

Livingston Water Reclamation Facility

Sample collection date: **April 5, 2020**

COVID19 confirmed cases in Park County, MT

On April 5, as reported by USAfacts.org

New cases	Cumulative cases
0	6

SARS-CoV-2 virus in sewage

DETECTED

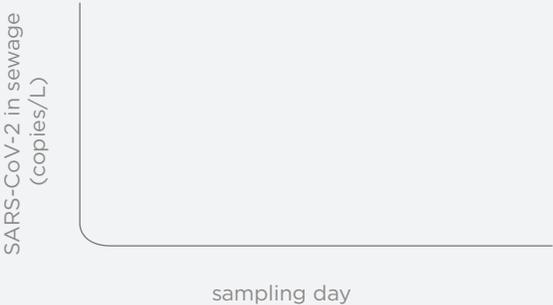
Virus concentration
per liter of sewage

4,873 copies

Biobot COVID19 case estimate

15 cases
(0.19% of catchment population)

SARS-CoV-2 detection over time



Biobot estimates in context

As a point of comparison, a large metropolitan area in Massachusetts had **36,400 copies** of SARS-CoV-2 virus per liter of sewage. This translates to an estimated case prevalence of **2.8%**.



About the data

Our methods for detecting SARS-CoV-2 in sewage are available at www.biobot.io/covid19. Our approach relies on detecting genetic fragments of the virus that are excreted in stool, which does not determine if the virus is dead or active.

Biobot's COVID19 case estimate

We measure the SARS-CoV-2 virus in sewage by detecting its genetic signature. We convert our measurements into a COVID19 case estimate by using the flow rate and population data provided by the treatment facilities, as well as published rates of SARS-CoV-2 shedding in stool.

Our case estimates and confirmed clinical cases

Our COVID19 case estimates may not match the confirmed case numbers in the community for a variety of reasons. Clinical testing is limited and may not represent the entire infected population. Some COVID19 patients are asymptomatic or have mild symptoms and therefore do not seek out testing, but these patients may still be infectious. Our methods will continue to improve and get more accurate as we analyze more samples. In particular we are building a model to take into account person-to-person variability in SARS-CoV-2 shedding in stool. Learn more on our website, which includes links to our protocols and publications.

Data use

The Biobot COVID19 case estimates provide an alternative metric to guide responses to the outbreak. We recommend that you share this information with local public health officials, and see if there's a way to work together to respond to COVID19 in your community.

About Biobot's COVID19 sewage sampling campaign

In collaboration with researchers at MIT, Harvard, and Brigham and Women's Hospital, Biobot Analytics launched this *pro bono* campaign to analyze sewage from wastewater treatment facilities across the United States to estimate the prevalence of COVID19 infection.

Since launching on March 23, 2020, the campaign has reached capacity at over 100 treatment facilities in almost 25 states. We are currently working to increase our capacity.

For questions, email exec@biobot.io