Well 19 Public Information Meeting – Discussion Notes

Wednesday, July 6
Eagle Heights Community Center
Attendees: 9

Madison Water Utility

DISCUSSION NOTES:

Q: When did the utility notice the increase in iron and manganese in the water?

A: There was not necessarily an increase; these compounds have been present for a while now. We do see periodic jumps in these compounds; they pertain to secondary standards and guidelines for aesthetics, so this filtration is more preventive and proactive; long-term, I do not foresee it ever consistently exceeding the secondary standards.

Q: Once you install the treatment facility at Well 19, do you plan on blending the water (treat a certain percentage of the water) or will you treat 100% of the water?

A: Typically, we want to treat all the water that the well will be producing. We could theoretically save money on operational costs by only treating a portion of it, then say instead of getting down to non-detect level, just get down to the secondary standards. Blending can be thought of as a way to treat water, but we are more concerned with a total removal process; the 16 large vertical pressure vessels are designed to remove 99.99% of all the iron and manganese that are naturally occurring in that zone; the radium that is also naturally occurring is creeping up to that threshold. However, the pilot study showed that it can be successfully removed.

We expect a complete removal of the two secondary contaminants (iron and manganese) and then 40-50% removal of Maximum Contaminant Load (MCL) for radium.

Q: Will this project impact our rent and/or our Municipal Services Bill?

A: This project should not impact overall rates and is not significant enough to impact [Eagle Heights Community] rents. The utility is investing in this well, but that does not mean we will be only charging people whom are the beneficiary of the water from this well; all 70,000+ customers/ratepayers will pay similar rates. Eagle Heights has also done a lot in the realm of water conservation, so a potential small rate increase will not impact current rents.

Q: Why are you only running the well at 30% and how does this relate to the concept of blending well waters?

A: Anytime we operate the well we are putting higher levels of iron and manganese into our distribution system; what that does is increases the likelihood of our customers' experience with discolored water; the water itself is not discolored, but overtime those sediments accumulate out in the system.

Most of the calls we receive regarding discolored water are from residents that receive most of their water from Well 19. For this reason, we have purposely limited the amount of water that we put into the system that has this level of iron and manganese. We can then positively rely on other wells in the system.

The other piece is that we try to spread out the use of our water within our system; our operational guidelines attempt to keep us at 50% or lower; in terms of blending, we do not typically blend water; there is no "blending" that takes place out in the system; we could theoretically treat 25% of the water and then blend it, but it would not be an effective solution, as 75% of water put out into the system, in this case, would still have high levels of iron and manganese. We want to take advantage of the capital investment in this well.

Q: Are the other wells (other than UW19) subject to similar problems?

A: We currently have eight wells that have iron and manganese issues; three of them already have filters, this will be the 4th one with a filter; we've been systematically taking care of the ones that have the highest levels of iron and manganese which exceed the secondary MCL. We are then working down to the ones that are close to exceeding the standard or approaching the MCL. Our board policy suggests that we should filter 4 or 5 more wells over time. This will be completed as our finances allow us to do that in conjunction with priorities of other capital projects; we must balance all needs and water quality is just one of those needs;

Q: What are you doing about other contaminants in the water?

A: The discolored water are guidelines – secondary MCLs and are not enforceable; drinking water standards that are primary MCLs are enforceable and the utility meets each of those; we are committed to meeting all drinking water standards; striving to provide the highest quality water that meets all standards, not just for health, but for aesthetics and all else.

Q: Emerging contaminants; where are we with that?

A: You are likely referring to PFAS; The EPA released Health Advisory Limits (HALs) a couple weeks ago for those emerging contaminants. We first discovered these "forever chemicals" in our water in 2017, and more recently in 2019 we started conducting comprehensive testing. The health advisories guide utilities to assess, inform, and reduce – a three-part strategy. Right now we are assessing and informing; we will then make reasonable efforts to reduce. We currently have a project on the east side at Well 15 where we are planning to remove PFAS through a filtration system.

We have not detected PFAS in well 19, given it is mostly a residential neighborhood that is detached from commercial and manufacturing uses.

Q: Does technology exist to effectively remove PFAS?

A: Technology does exist to remove PFAS down to *some* level, but that level is in question; the Health Advisory aims for levels at 4 parts per quadrillion – that is 1 million times lower than the levels we previously adhered to. We are not aware of a laboratory that can measure down to the newly proposed HAL; filtration technology nor laboratory equipment is advanced enough to measure down to that level.

It is emerging issue for utilities and we are taking all the steps necessary to reduce PFAS throughout our system.

Q: We have experienced issues trying to find contractors for projects across the city – do we actually have a contractor that has specialty services available to actually execute this project in the timeframe that is planned?

A: Contracting can be different in Dane County and city of Madison, but there are still qualified contractors that are available to do this job; we've used local contractors recently that have done a great job start-to-finish. Projects have been finished on time. We are being consulted by a past contractor that has done a lot of work in this area and is guiding our team to understand timeframes, costs, etc.

Bottom line is there are contractors available to do this work – we are not too worried.

Q: How do the proposed filters work?

A: It's a big pressure vessel filled with this sand-like medium; we will rely on them to remove iron and manganese from water at well 19. Water comes in through the top and then as it is moving through the tanks, iron and manganese get removed from the water. As water passes through the filtration medium, it essentially binds to the manganese dioxide and accumulates the solids to be disposed of. The well will continue to pump and then once a day we will be backwashing; meaning, on a daily basis we will need to reverse the flow.

Essentially, we are expediting the natural process of oxidation in a way that filters out 99.9% of the iron and manganese.

Q: What do you do with the solids after they are captured by the filtration medium?

A: We collect the solids in a tank, then it is sent to the waste water treatment plant; the iron and manganese are removed and then the water gets distributed into Bad Fish Creek; all of our city's waste water goes to the nine springs waste water plant then discharges into Bad Fish Creek.

Q: How long do the filters last?

A: Could be 5-10 years. The media stays in the vessel and is cleaned out daily. We would need to change medium every 5-10 years.

Q: Do you have any other plans to provide water during construction, other than getting it from other wells in the system?

A: The method of getting water from other wells in the interim (during construction) will suffice. This well has been down for maintenance before for weeks at a time with no supply issues; the most sensitive time would be during the summer months when water demand is the highest; other times of the year, it would be fine to take it offline because there are other wells in the area that can meet the demand for this zone.

Our distribution system is completely interconnected; if we shut down well 19, the other wells would send more water through the mains to serve this area. We have a robust mapping system that allows us to model distribution, especially if well 19 is offline – this is considered as a part of our design process.

Q: There are already 3 wells that have this similar filter?

A: There are indeed three other wells with filters such as the one planned for well 19; this project is planned to be under construction next year (2023) and well 15 PFAS filtration facility is planned for construction in 2024 – it will stay offline until that time.