

# Managing Aging USTs with Facts and Confidence

by Brian Derge

In the 1980s, the U.S. Environmental Protection Agency (EPA) was at work developing the first comprehensive set of regulations governing underground storage tanks (USTs). Simultaneously, the retail fuel industry was working to upgrade existing locations throughout the U.S. and add new ones at a rapid pace.

At that time, retail fuel was still dominated by the major oil companies. The cost of gas had just crossed \$1.00 per gallon for the first time in 1979, and existing mechanical dispensers couldn't handle pricing above 99.9 cents. That drove the major oil companies to embark on substantial upgrade programs, with new dispensers and USTs going into the ground at an unprecedented pace.

In 1986, pay at the pump was introduced, further driving the need for updated technology at the dispenser level. In many cases, this translated to wholesale site upgrades, including new tanks.

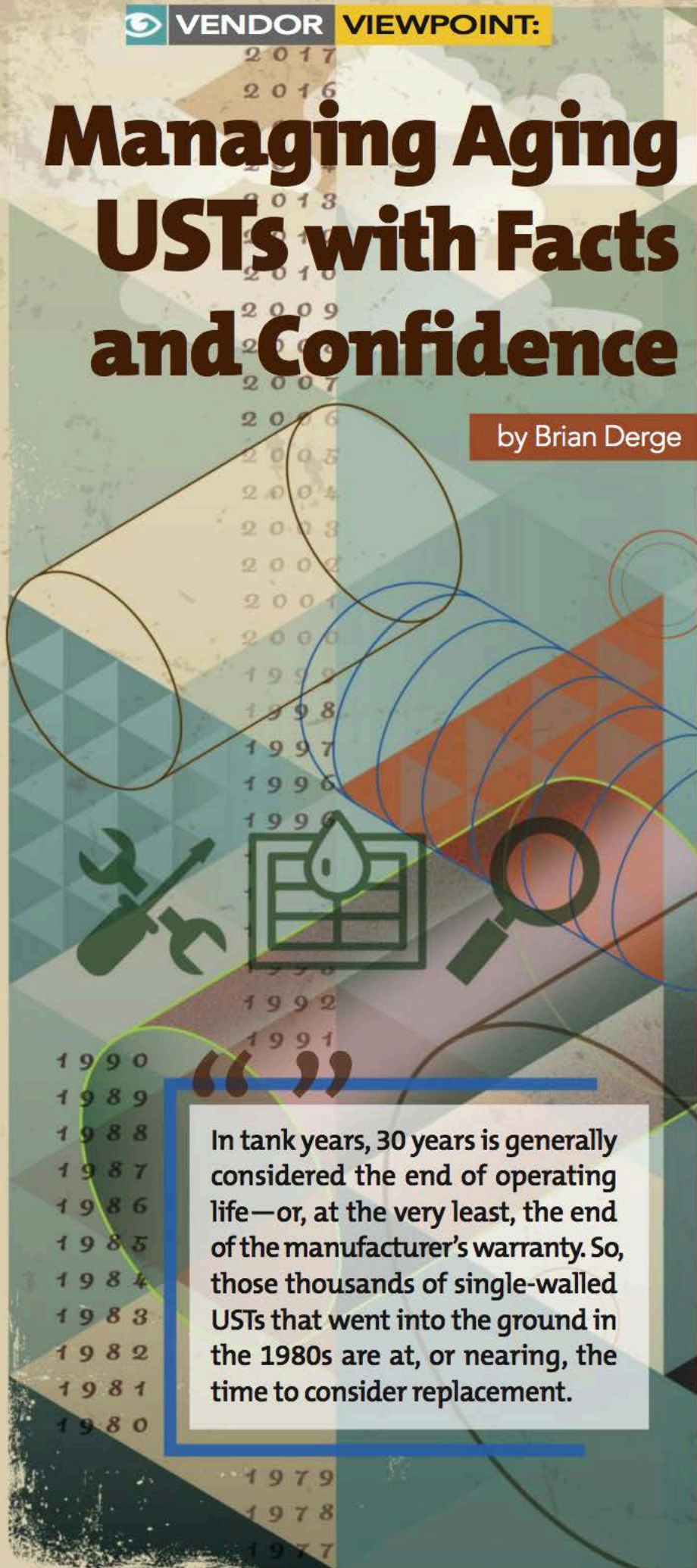
The USTs going into these new and upgraded sites in the 1980s were both steel and fiberglass, and mostly single-wall in construction. The people who have been in this industry since those days often remark that it's hard to fathom that was 30 years ago.

In tank years, 30 years is generally considered the end of operating life—or, at the very least, the end of the manufacturer's warranty. So, those thousands of single-walled USTs that went into the ground in the 1980s are at, or nearing, the time to consider replacement.

Major oil has largely exited the retail fueling business, and their sites have been sold—and in many cases sold again, and maybe again—to subsequent owner-operators. In our experience in these situations, records can be scarce and current owners tend to know little about their tanks and their current condition.

This is an issue throughout the retail petroleum industry, where the proportion of tank systems around 30 years of age is sizable. A common challenge operators face involves determining exactly what they have in terms of USTs in the ground and how to prioritize their replacement.

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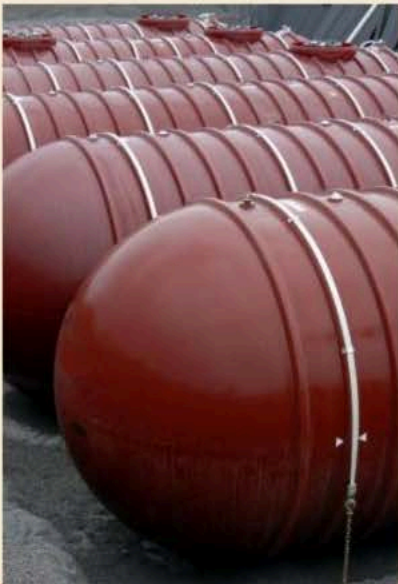


## Once a UST is 30 Years Old, Does It Have to Be Replaced?

In a small number of jurisdictions, they might have to be replaced simply because they are 30 years of age—but in the majority of the country, that's not the case. In our experience, some 30-year-old tanks are in better condition than tanks half their age. A complex mix of variables determine the life of a UST. That makes it difficult to know which of them could continue in operation for another 10 or more years, and which need to come out sooner rather than later.

Our proactive clients with tanks in this age range are taking an investigative approach to assessing their tank population. They can't just replace all of their tank systems in a two- or three-year period, the economics simply aren't feasible.

Instead, we're helping our clients with individual site assessment programs, which enable them to tackle their biggest potential concerns right away and spread their upgrade programs over several years. This allows them to appropriately plan and budget with confidence, and the assurance that they aren't missing something potentially catastrophic.



## How Do You Assess Whether a Tank Should Be Replaced?

As previously mentioned, there are a lot of variables, and they differ depending upon whether the UST is steel or fiberglass. Keep in mind: most of the tanks installed in the 1980s were single-walled. The following is a recommended practice for making an assessment.

Look first at the history of the UST, its date of installation and its history of maintenance and repairs. In cases of property transfers, this can be challenging, as maintenance records and logs often don't get passed along, or their importance is overlooked at the time and they end up getting destroyed somewhere along the way.

### If the UST Is Steel:

- Has it had consistent corrosion protection? If so, what was the date of install?
- Are there reliable maintenance and compliance records?
- Are there any inspection records? If so, what do they reveal?
- What type of fuel has been stored in the tanks? Are there any records of tank cleanings?

### If the UST Is Fiberglass:

- What is the history of product storage, particularly with oxygenated fuels? Most would have contained MTBE, and others could have contained ethanol, which may have developed fuel compatibility issues depending on the date of manufacture.
- Have there been any corrosion issues with non-tank components of the fueling system?
- Has the tank been measured for bottom flatness? Improper installation practices could have led to settling that caused tank deformation.

### For All Tanks:

**W**hat is the leak detection history of the tank? Was a reliable method used for consistent tracking and responding to alarms? The leak detection method should provide passing results every month. Any months with missing or inconclusive results could indicate a problem.

**H**ave consistent measures been taken to minimize water intrusion? Water is never good for fuel or tanks. With ethanol-blended fuels in particular, water is your worst enemy, so a strict water management program can help alleviate a lot of issues.

**I**s there a visible presence of corrosion in the tank, piping, shafts, sumps, filters or other tank system components? Such visible corrosion is likely indicative of a problem in the tank itself. If corrosion is present through the system, does it seem to be excessive or especially fast growing? This is common in both steel and fiberglass tanks that contain ultra-low-sulfur diesel (ULSD). The presence of water is the driver of this type of fast-growing corrosion.

Unfortunately, in many cases, these questions cannot be answered. Again, the records are minimal. The changes in ownership and management have resulted in significant assets that are largely unknown. What do you then?



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## When Records Are Poor, How Do You Assess a Tank?

### Tank Assessments



When assessing assets to help owners get a better sense of what they have and begin to prioritize their repair

and replacement programs, our typical approach is to start with an overall assessment of each site. This includes a detailed visual inspection and documented assessment of the entire fueling system—tanks, piping, dispensers, sumps, etc.

This phase also includes amassing all the available records on maintenance, leak detection reports, tank and line testing results, corrosion protection inspection records and so on, limited as they may be.

Information from tank manufacturers can be helpful, especially for fiberglass tanks, to help determine ethanol compatibility.

### Testing



Based on an analysis of the assessment phase results, we may recommend

tightness testing the tanks and lines to verify full system (liquid and ullage) integrity. With a fiberglass tank, a bottom flatness measurement might be performed to determine whether any tank deformation may have occurred.

### Visual Inspection



To get a detailed look at what's really happening inside a tank, we sometimes recommend a remote video inspection. Our TankCam®

inspection service provides a clear video of the tank interior.

Getting clear, first-hand pictures like these used to require evacuating the tank of all fuel, inerting it to avoid the possibility of explosion and having a person enter the tank to personally inspect it. Given the danger and expense of such manned entry, this is rarely an option.

The remote camera technology Tanknology employs doesn't require any of those precautions, so it is a fraction of the cost. The photos accompanying this article are still images from one of our video inspections.

### Tank Cleaning



A thorough tank cleaning is often a good option for a 30-year-old tank. It can make the difference between a

decision to pull and replace a tank and getting another 10 years of life out of it.

For our clients making an asset decision like this, we will typically recommend combining the remote video inspection along with the tank cleaning to get the clearest understanding of exactly what they have once the tank is clean and empty.

For fueling facility owners of any number of sites, a lot of money is invested in their facility, tanks, pipes, dispensers and so on. It is, without question, an asset-heavy business. Managing those assets well can truly make the difference between success and failure.

To do that cost effectively, owners need to understand exactly what they have now so they can make sound decisions, plans and budgets for their facility upgrades going forward.

Just because a single-walled tank is 30 years old doesn't mean it can't continue to serve you well for years to come. You just need to be sure. ■

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Brian is the Chief Operating Officer for Tanknology Inc., the largest company in the world devoted to compliance testing, inspections and assessments of fueling facilities. In his position, Brian oversees all service operations and inspection services nationwide. Brian is a near 20-year veteran of the company and industry, and serves on multiple petroleum industry committees.