# Point-of-Use Water Treatment: MadiDrop+ and Copper Mesh

(Technical Report)

# Poison in the Pipes: How U.S. Cities Have Responded to Lead-Contaminated Water

(STS Research Paper)

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Civil Engineering

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May 10, 2023

## Preface

How may access to safe drinking water be improved? Waterborne illnesses are persistent even in high-income countries, and the causes require great urgency in addressing.

How can chlorine and metal-based disinfectants in point-of-use (POU) water treatment kill pathogens and mosquito larvae? In areas without central water treatment, POU water treatment can save lives. Cost and complexity often rule out current POU disinfectants. The research team combined copper mesh and small blocks embedded with silver to decontaminate the water. To neutralize pathogens, copper and silver must be released from the sources at a sufficient rate. In lab samples, deionized water was used to test the separate and combined release rates of the silver and copper products. The release rates of both met the threshold necessary to eliminate the pathogens. This research offers new insight into the effectiveness of combining different disinfectants, with research on future combinations and applicability on the horizon.

How have U.S. cities responded lead-contaminated water? In the public water supplies that serve millions of Americans, lead concentrations exceed 10 parts per billion. To protect the public, cities must learn from incidents, invest in water infrastructure, and be transparent to the public. Budget cuts and coverups contribute to and exacerbate failures to ensure that water supplies are safe. The research highlights that greater accountability of regulatory agencies by the government and public along with constant improvement and investment are the path to success.