



# Why Is the Navy Sampling for PFOS and PFOA?

Additional information can be found online at [www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact [PAO\\_feedback@navy.mil](mailto:PAO_feedback@navy.mil) (email) or 360-396-1030 (voicemail)

- The Navy used AFFF, a source of PFAS, for firefighting.
- The EPA established a lifetime health advisory (70 ppt) for two PFAS, specifically PFOS and PFOA, in drinking and cooking water.
- Navy policy is to identify and prioritize locations with the potential for exposure to PFOS and/or PFOA.
- The Navy has tested and continues to test for PFOS and PFOA in drinking water to eliminate unacceptable exposure and protect human health.



**The Navy is being proactive by identifying exposure to PFAS in Imikpuk Lake water.**

**The Navy is taking responsibility for our known prior PFAS releases.**

AFFF aqueous film forming foam  
EPA U.S. Environmental Protection Agency  
LHA lifetime health advisory  
NARL Naval Arctic Research Laboratory

PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid  
PFOS perfluorooctane sulfonate  
ppt parts per trillion



# Water Sampling at Imikpuk Lake

Additional information can be found online at  
[www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

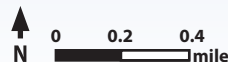
For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
[PAO\\_feedback@navy.mil](mailto:PAO_feedback@navy.mil) (email) or 360-396-1030 (voicemail)



## LEGEND

- Site Boundary (suspected source)
- Site 5 - 1-mile zone
- Navy Property Boundary



## Imikpuk Lake Water Investigation

The Navy has conducted water sampling at Imikpuk Lake located near Site 5 (Airstrip Site) at the Naval Arctic Research Laboratory (NARL) near Utqiagvik (Barrow).

- AFFF was used at Site 5 to suppress the potential for fires from petroleum spills. Active zone water migration and snow melt runoff are toward Imikpuk Lake.
- Imikpuk Lake used to be the primary drinking water source for the Ukpeagvik Inupiat Corporation-NARL (UIC-NARL) facility. The UIC-NARL facility currently obtains drinking water from the Isatkoak Reservoir, the City of Utqiagvik's drinking water source.
- Imikpuk Lake has periodically been used as an alternate drinking water source by elders and local hunters; therefore, the Navy collected samples for PFOS and PFOA to determine if the community has been exposed at concentrations above the EPA LHA.

AFFF	aqueous film forming foam	PFAS	per- and polyfluoroalkyl substances
EPA	U.S. Environmental Protection Agency	PFOA	perfluorooctanoic acid
LHA	lifetime health advisory	PFOS	perfluorooctane sulfonate
NARL	Naval Arctic Research Laboratory	ppt	parts per trillion





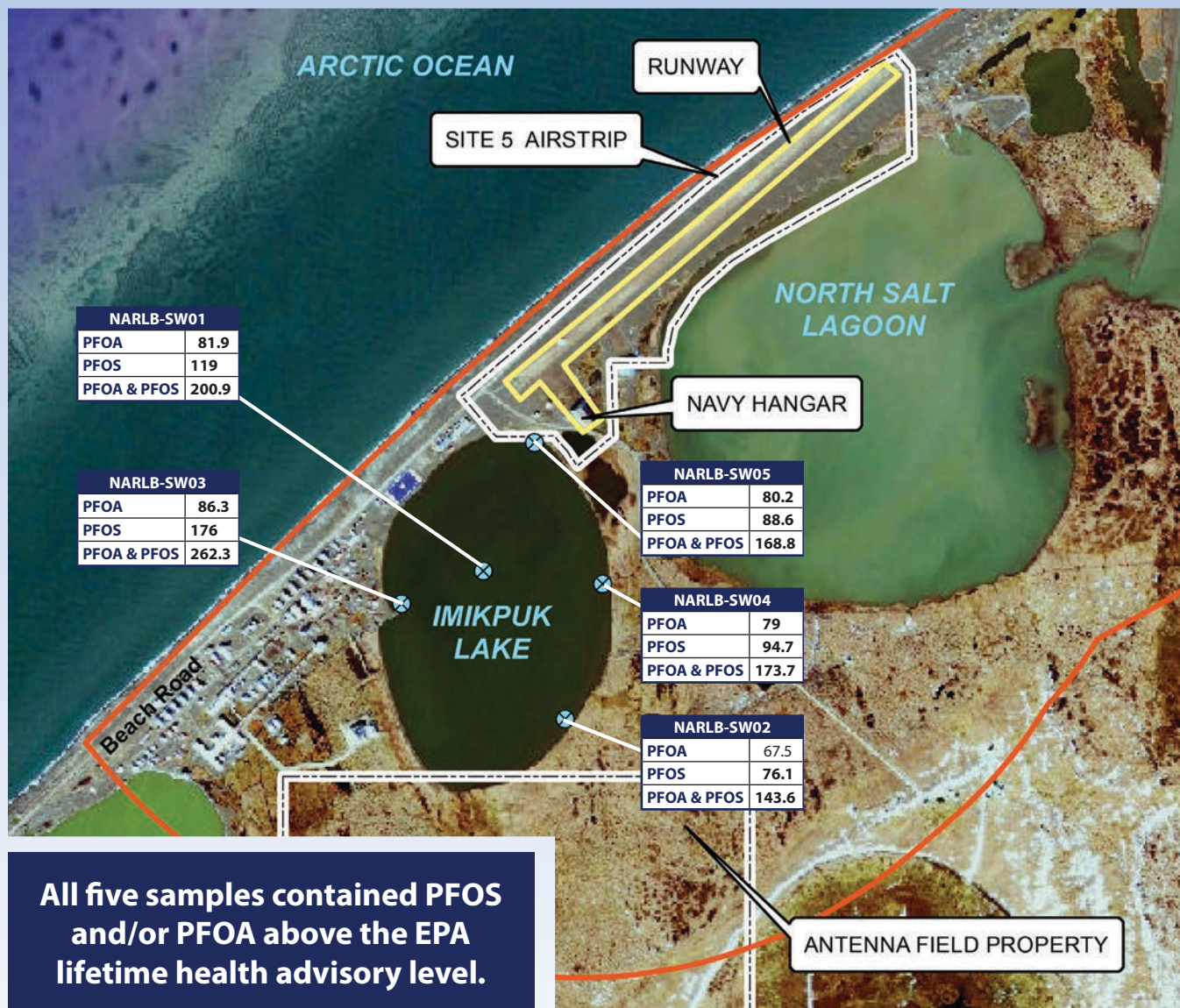
# Water Sampling at Imikpuke Lake

Additional information can be found online at [www.secnv.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnv.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact [PAO\\_feedback@navy.mil](mailto:PAO_feedback@navy.mil) (email) or 360-396-1030 (voicemail)

**Based on these results, it is not recommended to use Imikpuke Lake as a drinking or cooking water source at this time.**



**All five samples contained PFOS and/or PFOA above the EPA lifetime health advisory level.**

## LEGEND

- Site Boundary (suspected source)
- Site 5 – 1-mile zone
- Navy Property Boundary

## Notes:

All concentrations are reported in parts per trillion.  
**Bold** indicates a PFOS and/or PFOA concentration above the EPA LHA of 70 ppt combined.



0 0.2 0.4 mile

AFFF aqueous film forming foam  
EPA U.S. Environmental Protection Agency  
LHA lifetime health advisory

NARL Naval Arctic Research Laboratory  
PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid

PFOS perfluorooctane sulfonate  
ppt parts per trillion





# Area Water Sources

Additional information can be found online at  
[www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
PAO\_feedback@navy.mil (email) or 360-396-1030 (voicemail)

## PFOS and PFOA were not detected in BUECI distribution water.



### LEGEND

- Site Boundary (suspected source)
- Site 5 - 1-mile zone
- Navy Property Boundary



0 0.4 0.8  
mile

AFFF aqueous film forming foam  
EPA U.S. Environmental Protection Agency  
LHA lifetime health advisory

NARL Naval Arctic Research Laboratory  
PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid

PFOS perfluorooctane sulfonate  
ppt parts per trillion



# Per- and Polyfluoroalkyl Substances (PFAS)

Additional information can be found online at  
[www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
PAO\_feedback@navy.mil (email) or 360-396-1030 (voicemail)

## Where Do PFAS Come From?

- Manufactured compounds, no natural occurrence
- Used since 1950s in many products
- Last a long time in the environment
- Globally distributed and detected in people, wildlife, and fish



AFFF



stain-resistant carpets



water-repelling fabrics



paints and stains



nonstick cookware



food packaging

## What Is the EPA Health Advisory for PFOS and PFOA?

- Sets a concentration of 70 ppt in drinking water
- Protects against adverse health effects to sensitive populations and the general public, even for lifetime exposure
- Compares the total concentration of both PFOS and PFOA found to the 70 ppt advisory
- Provides information to state agencies and public health officials on health effects and treatment so they can take steps to reduce exposures
- Is non-enforceable

## How Is the EPA Health Advisory Calculated?

- Based on studies of health effects with PFOS and PFOA in laboratory animals
- Considers information regarding health effects of people exposed to PFOS and PFOA
- Protects sensitive populations including the fetuses or nursing infants of mothers who are exposed
- Assumes 20 percent of overall exposure is from drinking water, 80 percent of exposures is from other sources

AFFF aqueous film forming foam  
ATSDR Agency for Toxic Substances and Disease Registry

CDC Centers for Disease Control and Prevention

EPA U.S. Environmental Protection Agency

LHA lifetime health advisory  
NARL Naval Arctic Research Laboratory  
PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid  
PFOS perfluorooctane sulfonate  
ppt parts per trillion



# Exposure and Health Effects

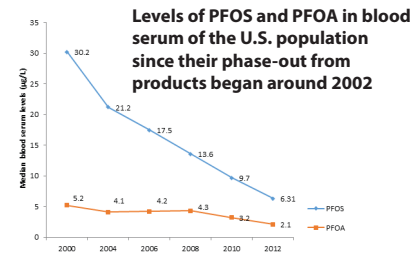
Additional information can be found online at  
[www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
PAO\_feedback@navy.mil (email) or 360-396-1030 (voicemail)

## PFAS in People

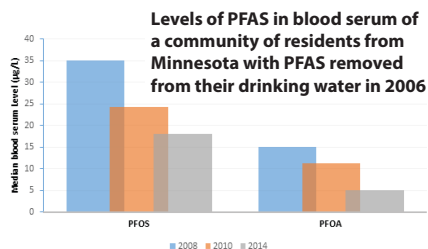
- CDC monitoring estimates that most people in the U.S. have PFAS in their bodies.
- Levels of PFOS and PFOA are going down over time following their phase-out from use.
- Some PFAS stay in the body a long time – there is no recommended medical treatment to reduce PFAS in the body.



Source: CDC National Health and Nutrition Examination Survey)

## Exposures to PFAS

- Appear to be widespread across the globe
- Are primarily through
  - Ingestion of contaminated food, water, or soil
  - Breathing air that contains contaminated dust from carpets, upholstery, clothing, etc.
- Will build up in the body until exposure stops
- Reach the fetuses or nursing infants of mothers who are exposed
- Are not significant through skin contact when bathing or showering



Source: Minnesota Department of Health.  
Available from: <http://www.health.state.mn.us/divs/hpcd/tracking/biomonitoring/projects/emetro-landing.html>

## How To Reduce Exposure

- If water contains PFOS and PFOA above the health advisory level, you can reduce exposure by using a different water source for drinking, cooking, and brushing teeth.
- Use certified granular activated carbon or high-pressure membrane systems, such as reverse osmosis, to filter water. These treatment systems require ongoing maintenance.

## Health Effects

- Based on limited evidence from studies with people, the potential health effects include:
  - Increased cholesterol levels
  - Changes in growth, learning, and behavior of the developing fetus and child
  - Immune system changes
  - Decreased fertility
  - Altered thyroid function
  - Increased the risk of certain types of cancer
- Animals given large doses exhibit developmental, reproductive, and liver effects, along with increased rates of cancer.
- The levels of PFOS or PFOA in drinking water do not predict what, if any, health impact might occur as a result of exposure.
- More research is needed to confirm or rule out possible links between exposure and health effects.

## Should I Have My Blood Tested?

ATSDR and CDC understand and acknowledge that you may want to know the level of PFAS in your body. However, there are some limitations with blood tests to consider:

- Test results will not provide clear answers for existing or possible health effects.
- Blood testing for PFAS is not a routine test that health care providers offer.
- Consult with your doctor for more information.

AFFF aqueous film forming foam  
ATSDR Agency for Toxic Substances and Disease Registry

CDC Centers for Disease Control and Prevention

EPA U.S. Environmental Protection Agency

LHA lifetime health advisory  
NARL Naval Arctic Research Laboratory  
PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid  
PFOS perfluorooctane sulfonate  
ppt parts per trillion





# Next Steps

Additional information can be found online at  
[www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
[PAO\\_feedback@navy.mil](mailto:PAO_feedback@navy.mil) (email) or 360-396-1030 (voicemail)

## Imikpuk Lake Surface Water Sampling Activities

Imikpuk Lake Sampling  
and Analysis  
July 2017

Notify Local Leadership  
and Community of Imikpuk  
Lake Sampling Results  
August 2017

Sampling Results  
Open House Public Meeting  
September 14, 2017

WE ARE HERE



JULY

AUGUST

SEPTEMBER

### We Will Continue To...

- **Keep the community informed of the upcoming investigation.**
- Communicate with residents through local newspapers, radio, television, websites, emails, the Restoration Advisory Board, and applicable Facebook pages.
- Monitor the science and regulations related to PFAS.
- Partner with local, state, and federal environmental and health agencies to determine the best path forward.

**Keep informed by participating in  
the Restoration Advisory Board!**

### We Need Your Help To...

- Understand how you use the water from Imikpuk Lake.
- Understand prior discharges of AFFF.

**Based on the recent sampling  
results, it is not recommended to  
use Imikpuk Lake as a drinking or  
cooking water source at this time.**

AFFF aqueous film forming foam  
EPA U.S. Environmental Protection Agency  
LHA lifetime health advisory  
NARL Naval Arctic Research Laboratory

PFAS per- and polyfluoroalkyl substances  
PFOA perfluorooctanoic acid  
PFOS perfluorooctane sulfonate  
ppt parts per trillion



# Email and Mail Distribution List

Additional information can be found online at  
[www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit  
<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact  
[PAO\\_feedback@navy.mil](mailto:PAO_feedback@navy.mil) (email) or 360-396-1030 (voicemail)

**Sign up here to  
Receive Restoration Advisory  
Board email updates  
Receive a survey about your  
water usage at Imikpuk Lake**