



## **UNDERGROUND STORAGE TANKS Emergency Policy And Guidance**

June 20, 2008

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Flooding and storms have caused untold damage across Iowa. The Iowa Department of Natural Resources recognizes residents, properties and businesses are facing physical, emotional, and financial hardships. The UST Section seeks to assist owners and operators in bringing their UST systems back into service as soon as possible. At the same time, the DNR needs to ensure systems are safely returned to operation while minimizing the risk for subsequent fuel releases.

Existing agency rules do not adequately address what actions must be taken to allow UST systems to be brought back into service as a result of impacts from flooding such as this. Therefore, this emergency policy establishes a procedure to authorize owners and operators to bring their UST systems back into service.

### **WHAT UST OWNERS & OPERATORS NEED TO DO NOW:**

- Inspect the UST system for structural integrity or obvious damage (as outlined below under C. UST SYSTEM EVALUATION).
- Inspect the UST system for evidence of a release. If a release is suspected or confirmed, contact your UST financial responsibility provider (insurance) and notify the DNR.
- Retain an Iowa licensed installer, installation inspector or compliance inspector to evaluate your UST system prior to operation. See our website for listings: <http://www.iowadnr.com/land/ust/index.html>.
- Submit documentation of your UST system's evaluation before dispensing product.

In light of these extraordinary circumstances, the DNR does not intend to take enforcement action for violations of agency rules as long as owners and operators make a good faith effort to follow the emergency policy. Please check the DNR's website for further information and updates: <http://www.iowadnr.com/land/ust/index.html>.

For assistance contact Tom Collins at 515.281.8879 or Paul Nelson at 515.281.8779.

The department recognizes that an evaluation of your site may create delays in re-opening UST systems. As such, alternatives may be approved depending on the demand and other circumstances. The DNR also understands the extra cost involved in evaluating a site under these guidelines and we are exploring ways to assist you with the cost of the evaluation.

## A. APPLICABILITY OF THE POLICY

This policy and procedure applies to all UST systems submerged by floodwaters or otherwise affected by flooding, such as saturation damage/exposure.

## B. HOW UST SYSTEMS ARE AFFECTED BY FLOODING

- 1) The buoyancy of the tanks could offset the restraint of backfill and pavement over the tanks causing the UST system to move or shift in the backfill. Connections in the UST system could be loosened or broken. If the UST was not anchored, it may be pushed out of the tank pit and float. Contact Tom Collins at 515.281.8879 or Paul Nelson at 515.281.8779 to report a petroleum release, a floating tank or if you have any questions or concerns about the evaluation or problems scheduling someone to evaluate your system.
- 2) It is likely that water infiltrated the tank. When it does, it settles at the bottom of the tank and push out the product. If water found its way in, product can be forced out. However, if fill port caps, probe caps, vapor recovery port caps are tight and intact, flood waters did not reach the top of the vent line, and the tank is anchored, then little damage may result.
- 3) If the ports at the top of the tanks are not tight, the tank will fill with water and displace product.
- 4) Tanks that are not anchored or weighted down with fuel will float up destroying the overburden, product lines and vent lines and spill product. UST systems that suffer this type of damage will require replacement.
- 5) Submerged electrical power systems, such as pumps, turbines, dispensers, ATG consoles, emergency shutoff panel box, and underground wiring can be damaged due to extended contact with water.
- 6) Above and below ground components of remediation systems will also be damaged by flood waters and may need either replacement or an extensive overhaul. Groundwater professionals must carefully investigate and monitor systems that remain intact, but had submerged underground components.

### C. UST SYSTEM EVALUATION

Before flooded UST systems are returned to operation, they must be evaluated by an Iowa licensed installer, installation inspector or compliance inspector to determine the extent of damage or whether they are suitable to receive product. The owner or operator must document to the DNR that the system has been inspected and certified as safe to return to operation. A list of Iowa licensed installers can be found at DNR's UST Section website: <http://www.iowadnr.com/land/ust/ustinstall.html>.

The evaluation of UST status should begin as soon as conditions and officials allow flood area re-entry. This policy assumes that there is a reasonable likelihood that a release of product may have occurred if an UST system has been submerged or affected by flood waters. The following procedure is intended to, in part, comply with the "system check" requirements whenever there is a suspected release as provided in agency rule 567 Iowa Administrative Code 135.6. This policy further assumes that damage may have occurred such that inspection, product removal and repairs may need to be undertaken. All submerged and flood affected USTs must follow the proceeding evaluation before start up.

1. Measure for water in the tank bottoms with your ATG system or by using a gauge stick (capable of measuring the level of product to within 1/8 inch) and water finding paste. If you have over an inch of water you will need to remove it. No water is acceptable for tanks containing an ethanol blend as the water will be absorbed by the ethanol and create fuel quality problems. Contact a hazardous waste management company (see last page for a list) for more information about removing water/ethanol mix from ethanol blended tanks. Fuels sold in retail markets must meet strict ASTM standards; make sure your fuel quality is not compromised. Fine silts are present in flood waters and may contaminate the fuel. The fine silts will need to be removed if present. Fuels will have to be removed if the UST system is found to be damaged during the evaluation.
2. Before returning to operation, all flooded UST systems must conduct tank and line tightness testing (0.1 gph). Tightness testing may be conducted using an Automatic Tank Gauging (ATG) system or a third party tightness tester. Tanks with secondary containment (double wall) may use interstitial monitoring in lieu of tightness testing. Tanks with confirmed "Fail" results must be emptied.
3. If water entered interstitial spaces of tanks and product lines, they must be drained and flushed where possible. Tanks with brine, vacuum or interstitial sensors may be returned to service if the levels are normal.
4. Empty and clean all containment sumps, spill buckets and dispenser pans. If there is no petroleum sheen on the water, you should be able to empty it onto the concrete where it can evaporate. Water with a petroleum sheen or floating product in a containment sump must be investigated for a release. The water and petroleum must be removed and properly disposed by a hazardous waste management company (a list is provided with this guidance memo). Do not discharge contaminated water to a streets, storm sewers, ditches or sumps. Do not operate pumps and dispensers if they continue to fill with flood waters as there is chance water could enter the fueling system and damage components.

5. Submerged dispensers may have to be replaced or repaired if possible. Any submerged suction system will have damaged motors and pumps. Check hanging hardware for damage.
6. Check sump lid gaskets. After initial cleaning and drying make sure sumps, dispenser pans and spill buckets are liquid tight and prevent water ingress.
7. If you have more than one inch of water in a diesel or gasoline tank (non-ethanol blend), have it removed by a hazardous waste management company. More than an inch of water at the bottom of the tank can contaminate fuel systems in vehicles. Hazardous waste management companies can remove the water and leave the product in the tank.
8. Check the deflection of fiberglass tanks to make sure they meet the manufacturer's specification.
9. Determine whether the tank moved or shifted. If problems are found, repair according to manufacturer's instructions and appropriate industry standards and regulations. These tanks must not receive fuel until that are deemed safe and tight.
10. Check vents for movement, cracking, blockage and proper operation. This is a common area for water ingress and damage from flooding.
11. Check dispenser filters and submersible check-valve screens for plugging with dirt or mud.
12. Check critical safety devices (e.g., emergency power off controls, line leak detectors, air compressor pressure limiters, shear valves, stop switches, isolation relays on dispensers, etc.). Shear valves may be salvaged if they can be cleaned and lubricated with corrosion preventative. Some may still have to be replaced.
13. Sump sensors may need to be replaced after emergency conditions cease.
14. Submersible turbine pumps, ATG probes, overfill devices, ALLDs and all caps at the top of the tanks must be assessed for damage and replaced if necessary.
15. After flooding has abated, submerged CP systems must be assessed by a NACE or Steel Tank Institute certified cathodic protection professional. Submerged rectifiers may have to be replaced, if not submerged they must be checked for proper operation. Inspect CP wiring in saw cuts for damage and replacement if necessary.
16. Make sure the electrical system for the ATG, fueling and corrosion prevention systems is checked for shorts and continuity before restoring power.
17. All electrical junction boxes and conduit should be inspected for the presence of water and dried or vacuumed and for the presence of electrical shorts or opens. Open all dispenser panels to inspect and dry out.
18. Make sure tank management tags are present on the fill port. If missing contact the numbers listed in this guidance.

