ETHANOL & BIODIESEL PRACTICES

Ethanol mixes with water better than it does with gasoline. Monitor the levels of water in your tank.

Ethanol and biodiesel are solvents and will remove foreign material and other contaminates from your tanks, piping and dispensers. You should change the filters in your dispensers more frequently when you first start supplying ethanol blended gasoline or biodiesel and biodiesel blends.

Check with your equipment supplier to verify your tank and equipment are ethanol and biodiesel compatible.

Ethanol and biodiesel fuels react with water. Biodiesel can grow algae, fungus, and bacteria in the presence of water. Ethanol and biodiesel fuel storage tanks should be professionally cleaned prior to loading biodiesel or ethanol. Consider using fuel additives to prevent problems.

Regularly check your underground storage tanks for leaks, water levels, and contaminants.

Replace your fuel filters on a regular basis. Plugged filters will reduce fuel flow rates. This is most cost-effective and proactive measure you can take to ensure you are delivering clean fuel.

HELPFUL LINKS

Dept of Ecology

Underground Storage Tank (UST) Info
ecology.wa.gov/spills-cleanup/contamination-cleanup/underground-storage-tanks

EPA Underground Storage Tanks Requirements

www.epa.gov/ust

Gasoline Vapor Recovery Requirements

apps.leg.wa.gov/WAC/default.aspx?cite=173-491-040

Clean Fuels Alliance America

cleanfuels.org/

National Institute of Standards and Technology

nist.gov/pml/owm/nist-handbooks

Washington State Department of Agriculture
Weights and Measures Program
PO Box 42560, Olympia, WA 98504
Phone: 360-902-2035
agr.wa.gov/wm

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WASHINGTON STATE DEPARTMENT OF AGRICULTURE

Fuel Tank Storage & Maintenance

Washington State Department of Agriculture

Weights and Measures Program

MAXIMUM AMOUNT OF WATER IN FUEL STORAGE TANKS

Washington State Department of Agriculture determines the amount of water allowed in retail fuel storage tanks using the standard in the National Institute of Standards and Technology (NIST) Handbook 130.

Gasoline-alcohol blends, biodiesel blends, E85 fuel ethanol, aviation blends, aviation gasoline and aviation turbine fuel - No water phase greater than ¼ inch (6mm) is allowed to accumulate in tanks used to store the fuels listed above.

Gasoline, diesel, gasoline-ether, kerosene and other fuels - No water phase greater than 1 inch (25 mm) is allowed to accumulate in tanks used to store fuels listed above.

WSDA Inspections

WSDA inspectors will dip the fuel storage tank and record the amount of water at the bottom of the fuel storage tanks. Inspectors will apply water detection paste (approved for use with ethanol/gasoline and biodiesel/diesel) to a tank gage stick, and dip the fuel storage tank. The inspector will record the water measurements as part of the inspection.

NIST Handbook 130, Uniform Engine Fuels and Automotive Lubricants Regulations, Section 4.

Stop Sale Orders

Failure to manage water and fuel storage tanks may result in a Stop Sale Order being placed on the fuel.

MONITOR FUEL STORAGE TANK WATER LEVELS

How do I monitor the amount of water in my fuel tank?

Make sure your station has a tank gauge stick available.

Use a water detection paste that is approved for use with ethanol/ gasoline blended fuel or biodiesel.

Every time a load of fuel is delivered, *dip the tank before and after* the fuel is loaded. Record this measurement on your bill of lading.

Documenting this measurement will help you monitor your fuel storage tank and provide a documentation trail to trace back when the water level exceeded the maximum allowed level.

Note: *Tank monitoring systems are not reliable and usually do not detect under ½ inch. Retailers should regularly dip the fuel tanks with water detection paste.*

The best way to prolong the storage life of your fuel is to establish a monitoring and maintenance schedule for your fuel storage tanks.

GOOD PRACTICES FOR FUEL STORAGE & MAINTENANCE

- ☑ Moisture condenses on tank walls exposed to air. A fuller tank means there is less exposed area for water to accumulate.
- ☑ Keep at least 24inches of fuel in your storage tanks. If tanks are kept below 24 inches of fuel, you may burn out your submersible fuel pump. This could result in pumping sediment from the bottom of the your storage tank into your customer's fuel tank.
- ☑ Set the automatic tank gauge "low fuel level" alarm to at least 24 inches. This will help the retailer maintain an adequate amount of fuel in the tank.

  Note: *The Environment Protection Agency (EPA) and Department of Ecology require most drop tubes (or fill tubes) to be at 6 inches from the bottom to comply with Vapor Recovery Stage I & II requirements.*
- ☑ Protect your fuel and your customers from dirt, debris, and water with a spin-on fuel filter designed for the type of fuel being dispensed.
- ☑ Check hoses and nozzles for gum, rust, and foreign material that will cause problems.
- ☑ Biodiesel may be stored in tanks made of aluminum, steel, fluorinated polyethylene, fluorinated polypropylene, Teflon, and most fiberglass.
- ☑ Ethanol should not be stored in tanks constructed of aluminum, zinc, brass, copper or lead. Verify with your vendor that your tank is compatible with E10 and E85.
- ☑ Check with your fuel tank supplier to verify your tanks are compatible with the fuel stored.