped into the city's 20-Mgal Dort reservoir. In the current configuration, water from Detroit flows by gravity through this reservoir and then into the WTP's 3 Mgal reservoir followed by

pumping via Pump Station No. 4 into the city's distribution system.

Improvement in stand-by power may also be necessary. Finally, if a component of Flint River water were to be treated, then more advanced treatment based upon higher bin classification (UV disinfection, etc.) could be required based upon crypto. results.

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