Wastewater Utility

In December of 2001, the City of Petersburg Wastewater Utility was granted a renewal of its National Pollution Discharge Elimination System (NPDES) Permit # AK-002145-8 by the Environmental Protection Agency. This permit authorizes the Borough's Wastewater Utility to operate and maintain a 2.1 million gallon per day primary treatment facility and 20 lift stations that comprise the community's collection system. The wastewater treatment plant processes approximately 200 million gallons of wastewater per year while meeting all of its discharge limitations and preserving the receiving waters of Frederick Sound. The utility is staffed by 2 full time operators and 1 part time operator. In addition to operations and maintenance of the utilities equipment these operators are also responsible for performing required laboratory analysis to ensure compliance with state and federal regulations.

Collection System

The Borough's wastewater collection system transports sewage from 1100 customer connections to the Borough's treatment facility. The collection system consists of approximately 17 miles of underground piping, 350 manholes and 20 lift stations.

Treatment system

The wastewater treatment facility uses 3 processes to physically remove contaminants from the wastewater. These processes consist of:

Rotating Screens – fine screens that remove larger debris such as food waste, paper towels and any other material larger than 0.040 inches.

Grit Separation – a cylindrical chamber that uses centrifugal force to remove sand, silt and other inorganic material.

Primary Clarification – larger rectangular tanks that slow the flow of the water allowing smaller suspended material enough time to settle so it can be pumped out. Additionally, floatable material such as grease is skimmed from the top of the water as needed.

Treated Water Disposal

Once the water has left the last stage of the treatment process it flows to the Borough's outfall in Frederick Sound. The area surrounding the outfall is referred to as a mixing zone. It is a circular area 1600 meters in diameter that is centered on the end of the outfall and extends from the shoreline just North of Sandy Beach Park and reaches to the mouth of the Wrangell Narrows. While the Alaska Department of Environmental Conservation recommends that citizens do not bath or consume raw shellfish within the mixing zone, the Borough's tests have historically shown an extremely low impact on Frederick Sound waters by the treatment plant effluent.

Solids Disposal

Each year the treatment plant removes approximately 40 metric tons of solid contaminants from the wastewater. In 2015 the wastewater utility began composting the removed solids in an effort to find a more sustainable and beneficial approach than the past practice of landfilling. Early results have been promising and staff is working to improve the program with hopes of eventually being able to offer a product that would be a safe and effective soil conditioner.

PETERSBURG
ALASKA

Petersburg Borough

Wastewater Utility Annual Report 2017

Petersburg Borough

Wastewater Utilities

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Water Quality

Utility staff are responsible for performing approximately 300 laboratory tests each year to ensure compliance with the Borough's NPDES permit. These tests include:

Biochemical Oxygen Demand (BOD) – A water quality measurement that indicates what demand a stream of wastewater will incur on the dissolved oxygen content in the receiving waters.

Total Suspended Solids (TSS) A measure of the concentration of suspended matter that is present in wastewater.

Fecal Coliform – These are the bacteria that are present in wastewater indicative of warm blooded animals and humans. When measured, it is an indication of "strength" of a wastewater sample.

Dissolved Oxygen (DO) – A measure of the amount of oxygen dissolved in the wastewater. Dissolved oxygen in water is essential in sustaining aquatic life.

pH – The measure of the acidity or basicity of the wastewater.

	Effluent Permit Limits monthly avg.	Petersburg Borough's Effluent 2017 monthly avg.
TSS	140 ppm (parts per million)	41.5 ppm
TSS	30% minimum removal	73.4 % removal
BOD	140 ppm (175ppm in summer)	82.0 ppm
BOD	30% minimum removal	46.4 % removal
FC	1,000,000 FC/100ml	515412 FC/100ml
DO	Min 2 ppm / Max 17ppm	7.0 ppm
pH	Min 6.5 / Max 8.5	7.1
Flow	1.2 MGD (million gallons per day)	0.449 MGD

Household Hazardous Waste

As you can see, the Borough is doing its part to clean up the wastewater that is generated in your homes. All the citizens of Petersburg can help us by paying attention to what they put down the drain. Grease and oil can build up in sewer lines and cause blockages. Rags, disposable wipes and paper towels can get caught in pumps causing interruptions in service and potential damage to the pump itself. Household hazardous wastes can create serious problems when introduced into the sewer. Corrosive, toxic and flammable substances are a detriment to the collection system, treatment plant, Borough personnel and ultimately Frederick Sound. If hazardous wastes are detected during routine sampling, additional testing is immediately required and puts a tremendous financial burden on the utility to track down and find the source of the hazardous substance. Fines can be levied on the Borough and responsible individuals for violation of discharge requirements. It is in the best interest of rate payers, the wastewater utility and the environment for all persons in Petersburg to dispose of hazardous waste in a proper manner.

Proper Disposal of Hazardous Waste

The Borough sponsored a Household Hazardous Waste collection event June 3rd and 4th of last year. With your help the Borough was able to collect approximately 27,000 pounds of waste. The next Household Hazardous Collection event will be June 9th & 10th, 2018, Items that can be brought to the baler during the collection event free of charge include, but are not limited to: used oil, fuels, gasoline/water mix, antifreeze, transmission fluid, brake fluid, batteries, solvents, glue, stain , paint, paint stripper, primer, bug spray, herbicide, fungicide, gun cleaning solvents, poisons, weed killer, photo chemicals, corrosive cleaners, acids, and any other household items that you may have had under your sink and don't know what to do with. We thank you for your help keeping our wastewater free of these pollutants and protecting the environment. Please help us protect the environment in the future by taking part in the collection event.