LIA Water Committee Report – April 2023

LIA is still working with Jim Balk to install new hydrants to improve the ability to flush the LIA water mains in order to removed sediment and debris which may be collecting. Balk has obtained the schedule 80 pipe needed for the install and has most of the old flush hydrants and water shut off valves located. Darrell Aders met with Mr. Balk on Sunday, April 2 and checked on various locations to set priorities for installation. Balk will start with three locations initially which were determined by those most in need areas that serve the most residences. They include the new four-inch two-way hydrant on Arapaho as well as smaller two-inch one-way hydrants on Pima Lane and Wyandotte. Balk is doing a JULIE locate and should be able to start the replacement of these hydrants in the next few weeks, weather permitting. After the new hydrants have been installed, LIA will work with ERH to try to do a better flush and perhaps a targeted flushing focusing on certain areas of the water system to help remove sediment.

LIA also obtained independent drinking water samples from four separate locations on Friday, March 10 which were submitted to an independent lab for the analysis of water properties, disinfection byproducts, fertilizers, heavy metals, non-metal organics, petroleum products, and other VOCs. The test kits from Tap Score were tested by Simple Labs which provide the test results of these 109 analytes as well as water parameter readings. These samples were collected from the sink at the water plant; a frost-free hydrant at Comanche near Cayuga; a frost-free hydrant at the end of Arapaho, and a frost-free hydrant on Kiowa near Chippewa.

The lab results of the samples show the Maximum Contaminant Level (MCL) and Maximum Contaminant Level Goal (MCLG) levels set by the US EPA. There is also a reference to an SLR which is the Simple Labs Recommendation. We do not know how Simple Labs arrived at their recommended levels. The Illinois EPA MCLs and MCLGs can be found online. The committee did not see where any of our results exceed the US EPA or ILEPA levels, but there are some things worth noting.

Chloroform is present in all the samples as part of the Total Trihalomethanes (THM) but is very low in the sample from the water plant. Another THM, Bromodichloromethane is present in each of the samples out in the water supply but not at the water plant. THMs are a byproduct as the result of the disinfection of water containing chlorine and typically occurs in the water distribution system. Flushing typically removes most of these byproducts and LIA will perform another water sample test to compare the THM results after a subsequent flush of the water mains. Please note the THM is only appearing in parts per billion

ERH has been working hard at establishing breakpoint chlorination as required by the IEPA. ERH has obtained a booster pump they will install to use with the chlorine injector to accommodate a more even distribution of the chlorine. The chlorine injector can be manually adjusted, and does not adjust automatically. The water flow rate at the injector site is also manually adjusted and set to what they believe is an optimal level. If the flow rate is increased here, it could result in less contact time of the water with the filters and water softeners which could be detrimental to the treatment process.

There is Manganese present in each of the water samples. At relatively low concentrations, Manganese may give a yellow color to water and appears darker with higher concentrations and can leave a brownish ring on toilets, showers, sinks, and clothing. Drinking water testing by Hawkins in September 2022 also showed a high level of manganese in the water distribution system. Because these levels were 2-5 times greater that the raw water, Hawkins believes these are old deposits being stripped from the water mains and re-introduced to the water.

There are also very low levels of Lead present in the samples at Kiowa and the Water Plant but none at the other locations. Boron was detected in all four samples at a level higher than the SLR recommendation but below the acceptable standards set by US EPA and IEPA. There is not an MCL or MCLG for Boron through USDA or IEPA.

In the sample test results, LIA also observed that the water hardness at the water plant was 115, 119 on Kiowa, and up to 146 on Arapaho, but was only 69 on Cayuga. The committee found this very unusual and hard to explain. The new ERH employee has been back-washing the water softeners on a regular basis which we think has helped some but not quite enough. ERH now performs this back-flush on a regularly scheduled basis regardless of what the water softness levels show to make sure the softeners are always running at peak efficiency. According to the monthly samples, our water softness has come back down from the extremely hard water over the summer, but it is still not quite where we would like it to be. ERH currently blends softened water with hard water prior to being stored in the water tower. Softening of all the water would result in the water being too soft and corrosive on clothes, water heaters, and water pipes. ERH will change their blending so that they are putting in more soft water than hard water in an effort to bring the overall average water softness down for the residents.

Some of our other concerns are whether or not ERH could find a control mechanism that could be placed on wells #2 and #3 and control the amount of water from each well so that we could use both of those wells at the same time. While these are only backups to our main well #1, if we have to run these wells in the future, we need to make sure we can run both simultaneously so we can produce enough water to serve the community if the main well goes down. LIA will work with Cleary Equipment to research acquisition of an adequate control system for this purpose.

The pump on the main well #1 was oversized and at one time was pushing more water than needed at the water plant. This could cause hydraulic overload of the filters and softeners. ERH is checking the size of the replacement pump and will work with Stoddard an Illinois company that does well work in an effort to determine if the new pump is adequate or needs to be metered to reduce the water flow.

LIA also recognized that the US EPA is considering implementation of new drinking water standards for PFAs and is trying to determine if we can test for PFAs in our water and how this new requirement might affect us. ERH will check with PDC, Pace, and/or Hawkins to see if any of these firms do testing for PFAs.