



Perfluoroalkyl Substances Found in Fish from Kimberly Lake

Updated February 27 2019

Background

- Perfluoroalkyl substances (PFAS) have been used worldwide for decades, and recent environmental sampling efforts have identified groundwater contamination in several communities in Alaska (see the references below for more information about PFAS).
- In 2018, the Alaska Department of Environmental Conservation (DEC) tested groundwater wells downgradient from the former North Pole Refinery property for PFAS. The test results revealed the presence of a PFAS plume in groundwater at levels of potential concern for human health. The plume is thought to be the result of historical use of aqueous film forming foams (AFFF) on the former refinery property.
- Since groundwater in the area flows to the northwest, toward Kimberly Lake, DEC sent water samples from the lake to a commercial laboratory for analysis. Laboratory results confirmed the presence of elevated levels of several types of PFAS compounds, the majority of which were PFOS and PFNA.
- Three rainbow trout from Kimberly Lake were collected and submitted to a commercial laboratory for PFAS analysis. All three fish were found to contain elevated levels of PFOS and PFNA. Results of Kimberly Lake fish tissue testing are available at the following DEC website:
<https://dec.alaska.gov/spar/csp/sites/north-pole-refinery.aspx>
- Both PFOS and PFNA are known to bioaccumulate in fish, which can create a route of human exposure through fish consumption.

Interim Recommendations

- Because the health effects of PFAS contamination are not yet well understood, federal health officials and most states do not currently have fish consumption guidance for PFAS chemicals. However, the U.S. Environmental Protection Agency ([EPA](#)) has developed a reference dose ([RfD](#)) for PFOS and the federal Agency for Toxic Substances and Disease Registry ([ATSDR](#)) has developed a Minimum Risk Level ([MRL](#)) for PFOS and PFNA.
- Both the RfD and the MRL are intended to provide an estimate of the amount of a chemical a person can eat, drink, or breathe each day without a detectable increase in the risk of non-cancerous health effects in chronic exposure scenarios.
- Based on the limited available data, consumption of fish from Kimberly Lake could result in exposure to PFOS and PFNA at levels that exceed EPA's RfD and ATSDR's MRL, depending on the amount and frequency of consumption.

- It is important to note that just because someone is exposed to a chemical in concentrations above the RfD or MRL, it does not necessarily mean that health problems will occur. The likelihood of developing health problems related to PFAS exposure is dependent on many factors, including the frequency and amount of exposure, and the person's underlying health status. More information on EPA's RfD is available [here](#); more information on ATSDR's MRL is available [here](#).
- Several states (e.g., Michigan, Minnesota, New Jersey, West Virginia, and Wisconsin) have issued their own fish consumption guidelines, based in part on the EPA and ATSDR recommendations.
- Alaska has not yet developed PFAS fish consumption guidance of its own. However, based on the potential risk to health that may be associated with exceeding ATSDR's MRL and EPA's RfD over a sustained period of time (given the levels of PFAS found in the three fish tested from Kimberly Lake), and the fish consumption advice issued by other states, restrictions on consumption of fish from Kimberly Lake are warranted until more data are available.
- Therefore, out of an abundance of caution, the State of Alaska advises the following until further notice:
 - Do not consume fish from Kimberly Lake
 - Do not consume lake water from Kimberly Lake
 - Do not provide water from Kimberly Lake to your pets.
- It is considered safe to use Kimberly Lake for recreational purposes, like swimming and catch and release fishing, as long as large amounts of water are not ingested. This is because PFAS chemicals are not well absorbed across the skin in humans.

Additional Information

- DEC PFAS website: <https://dec.alaska.gov/spar/csp/pfas-contaminants>
- DHSS PFAS fact sheet: <http://dhss.alaska.gov/dph/Epi/eph/Documents/PFCs/PFAS%20FAQ%20011719.pdf>
- ATSDR PFAS website: <https://www.atsdr.cdc.gov/pfas/>
- EPA PFAS website: <https://www.epa.gov/pfas>
 - On February 14, 2019, EPA announced its new PFAS Action Plan, which includes developing a Maximum Contaminant Level (MCL) for PFOS and PFOA in drinking water. The Action Plan is available [here](#).