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Alaska Native Tribal Health Consortium Project Profile

CUSTOMER: Alaska Native Tribal Health Consortium

APPLICATION: Water and sewer treatment plants

LOCATION: Rural Alaska

CONTRACTOR: ANTHC's Environmental Health and Engineering Division

Viega ProPress® system for stainless helps bring safe drinking water and sewage treatment to remote Alaskan villages



America's largest state, Alaska, ranks second-last in population. It is a place of vast wilderness areas, with its 710,000 residents spread out over more than half-a-million square miles.

Many Alaska natives live in remote villages without basic infrastructure that most people take for granted. Approximately 25 percent of the states' residents do not have access to clean treated drinking water. The result is poor health and more trips to difficult-to-reach hospitals.

The Alaska Native Tribal Health Consortium (ANTHC) is trying to change that. The organization is owned and managed by Alaskan natives through their tribal governments. For the past 15 years, the ANTHC's Environmental Health and Engineering division has been building health clinics, water treatment plants and sewage treatment facilities for rural Alaskan villages.

"The goal is to improve health and sanitation conditions for native Alaskans," said D. Whittington, the division's construction manager. "We do that by ensuring that the villages' water and sewage are properly treated.

"Some of these people have never had running water in their homes," he continued. "Our organization builds water and sewer treatment plants out in the wilds of Alaska. The projects are not that large. Most villages have between 50 and 1,000 people, so we build treatment plants that are fairly small."

Whittington has been using the Viega ProPress stainless system to connect pipe at the water and sewage treatment

facilities. The system is comprised of stainless steel pipe, fittings and valves. To join the pipe ends together, installers use a RIDGID® pressing tool to create a water-tight connection. The process is significantly faster than welding and threading.

Water acidity is one of the reasons ANTHC chose stainless steel over copper for the piping. Because of glacial runoff, melting snow and a variety of different soil compositions, Alaska's water often has a high pH. "A lot of times, water with a high pH will end up causing pitting or holes in the copper pipe," Whittington explained. "Stainless steel pipe is a little more forgiving in that respect."



Water conditions in Alaska can also change, resulting in retrofits to the plants. "We'll build a plant under one set of specifications; then a heavy glacial silt runoff might change the turbidity or the acidity of the water," Whittington said. "We may end up having to come back and add more equipment or filtering processes.

"The Viega ProPress system for stainless makes that real easy," he added. "We come in, shut off some parts of the system, take valves off and then add new pieces of equipment without having to shut down the whole plant. That's one of the big benefits of Viega's ProPress. On almost every plant we've built, we've made changes within the first year because of the water changing."

Whittington also pointed to an advantage that stainless pipe has over CPVC pipe. "Most villages have a water storage tank on the hillside above the village. CPVC pipe can have too high a head

pressure in it and end up failing. After we found some failures in the CPVC, we switched to welded steel and stainless pipe. We've since made the transition to the Viega ProPress system for stainless."

The construction manager said that it took some convincing to get his crews to use pressing. "Most of them have done things the same way for 20 years, so they're not looking for other products. I have been educating them on Viega ProPress by doing demonstrations, showing them how much faster it was and telling them how it differs from welded pipe.



"The plumbers who have used Viega ProPress have embraced it wholeheartedly," he added. "And now that our engineers have seen the results, they're a lot more open-minded about pressing.

"On a recent project, one plumber and one helper did all of the plant process piping in just three weeks," Whittington said. "Doing the same installation with CPVC pipe typically would take about six weeks. So, Viega ProPress enabled them to do it in half the time.

"We use about 1,500 feet of stainless pipe in each of these projects," he said. "And probably about 200 different fittings. We run anything from 1/2" and 3/4" sizes all the way up to 4"."

Whittington said that it's very easy to install pipe with Viega's ProPress system for stainless and also easy to train others to use the system. "We try to use local labor to help build the plants," he explained. "We typically bring in our own plumbing crew, but once somebody else is trained on the process, they can do the plant maintenance.

"When we leave, the locals become the plant's staff, operating and maintaining the facility themselves," he continued. "Our Tribal Utility Support division works with the villages to keep things running smoothly."

Whittington gave examples of some of the places where the Viega ProPress piping is used. "We use stainless pipe on our air scour lines," he said. "That's where we take air and blow it back through the filters to fluff up the media. Backwash piping is another application. As we backwash the filter media, it goes to a drain and is then pumped over to a lagoon outside the building.

"The raw water line is also stainless," he added. "That's the line that brings water into the plant from an outside source, such as a well or reservoir. The water is pumped to the treatment plant through the stainless steel pipe."

According to Whittington, five projects are currently underway and several more are in the design stage. He will soon build a sewage treatment plant in a village plagued by flooding problems. "In the spring, the river overflows and then floods the sewage lagoon," he said. "The water washes through the village and the waste ends up all over the place. It's very unsanitary. We're trying to improve living conditions for the people.

"We're working on improving the infrastructure for 322 villages," Whittington said. "We've probably done 120 over the last 15 years. It all depends on the funding we get. Hopefully, the economy will get better and we will get more money.

"Our numbers show that when children get clean water from a treated system, respiratory illnesses, skin diseases and intestinal problems drop dramatically," Whittington concluded. "Doing what we do is all about helping the kids in the villages. It's really a neat thing seeing the impact we have on the people."

For more information on Viega ProPress stainless, visit www.TheTorchIsPast.com or call toll free: 866.766.7805.

