

UNDERGROUND STORAGE TANK FLOOD CHECKLIST

This checklist may help to identify and address UST issues in the event of a flood. Further guidance can be found in the document, [Underground Storage Tank Flood Guide](#) (EPA-510-B-20-001, August 2020).

Owners and operators must follow requirements established by their UST implementing agency for:

- Emergency response.
- UST system removal and release cleanup.
- UST system component testing.
- Restarting an UST system.
- Waste disposal.
- UST system installation.

Before The Flood

- Conduct an inspection of the entire facility to determine areas susceptible to flooding and the potential consequences if a flood happens.
- Assess the extent and duration of predicted flooding.
- Turn off power to all UST systems including STPs, pumps, and dispensers.
 - Keep the release detection system on as long as power is available.
- Take product inventory and water level readings of all tanks.
- Reduce the chance of a tank rise.
 - Place heavy objects, for example, dumpster, sandbags, or large containers full of sand or rock, over the tank.
 - Fill the tank with fuel to decrease buoyancy by weighing down the tank so it will not float out of the ground.
 - If the predicted flood extent and duration is excessive, owners and operators may want to instead consider minimizing the amount of fuel to lessen the likelihood of a release into the environment.
 - Do not fill tanks with water due to additional costs for disposing contaminated water and possible corrosion to the tank system.
- Make sure fill caps are operable and secure.
- Place sand bags on top of the spill catch basin and tank top sump lids to minimize the amount of water entering each tank.
- Make sure the seals on spill bucket plungers are operational to keep water out of the tank.
- If possible, have an UST technician drain all product lines back into each tank.
- Close flow restrictors and manually trip shear valves on pressurized piping to prevent product releases from dispenser lines.
- Temporarily cap off vent pipes to prevent water from entering the tank and displacing product.
- Protect fuel pump and controls to prevent damage from flooding.
 - Secure dispensers with plastic, tarps, or plywood.
 - If time allows, consider removing dispensers, and storing them safely.
 - Remember to also protect aboveground components from floating debris or floodwater.
- Check the remediation system, if applicable.
 - Shut off power to the remediation system.
 - Disconnect all wiring and piping to remediation trailers and remove portable equipment trailers from the flood hazard area.
 - Cap and secure remediation wells to prevent floodwaters from entering.
 - Store remediation equipment away from the flood hazard area.
 - If possible, close all control valves to isolate the remediation system.



After The Flood

Take the following actions after the water recedes and local officials allow re-entry. Remember that every situation is different and site-specific issues will dictate the proper course of action.

Before bringing an UST system back into service

- Make sure the power is off.
- Remove all debris and water from the concrete pad.
- Inspect the concrete pad for any indication of tank movement or shifting.
 - If the pad has been damaged, have a contractor evaluate the entire UST system to determine its suitability to receive product.
- Inspect UST system components, such as secondary and under-dispenser containment and sumps for leaks.
 - Have a technician check the connections and verify that all dry secondary containment areas are still dry.
 - Ensure that the isolation boot under the dispenser is working properly. Loose or defective boots may allow water seepage into the piping secondary containment.
- Measure the product and water levels in each tank.
 - If there is a discrepancy in pre and post flood levels, follow the UST implementing agency requirements for release notification and response.
- Remove any debris from each tank.
- Remove any water from the tank according to implementing agency requirements. Make sure that the remaining product is suitable for use.
 - The owner or operator should consider not using the product if there is greater than 2 inches of water on the bottom of the tank.
 - A tank with ethanol blended gasoline should not have any water on the bottom (and the product is not usable if water has caused phase separation or fuel degradation from its quality specification).
 - In emergency situations, a diesel tank or a non-ethanol gasoline tank may be used with up to 2 inches of water on the bottom of the tank¹.
 - Remove any unusable product from each UST in accordance with the UST implementing agency requirements.

¹ However, during normal operating conditions, some management practices advise a regular check of the tank to ensure that the water layer is less than 1" on the bottom of the tank. Minimizing water in tank bottoms will help minimize fuel quality problems or corrosion risks due to microbial growth.



Bringing an UST system back into service

- Return power and have a technician inspect for proper operation.
 - Check all UST system electrical equipment for proper operation.
 - Ensure that leak detection equipment is operational as soon as practically possible; however, certain leak detection methods may not be viable.
 - Contact the UST implementing agency if the leak detection system is not working properly or found to be inoperable.
- Inspect vent lines for movement and cracking.
 - Ensure that the vent is working properly.
- If installed, test the cathodic protection system for proper operation.
- Clean and empty all spill buckets, under dispenser containment, and containment sumps.
 - Test and replace all damaged or inoperable spill buckets and sumps.
- Clean and lubricate shear valves before resetting them.
- Be alert for unusual operating conditions such as slow dispensing of fuel, frequent alarms, customer complaints, or equipment shutdowns.
 - If product loss has occurred, immediately notify implementing agency requirements for release notification and response.

What If An On-Site Remediation System Is Affected By A Flood?

- Have a qualified electrician or technician check the motors and controls for damage and presence of moisture or silt and verify proper operation.
- Notify the implementing agency of any damage that occurred.
- Return power to the remediation system.
- Reconnect the remediation system to the power and piping system.
- Have a qualified professional clear water and silt that may have collected and disinfect system components.
 - Replace system components that cannot be effectively cleaned and disinfected.
- Check the piping system valves for proper operation.
- Inspect monitoring wells for damage.
 - Check for water and silt entering monitoring, extraction, or injection wells.
- Reassess the site characterization to determine if the extent of contamination has changed.

What If An UST Floated Out Of Its Excavation?

- Turn off any power in the vicinity of the UST system, and immediately call the electric company if any power lines are down in the area.
- Notify the appropriate authorities according to applicable policies if there is any evidence of spilled product.
- Notify the local fire department.
- Rope off the area and keep people away from the affected area.
- If it is safe to do so, remove all contents of the tank.
- Perform initial leak mitigation and release reporting, if necessary.
- Obtain a contractor to dismantle any piping and dispensers and remove the piping and tank properly.