Date: 9/8/2020

To: Mitchell Gayer

From: David Ekstrand
Kadeem Hill
Veronica Kero, CIH, P.E.

Re: (NJIT NEWARK CAMPUS WASTEWATER DISCHARGE SARS-CoV-2 SAMPLING &PCR ANALYSIS) WEEKLY DATA SUMMARY FOR 9/01-9/02/2020 {Omega Project #: 20-1177}

Attachment(s):

- *Prestige EnviroMicrobiology Laboratory Analysis Report dated 9/03/2020 for samples collected 9/01-9/02/2020*

Project Overview:

In order to proactively predict potential escalation of COVID-19 cases in occupied campus dormitory buildings, 24-hour composite wastewater (WW) discharge sampling is being performed, followed by 3rd party laboratory analysis in accordance with the published method cited on the attached laboratory analysis report using the approved CDC EUA Kit.

Weekly Data Summary:

WW Discharge Sampling Location	24-hr Sampling Date Range	2019-nCoV (N1 Protein)	Cycle Threshold Value[3] (N1 Protein)	2019-nCoV (N2 Protein)	Cycle Threshold Value[3] (N2 Protein)
Cypress Hall	9/01-9/02/20	ND	ND	ND	ND
Honors Resident Hall Manhole	9/01-9/02/20	ND	ND	ND	ND
Laurel Main	9/01-9/02/20	ND	ND	ND	ND
Oak Hall	9/01-9/02/20	ND	ND	ND	ND

Data Interpretation:

NJIT informed Omega Environmental Services of a confirmed case on 9/3/20. The student in question resided at Cypress Hall. Considering that the sample from Cypress Hall resulted in a non-detection, it is possible that the student did not use the bathroom in the dormitory or the sampler did not collect effluent from the infected student. The NJ published COVID-19 infection rate was <2%, this data set reflects a full occupancy baseline with one reported outbreak. If order-of-magnitude other variations are reported in upcoming weeks, the data set will be analyzed for relative week-to-week infection outbreak risk.

Prestige EnviroMicrobiology, Inc.

Analytical Test Report

Client: Omega Environmental Services, Inc., 280 Huyler Street, South Hackensack, NJ 07606

Client Project/Name: 20-1177

Sample date: 9-1-2020 & 9-2-2020

Submittal date: 9-2-2020

Sample received: 9-3-2020

Samples submitted by: David Ekstrand

Date analysis completed: September 3, 2020

Prestige Report number: 200903-06

RT-PCR 2019-nCoV: Analysis of Water samples for the detection of SARS-CoV-2 Genetic Markers

Prestige # Client sample ID Location	2019-nCoV (N1 Protein)	Cycle Threshold Value[3] (N1 Protein)	2019-nCoV (N2 Protein)	Cycle Threshold Value[3] (N2 Protein)
200903-06-116 01 Cyprus -1	ND	ND	ND	ND
200903-06-117 02 Honors -1	ND	ND	ND	ND
200903-06-118 03 Oak -2	ND	ND	ND	ND
200903-06-119 04 Laurel M-2	ND	ND	ND	ND

Report approved: Theresa Lehman

Theresa Lehman, MPH, Lab Director

Technical Manager: _____

Chin S Yang, Ph.D.

Analyst: Ching-Yi Tsai, Ph.D.

1. The samples in this report were received in good, acceptable conditions. Results relate only to the items tested.
2. Wastewater samples are processed following the protocol described in the article: Ahmed, W., et al. 2020. First confirmed detection of SARS-CoV-2 in untreated wastewater in Australia: A proof of concept for the wastewater surveillance of COVID-
19 in the community. Science of the Total Environment 728.
https://doi.org/10.1016/j.scitotenv.2020.138764

3. The primers and probes in 2019-nCoV CDC EUA Kit are designed for the detection of the two SARS-CoV-2 genes that encode for the N1 and N2 proteins. The kit is manufactured and supplied by Integrated DNA Technologies and approved by the U.S. Centers for Disease Control and Prevention (CDC). Three controls, two positive controls for N proteins and one internal control for the RNA extraction process, are simultaneously run with the samples.

4. Cycle Threshold Value refers to the number of cycles required for the fluorescent signal to cross the detectable threshold in Reverse Transcriptase Polymerase Chain Reaction (RT-PCR); a lower cycle threshold value indicates a higher viral load.

242 ND = not detected, no genetic marker is detected within 40 PCR cycles. The detection limit is 10 copies/reaction.