

## Love City Strong Deploys Aquagenx CBT *E. coli* Kit in St. John for Hurricane Disaster Response and Recovery



Love City Strong is a non-profit organization that serves the U.S. Virgin Island community of St. John by aiding in disaster response and recovery and addressing public needs that fall outside of the jurisdiction of other local entities.

[www.lovecitystrongvi.org](http://www.lovecitystrongvi.org)

### Problem

In the aftermath of Hurricanes Maria and Irma in 2017, many homes on St. John do not have safe, potable water. Renters and homeowners have no way to determine water quality in their cisterns. Love City Strong spearheaded a canvassing project to collect immediate needs water quality data following both hurricanes. Of 1,035 households surveyed in 2017, 973 use a cistern as their main water source. Of these 973 households, 817 had not cleaned or maintained their cisterns after the hurricanes. This data demonstrated a need for ongoing water quality testing of cisterns as well as water purification education.

On St. John, the island's natural landscape makes it challenging to navigate and reach Love City Strong's clients. The majority of the vulnerable population is spread out on secondary, mountainous roads that in some cases are inaccessible by vehicles. The extent of damage done to the infrastructure of St. John has presented additional challenges in the form of home debris scattered on client property and, in some cases, major damage to primary roads.

### Solution

Love City Strong uses the Aquagenx CBT *E. coli* Kit to identify cistern water systems that have *E. coli* contamination for vulnerable residents because it is designed for low resource and disaster/emergency areas. CBT *E. coli* Kit test results allow Love City Strong to educate residents on the most practical, safest ways to manage and treat their cistern water.

Phase 1 of water quality testing with the CBT *E. coli* Kit began in February 2018. All residents participating in the project were asked to complete an optional questionnaire. Data from questionnaires showed an alarming number of residents were unaware of certain recommended methods for treating and maintaining a cistern, both long-term and immediately following a disaster.

This questionnaire data formed the parameters for Phase 2 of the project that began in June 2018, which is water purification using field tested laboratory equipment and chlorination metrics developed in partnership with the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Environmental Protection Agency (EPA). Love City Strong is developing a controlled chlorination treatment study with the goal of implementing new, safe methods for long-term cistern treatment that can be used by Virgin Islanders to regain access to safe, potable water.



### Comparison of the Aquagenx CBT *E. coli* Kit to EPA Methods

Love City Strong demonstrated the reliability of the Aquagenx CBT *E. coli* Kit by validating three randomly selected water samples from different locations across St. John and sending identical samples to an EPA certified lab located on a neighboring island. The comparison of testing methods confirmed the Aquagenx CBT *E. coli* Kit generates identical test results to the EPA validated testing method.

This positive validation of the Aquagenx CBT *E. coli* Kit demonstrates to partnering agencies and Love City Strong donors their organization has taken steps to mitigate potential issues involved with using only one testing method, and the testing method they use is reliable and accurate.

### Test Results

Phase 1 water quality testing revealed more than half of the cisterns contained a high level of *E. coli* and residents' cistern water was unsafe for drinking, cooking and personal hygiene. Following Phase 2 water purification, another round of water quality testing was done in July 2018. 200 households were tested. 64.9% of those households had no risk for *E. coli*, and 35.1% of households indicated high risk for *E. coli*, making cistern water for these households unsafe for drinking, cooking and personal hygiene.

### Conclusion

Stephen Libbey, Senior Project Manager at Love City Strong says, "Having no prior training or knowledge of these kinds of water quality tests or the methodology behind results evaluation, our teams found the Aquagenx testing equipment to be very user-friendly. Using the educational materials provided by Aquagenx, we have been able to deliver the test results to our clients in a simple, direct and easy to understand fashion."

Libbey continues, "Aquagenx products are easy for our team to use, and the results are fast and easily deliverable to our clients. Additionally, the professionalism and personalized care with which representatives from Aquagenx have shown in working with our team are second to none."