ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM
and
DIVISION OF ENVIRONMENTAL HEALTH
DRINKING WATER PROGRAM
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Technical Memorandum

Action Levels for PFAS in Water and
Guidance on Sampling Groundwater and Drinking Water

Purpose

This document was prepared by the Alaska Department of Environmental Conservation (DEC or "department") to provide clear, consistent guidance on responding to Per- and Polyfluoroalkyl Substances (PFAS) in groundwater and surface water, and to establish health-based action levels for drinking water.

This Technical Memorandum replaces the August 20, 2018 (and April 9, 2019 amendment) Technical Memorandum. PFAS is an emerging issue and DEC policy is being updated to reflect new information. The science on PFAS is evolving and state policy may change in the future to take new toxicity information or federal policies into account.

Background and Basis for Guidance

To ensure public drinking water is safe for consumption, Alaska relies on and adopts the U.S. Environmental Protection Agency's (EPA's) drinking water maximum contaminant levels (MCLs), rather than establishing state specific MCLs.

The EPA has not yet established MCLs for PFAS. However, in 2009 the EPA published Provisional Health Advisory Levels of 0.4 µg/L perfluorooctanoic acid (PFOA) and 0.2 µg/L perfluorooctane sulfonate (PFOS), and recommended people not drink water containing higher levels of these compounds.

In 2012, EPA published the third Unregulated Contaminant Monitoring Rule (UCMR3) under the Safe Drinking Water Act (SDWA). The rule required a subset of public drinking water systems to monitor for thirty unregulated contaminants including six PFAS compounds [PFOS, PFOA, perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), perfluorohepatanoic acid (PFHpA) and perfluorobutane sulfonate (PFBS)] between 2013 and 2015. PFAS have since been found in many public and private water supplies across the country.

In 2016, EPA published lifetime health advisories (LHAs) under the SDWA for two PFAS, specifically PFOS and PFOA. These LHAs were created to assist state and local officials and drinking water system operators, in evaluating risks from these contaminants in drinking water, so they can take appropriate action to protect residents. **The EPA recommends people not drink**

water containing a total concentration of PFOS+PFOA above 0.07 µg/L (70 parts per trillion).

The EPA LHA levels assume an adult body weight of 80 kilograms and a daily drinking water intake rate of 4.32 liters for a nursing mother. In addition, each LHA level incorporates a relative source contribution (RSC) that assumes 20% of the exposure to PFOS and PFOA is from drinking contaminated water and the remaining 80% is from exposure from other sources (e.g. consuming contaminated food, contact with household products, and occupational exposure).

In November 2016, the department promulgated groundwater cleanup levels for two of the UCMR3 compounds -- PFOS and PFOA -- that incorporated the published EPA LHA reference dose (RfD).[1] Groundwater cleanup levels for contaminants regulated by the department are calculated using a risk-based approach that does not include an RSC factor.

In June 2018, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a draft Toxicological Profile for Perfluoroalkyls for public review and comment, which has not yet been finalized.

On August 20, 2018 DEC issued a Technical Memorandum that established PFAS Action Levels for groundwater and surface water used as drinking water. A 0.07 µg/L action level was set for the sum of the following five (5) PFAS chemicals: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), and perfluoroheptanoic acid (PFHpA). A separate action level for the shorter-chain, perfluorobutane sulfonate (PFBS) was set at 2.0 µg/L.

On February 14, 2019 EPA published a PFAS Action Plan. This plan includes a commitment to propose a national drinking water regulatory determination for PFOA and PFOS for public comment in 2019 – this is a critical step under the Safe Drinking Water Act for EPA to determine whether it will establish MCLs. EPA also proposed to finalize toxicity assessments for five other PFAS.[2]

Action Levels

In order to align state actions to the recently announced EPA plans, DEC will use the EPA LHA (PFOS+PFOA above 0.07 µg/L) as the Action Level.

Guidance

Any new testing for PFAS will report the full suite of PFAS compounds analyzed by the appropriate EPA Method.

At a contaminated site where a release of PFAS has been documented, a responsible party shall develop a work plan to:

[1] See 18 AAC 75.345(b), Table C

[2] For more on the EPA's PFAS action plan, see: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

- characterize the nature and extent of contamination in groundwater including, if appropriate, surface water and pore water if contaminated groundwater is discharging to surface water, using approved analytical methods and PFOS and PFOA results, following the ITRC sampling guidance for PFAS[3]
- conduct a water well survey to identify wells that may be impacted; and
- sample potentially impacted drinking water supplies, both public and private, using approved analytical methods to determine the extent of impacts.

Where drinking water contamination is likely, water well surveys and drinking water sampling should be conducted as soon as feasible. Where drinking water sources or water supply wells are affected, the responsible party shall:

- provide an alternative drinking water source to all properties where drinking water has been impacted above the action levels described above;
- work with owners of all water supply wells containing PFAS concentrations above the action levels as soon as feasible to:
    - ensure all water pumped and discharged is treated to concentrations below the action levels;[4]
    - disconnect the wells (disconnect power, cap water line, and label) and take them out of use; or
    - permanently decommission the wells.

Regulatory Authority

18 AAC 75.325(d): "A responsible person shall investigate, contain, and perform a cleanup of a discharge or release of a hazardous substance…"

18 AAC 75.325(f)(1)(D): "A responsible person shall to the maximum extent practicable, …prevent, eliminate, or minimize potential adverse impacts to human health, safety, and welfare, and to the environment, onsite and offsite, from any hazardous substance remaining at the site."

18 AAC 75.990(17): Cleanup is defined to include "efforts to mitigate environmental damage or a threat to human health, safety, or welfare resulting from a hazardous substance, and includes . . . measures that are necessary to mitigate or avoid further threat to human health, safety, or welfare."

18 AAC 75.345(d): "Where the department determines that toxicity information is insufficient to establish a cleanup level for a hazardous substance or a pollutant that ensures protection of human health, safety, and welfare, and of the environment, the department may require a responsible person to provide an alternative source of drinking water for the affected parties or implement other

[3] ITRC 2018. Site Characterization Considerations, Sampling Precautions, and Laboratory Analytical Methods for Per- and Polyfluoroalkyl Substances (PFAS).

[4] Excavation dewatering and other discharges may be permitted on a case-by-case basis under an excavation dewatering permit, DEC work plan, or other DEC authorized permit, and may involve limited or controlled discharge locations and/or heightened monitoring requirements.

institutional controls under 18 AAC 75.375 until a cleanup level is established under (b)(2), (3), or (4) of this section."

18 AAC 75.345(c): "The department will set a more stringent cleanup level than the applicable level under (b) of this section, if the department determines that a more stringent cleanup level is necessary to ensure protection of human health, safety, or welfare, or of the environment, and based on actual onsite and actual or likely offsite uses of the groundwater that are likely to be affected by the hazardous substance. In making a determination under this subsection, the department may consider:

(2) the presence of sensitive subpopulations who respond biologically to lower levels of exposure to a hazardous substance…

(5) a health advisory value developed by EPA's Office of Water…"

18 AAC 80.005(a): "The purpose of this chapter is to protect public health and safety by establishing…

(2) contaminant monitoring requirements for drinking water provided by a public water system."

18 AAC 80.015(a): "A person may not

(1) cause pollution or contamination to enter a public water system; or

(2) create or maintain a condition that has a significant potential to cause or allow the pollution or contamination of a public water system."

The department may revise this memorandum as new information becomes available.

For more information or additional questions, please contact: John Halverson at (907) 269-7545.