



Release Response During a UST Closure

February 22, 2022

Introduction

The following guidance was developed in accordance with the “[*Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials*](#)” (250-RICR-140-25-1) (“UST Regulations”). This document is intended to assist owners of underground storage tank (UST) systems, contractors, and environmental consultants to effectively respond to releases discovered during the closure of a UST system. All criteria referenced are to be used only for releases discovered during the closure of a UST or associated product piping. This document’s main purpose is to clarify real-time responses to UST releases from systems removed from the ground. This document does not address UST that are closed in place, and requirements are at the sole discretion of the DEM project manager. This document addresses contamination of the following types: gasoline, diesel, #2, #4, and #6 oils. In the event of another type of UST release, the DEM inspector may make additional requirements or modify existing requirement to address non-petroleum UST releases.

The UST Regulations require a qualified environmental consultant to directly supervise or perform work in all major components of addressing a UST release. A qualified environmental consultant, at a minimum, must have one of the following: a Professional Engineer (PE) license, be a Registered Professional Geologist (RPG), or a certified professional geologist (CPG). The DEM inspector must be able to directly communicate the PE/CPG/RPG in real time during the performance of field work (onsite or via phone).

UST Release Determination

A DEM inspector is present at all UST removals and will make the final determination on whether a UST release has occurred. The DEM inspector may utilize a variety of criteria, including:

- Hole(s), cracks, or any physical/visual indications of a release noted in any part of a UST System, including the UST or its piping.
- Petroleum odor or staining in soils around the UST or piping.
- Petroleum odor in groundwater, or sheen/product, around the UST or piping.
- PID screening of soils or groundwater around the UST System, including the UST and/or its piping:

Soil Screening Thresholds when using a PID/FID	
Gasoline, All Grades	20 ppm
Diesel, #2 Fuel Oil, Waste Oil	10 ppm
Kerosene, Aviation Fuels	20 ppm
#4 and #6 Fuel Oil	PID Screening not applicable

- Petroleum field screening methods, including TPH Meter, TPH Oleophilic Dye test, and/or the water shake test outlined in Maine's [Compendium of Field Testing of Soil Samples for Gasoline and Fuel Oil](#).
- Laboratory analytical data.

UST Release Response

When a release is documented, the following is required:

- 1) Excavation of soils in accordance with Rule 1.15D(11)(b) of the UST Regulations.
- 2) Completion of a closure assessment in accordance with Rule 1.15 (D)(10) of the UST Regulations.
- 3) Completion of a site investigation in accordance with Rule 1.14(H)(2) of the UST Regulations.

The primary goal when a UST release is discovered is the full and complete removal of the release via the following techniques: soil removal, product removal, and groundwater treatment.

Excavation of Soils:

Required Excavation: In accordance with UST Regulation 1.15D(11)(b), excavation is required in response to a UST release. The excavation requirement is the removal of five feet of soil beneath the release. All soils exhibiting any indication of contamination within the first five feet below the release are to be immediately removed and properly disposed of the goal for excavation is to reach either non-detect using the source-specific screening methods outlined below or five-foot depth; whichever is first. Dewatering may be required for the completion of excavation.

Failure to comply with the required excavation requirement may result in formal enforcement action, making a site ineligible for the UST Reimbursement Fund.

If soils continue to exhibit evidence of elevated contamination beyond the initial required excavation, additional excavation of impacted soils is required. Contaminated soil removal should be performed the day the release is discovered. This should be coordinated with the onsite DEM inspector.

Please note the following excavation requirements:

- The goal for excavation is to remove all readily accessible contaminated soils. Partial removal of accessible soils with the intention of additional assessment or future alternative remediation is discouraged. Addressing contamination at the time of closure

generally results in a quicker and less expensive project resolution. Alternative remediation is generally reserved for contamination beyond reasonable excavation attempts. Accessibility will be a major factor for excavation.

- Soils deemed inaccessible are generally greater than 20 feet deep and/or under roads or buildings. The consultant and contractor are to direct excavations in a manner that protects public safety, property, buildings, and roads.
- The presence of a water table is not automatically considered a significant impediment for excavation. Dewatering will be discussed with the DEM inspector.
- The presence of offsite migration onto other properties is not automatically considered a significant impediment for excavation. The consultant will immediately notify and attempt to access abutting properties for excavation if offsite migration of soil contamination is discovered
- For excavations that extend beyond the day of the closure, the consultant must email daily updates of each day's activities to the DEM inspector. Updates must include volumes of soil removed, contamination observations and the plan for the next day's activities.
- End of excavation screening samples must be taken at the following intervals:
 - Excavation sidewalls:
 - Five-foot intervals along the excavation sidewalls taken at a depth of five feet above the base of the excavation.
 - Excavation base: Samples taken on a grid at five-foot intervals.
- End of excavation analytical sample locations and analysis types will be discussed and approved by the DEM inspector. At a minimum, seven samples are required: bottom samples every 10 feet, (three bottom samples minimum: each end and middle) and one sidewall per side, taken five feet above base of the excavation should be sent for analysis.

The following substance-specific criteria apply during excavation:

Release of Gasoline:

- Soils must be screened using a PID.
- Samples will be analyzed for EPA Method 8260. Additional analysis may be required:
 - Lead, for facilities where gasoline was stored prior to 1996.
 - EPH/VPH and EPA 8270 for facilities within 500 feet of a drinking water well or within 30 feet of a residential dwelling.

Release of diesel or #2 fuels:

- PID screening is viewed as only moderately effective for these fuels and used primarily for guiding an ongoing excavation, not determining the end of excavation.
- A TPH Oleophilic Dye Test is used for determining the end of an excavation of diesel or #2 fuel oil. End of excavation samples are to be first screened via the dye test before the excavation is halted. Samples sent to a lab must also be screened in duplicate via the dye test.
- Samples will be analyzed for VPH. Additional analysis may be required:

- EPH/VPH and EPA 8270 for facilities within 500 feet of a drinking water well or within 30 feet of a residential dwelling.

Release of #4 or #6 fuel oil:

- Visual screening is the primary method for guiding an ongoing contamination excavation; not determining the end of excavation.
- TPH Oleophilic Dye Test will be used as a secondary guidance and for guiding an ongoing contamination excavation and determining the end of excavation. The use of mixing soils and water in a vial to observe a sheen can be discussed.
- In cases where fuel oils have been mixed with volatile solvents PID screening should be discussed with the DEM inspector.
- Samples will be analyzed for EPA Method 8260 and TPH. Additional analysis may be required:
 - EPH/VPH and EPA 8270 for facilities within 500 feet of a drinking water well or within 30 feet of a residential dwelling.

Any regulated substances and/or petroleum products not identified above shall be handled at the sole discretion of the DEM project manager.

Soil screening and stockpiling:

- Soils should be regularly screened (e.g., every five excavator buckets). Soils removed from the ground screening above the screening threshold cannot be put back in the excavation. Contaminated soils cannot be rescreened at a later time.
- Soils that are below the soil screening threshold, but removed during excavation, and are not to be reused on the site, must be disposed of properly and may not be transported and used as fill at other sites.
- Contaminated soil must be stockpiled, covered, and properly disposed of.
- Contaminated soils must be handled in accordance with RIDEM Oil Pollution Control Regulations:
 - The soil must be stored on an impermeable base or liner and covered.
 - The soil must be disposed within 30 days of excavation.
 - Consultant will notify DEM inspector of soil disposal via email.
 - Documentation of the soil disposal must be included in the closure assessment report.

Closure Assessment Report

- A closure assessment report is required for **all** removals where a release is observed. The closure assessment is due within 30 days of the UST closure.
- In the event a required excavation has not been completed within 5 days of discovery of a release, a separate soil excavation report is required. The closure assessment report will still be due 30 days from the UST's closure.

Site Investigation Report

A site investigation report (SIR) is automatically required after a release from a UST system is discovered unless waived by the Department. Site Investigation waivers will not be considered if all soil excavation, screening, sampling, analytical, and disposal requirements are not met.