

Wastewater surveillance for SARS-CoV-2 in Peel region, Ontario

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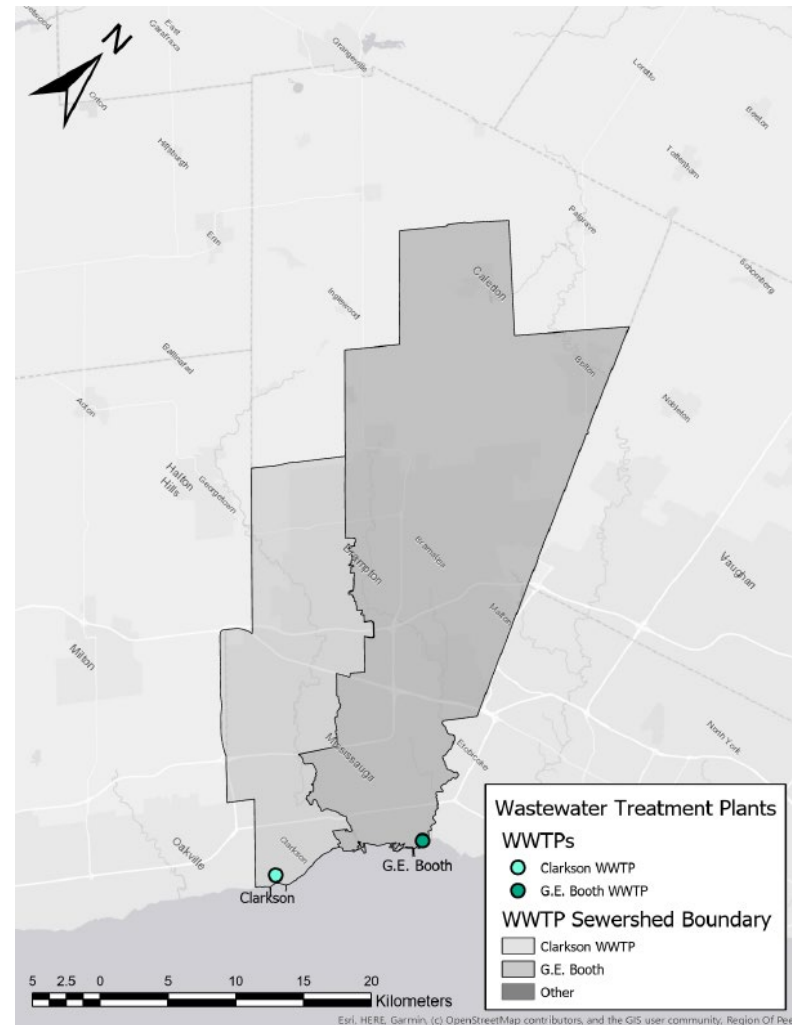


Peel Region has been monitoring SARS-CoV-2 in wastewater since summer 2020

Region of Peel - Public Works samples 3-5x/week at GE Booth and Clarkson Wastewater Treatment Plants (WWTP)

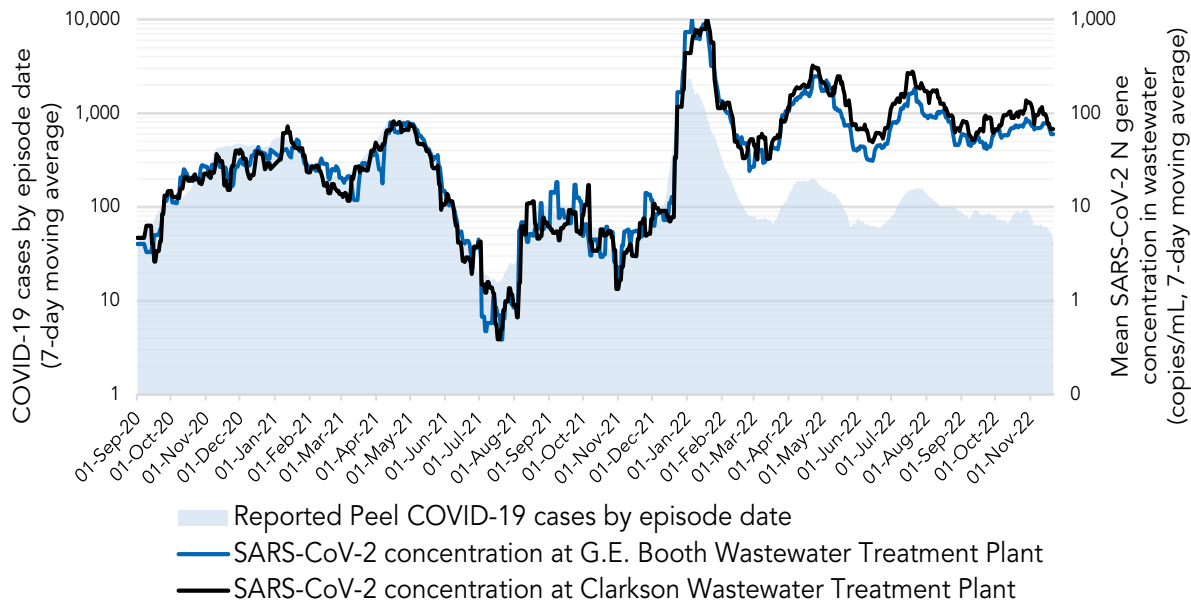
These WWTP serve Mississauga and Brampton and some parts of Caledon, York Region and Toronto. Combined population ~1.6mil residents

Samples are processed by Mark Servos and team at University of Waterloo



Our experience in Peel region, Ontario

COVID-19 cases in Peel and concentration of SARS-CoV-2 virus detected in untreated wastewater: September 1, 2020 to November 21, 2022



Initial waves:
Understanding the data

Waves 2 to 4:
Monitoring trends and emergence of VOCs

Waves 5-current:
Omicron and testing changes

Notes: Data are presented as moving averages to adjust for fluctuations in individual data points. Cases in the two most recent weeks may not yet have been reported. Influent wastewater samples are tested for the N1 and N2 genes of the SARS-CoV-2 virus, and the values in the figure represent the mean concentration of the two genes.

Sources: (Wastewater data) M. Servos, M. Fuzzen, H. Dhiyebi, N. Srikanthan, S. Hayat, H. Ikert, University of Waterloo. (Case data) Ontario Ministry of Health, Public Health Case and Contact Management Solution (CCM), extracted by Peel Public Health [24/Nov/2022].

[COVID-19 in Peel - Region of Peel \(peelregion.ca\)](https://www.peelregion.ca/COVID-19)

How we can use wastewater data in public health

Wastewater surveillance helped us:

- ✓ Monitor COVID-19 infection trends (increasing, plateau/peak, decreasing) and amplitude
- ✓ Monitor variant composition and signal potential emerging variants
- ✓ Estimate degree of underreporting of PCR-confirmed cases

But wastewater surveillance cannot:

- Tell us specifics about who is shedding virus (age, sex, local geography, symptom status, disease severity)
- Provide information for areas of Caledon on septic systems (<1% of cases)

Reflections on our experience



TIME IS NEEDED TO
UNDERSTAND DATA AND
REFINE METHODS



THE IMPORTANCE OF
PARTNERSHIP AND
RELATIONSHIPS



SURVEILLANCE SHOULD
ULTIMATELY PROVIDE
'DATA FOR ACTION'