



Corrosion Risks in Underground Tank Systems Storing Diesel Fuel

DEQ has received reports of significant corrosion occurring on both steel and fiberglass underground storage tank (UST) system components that store diesel fuel. Recent U.S. EPA and industry research suggests that this problem may be more widespread than previously known. UST corrosion can reduce the useful life of tank equipment and, if left unchecked, cause dangerous and costly fuel leaks. DEQ recommends tank owners monitor their tanks regularly for corrosion and take measures to reduce corrosion.

Background

Several years ago, tank owners began noticing significant corrosion occurring on various parts of their diesel UST system components such as pumps, pump risers, fill pipes, overfill prevention devices, automatic tank gauging (ATG) equipment, and shear valves. Corrosion is now being seen not only in the wetted portion of the tank, but also in the un-wetted (vapor space) portion of the tank.

How to Prevent Corrosion

The most important way to minimize corrosion is to keep water out of the tank system. Water can corrode metal and provides an environment for microbes that potentially cause corrosion to thrive. Tank owners should check their tanks for water regularly by using ATG measurements or water-finding paste. If you discover water in the tank system, contact your service provider immediately to have the water removed from the tank.

If more than 2 inches of water is found in a tank, DEQ must be contacted within 24 hours of discovery.

How to Prevent Water from Entering a UST System

- Ensure all riser caps are in good condition.
- Inspect and replace old or damaged seals and gaskets to riser caps.
- Cap vent lines with industry recommended caps.
- Build up area around fill area with concrete to divert storm water away from fill area.
- Periodically have the tank professionally cleaned.
- Do not use the drains found on some spill buckets to empty the bucket contents into the tank.
- Request that your fuel supplier take measures to deliver water free product.
- Frequently check and remove any water that collects in containment sumps.

Corrosion Indicators

Corrosion is not always obvious, so tank owners are encouraged to check their tank system periodically for signs of corrosion. Owners should contact their service provider if there are any signs of significant corrosion in the tank system.

The following are indicators that corrosion may be occurring somewhere in the tank system:

- Slow dispensing of fuel;
- Clogged filters (a "coffee ground" like substance will be present);
- Erratic ATG readings;
- Fuel or filters have a rotten egg odor;
- Frequent replacement of valves, rubber seals, and hoses.

Additional Information:

DEQ UST program:

<http://www.deq.virginia.gov/programs/landprotectionrevitalization/petroleumprogram.aspx>

EPA's Corrosion in USTs Storing Diesel Website:

<https://www.epa.gov/ust/alternative-fuels-and-underground-storage-tanks-usts>

Coordinating Research Council - Preventive Maintenance Guide for Diesel Storage and Dispensing Systems:

<https://crcao.org/reports/recentstudies2016/CRC%20672/CRC%20672.pdf>

Steel Tank Institute -

<http://www.steeltank.com/Publications/STISPFASore/ProductDetail/tabid/502/rvdsfpid/storage-tank-maintenance-standard-r111-308/Default.aspx>

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