

QUESTIONS FROM SENATOR STAMAS TO MDEQ DIRECTOR KEITH CREIGH

- 1. Explain how the decision was made not to require corrosion control treatment prior to the switch to the Flint River? Who made the decision? Who was consulted prior to making the decision?**

There are two ways under the LCR to deem a water supply as providing “optimal corrosion control” – either by sampling and determining through a calculation that the supply is “optimal” or by installing treatment if it is needed. The DEQ requested that the City perform two 6-month rounds of monitoring to demonstrate if the City was practicing optimal corrosion control treatment. According to state regulations [R325.10604f(2)(b)(iii)], a system can demonstrate optimized corrosion controls by sampling in two, consecutive 6-month monitoring periods and comparing the results of this monitoring to the lead level in the source. Optimal corrosion control under this scenario would be defined as having the 90th percentile in each of these monitoring periods lower than the sum of the lead in the source and the practical quantification limit for lead of 5 ppb. Since the source water has 0 ppb lead, the City would have been deemed optimal if its 90th percentile of lead was 5 ppb or less in these two consecutive periods. However, once a system has installed treatment, it would also be considered optimized regardless of the 90th percentile level achieved, as long as it does not exceed the action level of 15 ppb.

In this case, the City had been purchasing water from DWSD that was treated for corrosion control. It was the DWSD water system that was considered as having optimized corrosion control at that point. Since the City water system had not been the supplier of water before, the DEQ did not require the City to maintain corrosion control for which it was not responsible [R325.10604f(2)(b)]. It could not “maintain” operations undertaken elsewhere by a different entity for a different source of water. The DEQ’s instructions to the City were consistent with past practices afforded to all other large water systems. At the beginning of the LCR, all large systems were initially granted the option to demonstrate optimal corrosion control treatment through full-scale monitoring under the applicable rules. For these reasons, two 6-month rounds of monitoring, as required by the LCR, were the required means to determine whether or not optimal corrosion control was being achieved.

- 2. Did MDEQ staff discuss the possibility of differing interpretations of the lead and copper rule (LCR) prior to making its decision regarding corrosion control? If so, why did the MDEQ choose to interpret the rule as not requiring corrosion control until two 6-month monitoring periods demonstrated the need for corrosion control?**

It is my understanding based upon information reviewed and speaking with staff that the DEQ did discuss how the LCR applied to Flint’s decision to switch water sources. DEQ decision to require two 6-month monitoring periods to determine if treatment was necessary to optimize corrosion control was based upon language of the LCR and its past practice afforded to all other large water systems.

3. Did MDEQ staff consult with the EPA on how to interpret the rule? If not, why not?

MDEQ works with EPA in the development of new drinking water rules and relies upon EPA to provide implementation guidance, including training developed for state and local health department staff on implementation of new rules.

EPA has granted MDEQ Primacy for the original Lead and Copper Rule and each of the rule revisions promulgated by EPA and adopted by Michigan since that time. In each of those instances, EPA required MDEQ to provide draft rules for review along with a crosswalk identifying where each federal requirement was addressed in state rules so EPA program staff and legal counsel could determine that the proposed state rules were as stringent as federal rules before Michigan formally adopted them. EPA also required MDEQ to submit a primacy application with all policies and practices developed for implementation of new rules for approval.

It is my understanding that MDEQ did confer with EPA Region 5 Program Managers in the spring of 2015 about Flint and the application of the LCR, specifically in regard to the requirements pertaining to maintenance of optimal corrosion control treatment in situations in which a large water system ceases to purchase treated water and switches to a new drinking water source. At the end of the discussion, EPA indicated they were going to request a formal determination from Headquarters. On November 3, 2015, Peter Grevatt, Director of the Office of Ground Water & Drinking Water for EPA, issued a memo to all EPA Regional Water Division Directors addressing the concerns raised by this discussion. The response stated, "...the language of the LCR does not specifically discuss such circumstances. After reviewing the rule with our Office of General Counsel, it appears that there are differing possible interpretations of the LCR with respect to how the rule's optimal corrosion control treatment procedures apply to this situation..."

4. Why did the DEQ not require the installation of corrosion control treatment after the first 6-month monitoring period when it was clear the Flint water treatment plant could not meet any exception for corrosion control treatment under the LCR?

According to the LCR, a water system can demonstrate optimized corrosion controls by obtaining sampling results in two consecutive 6-month monitoring periods that fell below the 90th percentile calculation, which was 5 ppb. The results of Flint's first 6-month sampling round for lead was 6 ppb. Based upon the information available to it, because the exceedance was relatively slight, it is my understanding DEQ decided to allow Flint to conduct the second 6-month monitoring period to determine if the results would fall

below the 5 ppb. If it did fall below that level, based upon its past practice, DEQ may have allowed Flint to conduct another 6-month round to determine if it could meet the two, consecutive 6-month monitoring period requirements of the LCR.

5. The Safe Water Drinking Act (SWDA) allows for states to be more protective than the federal standards, and your department has rulemaking authority under that part—what changes have you made to provide greater protections for public health?

No rules have been promulgated, however on April 15th, 2016 through the Flint Water Interagency Coordinating Committee's Policy Subcommittee, Governor Snyder proposed the creation of a Michigan LCR. Changes include:

- reducing the action threshold from 15 ppb to 10ppb
- requiring annual sampling and testing of schools and daycare centers and vulnerable populations
- increased specificity on corrosion control optimization and requiring analysis within set time parameters when a public water system changes water source
- create a statewide Advisory Commission on Drinking Water Quality
- establish a state household action level
- require an inventory for all public water systems
- not allowing any partial lead line replacements
- require lead analysis and information as part of home sales and rental contracts
- expand the notification requirements when a public water system exceeds the lead action level

6. Under the state SDWA and its rules, does the DEQ have the discretionary authority to require additional actions or more prompt action in order to protect public health?

DEQ does have authority to require water supplies to take action when considered necessary in order to protect public health. See, e.g., MCL 325.1015.

7. Are you aware of any similar review that your predecessor made to ensure updates of key department drinking water protocols? It appears that application/interpretation of the LCR may have been an issue for some time—why was it not the focus of department review to ensure that the rule was clearly understood by federal, state, and local officials?

I am unaware whether my predecessor did or did not undertake any such reviews. My understanding is the LCR is a lengthy and complex rule that has been the subject of numerous discussions with EPA over the years.

8. Are the DEQ monitoring protocols designed to detect the worst-case lead conditions in a system or to obtain a representative picture of lead conditions throughout the system?

The DEQ's current monitoring protocols for the LCR require systems to prioritize sampling sites identified as posing the highest risk of lead exposure. These highest risk sites are often clustered in certain neighborhoods, not dispersed throughout the distribution system, so compliance monitoring will often not provide a representative picture of lead conditions throughout the system. Also, the DEQ monitoring protocols follow the requirements established in the regulation of collecting a first draw, one liter sample from these high risk sites. The monitoring protocols follow the requirements of the EPA's Flint Water Task Force.

9. What steps has the DEQ taken to ensure that other community water suppliers have properly chosen sampling sites for determining compliance with the LCR?

The DEQ issued a letter to all community water supplies with additional guidance on complying the LCR. That letter is attached.

10. The Governor's Flint Water Advisory Task Force found a culture of "technical compliance" and a "minimalist approach to regulatory and oversight responsibility"? What have you done to address the culture in the MDEQ?

DEQ has many highly skilled staff working in districts across the state. DEQ senior management has communicated the need for employees to establish outcome based objectives that balance the protection of public health and the environment. Staff have been encouraged to seek out alternative viewpoints to assist with informing decision making processes. Future managerial training and program staff training sessions have been scheduled.

11. Do you believe this culture is limited to the Office of Drinking Water and Municipal Assistance that office or is it found throughout the DEQ?

DEQ has many highly skilled staff working in districts across the state. DEQ senior management has communicated the need for employees to establish outcome based objectives that balance the protection of public health and the environment. Staff have been encouraged to seek out alternative viewpoints to assist with informing decision making processes. Future managerial training and program staff training sessions have been scheduled.

12. In Late January 2016, you wrote a letter to EPA Administrator Gina McCarthy disputing whether the EPA "has the legal authority" to require a state to take actions outlined in the order. Besides the order, the EPA Administrator also

addressed a letter to Governor Snyder outlining specific steps for the state to take to get. She expressed concern over “continuing delays and lack of transparency” and directed the state to notify the EPA within a day of the state’s intent to comply. The EPA issued the following statement in conjunction with the letter and order:

“As part of the ongoing federal response in Flint, MI, EPA Administrator Gina McCarthy spoke to Michigan Governor Rick Snyder, sent him a letter, and issued a Safe Drinking Water Act Emergency Order to ensure the state and city immediately take actions necessary to protect public health. EPA has determined the State of Michigan and the City of Flint’s responses to the drinking water crisis in Flint have been inadequate to protect public health, there are serious, ongoing concerns with delays, lack of adequate transparency, and capacity to safely manage the drinking water system. Governor Snyder reiterated his commitment to quickly get safe water back to the people of Flint and the willingness of his new team to work with EPA to define a path forward as soon as possible. McCarthy also spoke to newly elected Flint Mayor Karen Weaver about these next steps.”

13. Your response to the EPA order stated the order was filled with “factual omissions and legal errors.” Please explain what you meant and elaborate on your beliefs concerning these communications by the EPA?

DEQ has expressed its concerns to EPA about multiple factual omissions and legal errors in the order. As examples of factual omissions or errors, the order asserts that DEQ and the State “failed to take adequate measures to protect public health”. Yet, the order does not list the tens of millions of dollars expended by and multiple actions taken by the State to assist the residents of Flint. The order also asserts that EPA had consulted with the State to confirm the correctness of the information upon which the order was based and to ascertain the actions being taken by the State. Yet, to the best of my knowledge no such consultation took place. Indeed, if such consultation had taken place, EPA would have learned that many of the actions ordered had already been undertaken by the State. Finally, although the order states that the State had failed to take adequate measures or comply with US EPA’s demands, in fact, the State had complied with every known demand or request made by the EPA.

With respect to legal errors, DEQ’s principal concern was EPA’s failure to explain how it has the legal authority to order a sovereign State and its agencies to take the actions outlined in the order. EPA never provided such an explanation.

14. While protecting individual rights of privacy for those who may currently be the subject of ongoing outside investigations, can you tell us if any more MDEQ employees (other than those who have left the MDEQ) have been disciplined by the MDEQ for their involvement in the crisis?

Individuals that have been disciplined by DEQ under the civil service rules are Liane Shekter-Smith, Stephen Busch, and Mike Prysby.

15. Miguel Del Toral's June 2015 memo was not formally delivered to state environmental officials until November 2015 — after the state had begun taking actions to address the lead problem. What is your understanding of why the concerns raised by this EPA staff expert were not elevated or provided to either the city or the state for review and action until after the state's response was well underway?

DEQ cannot answer on behalf of EPA as to why it failed to formally advise the City or State of Mr. Del Toral's concerns until November 2015.

16. In November 2015, the EPA announced it was auditing how Michigan enforces drinking water rules and said it would identify how to strengthen state oversight. What can you tell us about this audit? Was the EPA's emergency order in on January 22, 2016 part of this process?

The United States Environmental Protection Agency conducted an on-site joint file review and enforcement verification of Michigan's Public Water System Supervision Program, along with a Detailed Lead and Copper Rule Implementation and Flint Review from Monday, April 4, 2016 to Friday, April 8, 2016. Fourteen staff from EPA and The Cadmus Group met with staff from the Office of Drinking Water and Municipal Assistance, reviewed files, databases, policies and procedures, and conducted interviews. This audit was independent of the USEPA's January 22, 2016 emergency order. The draft audit report is expected in June 2016.

17. What is the MDEQ protocol for working with the MDHHS in cases where public health concerns arise?

The Departments utilizes their staff to evaluate public health concerns as they arise, particularly from sites that are associated with a release of contaminants. This group that reviews this information is known as the Toxics Steering Group. The group generally meets quarterly, however more frequent meetings can be held at the call of the chairperson or the deputy director of the department. The group is composed of toxicologist and risk assessors from the Department of Environmental Quality, Department of Human Health and Services, and the Department of Agriculture and Rural Development. This group evaluates the risk to the populations that are exposed and they attempt to come to a consensus agreement on how to address the issue within the context of Michigan Law and Regulations. Additionally a DEQ and MDHHS recently revised an MOU on sharing data is attached.

18. How are disagreements on data analysis among DHHS staff resolved?

This question is not directed to DEQ.

19. Before lead was detected at high levels in Flint, there were complaints about how the water looked and smelled and complaints about rashes caused from bathing in the water? How did the MDEQ respond to those complaints? Did either department take any action to determine what was causing those problems, particularly the rashes?

It is my understanding ODWMA staff responds to customer complaints by asking questions about the nature of the complaint, offering possible causes and/or solutions based on their experience or knowledge of similar complaints, and when appropriate, enlisting the involvement of the local water department to provide onsite assistance and investigation.

20. Does the MDEQ have a policy for accepting, considering, and responding to information, concerns, or complaints from entities outside their department, whether a federal agency, another state department, independent experts, or the general public, outside of a formal public comment process? If so, does the policy set a standard for evaluating different viewpoints and the tone for responses?

The MDEQ has a policy for responding to complaints from individuals outside of the agency. It is titled "Nondiscrimination in Programs Receiving Federal Assistance from the U.S. Environmental Protection Agency" and it is identified as DEQ Policy Number 09-024. In addition, the MDEQ has a policy for consulting with entities outside of the department. It is titled "Policy on Public Involvement in Department Programs and Activities" and it is identified as DEQ Policy 09-007. The policy identifies underlying principles of public involvement in the department's decision making process. The department has invested in employee training regarding improving stakeholder outreach. Many of the department's facilitators attend the Michigan State University Extension's Facilitative Leadership program. These trained facilitators often lead the diverse group of external stakeholders the department routinely assembles to update its rules, statutes and policies. A list of current advisory groups can be found at www.michigan.gov/deq | Boards & Advisory Groups.

21. Does the MDEQ have a policy for consulting with entities outside their department?

See Question 20.

22. What actions is the MDEQ taking to promote better communication and cooperation with the DHHS and other departments?

On April 12, 2016, a Memorandum of Understanding was executed between DHHS & MDEQ in order to ensure the exchange of data and public health information between the two agencies with a goal of ensuring their combined recommendations are consistent with the protection of public health. MDEQ and DHHS staff overlap through the Toxics Steering Group (TSG), which is a forum for discussion of human health risk assessment issues related to the exposure to chemical contaminants in environmental media. TSG members also include representation from assessors, toxicologists and the Department of Agriculture and Rural Development.

23. How will the MDEQ respond if there is an outbreak of Legionellosis this summer in the city of Flint?

We will work with the city to optimize water quality conditions. MDEQ is currently working with EPA and Flint to develop and implement a distribution system water quality optimization plan. Some steps have already been initiated, including the use of booster chlorination facilities, the installation of automated flushing equipment to minimize stagnation and maintain adequate chlorine residuals in low flow areas, and obtaining and installing additional inline chlorine residual monitoring equipment that can provide real-time results and inform decisions by city operators to initiate corrective measures. We will also work with our partners to provide educational outreach to Flint hospitals and other customers about the hazards posed by premise plumbing and the precautions and options they may wish to implement.

24. What is the role of state government in ensuring that water safe for drinking and bathing is flowing from a faucet?

The role of delivering safe clean water from the source to faucet is a joint responsibility of DEQ, the municipal water supply and the homeowner. The DEQ has a responsibility to ensure there is uniformity in the standards and regulations. The public water supply has a responsibility for the water infrastructure and the drinking water plant, the water leaving the plant meets state and federal drinking water standards, and that proper testing of the water system occurs. In addition, local units of government institute and apply plumbing and/or building codes to ensure suitable materials are used for premise plumbing. In most communities the homeowner is responsible for the infrastructure from property line into the home.

25. Does the MDEQ have a responsibility to ensure that water flowing from a tap is safe to drink or only that water delivered to a private residence or business is safe?

See Question 24.

26. There are critical relationships between the MDEQ and DHHS that must exist in order to fulfill the state's mission to protect public health—a prime example being a relationship between your Office of Drinking water and appropriate

divisions within the DHHS-- do you have mechanisms in place to cause those relationships to be forged or enhanced?

The Department utilizes their staff to evaluate public health concerns as they arise, particularly from sites that are associated with a release of contaminants. This group that reviews this information is known as the Toxics Steering Group. The group generally meets quarterly, however more frequent meetings can be held at the call of the chairperson or the deputy director of the department. The group is composed of toxicologist and risk assessors from the Department of Environmental Quality, Department of Human Health and Services, and the Department of Agriculture and Rural Development. This group evaluates the risk to the populations that are exposed and they attempt to come to a consensus agreement on how to address the issue within the context of Michigan Law and Regulations. Additionally, DEQ and MDHHS recently revised an MOU on sharing data.

27. If so, what are they and if not, why not? What regular methods of communication did your predecessor have with Mr. Lyons to ensure a sharing of critical information and what methods do you employ?

I am unaware of my predecessor's regular methods of communications with Mr. Lyons.

28. The Governor's Task Force Report found: the MEDQ bears primary responsibility for the water contamination in Flint; misinterpreted and misapplied the LCR requirements; the Office of Safe Drinking Water suffers from "*cultural shortcomings*" that prevent it from adequately protecting the public health of Michigan residents; the MEDQ waited months to accept the EPA officer of assistance and were at times dismissive and unresponsive; and failed to move swiftly to investigate – alone or with DHHS - the possibility that Flint River water was contributing to an unusually high number of Legionellosis cases. As Michigan's top environmental regulator how will you change the culture of the MDEQ?

DEQ has many highly skilled staff working in districts across the state. DEQ senior management has communicated the need for employees to establish outcome based objectives that balance the protection of public health and the environment. Staff have been encouraged to seek out alternative viewpoints to assist with informing decision making processes. Future managerial training and program staff training sessions have been scheduled.

29. What is your mission statement for the MDEQ and how is that cascaded down into your division heads to ensure consistency?

The mission of the DEQ is "The Michigan Department of Environmental Quality promotes wise management of Michigan's air, land, and water resources to support a

sustainable environment, healthy communities, and vibrant economy.” The division leadership helped develop the mission. Over the past four months I have spent considerable time with the Senior Management team and staff discussing how to ensure public health protection is at the forefront of our decision making with the context of our mission.

30. What mechanisms does the department have in place to ensure regular training, certification of its employees?

New employees receive new employee orientation via the Office of Human Resources.

New managers and supervisors receive related training via the Office of Human Resources.

Divisions utilize employee training plans that are developed and reviewed via the Employee Performance Management system.

Divisions have a training liaison and protocol through which employees request and get approved for needed training.

Training liaisons track completed training in the Civil Service HRMN System.

31. You have indicated the state should have required the city of Flint to treat its water for corrosion after elevated lead levels were first discovered in the city's water a year ago. While hindsight is 20/20 what event do you believed should have triggered state action and what action should the state have taken?

Although recognizing the difficulties presented due to the ambiguities in the LCR, with the benefit of hindsight and EPA's issuance of its November 3, 2015 clarification of the LCR, the City would need to implement corrosion control treatment when it switched sources to the Flint River.

32. There are reports that the MDEQ personnel are not as familiar as they should be with the Risk Based Correction Action (RBCA) protocol used for cleanups even though it is a process used in statute to help guide cleanup plans, could it be that there are other training deficiencies within the department?

To the best of my knowledge, DEQ staff involved in cleanup work that use RBCA protocols are trained and very familiar with them.

Managers will be asked to evaluate the skill sets of each employee and determine if additional training is necessary as part of the annual performance plan process.

- 33. Some have said that the MDEQ has a business-oriented mission and too often neglects its role to be a strong regulatory agency—what do you see to be the weakness in your department in that regard and what would you change to better protect the welfare of our citizens?**

The Department's programs balance public health, protection of the environment and economic development. Going forward I believe there needs to be more transparency and public engagement in the process before decisions are made.

- 34. Ideally, the MDEQ works in tandem with both federal and local regulatory officials when it comes to ensuring drinking water safety—and it has been said that there is a failure at all three levels when it comes to Flint—yet your department has the delegated responsibility to ensure public safety when it comes to drinking water—where do you think the department has failed in its responsibility to develop a coordinated role with federal and local officials?**

There are a numbers of reviews underway that will articulate this. Once those reviews are completed, I will share the results with the legislature.

- 35. Do you believe that the MDEQ could benefit from a citizen-based commission to help guide policy similar to the way the DNR is guided by the Natural Resources Commission?**

There are a number of different proposals being discussed by the Legislature, our stakeholders, and different Flint related task forces. Ensuring that the public has a voice outside of the traditional regulatory hearings and public comment periods is important, and could have allowed concerned citizens in Flint a venue to have their concerns elevated.

- 36. Would you support more flexibility to allow for civil servants to be disciplined, terminated and reassigned? If your predecessor had that authority could it have made a difference or does the MDEQ lack the necessary monitoring devices to sense when key employees are failing in their roles?**

I don't believe the events that occurred in Flint were the result of the civil service system.

- 37. What measures are you taking now in conjunction with your fellow department heads to look out into the future to sense new emerging health and natural resources threats?**

The DEQ regularly attends regional and national meetings at both the staff and executive level to learn about new emerging health and natural resource threats. Staff are also encouraged to belong to their respective professional societies. Through these

venues we are constantly monitoring issues of national importance and responding. For example, because of the natural gas storage leak in California, the DEQ and MPSC have convened a stakeholder workgroup to develop updated regulations for natural gas storage in Michigan.

38. Why did someone with so relatively-little experience in drinking water administration such as the former director of that office within MDEQ have such authority to make decisions that impact the public health? Does the Department have mechanisms in place to assess abilities to perform high level public health tasks?

Due to ongoing legal proceedings I cannot answer this question.

39. What changes would you make to involve the legislature more in becoming aware of emerging public health and natural resources crises so that we can be a more effective partner in helping protect the public health?

The DEQ is committed to ensuring the legislature is our partner in protecting public health and the environment. We will strive to keep our respective House and Senate committees better informed of emerging issues.

40. You have been director of both MDAR and MDNR prior to your current role, what do you see to be the unique challenges to administering the MDEQ and what administrative changes would you make to this department in order to better serve the citizens?

MDEQ is involved in highly complex and technical issues that demand effective public engagement. As a Senior Management Team, we will strive to perfect that engagement model.

QUESTIONS FOR DEQ FROM REPRESENTATIVES MCBROOM AND CANFIELD:

1. What do you believe were the most significant mistakes made by DEQ leading up to the Flint water crisis?

There are a numbers of reviews underway that will articulate this. Once those reviews are completed, I will share the results with the legislature.

2. What is the specific level of responsibility for the ODWMA? Did the ODWMA have the ability to monitor, inspect, and enforce the LCR or were certain portions of the Flint switchover the responsibilities of different DEQ divisions? If there were multiple divisions did they operate separately or in coordination?

The DEQ has the primary enforcement authority in Michigan for the Federal Safe Drinking Water Act under the legislative authority of the Michigan Safe Drinking Water Act. The division has regulatory authority for all public water supplies, including approximately 1400 community water supplies and 10,000 noncommunity water supplies. The ODWMA has the ability to monitor, inspect, and enforce the LCR for community water supplies and contracts with local health departments to maintain a noncommunity water supply program in each county. ODWMA staff support local health departments through training, technical support, and program evaluation.

3. What do you believe were the most significant mistakes made by local governmental entities (e.g., the City of Flint, the Flint Water Treatment Plant, Flint Public Works, etc.) leading up to the Flint water crisis?

There are a numbers of reviews underway that will articulate this. Once those reviews are completed, I will share the results with the legislature.

4. What do you believe were the most significant mistakes made by the EPA leading up to the Flint water crisis?

There are a numbers of reviews underway that will articulate this. Once those reviews are completed, I will share the results with the legislature.

5. Did DEQ fail to monitor and/or ensure that the City of Flint had an accurate database on service line material for every home, as federal law requires? If so, why?

My understanding is federal law does not require the State to ensure the City has an exhaustive list of service line material for every home.

6. Did DEQ fail to monitor and/or ensure that Flint water samples for testing were from "Tier 1" homes? If so, why?

It is my understanding, the DEQ examined the information submitted and certified by the City that its LCR compliance monitoring sites consisted entirely of Tier 1 criteria sites, which met the requirements of this rule to maximize sampling of high-risk targeted sites.

During the initial implementation of the LCR approximately 25 years ago, water supplies were required to complete a materials evaluation of their distribution system to identify a pool of targeted, high-risk sampling sites. These sites were to be categorized into one of three Tiers (1, 2, or 3) based on risk. The DEQ created an LCR reporting template for water systems to identify each compliance sampling site by Tier, service line material, and building plumbing material.

If a water system has sufficient Tier 1 sites, they are required to sample them before using any lower Tier sites. Furthermore, if they have sufficient sampling sites with lead service lines, they are required to use them to make up at least 50 percent of their sampling pool each monitoring period. Water supplies are also required to use the same sampling sites each time or explain on their LCR reporting form why they were unable to do so. Finally, the water system is required to certify all of the information they provide on the LCR reporting form is factual.

The DEQ must rely upon the public water system to identify appropriate sampling sites for LCR monitoring. The DEQ public water supply program has no control or authority over service lines or domestic plumbing. As a result, we have no records on construction standards or materials used by customers for these components. If these records exist, they are kept by plumbing code enforcement officials.

In 2015, City employees again certified that the information submitted on their LCR monitoring reports for the two 6-month rounds of monitoring conducted after they began treating the Flint River were accurate, and DEQ staff review of that information indicated it was in compliance with the monitoring requirements. The DEQ had no reason to question the validity of the City's reports until the DEQ heard City employees revealing to the media that the City did not know for certain if its compliance monitoring was collected from homes with lead service lines. As a result, the DEQ began to investigate the City's monitoring sites. As the City began to transfer its customer information to electronic records, the DEQ determined from the information available that a significant number of these sites that had been listed as having lead service lines either did not have them or the information was unavailable. On November 9, 2015, the DEQ notified the City in writing that it would be necessary to conduct a complete assessment of its sampling pool and report back its findings by December 30, 2015.

7. To your knowledge, have any DEQ employees intentionally manipulated or misleadingly used water samples or testing procedures to achieve a desired result, in relation to the Flint water crisis?

No

8. Please provide, in great detail, how the Department interpreted the Lead Copper Rule ("LCR") during the time in which the switch was made to the Flint River as a water source for the City. What was the legal justification for that interpretation?

There are two ways under the LCR to deem a water supply as providing "optimal corrosion control" – either by sampling and determining through a calculation that the supply is "optimal" or by installing treatment if it is needed. The DEQ requested that the City perform two 6-month rounds of monitoring to demonstrate if the City was practicing optimal corrosion control treatment. According to state regulations [R325.10604f(2)(b)(iii)], a system can demonstrate optimized corrosion controls by sampling in two, consecutive 6-month monitoring periods and comparing the results of this monitoring to the lead level in the source. Optimal corrosion control under this

scenario would be defined as having the 90th percentile in each of these monitoring periods lower than the sum of the lead in the source and the practical quantification limit for lead of 5 ppb. Since the source water has 0 ppb lead, the City would have been deemed optimal if its 90th percentile of lead was 5 ppb or less in these two consecutive periods. However, once a system has installed treatment, it would also be considered optimized regardless of the 90th percentile level achieved, as long as it does not exceed the action level of 15 ppb.

In this case, the City had been purchasing water from DWSD that was treated for corrosion control. It was the DWSD water system that was considered as having optimized corrosion control at that point. Since the City water system had not been the supplier of water before, the DEQ did not require the City to maintain corrosion control for which it was not responsible [R325.10604f(2)(b)]. It could not “maintain” operations undertaken elsewhere by a different entity for a different source of water. The DEQ’s instructions to the City were consistent with past practices afforded to all other large water systems. At the beginning of the LCR, all large systems were initially granted the option to demonstrate optimal corrosion control treatment through full-scale monitoring under the applicable rules. For these reasons, two 6-month rounds of monitoring, as required by the LCR, were the required means to determine whether or not optimal corrosion control was being achieved.

On November 3, 2015, the USEPA issued a memorandum regarding the “Lead and Copper Rule Requirements for Optimal Corrosion Control Treatment for Large Drinking Water Systems”. This memorandum addresses concerns raised about the application of the LCR, specifically the requirements pertaining to maintenance of optimal corrosion control treatment, in situations in which a large water system ceases to purchase treated water and switches to a new drinking water source. The USEPA states that this type of situation rarely arises, that the language of the LCR does not specifically discuss such circumstances, and that there are differing possible interpretations of the LCR with respect to how the rule’s optimal corrosion control treatment procedures apply to this situation. The memorandum is intended to clarify, on a prospective basis, steps agencies should take or apply in the future. USEPA’s new guidance provides acknowledgement that the LCR is subject to differing interpretations. The DEQ’s interpretation and application of the LCR in this situation was in compliance with the federal SDWA and Act 399.

9. Which DEQ employee(s) were responsible for interpreting the LCR?

ODWMA staff in both the Community Water Supply and Noncommunity Water Supply programs have responsibility for interpreting and implementing the LCR.

10. If the Department interpreted the LCR to require two testing periods before determining whether to use corrosion control treatment and that corrosion control treatment be used after those testing periods unless the lead results of both were under 5 ppb, then why did the Department not require corrosion

control after the results of the first period came back at over 5 ppb? Put another way, if DEQ knew after the first testing period's results that it would eventually (i.e., after the second testing period) need to require corrosion treatment under its own interpretation of the LCR, why did it nevertheless hold off on requiring treatment and instead order another round of testing?

According to the LCR, a water system can demonstrate optimized corrosion controls by obtaining sampling results in two consecutive 6-month monitoring periods that fell below the 90th percentile calculation, which was 5 ppb. The results of Flint's first 6-month sampling round for lead was 6 ppb. Based upon the information available to it, because the exceedance was relatively slight, it is my understanding DEQ decided to allow Flint to conduct the second 6-month monitoring period to determine if the results would fall below the 5 ppb. If it did fall below that level, based upon its past practice, DEQ may have allowed Flint to conduct another 6-month round to determine if it could meet the two, consecutive 6-month monitoring period requirements of the LCR.

11. Would there have been any significant downside (e.g., from a health, environmental, and fiscal perspective) to requiring corrosion control treatment immediately upon the switch to the Flint River as a water source? What would the cost have been for corrosion control treatment?

It is essential that water chemistry and parameters are determined before initiating treatment. The same corrosion control that was used for DSWD may not have been effective. Without knowing what treatment would be most effective in providing optimal corrosion control, it is not possible to estimate a cost.

12. At the time of the switch to the Flint River, did DEQ believe that the LCR was ambiguous as to what it required? If so, why did it not immediately ask the EPA to clarify the rule's requirements rather than move forward with an interpretation that DEQ wasn't certain about?

No.

13. Was the Flint Water Treatment Plant equipped to use corrosion control treatment at the time of the switch to the Flint River? Was this a factor in the determination of whether to require treatment?

I am not aware what role this made in the determination.

14. Who was responsible for setting a timeline for the change over? Particularly, if it were proven that corrosion control was legally necessary after the two six month periods, how long it would then take to install and activate corrosion controls? Is setting timelines and contingencies a part of the planning process? Are the personnel who failed to properly establish a transition plan with contingencies removed from the department?

The federal LCR sets the timeline for activating corrosion controls.

15. What modifications did DEQ require of the Flint Water Treatment Plant in relation to the switch to the Flint River as a water source?

The city applied for and obtained two construction permits prior to the water treatment plant changing from an emergency backup plant to full-time operation. These permits were for new chemical feed equipment, changes to the electrical service, etc.

16. When was it first suggested, either from an outside entity or within, that corrosion control treatment should be used rather than waiting for the results of two testing periods? Who suggested such?

As I was not Director at the time, I cannot speak to this decision.

17. Was the above determination made with any consideration of whether the city would be able to go without corrosion control with the KWA water, particularly since the previously received DWSD water from Lake Huron was treated?

I have no knowledge about how the determination was made.

18. What precedent or past success did the ODWMA observe or rely on to believe operating without corrosion controls could pass the two 6 month periods successfully? Are there ANY municipal systems with lead lines operating without it anywhere in Michigan? The midwest?

There are water systems in Michigan that were deemed optimal by the results of their initial two 6-month rounds of monitoring – Ann Arbor, Kalamazoo & Wyoming are examples, and some of these systems have lead service lines. The treatment they were already employing in combination with the water quality of their source was deemed optimal corrosion control.

I cannot speak for systems outside Michigan.

19. Was the decision to attempt no corrosion control made with the intent to simply delay the inevitable to a later date?

Not that I am aware of.

20. Was this a special dispensation given out by this office for Flint that they have refused upon request by other municipals who wanted to attempt going without corrosion control?

Not to my knowledge.

21. When did DEQ employees first give serious consideration to the concerns raised by Miguel Del Toral of the EPA; namely, that corrosion control treatment needs to be used? According to an email by Jennifer Crooks of the EPA on June 29, 2015, she was told by Pat Cook of the DEQ in mid-May of 2015 that “maybe” Flint should be adding corrosion control. Is that the earliest instance that you are aware of?

I am uncertain to when DEQ first gave consideration to Mr. Del Toral’s concerns.

22. Has DEQ always interpreted the LCR to require two testing periods before requiring corrosion control treatment, prior to 2016? If so, have there been any cases involving a local water treatment authority that nevertheless chose on its own to use corrosion control treatment during the testing periods? If not, please provide an explanation for the inconsistent requirements.

The answer to the first part is yes.

In the short period of time I have given to answer these questions, I was not able to identify an example of that communities chose to do this. Nothing restricts a local unit of government from implementing a higher standard.

23. Please list and briefly describe all known cases involving the switch of a municipal drinking water source in the past 10 years other than Flint.

Some examples include:

Bay County constructed a water treatment plant that tapped into the Saginaw-Midland pipeline as their source to replace Bay City’s water treatment plant that relied upon an intake in Lower Saginaw Bay. When the new treatment plant was placed in service (last year), it became the new supplier for about a dozen or more of Bay City’s consecutive community customers as well as for the city of Bay City, who decommissioned their water treatment plant to become a customer of the new Bay County system.

The city of St. Louis recently connected to the city of Alma and discontinued relying on contaminated wells. Alma was already employing OCCT, while St. Louis was not, so now they are receiving water with corrosion control treatment.

About 5 years ago, the city of Norton Shores and Fruitport Township in Muskegon County issued a termination notice to their supplier of water, Muskegon Heights, and they developed plans to construct their own water treatment plant. However, before they began construction of their own treatment plant, these communities received an acceptable offer from the city of Muskegon to supply drinking water. Transmission mains, pumping stations and connections were then installed and these two

communities “switched” sources, although they went from being customers of one wholesale supplier to one that is only a mile or so apart on the Lake Michigan shoreline.

Benton Township in Berrien County constructed a water treatment plant and separated from Benton Harbor about 6 to 8 years ago.

There has also been a recent switch in sources for the residents of Highland Park where they went from receiving drinking water from their own Water Treatment Plant to becoming a customer of Detroit, now the GLWA. This transition occurred when Detroit agreed to serve Highland Park temporarily so repairs could be made to Highland Park’s treatment plant. It became evident during the dewatering and assessment phases for this work that Highland Park would not be able to afford the increasing costs of additional repairs being identified and the water treatment plant could not be placed back in service without these repairs. The city customers have remained on this alternate source since that time.

24. In each of the above cases, what corrosion control procedures did DEQ require under the LCR (e.g., was corrosion control treatment required immediately after the switch or were two testing periods required before the use of treatment)?

Bay County, St. Louis, Norton Shores, Fruitport Township and Benton Township were placed on increased LCR monitoring to determine if these switches may have altered their compliance status. Highland Park’s switch to Detroit (now GLWA), which provides water that is designated as providing optimal corrosion control treatment. In addition, Highland Park has been placed on a monitoring schedule that parallels the LCR monitoring conducted in the more than 100 consecutive systems supplied by GLWA.

25. Are there any known municipalities that are currently in the process of switching water sources? If so, what corrosion control procedures will DEQ require of them under the LCR?

No known cases where municipalities are currently in the process of switching sources.

26. On March 26, 2013, Steven Busch of DEQ sent an email to other DEQ officials stating that the use of the Flint river as a water source could lead to multiple problems, including disinfectant byproducts, increased microbial risk to public health, and increased regulatory requirements under the Safe Drinking Water Act. How did the Department act on these warnings, if at all? Why did it choose to allow Flint to move forward with the switch despite Mr. Busch’s initial warnings, particularly in light of the fact that a DEQ report from 2012 detailed the millions of dollars in upgrades that would be needed at the water treatment plant to make it able to treat Flint river water on a full-time basis?

The identified e-mail was prepared in a request for comments to a report that was prepared by a consultant to the Department of Treasury. Staff were requested to prepare comments to the report in an effort to determine if the cost cited in the report were reasonable and to provide any other comments relative to the report. This information was not only provided to the Treasury staff, but also to the City and County before a decision was made to join the KWA Authority. The DEQ does not have the authority in rule or law to prevent communities from leaving a community water supply or establishing a community water supply. There have been a number of communities that have left their current water supply to establish their own water supply. DEQ's responsibility is to ensure that the water supply is compliant with the requirements of the Safe Drinking Water Act. The Department would need to have changes in the law to allow denial of establishing a new water supply. The only existing limitation right now is the volume of water to be utilized which may require water use permit if over one million gallons per day.

27. Precisely which DEQ employees are responsible, or may be responsible, for the Department's mistakes leading up to the Flint water crisis? Put another way, which employees have been or are potentially subject to discipline as a result of their actions related to the Flint water crisis?

DEQ employees that have been disciplined are Liane Shekter-Smith, Stephen Busch, and Mike Prysby.

28. What are the exact steps that have been taken thus far to discipline DEQ employees that were involved in the Flint water crisis (e.g., terminations, suspensions, intradepartmental transfers, etc.)?

Liane Shekter Smith- dismissed
Steve Busch- unpaid suspension
Prysby- unpaid suspension

29. Have you encountered any impediments that have precluded you from effectively and efficiently disciplining departmental employees involved in the Flint water crisis (e.g., civil service rules)? If so, do you have any suggestions for legislation that would help remove those road blocks?

No.

30. Do you believe that the culture within DEQ has changed for the better since the Flint water crisis? If so, how?

As a result of the Flint water emergency morale has suffered across the DEQ. In addition, it is clear that we need to clarify decision making going forward.

31. Would the Office of Drinking Water be able today to properly handle another situation similar to Flint's involving the switch of a large municipality's water source? If so, please provide justification for that claim.

Yes, there has been clarification from EPA on the implementation of the LCR.

32. Does the DEQ recommend the ODWMA be placed back under the DHHS umbrella? If not, why not?

I am not aware that the Governor has recommended a switch at this time.

33. Does the DEQ have the authority to declare a public health emergency?

No, however the DEQ does have authority to require water supplies to take action when considered necessary in order to protect public health. See, e.g., MCL 325.1015.

34. What needs to happen to obtain coordination between the ODWMA and health related issues brought to other agencies such as county health departments, DHHS, local WTPs, and hospitals and health care providers? Can this be done at the department level by aggregating currently available and provided information so that others are not taxed with more work? Should this not be the ODWMA's job?

DHHS and DEQ have agreed to share data generated across programs areas to assist with this effort.

35. Is it possible to merge the issues of both system integrity and user satisfaction (including health)?

Additional information and clarity is needed on this question in order for me to answer it.

36. What have the ODWMA and the DEQ done to make sure that technical safety is not more important than engineering? I.e., In Flint, citizens were told that the long term appearance and smell issues were not a safety issue: even if this had been true, how could this be justified and accepted by the department and what is being done to alter this indifferent approach to both properly engineering an acceptable product and properly responding with basic empathy to a fellow human being?

DEQ has many highly skilled staff working in districts across the state. DEQ senior management has communicated the need for employees to establish outcome based objectives that balance the protection of public health and the environment. Staff

have been encouraged to seek out alternative viewpoints to assist with informing decision making processes. Future managerial training and program staff training sessions have been scheduled.

QUESTIONS FOR MDEQ FROM REPRESENTATIVE IRWIN

1. ODWMA staff who regulate compliance with the SDWA are not required to be licensed operators or have experience with drinking water treatment plant or distribution system operations. -Flint Water Advisory Task Force (Page 26)

- What was the reason for not requiring ODWMA personnel to be licensed operators or have experience with drinking water treatment plant or distribution system operations?
Has DEQ started to implement the Task Force's recommendation to establish a training/certification program for ODWMA employees?**

The MDEQ is in support of this recommendation and had begun internal discussions as to how to ensure licensed engineering positions have the proper and up to date training and certifications, including the certified operator training which water system operators are required to complete. MDEQ will also continue to seek external support through entities such as the American Waterworks Association to align with national training / certification standards and best practices.

2. When asked by Flint water plant personnel about adding phosphate in the treatment process, as DWSD does for corrosion control, MDEQ said that a corrosion control treatment decision would be made after two 6-month monitoring periods were conducted to see if corrosion control treatment was needed. -Flint Water Advisory Task Force (Page 27)

- The LCR requires that corrosion control treatment be continued, why didn't MDEQ require corrosion control as stipulated by the LCR? Further, after the first six months of testing failed to meet the LCR standard, why did DEQ insist on a second six month testing rounds before implementing a corrosion control treatment regime?**

According to the LCR, a water system can demonstrate optimized corrosion controls by obtaining sampling results in two consecutive 6-month monitoring periods that fell below the 90th percentile calculation, which was 5 ppb. The results of Flint's first 6-month sampling round for lead was 6 ppb. Based upon the information available to it, because the exceedance was relatively slight, it is my understanding DEQ decided to allow Flint to conduct the second 6-month monitoring period to determine if the results would fall below the 5 ppb. If it did fall below that level, based upon its past practice, DEQ may have allowed Flint to conduct another 6-month round to determine if it could meet the two, consecutive 6-month monitoring period requirements of the LCR.

3. What are the limitations and ambiguities in the EPA'S LCR? Does the MDEQ have the authority under the current law to promulgate better rules for compliance with the LCR? What has DEQ done to strengthen and clarify SDWA/LCR? -Flint Water Advisory Task Force (Page 30-Recommendation 3).

Michigan does have the authority to strengthen the federal SDWA. On April 15th, 2016 through the Flint Water Interagency Coordinating Committee's Policy Subcommittee, Governor Snyder proposed the creation of a Michigan LCR. Changes include:

- reducing the action threshold from 15 ppb to 10ppb
- requiring annual sampling and testing of schools, daycare centers and vulnerable populations
- increased specificity on corrosion control optimization and requiring analysis within set time parameters when a public water system changes water source
- create a statewide Advisory Commission on Drinking Water Quality
- establish a state household action level
- require an inventory for all public water systems
- not allowing any partial lead line replacements
- require lead analysis and information as part of home sales and rental contracts
- expand the notification requirements when a public water system exceeds the lead action level

4. ODWMA anticipated that use of Flint River water would be problematic but deferred to state emergency manager decisions to proceed. -Flint Water Advisory Task Force (Page 27)

- **Why were decisions deferred to the state emergency manager?**

As I was not Director at the time, I have no firsthand knowledge of this decision.

- **What decisions were deferred to the state emergency manager and how did they influence DEQ personnel?**

As I was not Director at the time, I have no firsthand knowledge of this decision.

5. MDEQ, "specifically its ODWMA, suffers from cultural shortcomings that prevent it from adequately serving and protecting the public health of Michigan residents". -Flint Water Advisory Task Force (Page 28-Findings 2)

- **What did DEQ do to set organizational culture?**
- **Were there staff trainings and meetings?**
- **Were there staff-wide or division meetings or trainings?**
- **Who facilitated such trainings and meetings?**

- **Did Governor Snyder, or Rich Baird meet with staff or senior leadership to set goals and objectives?**
- **Has DEQ implemented trainings and programs to address the Task Force's cultural concerns?**
- **Have you performed an internal audit to determine if the cultural issues of the MDEQ's ODWMA were isolated to only that division? Are there other areas and divisions where MDEQ has a culture of "minimal compliance" at the expense of public health?**

DEQ has many highly skilled staff working in districts across the state. DEQ senior management has communicated the need for employees to establish outcome based objectives that balance the protection of public health and the environment. Staff have been encouraged to seek out alternative viewpoints to assist with informing decision making processes. Future managerial training and program staff training sessions have been scheduled.

QUESTIONS FROM SENATOR ANANICH

1. I met with the Flint Water Task Force on Wednesday, January 13, 9:30-11:00 at Public Sector Consultant's office. George Krisztian, DEQ's Flint Water Coordinator attended the meeting with Director Creagh. To the best of my knowledge, I am not aware of Director Creagh giving them any documents at that meeting.

On January 20, 2016, the Flint Water Task Force sent an email from Matt Davis to me asking for Information on Aging Infrastructure as it relates to the "target communities", including the water testing results under the LCR and any other available water quality data, for these communities for the period 2010-2015. That information was provided on a thumb drive to Chris Kolb on February 2, 2016.

In addition, the Task Force reached out to Madhu Anderson, Deputy Director of Economic and Strategic Affairs for DEQ, for information on professional background. The responses are attached.

2. Steve Busch is currently suspended without pay. He was previously suspended, with pay. Documents are included.
3. I cannot comment on this matter, due to pending litigation.
4. Documents related to Mike Prysby's new position are attached.
5. There are investigations ongoing, which I cannot comment on.