



PFAS Study in North Pole Area Water

March 2019

The finding of PFAS, or per- and polyfluoroalkyl substances, in drinking water has drawn attention nationwide, statewide and locally in the Fairbanks area. In Alaska, PFAS in the environment are often linked to the use of certain foams used in firefighting or fire training activities.

PFAS are man-made chemicals used in industry and consumer products worldwide since the 1950s. These chemicals resist heat, oil, water, and stains. They are used in firefighting foams and in many everyday products such as non-stick cookware and water- and stain-repellent fabrics. PFAS do not easily break down in the environment, and they travel rapidly to groundwater where they can spread. Concerns have emerged about possible health impacts of PFAS, and further studies are needed.

In August 2018, the Department of Environmental Conservation (DEC) set action levels for six PFAS in drinking water supplies. In February 2019, the U.S. Environmental Protection Agency (EPA) released their PFAS Action Plan.

For more information on PFAS, DEC's 2018 action levels and EPA's recent PFAS Action Plan, please visit DEC's website: dec.alaska.gov/spar/csp/pfas-contaminants

PFAS Sampling

In summer 2018, DEC used the existing sulfolane monitoring program to sample North Pole groundwater for PFAS. DEC tested for PFAS in a small number of private water wells and wells used for monitoring sulfolane.

DEC collected more PFAS samples in late fall/early winter 2018. Water from other water wells and surface water – including Kimberly Lake and Badger Slough – was tested for PFAS. Hydrologists chose the test locations to look for PFAS across a wide range of groundwater conditions over an approximate six square mile area in the direction of groundwater flow north and northwest of the former North Pole Refinery.

DEC is aware that fire-fighting foams containing PFAS were used in the past on the former refinery property. The goal of the 2018 monitoring was to look for PFAS off the refinery. PFAS is not related to sulfolane, except that both chemicals were used on the former refinery.

People in the area sampled have already been provided alternate drinking water supplies or point

Drinking Water Well Results

Water treatment systems used for sulfolane removal are removing PFAS to below DEC action levels.

of entry (POE) water treatment systems for sulfolane removal.

For the PFAS sampling DEC selected:

- **35 water wells, 20 of which had POE treatment systems, and**
- **42 groundwater monitoring wells.**

From each well with a POE treatment system, DEC took two samples: one untreated and the other after treatment. DEC took one sample from each of the other wells.

Drinking Water Well Results

POE treatment systems are removing PFAS to below DEC action levels.

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(Drinking Water Well Results, continued)

- **Untreated** sample results show a PFAS plume, or area of contamination. Some results were above the DEC action level.
- **Samples collected after treatment by POE systems show PFAS below the DEC action levels.**
 - PFAS results were far below DEC's action level in all 20 treated water samples tested.

Groundwater Monitoring Well Results

There is a **PFAS plume to the north-northwest of the former North Pole Refinery.**

- 19 of the monitoring well and untreated water well results were above DEC action levels.
- 58 of the monitoring well and untreated water well sample results were below the action levels.

Surface Water Results

- PFAS are present above DEC's action level in the water sample from Kimberly Lake. Kimberly Lake

is located to the northwest of the former North Pole Refinery, in the direction of the groundwater flow.

- PFAS are present at low levels, below DEC's action level, in samples collected from Badger Slough at the Repp Road, Plack Road, and Hurst Road culverts.

Next Steps

- DEC is working with parties responsible for the contamination to further define the PFAS plume off the former North Pole Refinery property.
- Possible other sources of PFAS in the area are being explored.

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To learn more, visit:

DEC - Former NPR website:

dec.alaska.gov/spar/csp/sites/north-pole-refinery.aspx

DEC PFAS website:

dec.alaska.gov/spar/csp/pfas-contaminants/

DHSS PFAS website:

dhss.alaska.gov/dph/Epi/eph/Pages/PFAS.aspx

The PFAS testing locations and results are shown on this map. Circles represent approximate sample locations.

