

CITIZENS ENVIRONMENTAL QUALITY COMMITTEE SPECIAL MEETING NOTES

DATE: Friday March 23rd, 2018

TIME: Scheduled for 1 pm

PRESENT: Fran Goodin, Bruno Borsari, Dan Hall, and Hans Madland

GUESTS: Two members of the public (Fran's family)

STAFF: Brent Bunke (Water Plant Superintendent), and John Howard (Natural Resources Sustainability Coordinator)

1. Johnson St. Water Plant Tour:

The sole focus of the meeting was a tour of the Johnson St. water plant. The tour began at 1 pm with introductions of CEQC attendees. The Water Department Superintendent, Brent, then started his PowerPoint presentation beginning with a history of the water department. The City's water department was created in 1882. Earlier iterations of the water plant had a stand pipe, which is a skinny water tower that looks like a smokestack, and then a more traditional looking water tower. The City began filtering water in 1969. The most recent technological change was switching from vertical filtering cylinders to horizontal ones in 2000.

The City's water wells are between 500 to 1,000 feet deep and draw water from the Mt. Simon aquifer. There are a total of 8 active water wells: three at the Johnson St. plant, three at the Westfield plant and two at the Wincrest water plant. Bruno enquired about the size of the aquifer, and neither John or Brent could provide an estimate. John replied that he believes some metro cities draw from the aquifer as well, and Brent pointed out that most metro cities draw their drinking water from surface water.

Brent also handed out a model of the hydrologic and groundwater system. There was a question regarding where water enters the aquifer. Brent and John indicated there is not one point, and were unsure where Winona's water has traveled from. Brent said that Minnesota Department of Health (MDH) looked at the age of the ground water in the last year, and dated the water as being in the ground for nearly 10,000 years.

One guest asked why water taste varies between different places in town. Brent indicated this was likely due to the pipes the water passes through, and potentially there could be different tastes between wells and treatment plant.

Brent explained that iron and manganese are removed from the City's water. Iron water from sand point wells causes an orangish discoloration on building and sidewalks, and may impact taste. Manganese is removed primarily for taste. The City does not soften water, although removing these two elements will change the grain count. Typically water will leave the plant at about 15 grains of hardness.

In addition to the three water plants, the city operates reservoirs. Booster stations are needed in some locations to increase the water pressure – one example is near the base of the Treetops subdivision.

The group then started the walking tour of the water plant. The first stop was at the fluoride station, which is automated. The MDH requires fluorination, although it is a small amount – no more than 2 parts per million. Typically the City water registers at 0.6-0.7 parts per million.

Next was the chlorine disinfection station. Chlorine has long been used as a water disinfectant and is much cheaper compared to other measures. Dan asked about alternate measures, as he knew this was of interest to other CEQC members not in attendance. The group discussed that UV light works as a disinfectant, and putting water in a clear bottle is a method used in less developed areas that takes advantage of the anti-microbial power of the UV rays in sunlight.

The group was able to see the well withdrawal area where ground water is pumped to the water plant from the wells. The water is put in a large underground reservoir before being treated. One of the guests from the public asked whether the City uses clean energy for the water plant, and if not, why not? Brent deferred to John, who replied that the City subscribes to a community solar garden, so we will get solar energy to power some of the water plant's operations.

The tour continued outdoors to the reservoir, where there were questions about site security and terrorism prevention. Hans asked what would happen if a flood got over the levy? Brent hoped such an incident never occurs. Brent stated that the fence around the plant is the standard security measure used by water plants.

The group went back inside and looked at the pumps that draw water from the reservoir into the treatment area. Typically one to two of these pumps operate at a given time.

Next the tour proceeded to the basement of the main building. This is the intake area to the filters on the floor above. A CEQC member asked if untreated water is ever used in an emergency. Brent replied that this is only a last resort, and to his knowledge, the City has not done this. Doing so would require a clean out of the pipes. On the way back to the main floor, another member asked about the pipe labeled sludge, which is where the buildup from the filter backwash is pumped – essentially it is the material removed from the water by filtration.

Brent explained that the large tanks on the main level are for filtration. The water enters at the top of the tank, and percolates through filter media, either starting with “green sand” or anthracite coal. As the water moves through the filter, the media gets larger and the water gets more pure. After filtration, the water is ready for chlorination and fluorination. Brent demonstrated the water purity levels at different levels of the filter tank based on the level of filtration.

The group proceeded to the education area where Brent showed an example of the typical household connection to the water main. The property owner is responsible from the connection point off the water main through to the house. Often a “goose neck” pipe, which is curved, connects to the water main, and has an emergency shut off that reaches to the ground level. Brent advised keeping the shutoff available, as it may be needed in an emergency. The “goose neck” piece of the pipe historically was made of lead, as it was a malleable metal.

Brent gave a demonstration about a flushing toilet, as a poor flushing toilet is the cause of 90% of all high water bills. John added that these high bills can be in the hundreds of dollars. A guest asked about how to test for a leak, specifically a hissing sound. Brent was familiar with this type of issue, and said the hissing is likely a poor gasket seal. To test for leakage, he suggested adding a dye packet to the toilet reservoir and seeing if it seeps into the bowl. A number of attendees took a free dye packet.

Following some miscellaneous questions, the tour concluded at approximately 2:45 pm.