

Alaska Water Sewer Challenge Phase 3

Monthly Progress Report #7

Reporting Period: January 1st, 2017 – January 31st, 2017

Submission Date: February 10th, 2017

Prepared by

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Per the professional services agreement, monthly progress reports will include a one page overview of how the monitoring and testing of the prototype is progressing and how the system is working. All major changes done to the system in the ending month and any changes planned for the following month will be disclosed.

System Overview for January 2017

The month of January has been primarily used to create version 2 of the wash water treatment system that updates membrane pretreatment with non-disposable (i.e. cleanable) filters/screens and will extend time between membrane chemical cleanings. Regarding version 1 stress scenarios, we filled our wash water system up with Anchorage tap water on January 4th, 2017 (after the system was thawed) and treated the water to wash water quality. Prior to wash water treatment, one 1" ball valve (\$23 part) was found to have cracked during the freeze and repaired. Our January we treated one batch of wash water created after thawing as we know this sample would have the most potential for contamination after removing and reinstalling membrane and flushing residual freeze/thawed greywater from the in-home fixtures. Certified sampling showed all parameters were within contract limits and much lower in many cases. Further, our frozen haul greywater haul container (i.e. a keg) was placed in the shower sealed. This container took about one full week to thaw and showed no damage. At this point in time all professional services agreement stress scenarios have been completed and achieved allowable water quality.

Further, reporting on last months analysis for emerging contaminants in our wash water, results show that none of the 50 emerging contaminants analyzed for (including CCL3 compounds such as nitrosamines and perfluorinated compounds) were found (i.e. below detection limit).

Considerations for February 2017 and Future

During this month we will be preparing the interim end-user report, working on our 3 minute video and completing construction of the 2nd wash water treatment system prototype. The second prototype we are striving to be fully automated prior to installation to allow operation during this year to better mimic daily homeowner/maintenance worker interaction with the treatment system.

General Notice of Data Sharing

All of our data (raw and processed) are being posted publicly as well as all progress reports.

Direct link to website resources:

http://reusewaterak.com/?page_id=10

Direct link to photos of water samples:

http://reusewaterak.com/data_AWSC/?dir=daily_photos

(photos now taken only intermittently)

Direct link to data:

http://www.reusewaterak.com/data_AWSC

End-User Interaction

We hosted five community members from Koyukuk and Kipnuk for January 17th, 2017. During this time, we had a full-day program including hands-on tours and talks. The visit was great and we are preparing the interim end-user report now.