



Metropolitan Water Reclamation District of Greater Chicago

# Press Release

Allison Fore

Public and Intergovernmental Affairs Officer

312.751.6626

allison.fore@mwrdd.org

100 East Erie Street, Chicago, Illinois 60611

For immediate release

March 16, 2022

## Freezer Challenge encourages sustainable goals for MWRD

*MWRD scientists participate in global cold storage laboratory competition*



*(From L to R): Laboratory Assistant Anthony Fontana, Laboratory Technician II Saeed Farooqui and Laboratory Technician II Miguel Rojas study samples taken from the water reclamation process in the Microbiology Laboratory at the Stickney Water Reclamation Plant. Scientists in the microbiology section are participating in a Freezer Challenge to implement sustainable cold storage practices for sample analysis.*

While scientists with the Metropolitan Water Reclamation District of Greater Chicago (MWRD) monitor the region's water environment, they are also helping to protect the planet by devising creative ways to reduce the MWRD's energy demands and decrease greenhouse gas (GHG) emissions throughout operations, starting in the MWRD laboratories.

For the first time, MWRD scientists will participate in an international competition known as the Freezer Challenge which focuses on reducing the environmental impact of cold storage. Coordinated by My Green Lab and the International Institute for Sustainable Laboratories ([I<sup>2</sup>SL](#)), the Freezer Challenge inspires scientists across government, academic, biopharma and clinical sectors to implement sustainable practices in the cold storage management of biological samples at ultra-low temperatures. The friendly competition encourages laboratories to achieve improved energy efficiency, sample integrity, sample access, risk prevention and cost savings. Since 2017, Freezer Challenge participants



*MWRD Associate Environmental Microbiologist Kaylyn Patterson inspects samples from an ultracold freezer unit that keeps temperatures as low as -80 degrees Celsius to preserve samples at the Stickney Water Reclamation Plant.*

have saved a cumulative 14.2-million-kilowatt hours (kWh) of electricity. Organizers said that is enough to offset the carbon emissions associated with driving more than 25 million miles in a passenger vehicle, according to the [United States Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator](#).

For the competition, the MWRD plans to review its laboratory practices to ensure the freezers and refrigerators are operating as efficiently as possible. This includes maintaining an inventory of frozen samples, discarding unnecessary samples, lowering operating temperatures on ultracold freezers, cleaning coils quarterly, and defrosting freezers semi-annually.

"A thriving water environment also requires sustainable laboratories," said MWRD President Kari K. Steele. "We applaud our scientists for taking part in this unique initiative and for their willingness to help us meet our goals in reducing energy demands and lowering our carbon footprint." *(continued)*

## Freezer Challenge encourages sustainable goals for MWRD, *cont.*

Despite the pandemic, more than 300 labs from 17 different countries competed in 2021, saving 4.3 million kWh of energy over the year, equivalent to 3,000 metric tons of carbon dioxide. The National Institute of Health won an award in 2021 for government organizations, accomplishing this by replacing 67 freezers with more energy-efficient models, saving the equivalent electricity use of 45 U.S. households. Closer to home, the University of Illinois at Urbana-Champaign won its fourth award in 2021 for its sustainable lab work in the category for academic institutions.

The MWRD's Monitoring and Research (M&R) Department employs close to 300 staff members, which includes essential lab technicians who sample and test the region's water and wastewater and ensure water quality meets the highest standards. M&R staff analyze groundwater, organic compounds, raw wastewater and clean water discharged from the MWRD water reclamation plants (WRPs). The MWRD also collects monthly river water samples at 30 locations throughout Cook County. They then return these samples to the lab, where they analyze the water for dozens of chemical and biological constituents.

The Microbiology Section of the Environmental Monitoring and Research Division of the M&R Department will be leading the Freezer Challenge at the MWRD's laboratories at the Stickney WRP. This section is responsible for monitoring fecal coliforms in groundwater, treated water and waterways, enteric viruses and helminth ova in biosolids and compost to ensure the MWRD meets its permits and additional water quality and biosolids standards and requirements. The staff also provide critical support to maintain liquid and solids treatment operations in addition to critical regulatory and technical reviews. Representative sampling can play a major role in obtaining and collecting operations data and new applications, like COVID-19 surveillance for local public health departments. Since March 2020, the MWRD scientists have participated in numerous studies to help researchers analyze sewage samples and to gain a retrospective understanding of how COVID-19 spread in communities might be detected in sewers.

To meet new energy reduction goals, the MWRD has developed a Climate Action Plan (CAP) that prioritizes

carbon reduction in support of the MWRD's recently unveiled Strategic Plan 2021-2025. These documents will guide future infrastructure planning and outline how the MWRD will address climate action through a variety of adaptive and mitigative strategies to maintain its reliable and essential services.

The MWRD will use an established 2005 carbon footprint as a baseline to calculate future reductions and has set milestones of a 28 percent reduction by 2025 and an 80 percent reduction by 2050 with additional stretch targets of 50 percent reduction and achieving net zero by 2025 and 2050, respectively, as laid out in the Strategic Plan 2021-2025. These targets are aligned with the federal government's economy-wide target of 50 - 52 percent reduction in GHG emissions by 2030 and a net zero emission economy by 2050.

"It is critical for us to examine our energy demands and find energy-efficient resources, whether in the Freezer Challenge or through our management of water for our region," said MWRD Commissioner Chakena D. Perry. "If we can reduce our carbon footprint, we can also work toward a goal of addressing climate change and improving our water environment."

In 2020, the MWRD also updated its investment policy, calling for sustainability factors to be regularly considered when the MWRD is evaluating investments. The revised policy commits the MWRD to consider environmental, social, governance/leadership (ESG), human capital, and business model/innovation factors in addition to financial factors when evaluating investments that bolster the MWRD's finances for construction, operating funds, and debt service funds. Sustainability factors include GHG emissions, resource management, waste and hazardous materials management and other ecological impacts.

Winners will be featured in Lab Manager magazine and will be recognized at the I2SL Annual Conference in Pittsburgh, Pennsylvania, October 16-19, 2022. To learn more about the Freezer Challenge, visit [freezerchallenge.org](https://freezerchallenge.org).

---

### ***Recovering Resources, Transforming Water***

*Established in 1889, the Metropolitan Water Reclamation District of Greater Chicago (MWRD) is an award-winning, special purpose government agency responsible for wastewater treatment and stormwater management in Cook County, Illinois. Learn more at [mwrld.org](https://mwrld.org).*