

Entry: 534

Wastewater Based Epidemiology

Started at: 10/21/2021 06:56 PM - Finalized at: 10/21/2021 08:31 PM

Page: NEAA Nomination Form

APPLICATION DEADLINE: **Friday, October 22, 2021, 11:59 pm PST**

All fields indicated by a red asterisk (*) must be completed

Category

Public Service

NOMINATING AGENCY'S INFORMATION

Name & Title of Individual Submitting this Application

Eileen M. White, Director of Wastewater

Submitting Agency's Name

East Bay Municipal Utility District

State (2letters)

CA

Service Area Population of Submitting Agency

740,000

Social Media (Indicate all that applies)

Facebook, Twitter

Facebook

<https://www.facebook.com/EBMUD> (<https://www.facebook.com/EBMUD>)

Twitter

<https://twitter.com/ebmud> (<https://twitter.com/ebmud>)

Agency Logo - Hi-Res Picture (jpg; or .png)

Download File (<https://vo-general.s3.amazonaws.com/1791819d-f6fc-46c3-b1b7-a1d38a2bd4d4/ea24e587-a6da-4736-aa3b-6f803c25bcbd?AWSAccessKeyId=AKIAJ4PRWO26HAX3IOCA&Expires=1723306001&response-content-disposition=inline%3B%20filename%3D%22EBMUD-logo-RGB-color.png%22&response-content-type=image%2Fpng&Signature=%2FImYS%2Fc%2BdCCTXZKyp83SvkHnLXU%3D>)

PROJECT / INDIVIDUAL NOMINEE'S INFORMATION

Name of Nominated Project / Program or Nominee (as it will appear on the NEAA award)

Wastewater Based Epidemiology

Has this project / program ever been submitted for NEAA recognition in the past?

No

SUPPORTING DOCUMENTATION

Narrative Description: Project / Program or Individual (attach pdf, limited to 4 pages, double-spaced, 12pt)

Download File (<https://vo-general.s3.amazonaws.com/1791819d-f6fc-46c3-b1b7-a1d38a2bd4d4/6e9ddea4-3090-42d9-a0ee-a8ea610e7e5d?AWSAccessKeyId=AKIAJ4PRWO26HAX3IOCA&Expires=1723306001&response-content-disposition=inline%3B%20filename%3D%22Narrative%20Public%20Service%20Award%20EBMUD%20%20WBE.pdf%22&response-content-type=application%2Fpdf&Signature=ldfLNXXh2svjMmlayOcV6v4KxTc%3D>)

Supplemental Information Included - i.e. images, video, add'l document (Optional)

No

MEMBER SPOTLIGHT

Please attach a third-person article (350-400 words MS doc) - something that a layperson would understand, describing your project / program to be posted on the front page of NACWA's website as part of our "Member Spotlight" section.

Member Spotlight Document (MS Word)

Download File (<https://vo-general.s3.amazonaws.com/1791819d-f6fc-46c3-b1b7-a1d38a2bd4d4/5f1faad8-4128-4fce-9ddb-f7121e945a28?AWSAccessKeyId=AKIAJ4PRWO26HAX3IOCA&Expires=1723306001&response-content-disposition=inline%3B%20filename%3D%22Member%20Spotlight%20Public%20Service%20Award%20EBMUD%20%20WBE.docx%22&response-content-type=application%2Fvnd.openxmlformats-officedocument.wordprocessingml.document&Signature=k0HmzmAMg1LkGD2KjbkXMkGL%2FmI%3D>)

Member Spotlight Hi-Res Picture (jpg; or .png)

Download File (<https://vo-general.s3.amazonaws.com/1791819d-f6fc-46c3-b1b7-a1d38a2bd4d4/43a9f718-e0eb-44d5-a2bf-932b476077c3?AWSAccessKeyId=AKIAJ4PRWO26HAX3IOCA&Expires=1723306001&response-content-disposition=inline%3B%20filename%3D%22Photo%20%20Kiley%20and%20Cheryl%20sampling.jpg%22&response-content-type=image%2Fjpeg&Signature=EpVpB6brREYW2DxeVI6%2Fn3%2BOWco%3D>)

Member Spotlight Hi-Res Picture (.jpg; or .png)

No File Uploaded

PROJECT POSTER or PROJECT WEBSITE

Please include a hi-res PDF or website link of your Project to be displayed on NACWA's NEAA website (example of last year's [honorees \(https://www.nacwa.org/about-us/awards/national-environmental-achievement-award-program/neaa-2021-honorees\)](https://www.nacwa.org/about-us/awards/national-environmental-achievement-award-program/neaa-2021-honorees).)

Project Poster / Website (indicate at least one)

Project Poster

Project Poster (pdf)

No File Uploaded

APPLICATION AUTHORIZATION

Please contact btrombino@nacwa.org (<mailto:membership@nacwa.org>; btrombino@nacwa.org?subject=Who%20is%20Our%20NACWA%20Primary%20Contact%20for%20the%20NEAA%20application%3F). if you do not know the name of your NACWA Representative (SUBJECT: Who is Our NACWA Primary Contact for the NEAA application?

Signature of Individual Submitting Application (pdf/jpg)

Name of Submitting Agency's NACWA Representative

Eileen M. White

Title of Submitting Agency's NACWA Representative

Director of Wastewater

Email of Submitting Agency's NACWA Representative

eileen.white@ebmud.com

Signature of Submitting Agency's NACWA Representative (pdf/jpg)

Does this Project/Program involve another NACWA Agency?

No

Please review your application prior to finalizing it. All fields with a red asterisk (*) must be completed. If you have any questions in regard to submitting your application, please contact Bredy Trombino (<mailto:btrombino@nacwa.org?subject=Application%20Questions%20-%20PreCompletion>) at 202.533.1820.

Public Service Award
East Bay Municipal Utility District
Wastewater Based Epidemiology

Introduction

The concentration of SARS-CoV-2 in wastewater is now being used to track and monitor the pandemic across the country and around the world. There are various city, county, and state dashboards, numerous media reports on this tool, and a plethora of papers published on the topic. But, before that, in mid-March of 2020, COVID-19 first appeared as an immediate concern of the East Bay Municipal Utility District (EBMUD) Wastewater Department in the form of a Grand Princess cruise ship and its potentially virus-impacted wastewater. At that point, a pandemic had not yet been declared and research was just starting to come out of Europe on the utility of wastewater surveillance or wastewater-based epidemiology. EBMUD was aware of this tool and utilized the connections made through its work on receiving cruise ship wastewater to propel these efforts and spotlight this opportunity.

Background

On March 10, 2020, the day before the World Health Organization declared COVID-19 a global pandemic, when most of us were scrambling to figure out whether we should cancel our social plans, trying to pivot to telecommuting, and nervously anticipating an announcement that schools would be closed, EBMUD was reviewing an application from an ill-fated Grand Princess cruise ship requesting to immediately discharge grey water and sewage to the sewer collection system served by EBMUD's Main Wastewater Treatment Plant. The ship had had an outbreak of COVID-19, with over 100 people having tested positive, and had docked under emergency protocols at the Port of Oakland. While it is likely novel coronavirus was already circulating in

the East Bay community in early March 2020, at the time it felt like a dangerous and mysterious plague was knocking at our door and we did not want to let it in. However, within 48 hours, after some quick work from EBMUD staff, we determined that we could safely receive and treat this "suspect" wastewater.

As part of the evaluation of the cruise ship wastewater, we worked closely with the County Public Health Officer and were connected to the Centers for Disease Control (CDC).

Approximately a week after we began taking the wastewater, we had a follow-up call with the CDC and used that opportunity to start a discussion of how wastewater-based epidemiology could be used to rapidly increase the monitoring of COVID-19 in the community.

Diligently Collecting Samples

Utilizing archived influent samples, EBMUD was able to provide samples from as early as March 2, 2020. From March 2020 through July 2021, EBMUD staff collected samples from the three interceptors that feed into the EBMUD's Main Wastewater Treatment Plant to support wastewater epidemiology efforts. Together this flow represents approximately three quarters of a million residents in the eastern San Francisco Bay Area. Twenty-four-hour composite samplers were set up, collecting samples between one and three days per week continuing through mid-2022.

Much of this sample collection work is very hands-on, and it should be noted that early in the pandemic we did not know whether the virus in wastewater was viable and how much of a risk it was to be collecting these samples, which were taken upstream of any disinfection process. Staff proceeded nonetheless, using extra levels of personal protective equipment to ensure safety.

Collaborating on Research

EBMUD has collaborated with various laboratories, research organizations, universities, and private companies by providing samples and expertise. The principal university collaborators have been the University of California at Berkeley, the University of South Carolina, and Stanford University. Samples have also been sent to private laboratories, including Biobot, Aquavitas, and Cel-Analytica. Samples have even been shared with a professor from the University of Wollongong in Australia. EBMUD was enrolled in both phases of the national Health and Human Services study in 2021.

Searching for Funding

EBMUD played a key role in leading several efforts to attract funding. These included informal discussions with several large private funders and the largest health care provider in California. Other efforts included grant writing for a major National Institutes of Health grant, a Water Research Foundation (WRF) grant, and letters of support to the United States Environmental Protection Agency and WRF for investigators working on new methods and approaches.

Developing and Supporting Method Development

To better support these evolving efforts and method development, one of EBMUD's technical experts served on the Technical Advisory Committee for the WRF Interlaboratory and Methods Assessment of the SARS-CoV-2 Genetic Signal in Wastewater project, which resulted in co-authoring a paper of the same name in Environmental Science Water Research & Technology

(2020). EBMUD also purchased a digital droplet PCR machine in order to develop in-house capabilities to respond the pandemic and monitoring requirements.

Spreading the Word

EBMUD also took an active role in disseminating information about wastewater-based epidemiology. EBMUD's staff and its wastewater treatment plant have been featured in news articles by KQED, the local public broadcasting network (April 27, 2020), the San Francisco Chronicle (July 21, 2020), the Public Policy Institute of California (August 3, 2020), CNBC (September 25, 2020), Vice (February 17, 2021), STAT News (June 24, 2021), and CNN (August 13, 2021). The EBMUD Director of Wastewater took a strong personal interest in the subject and spent many off-hours pursuing avenues for funding and support for this tool. The Director authored a story for the California Special Districts Association in September 2020 titled "Wastewater Could Help Stop the Pandemic," was interviewed for a Public Broadcasting Service special, and appeared as an expert on the popular Dr. Oz show. This is in addition to speaking at countless webinars for the California Water Environment Association and California Association of Sanitation Agencies.

Conclusion

From the very start of global pandemic, EBMUD took the opportunity to support national efforts to utilize wastewater epidemiology as a resource in fighting COVID-19. The EBMUD team did this through early, active support of the science and through collaboration with world-class research institutions. Work was carried out through hands-on sampling, method development, technical reviews, and publicizing of the work, in addition to advocating for funding.

MEMBER SPOTLIGHT

Public Service Award

East Bay Municipal Utility District

Wastewater Based Epidemiology

From the very start of global pandemic, the East Bay Municipal Utility District (EBMUD) took the opportunity to support national efforts to utilize wastewater-based epidemiology as a resource in fighting COVID-19. On March 10, 2020, the day before the World Health Organization declared COVID-19 a global pandemic, when most of us were scrambling to figure out whether we should cancel our social plans, trying to pivot to telecommuting, and nervously anticipating an announcement that schools would be closed, EBMUD was reviewing an application from the Grand Princess cruise ship requesting to immediately discharge grey water and sewage to the sewer collection system served by EBMUD's Main Wastewater Treatment Plant in Oakland, California. The ship had had an outbreak of COVID-19, with over 100 people having tested positive, and had docked under emergency protocols at the Port of Oakland. While it is likely the novel coronavirus was already circulating in the East Bay community, at the time it felt like the first contact with a dangerous and mysterious plague. However, within 48 hours, with some quick work from EBMUD staff, they determined that they could safely receive and treat this "suspect" wastewater.

As part of the evaluation of the cruise ship wastewater, EBMUD worked closely with the Alameda County Public Health Officer and the Centers for Disease Control. Approximately a week after EBMUD began taking the cruise ship waste, they utilized their new public health contacts to discuss how wastewater-based epidemiology could be used to rapidly increase the monitoring of COVID-19 in the community.

Since those early weeks of the pandemic, the EBMUD team has continued to support COVID-19 wastewater epidemiology efforts, often in collaboration with world-class research institutions such as University of California at Berkeley, the University of South Carolina, and Stanford University. EBMUD staff have conducted weekly COVID-19 wastewater sampling and have helped develop laboratory methods for COVID-19 detection in wastewater. Additionally, EBMUD staff and management have actively promoted the importance of this work through various media channels (ranging from local news outlets to the nationally televised Dr. Oz show) and have advocated for funding including assisting with grant applications to National Institutes of Health and the Water Research Foundation. Through these efforts and those of many, many other contributors, the concentration of SARS-CoV-2 in wastewater is now being used to track and monitor the pandemic across the country and around the world.



EBMUD

SILVERADO

www.ebmud.com