

Best Management Practices for Petroleum Storage Tank Systems

Day Tanks¹

The New Hampshire Department of Environmental Services (NHDES), in collaboration with the New Hampshire State Fire Marshal's Office (SFMO), provides the following information as a best management practice (BMP) for the installation and operation of day tanks installed in Aboveground or Underground Storage Tank (AST or UST) systems.

A day tank is an integral component of the piping system between an oil-burning or motor fuel burning (generator) device and the AST or UST that supplies it.

References/Standards:

- National Fire Protection Association (NFPA) 31, Standard for the Installation of Oil-Burning Equipment.
- NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
- NFPA 110, Standard for Emergency and Standby Power Systems.
- Env-Or 300, NH Code of Administrative Rules, Aboveground Petroleum Storage Facilities.
- Env-Or 400, NH Code of Administrative Rules, Underground Storage Tank Facilities.

Tank Location:

Day tank placement is dependent on the installation location and use of the system. At a minimum, the day tank should be:

1. Located 12" – 18" from any building wall so that all sides of the tank are visible for inspection.
2. Located as required by NFPA 31, NFPA 37 or NFPA 110, as applicable to the fuel use device.

Tank Construction:

Day tanks should be constructed as follows:

1. Constructed of steel or other material as the applicable NFPA standards allow.
2. Certified by the manufacturer, by label on the tank, as meeting or exceeding the following design or manufacturing standards, as applicable:



¹ **DISCLAIMER:** *This Best Management Practice (BMP) is for information purposes only and does not establish any regulatory requirements related to day tanks. In the future, sections or the entirety of this BMP may be adopted as requirements through a formal process that would include notice of the requirements and a public hearing to receive comments on the proposed rules.* Information contained in this document is current as of June 24, 2021. If there are any questions or comments concerning the status of this information, please call us at [\(603\) 271-3899](tel:6032713899) or email us at ORCBWMD@des.nh.gov

- a. UL 142, Steel Aboveground Tanks for Flammable and Combustible Liquids;
- b. UL 142A, Special Aboveground Tanks for Specific Flammable or Combustible Liquids; or
- c. UL 443, Standard for Steel Auxiliary Tanks for Oil-Burner Fuel.

Secondary Containment:

1. Day tanks should be equipped with secondary containment which meets the following criteria:
 - a. A double-wall tank by method of construction; or
 - b. A rupture basin or other open top containment that:
 - i. Is constructed of steel or stainless steel.
 - ii. Is constructed per UL-142 for diked tanks.
 - iii. Is capable of containing at least 100% of the day tank's total capacity.
2. Day tank secondary containment should be equipped with a leak detection sensor that:
 - a. Provides an audible and visual indicator upon the detection of liquid.
 - b. Stops the filling of the day tank by:
 - i. Stopping the pump that fills the day tank.
 - ii. Prevents further filling of the day tank by either:
 1. Closing a valve on the piping that fills the day tank; or
 2. Activating a pump to return product to the supplying tank.

Overfill Protection:

Day tanks should be equipped with the following overfill protection equipment:

1. Gauge or other automated measuring device that displays the level of product in the tank.
2. A high-level warning sensor that:
 - a. Is set at no more than 90% of the total capacity of the day tank.
 - b. Operates independently of other day tank sensors.
 - c. Provides a visual indicator when active.
 - d. Stops the filling of the day tank by:
 - i. Stopping the pump that fills the day tank; or
 - ii. Closing a valve on the piping that fills the day tank.
3. An overfill prevention sensor that:
 - a. Is set at no more than 95% of the total capacity of the day tank.
 - b. Operates independently of other day tank sensors.
 - c. Provides an audible and visual indicator when active.
 - d. Stops the filling of the day tank by stopping the pump that fills it.
 - e. Prevents further filling of the day tank by:
 - i. Closing a valve on the piping that fills the day tank; or
 - ii. Activating a pump to return product to the supplying tank. [A gravity return may also be utilized if the supplying AST or UST is lower than the day tank.]

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Piping:

Piping to and from a day tank should be constructed as follows:

1. Use of piping materials should be as indicated on the following NHDES fact sheets, as applicable:
 - a. Applicable References for the Design of Piping Systems for Aboveground Storage Tank (AST) Systems for Oil Burning Equipment, [REM-35](#).
 - b. Applicable References for the Design of Piping Systems for Aboveground Storage Tank (AST) Systems for Generators, [REM-36](#).
 - c. Applicable References for the Design of Piping Systems for Underground Storage Tank (UST) Systems for Oil Burning Equipment, [REM-33](#).
 - d. Applicable References for the Design of Piping Systems for Underground Storage Tank (UST) Systems for Generators, [REM-34](#).
2. Piping should be equipped with a means to prevent siphoning of the fuel in the event of a pipe leak. An anti-siphoning device may be a normally closed solenoid valve or a mechanical anti-siphon valve. A means of anti-siphoning should be considered if supply piping extends below the maximum fuel level in either the supplying tank or the day tank at any point along the piping from the supplying tank and fuel use device.

Venting:

Day tanks should be equipped with atmospheric and emergency venting that is applicable to the design or manufacturing standard for the day tank. All day tank vent/vent piping should:

1. Terminate outside the building.
2. Terminate away from building openings as required by NFPA 31, NFPA 37 or NFPA 110, as applicable to the fuel use device.
3. Be sized as required by the length of vent piping and changes in direction to ensure the internal tank pressure does not exceed the maximum allowable pressure for the day tank's design or manufacturing standard.
4. Be constructed of materials as allowed by NHDES fact sheets [REM-35](#) or [REM-36](#) for AST systems or [REM-33](#) or [REM-34](#) for UST systems.

Tank Markings:

Day tanks should be marked with the following information:

1. Product stored.
2. NHDES registered identification for the supplying AST or UST.
3. NFPA 704 identification of the hazards of materials for emergency response system symbol.
4. Optional: Tank height corresponding to the activation of the high-level warning sensor.

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Monthly Visual Inspections:

Day tanks and their associated components should be inspected monthly for deficiencies such as leaks, surface wetting, discoloration, blistering, or evidence of corrosion, cracks or other structural damage. The following components should be inspected:

1. Exterior surface of day tanks.
2. Secondary containment.
3. Piping, valves and associated equipment.
4. Day tank and piping supports.
5. Visible system components of the high-level warning, overfill prevention and secondary containment leak detection system.

Annual Testing:

Day tanks should have the following equipment tested for proper height and function at installation and annually thereafter:

1. High-level warning sensor.
2. Overfill prevention sensor.
3. Secondary containment sensor.

Other Considerations:

Alarm Location:

Day tank leak and overfill alarms should be located within sight of the day tank unless connected to a monitoring system for both supplying AST or UST and the day tank located elsewhere at the facility.

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