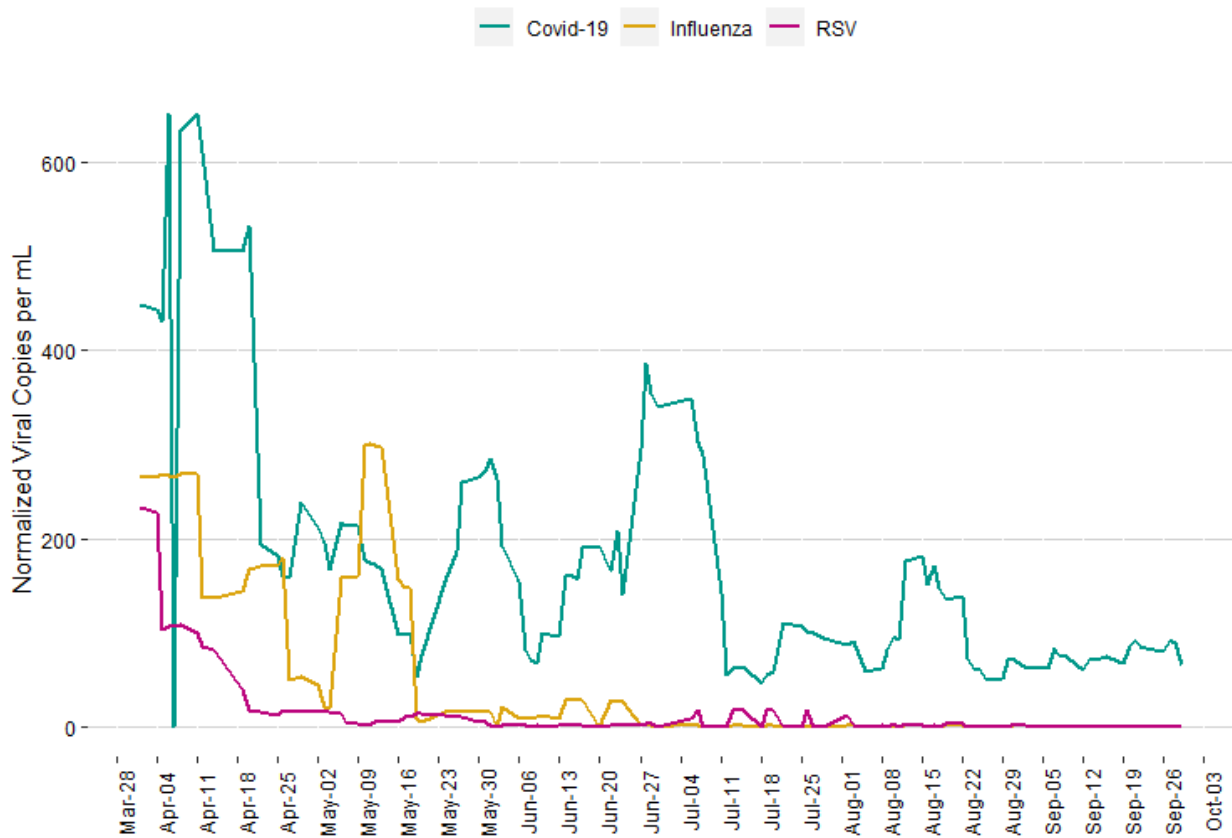# NWT Wastewater Monitoring Report

Office of the Chief Public Health Officer

2022-10-03

Aggregate data for SARS-CoV-2, Influenza, and RSV for all of the active NWT lift stations

Wastewater is handled in the NWT in one of two ways. Some communities have traditional piped or plumbed sewage systems (e.g., Yellowknife, and Inuvik). For some communities an internal tank in homes holds wastewater until a truck collects and delivers to the communities' wastewater treatment location. In communities using trucked wastewater systems, there can be uneven collecting or discharge of wastewater

which can result in results that can be hard to follow. To address these spikes in results, a method to address these has been used.[1]

The following graphs were split into two groups, based on community size. This will allow for a clearer comparison community to community.
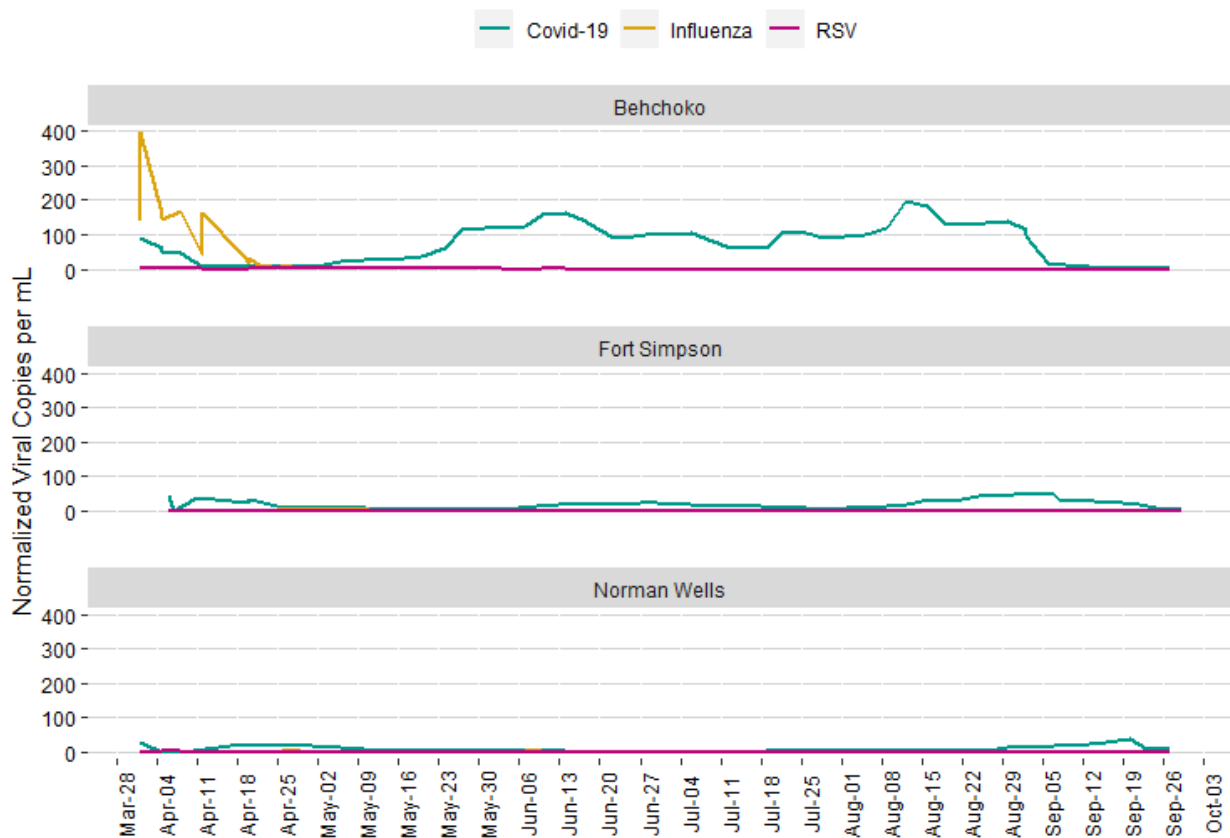
Aggregate data for SARS-CoV-2, Influenza, and RSV for Communities with under 2500 in Population

1 Active lift stations refer to communities in the NWT providing wastewater data to the GNWT. Currently these communities are Yellowknife, Behchokǫ̀, Norman Wells, Fort Smith, Fort Simpson, and Inuvik. Due to the sporadic nature of wastewater, modified z score was used to analyze outlier strength. Consider the following equation, where x is equal to the daily viral shed in cp/ml; $ModZ = (x - median(x)/sqrt(x))$. From there we calculated the standard deviation (SD) and filtered out data +/-2 SD units. This allows us to portray the viral shed copies in a more clear and concise way. Once the outliers were removed, a rolling 7-day average was applied. Since there are differing wastewater systems in the communities, we have grouped sites by similar population size and use of wastewater systems.
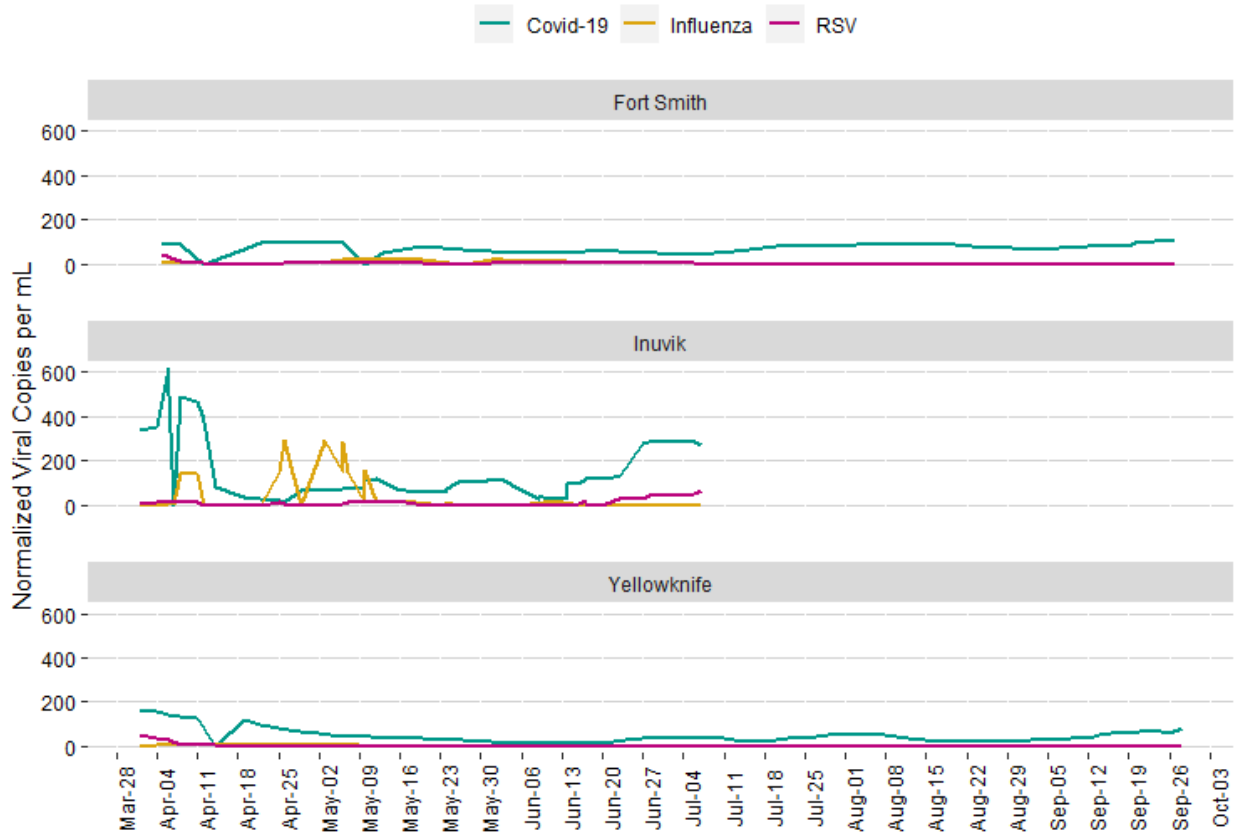
Aggregate data for SARS-CoV-2, Influenza, and RSV for Communities with over 2500 in Population