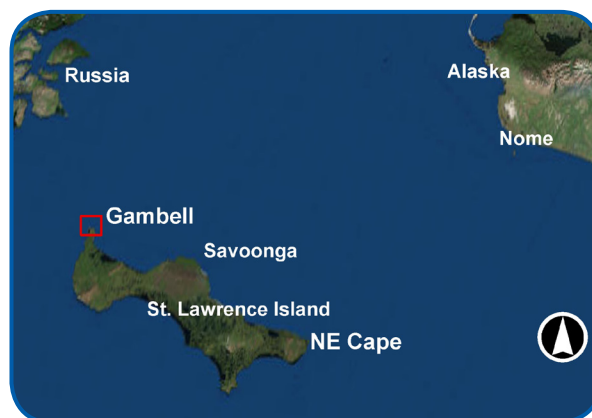


Health Consultation Summary

Gambell, St. Lawrence Island, Alaska

Potential health impacts of exposures to chemicals from the Formerly Used Defense Site (FUDS) at Gambell

The Native Village of Savoonga asked the Agency for Toxic Substances and Disease Registry (ATSDR) to evaluate the possible health effects from two formerly used defense sites (FUDS) on St. Lawrence Island. This summary focuses on ATSDR's findings of the former military surveillance and communication station at Gambell. The military operated at Gambell from 1948 to 1960.



What are the community concerns?

ATSDR started meeting with groups and individuals on St. Lawrence Island in 2010 to learn their concerns. ATSDR visited Gambell five times to meet with Tribal Council members and village residents. The concerns we learned about guided our investigation. We heard concerns about the following:

- Cancer and birth defects
- Safety of eating subsistence foods
- Buried military debris that surfaces after freeze-thaw periods
- The effect of military spills of hazardous substances such as fuel, waste oil, and cleaning solvents on the ground, groundwater, and air inside homes
- Safety of Troutman Lake and Nayvaghaq Lake

What did ATSDR do?

ATSDR listened to the Tribal Council and village residents. We also looked at information including:

- Groundwater test results from the U.S. Army Corps of Engineers
- Public drinking water data from the Alaska Department of Environmental Conservation's (ADEC) Drinking Water Program
- Hydrology (study of groundwater) report by the ADEC Village Safe Water Program and U.S. Geological Survey
- Soil and gravel data from the U.S. Army Corps of Engineers
- Soil and gravel data from the Native American Lands Environmental Mitigation Program
- Number and types of cancers and cancer deaths in Gambell recorded in the state cancer registry, Alaska Department of Health and Social Services (ADHSS)
- Preliminary birth defects analysis for Gambell and Savoonga by ADHSS using the state birth defects registry

Persistent organic pollutants (chemicals that build up in the food supply) were not found in the environment at the Gambell site, and thus ATSDR did not analyze subsistence foods such as fish or marine mammal data.



Gambell village on a clear day

What did ATSDR find?

Our investigation revealed seven findings, but only one presents a health hazard at this time.

Health hazard

1. Contact with metal debris can cause injury.

Adults and children might be injured by coming in contact with buried metal debris that rises to the surface after freeze-thaw events.

What can be done? ATSDR recommends the following:

Village residents inspect North Beach and areas of former military activity after spring thaw and report any finds to the city and or Tribe for removal.

City and Tribe agencies continue to provide hazard awareness education about surfacing metal debris.

No health hazard

2. There is not enough contact with site contaminants to suggest that exposures are contributing to cancer and birth defects rates.

ATSDR worked with the Alaska Department of Health and Social Services to review the cancer and birth defects registries data for Gambell and Savoonga. Cancer and birth defect rates are similar to rates in other Native Alaskan communities in the southwest region of Alaska. (See call out boxes)

- The number and type of cancer cases in Gambell and Savoonga are what we would expect to see in these communities.
- The types of cancers in Gambell are not the types of cancer related to the chemicals found in the Gambell environment.
- It is difficult to say if the number of birth defects seen in Gambell and Savoonga are what we would expect to see; the rates appear similar.

Box 1. General cancer information

Cancer is a general name for more than 100 diseases. All cancers start because abnormal cells grow out of control. But *why* they grow out of control is something we don't always know. Different cancer types have different causes. One in two men will develop some type of cancer in their lifetime; one in three women will.

According to the [American Indian Cancer Foundation](#), people can do things like these to prevent cancer or find it early:

- Get recommended cancer screenings
- Get recommended vaccines to lower cancer risk
- Avoid tobacco, limit alcohol, eat fruits and vegetables, keep a healthy weight, be physically active

Box 2. General information on birth defects

About one in every 33 babies is born with a birth defect.

For most birth defects, we think they are caused by a mix of factors, but we don't fully understand how these factors might work together to cause birth defects.

These factors include our genes (biological traits from our parents), our behaviors, and things in the environment.

A woman can do things like these before and during pregnancy to increase her chance of having a healthy baby. She can

- See a health provider regularly
- Take a multi-vitamin every day
- Not drink alcohol, smoke, or use street drugs
- Talk with a health provider about any medications she is taking

No health hazard (continued)

3. Chemicals from past military use have not been found in the public drinking water.

The City of Gambell routinely tests the public drinking water system to ensure its safety. Left over military chemicals, including fuels and polychlorinated biphenyls (PCBs) have not been found in the drinking water system.

What can be done?

Residents can continue to use this safe source for drinking water instead of using lake water or ice for drinking or cooking. The City should continue routine testing.

4. Chemicals from past military use in soil and ground water have not been found entering into homes or buildings.

Soil and groundwater samples collected after cleanup did not contain chemicals or vapors at levels that could seep into homes and buildings.

What can residents do?

Residents can take simple actions to prevent spilled fuel vapors from getting into heated buildings. Place fuel oil tanks in a tray to capture spills and prevent vapors from intruding into heated buildings. Inspect these containers monthly.

5. Contact with surface soil and gravel is not expected to be harmful.

Military chemicals spilled on the ground surface in the past would not likely remain on the surface for long. There are no fine soil particles or organic material to trap chemicals. The moist climate causes spilled chemicals to move from the surface.

Not enough information

6. Safety of activities at Troutman and Nayvaghq Lakes is uncertain.

Too few water samples have been taken from Troutman and Nayvaghq Lakes. We don't know whether drinking melted ice or water from the lakes or using the lakes for recreation could harm people's health. Some metal debris and ordnance from nearby disposal areas may still be present in the lakes.

If present, chemicals or debris can harm people using the lakes.

What can be done?

Before these lakes can be used safely for drinking water and recreation, we recommend that Alaska Department of Environmental Conservation conduct additional water quality testing. We also recommend water treatment to make the water drinkable.

To reduce the risk of injury from contact with remaining metal debris during recreation activities, we recommend Village residents continue to share and report possible hazards, and City and Tribal agencies continue to provide hazard awareness education about surfacing metal debris.

7. The health impact of contact with old 55-gallon metal drums is uncertain.

ATSDR cannot evaluate the exposure of adults and children who had direct contact with the contents of leaking 55-gallon metal drums because we don't know what the material in the drums was.



Buried metal resurfacing



Troutman Lake in fog

For more information or copy of the full report contact

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What is ATSDR?

The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal public health agency of the U.S. Department of Health and Human Services. ATSDR works with other agencies and tribal, state, and local governments to look at the way health may be affected in communities where chemicals have been released to the environment.



Drying fish and whale bones