



PUBLIC SERVICES AREA

MEMORANDUM

TO: City Administrator and Council

FROM: Craig Hupy, Public Services Area Administrator

DATE: December 10, 2018

SUBJECT: PFAS Update

Background

Per- and polyfluoroalkyl substances (PFAS) are a group of chemicals that have been classified by the U.S. Environmental Protection Agency (EPA) as an emerging contaminant nationwide. PFAS have been around since the 1950s, but little was known about their effects until the early 2000s, when scientists began releasing data on PFAS health impacts and persistence in the environment. For decades, they have been and are still used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating. PFAS chemicals are persistent, which means they do not break down in the environment. They also bioaccumulate, meaning the amount builds up over time in the blood and organs.

The EPA has established a health advisory level (HAL) for two of the PFAS, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), of 70 parts per trillion (ppt). PFOS was first detected in the City of Ann Arbor's drinking water in 2014, and the Huron River has been identified as the source of the PFAS. In 2018 to-date, the average PFOS+PFOA concentration in the City's drinking water was 7 ppt, significantly below the 70 ppt HAL.

More than 4,000 chemicals are classified as PFAS, but current analytical methods are only able to detect 24 of these compounds, including PFOS and PFOA. The contract lab that the City uses currently measures 21 of these compounds but expects to report a total of 24 compounds in the next few months. Researchers are currently studying potential health impacts of several PFAS, but limited health impact data exists and no regulatory guidance is available for these additional compounds. The State of Michigan

has taken a conservative approach and is totalizing the concentration for 21, and soon to be 24, PFAS chemicals, for which analytical techniques exist. In 2018 to-date, the average totalized PFAS concentration in the City’s drinking water is 40 ppt. Since there is no HAL for these additional PFAS chemicals, it is not possible to compare this concentration to an acceptable exposure level.

Since 2014, the City has continued to monitor for PFAS and to proactively study alternative treatment techniques with the potential for further reducing PFAS in the drinking water. The City currently operates granular activated carbon (GAC) filters, which are the best available technology for PFAS removal. In 2017, the City piloted a new type of GAC, which was shown to further reduce PFAS concentrations. In the fall of 2018, City Council approved additional funding to replace the GAC in all of the filters with this new media to proactively reduce PFAS concentrations in the City’s drinking water.

Update

In November 2018, the City received PFAS sample results from October 9, 2018. The table below presents the results from the September and October 2018 samples. The results indicate that the PFAS concentrations in the Huron River increased significantly between the September and October sampling dates, which resulted in increased concentrations in the City’s drinking water. The PFOS+PFOA concentration in the finished water, at 22 ppt, was still well below the EPA’s HAL of 70 ppt. Historical data shows that concentrations in the Huron River do fluctuate over time, and these fluctuations can impact PFAS levels in the City’s drinking water. The City is currently awaiting results from the November and December 2018 samples. Until these results are received, it is impossible to know if this increase is part of a trend or a short-term spike in PFAS concentrations in the Huron River.

Sample Date	Huron River at Barton Pond Water Intake		Ann Arbor Drinking Water	
	<i>PFOS+PFOA (ppt)</i>	<i>Total PFAS (ppt)</i>	<i>PFOS+PFOA (ppt)</i>	<i>Total PFAS (ppt)</i>
9/4/2018	11.7	64.1	5.3	53.2
10/9/2018	50.5	119.6	22	88.1

Next Steps

The samples from 10/9/2018 were taken before the first round of GAC replacement with the new filter media. From October 29 through November 2, 2018, six of the City’s filters were replaced with the new GAC. The City expects that these new filters will improve PFAS removal beyond what has previously been achieved. Additionally, the City is currently collecting data and working on optimizing its filter management strategy to achieve improved PFAS removal with the mixture of new GAC and older-GAC filters.

The City has proactively reached out to the Michigan Department of Environmental Quality (MDEQ) regarding these results. The MDEQ is conducting ongoing sampling along the Huron River and is actively working to identify sources of PFAS in the Huron River watershed. In the fall of 2018, MDEQ identified one major source of PFAS to the Huron River: TriBar Manufacturing, which sends wastewater to the Wixom Wastewater Treatment Plant (WWTP), where the water is treated and discharged to a tributary to the Huron River. Since its identification as a significant source of PFAS to the Huron River, TriBar has added GAC treatment to remove PFAS from its wastewater, and it is anticipated that PFAS concentrations in the Wixom WWTP discharge to the Huron River will begin to decrease as a result.

The City, in partnership with North Carolina State, was awarded a grant by The Water Research Foundation, to continue to study and refine techniques to remove other PFAS compounds from drinking water. The City of Ann Arbor has a pilot plant that it will use to test different types of filter media in different configurations to evaluate their success at removing these emerging contaminants. This project, which will commence in mid-2019, is projected to last two years.

The City's approach to addressing PFAS contamination in the drinking water supply is multi-pronged, focusing on source detection and removal as well as treatment. As technologies for detection and treatment of these chemicals are rapidly developing and anticipated future regulation remains uncertain, Ann Arbor has been progressive in its approach to protecting public health. Many systems are waiting to take action until treatment technologies are vetted and regulations are in place. The City of Ann Arbor has decided to act first, yet remain flexible in its treatment approach, while the scientific community continues to learn about the health impacts and to develop best practices for managing these "forever chemicals".