



# SEWAGE MONITORING & INVENTORY PROJECT



The Yukon River Inter-Tribal Watershed Council (YRITWC) is an Indigenous, non-profit organization dedicated to the protection of the Yukon River Watershed. Created in 1997 by Indigenous communities from Canada and Alaska, the YRITWC signatories includes 70 Tribal and First Nation governments. Throughout the Watershed, the YRITWC works together with communities and supportive partners to clean and protect all life within the Yukon River Basin.

## Science on the Yukon River ~

The YRITWC Science Department works collaboratively with Tribal technicians in merging Traditional Ecological Knowledge and Western Science to effectively assess impacts of a changing climate and identify contamination sources on the Yukon River and its tributaries. Creating baseline

datasets of the entire watershed through the Water Quality Monitoring Program, the Active Layer Network Project, and the Sewage Monitoring Project improves our understanding of regional variations and human responses to changes observed within the Alaskan and Canadian Yukon River Watershed.

50-year vision statement:  
To be able to drink directly from the Yukon River.



A technician in St. Mary's is learning calibration techniques for sampling.



Sewage discharge warning sign along a populated shoreline.

## How does sewage affect your life?

There is no denying it, but sewage is a part of everyday life for everyone! Unlike most residents of the continental United States, rural Alaskans face unique and a wide range of challenges, such as extreme temperatures, isolation, lack of funding, and high staff turn over. Consistent and proper management of sewage discharge ensures that the threats to human health and the environment are at a minimum.

A few of the serious health risks of untreated and unmanaged sewage discharge include a wide variety of acute illnesses caused by bacteria, parasites, and viruses (for example, E. coli, cryptosporidium, and Hepatitis viruses, respectively). The most common acute effect is diarrhea, but depending on age of the person infected and type of pathogen, effects can be much more severe, including death.

In addition to pathogens, untreated sewage can cause an influx of nutrient levels, creating algal blooms. The nutrients in sewage act as fertilizer to these single-celled plants, called phytoplankton algae, that can literally choke out life. These algal blooms can make the water anoxic (depleted of oxygen) and can sometimes create toxins that are dangerous to humans and other life living in the water. In rural Alaska, where subsistence fishing, hunting, and gathering are a way of survival, contamination of food and water sources can yield extremely disastrous results if sewage discharge is not properly treated and managed.

## Sewage Monitoring Project ~

With its vast size and diversity of geographic regions and cultures, Alaska is truly unique. However, it is unfortunate that outdated and poorly managed systems are an all too common reality among Alaska's rural villages. Tribes are tasked with the enormous responsibility of operating and managing their own infrastructure with few resources and very little funding, and are further burdened with the responsibility of compliance. While some communities have secured funding, others are relying on more primitive methods, such as honey buckets and are operating these systems in the extreme climate of Alaska.

Through the Administration of Native Americans (ANA)

Environmental Regulatory Enhancement program, the YRITWC Science Department is building local capacity within Alaskan communities to monitor and manage sewage discharge, while creating an improved awareness of this problem across Tribes, agencies, and Tribal technicians through education and outreach. By actively identifying sewage disposal systems through a targeted inventory and by beginning a monitoring effort with Tribal technicians that pin-point levels of sewage bacteria, we are working collaboratively towards improving Tribal sewage management systems across the Alaskan Yukon River Basin.



Improving lagoon monitoring & maintenance will keep the systems healthier & working more efficiently.



Community washeteria and water tank.



### PARTICIPATING COMMUNITIES

Eagle Traditional Council  
Council of Athabascan Tribal Governments  
Hooper Bay Native Village  
Ohogamiut Traditional Council  
Ruby Tribal Council  
Louden Tribal Council  
Koyukuk Tribal Council  
Iqurmiut Tribal Council  
Yupit of Andreafski  
Venetie Tribal Government  
Allakaket Traditional Council  
Naqsragmiut Tribal Council  
Anvik Tribal Council  
Chevak Native Village  
Dot Lake Village Council  
Mentasta Village Council  
Asa'carsarmiut Tribal Council  
Northway Village Council  
Native Village of Tanacross  
Tanana Tribal Council

## What can you do?

Below is a list that was developed with Tribal technicians throughout rural Alaska on adaptation strategies for sewage discharge. These are techniques and/or ideas that can be used to better adapt to a changing environment, particularly to one affected by sewage discharge:

- Education and outreach opportunities on the hazards of using honey buckets.
- Adequate training and proper equipment always being provided for jobs involved with management of a wastewater facility.
- Moving location of where drinking water is acquired if it imposes a potential threat to human health.
- Building and strengthening community relations between all (Tribe, city, corporation, etc.) for the betterment of the community.
- More research being provided on facilities that will function in the extreme climate and regions of Alaska.
- Upkeep of the maintenance of wastewater facilities so that they function safely and efficiently (for example, replacing old pipes).
- Having an incentive for people to work in wastewater facility professions
- Becoming involved in this project!

[www.yritwc.org/science](http://www.yritwc.org/science)