



COLD CLIMATE HOUSING RESEARCH CENTER

---

**CCHRC**

This report is written to accompany close-out documentation for grant number 01162-00 titled *Sustainable Northern Shelter Sewage Treatment Plant*. The following describes the body of work completed through the grant, the circumstance surrounding late delivery of the final report, and the current status of the project.

Work Completed:

Work began under this grant in the third quarter of 2009. Initial project steps were to organize project partners, gather community input, install equipment, install and commission monitoring equipment, establish initial experiments, and establish web pages for the project.

Intermediate project steps were to evaluate system performance using data from the monitoring systems and exchanges with the home owner, housing authority and building staff. Experiments to reduce energy use by modifying blower run time were conducted and found to be effective but were not the preferred path to saving energy due to potential to cause the system to operate outside its design parameters. Several "lessons learned" were developed through this project including insulation strategy for outdoor systems, impact of occupancy and occupant behavior, and impact of system energy use. Information collected during this phase of work led to home design changes in the Anaktuvuk Pass prototype home as well as to future iterations of the design applied on the North Slope.

Additionally, the manufacturer of the Extreme STP system worked in parallel to develop a new line of Extreme STPs that use approximately half the energy of its predecessors and improve the effluent quality beyond standards that were already acceptable to DEC. These newer systems are currently available for purchase in Alaska.

Final Report:

The main body of work for this project described above was completed prior to the close of the grant. However, the final report was not completed by December 31<sup>st</sup>, 2011 due to CCHRC's subcontractor Geo Watershed Scientific (GWS) failing to produce a draft. The proprietor of GWS gave as a reason for failing to produce a draft multiple simultaneous family crisis.

CCHRC had an initial meeting with GWS to discuss a time line for completing the final report and GWS was unable to commit to a time line for completing the report due to the aforementioned family crisis. CCHRC and GWS began the process of closing out existing contracts, although the proprietor of GWS still

wanted to produce the final report for the Sustainable Northern Shelter Sewage Treatment Plant project. CCHRC contacted Addison Wetzel to discuss this circumstance and it was agreed that a final report needed to be submitted as soon as possible. CCHRC set a goal of the end of February to submit a report, and in turn met with GWS to establish a deadline of February 20<sup>th</sup> for GWS to submit a final report to CCHRC for review. GWS again failed to meet this deadline and on February 21<sup>st</sup> CCHRC began to prepare a final report.

CCHRC submitted the final report on 6/8/12 by email and uploaded the final report to the project database on 6/13/12. CCHRC's work after 12/31/11 to complete the final report and prepare for the presentation is not being funded by the Denali Commission.

#### Payments to GWS:

The contract with GWS was for \$68,757. Payments to GWS totaled \$67,752.85, with GWS matching an additional \$36,261.25. The last payment to GWS was on 12/20/11. The contract is closed and no further payment will be made.

#### Financial Position at Project Close-out:

CCHRC did not expense the project after the project end date of 12/31/11. The project expenditures at close out are \$103,759.46 from a funded amount of \$119,639. The reason the project did not use the entire funding amount is due to a decision by CCHRC not to pursue reimbursement for work done after 12/31/11. The total in-kind expenditures are \$54,247.16, which is less than the estimated \$72,441. The difference is caused by the decision not to research a third STP unit as part of the project.