

In-Well Technologies Inc.

An innovative technology produced in 2001, the company's "No Tank" water pressure tank is actually installed inside the water well casing.

BY MIKE PRICE

Sitting in their office a little more than 10 years ago, Ken Meyers and his son, James, were hard at work brainstorming.

Their water well and pump installation company, Luisier Well Drilling Inc. in Oconto Falls, Wisconsin, was facing dilemmas on two fronts:

- Customers were asking them to design a water pressure tank that wouldn't freeze, as freezing is a major concern in northern Wisconsin.
- On top of that, the company, located 170 miles northeast of Madison, was busy drilling and installing water systems and needed a way to be more efficient and still control cost.

After deciding they needed to devise a system that would limit the amount of exposed piping to freezing temperatures, James had an idea.

"How about putting the tank below the frost line *inside* the water well casing?"

So in 1999, Ken and James developed, tested, and eventually patented a tank design with all of its controls inside the well casing, eliminating freeze-up on slab-type installations. Not only were their customers satisfied, but the installation time was cut in half.

Based on this novel approach to water tank technology, Ken founded In-Well Technologies Inc. in January 2001. He has since sold Luisier Well Drilling to James, a grandson of Art Luisier, who founded the drilling company in 1936.

In-Well Technologies manufactures the "No Tank" water pressure tank, which was put into production in June 2001. The No Tank was designed to be installed

directly into a 4, 5, 6-inch, or larger well casing, replacing conventional style tank installations.

The outside casing of the tank is constructed of stainless steel to prevent rusting and has a heavy-duty butyl diaphragm. It's pre-charged and tested with helium to assure no leakage.

"Every tank that is made, because of the way it's designed, is tested in a vacuum chamber for leaks using helium," Ken says. "Our failure rate in the past five years has been virtually zero because of it."

Located in Lena, Wisconsin, just five miles from Luisier Well Drilling, In-Well Technologies is a small operation that sells its No Tank primarily through distributors within the United States.

Luisier Well Drilling itself installs approximately half of its customers' tanks with No Tanks. Some of James' competitors choose not to install the No Tank, which is fine by him.

"It gives us a leg up on a lot of jobs," James says. "People like the pressure you get with the system and not having the tank inside the house taking up space."

Benefits Are Well Worth the Price

In-Well Technologies began selling its products nationally in 2002, and has since sold more than 20,000 No Tank units.

During the first two years the No Tank was sold, Ken owned both In-Well and Luisier Well Drilling. He sold only to Luisier Well Drilling customers at this time so he could keep track of and correct any issues that might arise. This served its purpose as Ken got to hear feedback from customers on the No Tank. He was surprised to learn of one specific comment.

"One of the things that I thought was a really neat, big benefit was the no-freezing issue," Ken says. "But the biggest issue was the water pressure and



James (left) and Ken Meyers with the PVC "No Tank" water pressure tank (above) and a diagram of the tank in a well (below).

that there was never any fluctuation in pressure. Customers said they appreciated the tank not freezing, but we don't see that. We see the constant pressure. We then changed our emphasis from no-freezing issues to constant pressure. This allows for longer pump run times and also fewer cycles."

The No Tank can be installed with either a variable speed pump or constant speed pump. When installed with a constant speed pump, a constant pressure valve must also be used.



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A stainless steel "No Tank" water pressure tank is being installed in a 6-inch well by Luisier Well Drilling Inc. in Wisconsin.



Besides providing constant pressure, James found that not only was the No Tank quicker to install, but quicker and easier to service.

"This system is serviced from the outside," James says. "You don't have to go inside the home to replace a pressure tank—that's an added bonus. If I have to change the tank, I can do it in less than 25 minutes."

Ken admits that despite knowing it works, the price of the No Tank—which is a bit more expensive than the standard pressure tank—makes selling it somewhat of a challenge.

Even so, James says most of the installations cost the same when installing a No Tank or a standardized pressure tank, based on the time of labor being cut in half.

"The benefits, once they are explained, the customer says the benefits are well worth the price," Ken says. "When pump contractors talk to their potential customers and explain the benefits of the system, they readily accept it. Their customers call back and thank them for putting it in."

David Massey, CWD/PI, president of Sandia Well Service Inc. in Edgewood,

New Mexico, has been installing the No Tank—typically in 5-inch well casing with a variable speed pump—for more than five years and it has served him well in applications where the system needs to be kept out of sight.

"Putting the system at the well is a great alternative," Massey says. "We usually install the system in situations where you can't normally put a well house in, or if it's not aesthetically pleasing, or where the housing contractor made a mistake on the plumbing in the house where the tank was initially going to go. We're able to outfit it in one of those situations."

Stainless Steel or Plastic?

In keeping with an industry trend where most parts of a well are now being made of polyvinyl chloride, In-Well Technologies introduced a PVC version of the No Tank.

PVC is used for well casing and drop pipe, so why not pressure tanks, Ken thought.

The pressure rating of schedule 40 pipe was investigated and found that the pipe would hold the weight and pressure. The next step was to design a method of attaching the tank end caps to the pipe that would be as strong as the pipe and could never be removed. After several tries, a design was found that used a brad and groove method that was as strong as the pipe.

Once the end caps are pressed in place, the completed tank is stronger than the pipe and able to hold more than 2000 pounds of hanging weight and 100 psi. This is more than PVC drop pipe can hold for hanging weight. The air cell for the PVC tank is the same butyl rubber design that is used in the stainless steel models, so all that has changed is the PVC outer shell. By making this change, the cost of the tank was reduced by 25%.

The PVC No Tank is 4½ inches in diameter and designed to fit in a 5-inch well and larger.

"It's an easy way to keep the cost down and you're not losing any quality," James says. "The PVC pressure tanks are rated to hold 2000 pounds of weight. You're not going to hang a pump deeper

on PVC drop than the tank rating. It's stronger than what people give it credit for."

Robert Kimbro, co-owner of O.L. Norman & Sons Pump Sales and Service in Dickson, Tennessee, recently began using the PVC No Tank. Before installing two of them in mid-June, his company had been installing the stainless steel No Tank in 6-inch well casings with a constant speed pump for the last couple of years.

"The plastic versions haven't been in long enough to see how well they work, but I haven't had any problems with the stainless steel ones," Kimbro says.

Each No Tank is comprised of two pieces: the air cell and the tank, making it easy for Ken and occasional part-time help to construct. He also contracts out some of the building and welding of the stainless steel tanks.

"We have less than two pounds of air loss in 10 years of use," Ken says. "Over the years we've been able to verify that because we have checked tanks out in the field and found that there was no lost air, our designs are working. Once we know the air cell is built properly and meets our standards, then we put it in the outer shell of the tank—stainless steel outer shell or PVC—then we can seal it up. Virtually none of the tanks are defective because of the design."

Noting the way the air bladders are constructed and tested, the No Tank has become more reliable through the years, says Andrew D. Bear Sr., CWD/PI, president of Coudersport Well Drilling Inc. in Coudersport, Pennsylvania. He installs them in mostly 6-inch well casings with a constant speed pump.

"With any bladder tank, you're going to have something that loses air over time," he says. "If there's going to be an issue, it's going to be air loss, but the last few years have been good."

Proud and humble of the No Tank, Ken is pleased that he and James thought of it by listening to their customers and making sure that they meet their expectations.

"It really is quite simple," Ken says. "You wonder why it wasn't done before. It's something unique, and hopefully they'll remember it and it'll stay around for a long time." [WWW](#)