

UST Compliance Assistance Handbook

ONEIDA ENVIRONMENTAL, HEALTH AND SAFETY DIVISION



Oneida Tribe of Indians of Wisconsin
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Created by the Oneida Environmental, Health and Safety Division, Compliance Assistance Program for the Underground Storage Tank (UST) Direct Implementation Tribal Cooperative Agreement (DITCA)
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Introduction

- The Oneida Tribe of Indians of Wisconsin (Tribe), under a cooperative agreement with the United States Environmental Protection Agency (EPA), offers compliance assistance (CA) to owners & operators (O/O) of federally regulated tanks in the Oneida Reservation.
- The agreement provides training and CA.
- Accepting CA does not eliminate the need for federal inspections.
- CA is an effort to increase the rate of significant operational compliance (SOC) of federally regulated tanks within the Oneida Reservation.
- By providing CA, O/O are taught to recognize potential non-compliance issues & correct them prior to a federal inspection.



Federal Authority

Subtitle I of Chapter 40 of the Code of Federal Regulations (CFR), Part 280 of the Solid Waste Disposal Act, regulates underground storage tanks (USTs) and includes:

- Requirements for UST system design, construction, installation & notifications;
- General operating requirements;
- Release detection, reporting, investigation, reporting, response & corrective action requirements;
- System closure and removal requirements;
- Financial and record keeping responsibilities.



Federal Authority

Energy Policy Act of 2005

- Amended 40CFR280;
- Requires EPA, to develop training guidelines for three distinct classes of owners and operators (O/O);
- O/O are classified according to level of responsibility;
 - A Operators (owners/managers)
 - B Operators (managers/on-site supervisor)
 - C Operators (clerk/cashiers)



Federal Authority

Federal UST Definition:

- Any tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground;
- Applies only to USTs storing either petroleum or certain hazardous substances; and
- Are greater than 1,100 gallons.



Federal Authority

A UST is NOT:

- Farm or residential tanks of 1,100 gallons or less, holding motor fuel used for noncommercial purposes;
- Tanks storing heating oil used on the premises where it is stored;
- Tanks on or above the floor of underground areas, such as basements or tunnels;
- Septic tanks and systems for collecting storm water and wastewater;
- Flow-through process tanks;
- Emergency spill and overfill tanks.



Federal Authority

Owner/Operator Requirements

- O/O training requirements provide various levels of training based on the responsibilities of the operator class.
- There are three classes of operators.
- Designed to ensure knowledge of operating and maintaining underground storage tank systems.
- Training will also ensure knowledge for hazardous substances and responses to spills.



Operator Requirements

Operator Responsibilities

Operators must receive training, relevant to their classification, that covers:

- Spill prevention
- Overfill prevention
- Release detection
- Corrosion protection
- Emergency response
- Product compatibility
- Reporting and recordkeeping requirements



Operator Requirements

Class A Operator:

- Manages resources and personnel;
- Responsible for achieving & maintaining compliance with regulatory requirements;
- Focuses on the broader aspects of the statutory and regulatory requirements and standards necessary to operate and maintain the underground storage tank system;
- Is often the owner.

Class A
Operator
Requirements



*Documentation
& oversight*

Operator Requirements

Class B Operator Requirements

Class B Operator:

- Ensures applicable UST regulatory requirements and standards in the field are met;
- Responsible for day-to-day aspects of operating, maintaining, and recordkeeping of USTs at one or more facilities;
- May also have Class A responsibilities and may be an owner and/or manager.



*Operation &
maintenance*

Operator Requirements

Class C Operator Requirements

Class C Operator:

- The first line responder to events indicating emergency conditions;
- Responds to alarms or other indications of emergencies caused by spills or releases from USTs;
- Notifies Class A or B operator & emergency responders when necessary;
- Not all employees of the facility are necessarily Class C operators;
- May be a clerk or attendant.



*On-site &
Frontline*

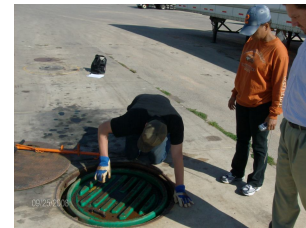
Operator Requirements

Which level of Operator are you?

Who is the A Operator?

Who is the B Operator?

Operator Responsibilities

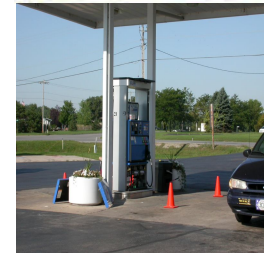


On-site Safety and Preparation for Compliance Assistance Visit

Generally

If you perform inspection and maintenance activities, be aware of hazards and safety issues.

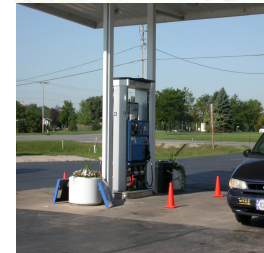
- In high-traffic areas:
 - Properly mark off your work area;
 - Wear visible clothing;
 - Maintain awareness.
- In remote areas:
 - Observe all of the above;
 - Make sure someone knows where you are.



On-site Safety and Preparation for Compliance Assistance Visit

Safety Equipment for Inspections:

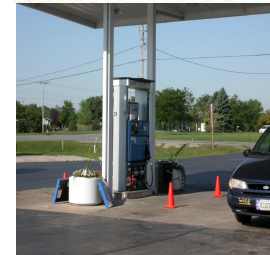
- Safety barriers, such as traffic cones or yellow plastic tape to mark off your work area.
- Orange safety vest
- Hard hat (for construction sites)
- Steel-toed boots
- First-aid kit
- Site safety plan (if appropriate)
- Chemical resistant gloves



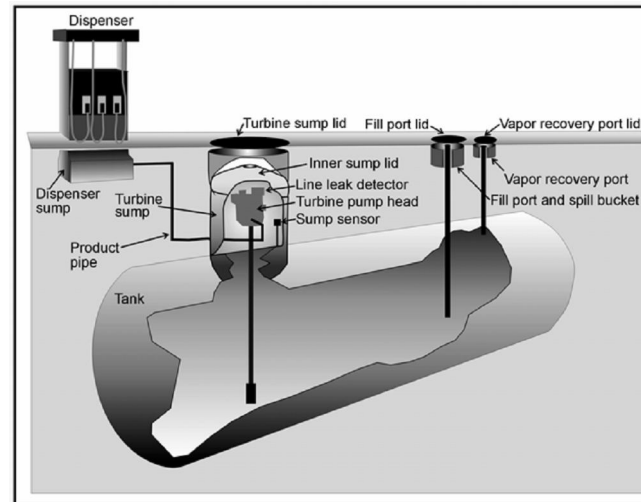
On-site Safety and Preparation for Compliance Assistance Visit

Additional safety precautions:

- Sump lids may be large, very heavy and may require more than one person to lift.
- Be aware of the possibility of explosive or harmful vapors when inspecting and maintaining sumps. Avoid breathing in petroleum vapors.
- The Occupational Safety and Health Administration (OSHA) designates some sumps as confined spaces.
 - Title 29 CFR Part 1910.146.



Tank Types, System Components, Operation, Maintenance & Inspection



Tank Types, System Components, Operation, Maintenance & Inspection

Tank System Components

Tanks systems may all or some of these components:

- Tank(s)
 - Tank Sump(s) or Spill Buckets
- Dispenser(s)
 - Dispenser Sump(s) or Spill Buckets
- Product Line(s)
- Vent pipe(s)
- Fill pipe(s)
- Alarms, Sensors and Automatic Tank Gauges



Tank Types, System Components, Operation, Maintenance & Inspection

There are several types of USTs that are used. They maybe:

- Fiberglass
- Bare or coated steel
- A composite of steel and fiberglass
- Single or double walled
- Cathodic protected

What number and type of tanks are at your facility?



Tank Types, System Components, Operation, Maintenance & Inspection

There are two types of pumps that are used:

- Submersible Pump: located inside the tank.
- Suction Pump: located inside the dispenser.

What type of pumps are at your facility?



Tank Types, System Components, Operation, Maintenance & Inspection

What Is A Sump?

- A subsurface area (pit) for access to equipment located below ground.
- Sumps may or may not be contained.
 - Contained sumps have sides and a bottom and are designed to be liquid tight.
 - Have a special water tight cover.
 - Prevents liquids from releasing into the environment.
 - Uncontained sumps generally do not have a bottom.
 - Not designed to prevent liquid from entering or exiting the sump.
 - May be wooden or metal sheeting to restrict slumping of soil or crushed rock onto equipment and prevent surface pavement from buckling or caving.



Tank Types, System Components, Operation, Maintenance & Inspection

Kinds of sumps and their location

- **Turbine Sumps**

- Provide access to the turbine area above the tank.
- May house the submersible turbine pump head, piping, line leak detectors, interstitial monitoring devices, wiring, and other equipment.
- Generally directly above USTs.
- Turbine sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.

- **Dispenser Sumps**

- Provide access to piping, flex connectors, shear valves, and other equipment located beneath the dispenser.



Tank Types, System Components, Operation, Maintenance & Inspection

Kinds of sumps and their location (continued)

- **Transition/Intermediate Sumps**
 - Less common
 - Found along the piping runs that connect the tanks to the dispensers
 - Designed to provide access to the piping.
 - Used to transition from above-ground piping to below-ground piping or different types of piping.
 - Located at key points in the piping system (e.g., low spots, branches, tees).
 - Transition/intermediate sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.



Tank Types, System Components, Operation, Maintenance & Inspection

Transition/intermediate sump:



Uncontained turbine sump:



Contained turbine sump:



Contained dispenser sump:



Tank Types, System Components, Operation, Maintenance & Inspection

**What kinds of sumps are at your location
(circle all that apply & indicate number)?**

Dispenser
How Many? _____

Turbine
How Many? _____

Transition/Intermediate Sumps
How Many? _____



Tank Types, System Components, Operation, Maintenance & Inspection

Steel Sump lids:



Spill Bucket lid:



ATG Probe Cover:



Dispenser cover:



Tank Types, System Components, Operation, Maintenance & Inspection

Spill Buckets

- Are contained sumps.
 - Located at fill and/or vapor recovery connection points.
 - Found remotely from, or directly above UST.
 - Both can be present.
 - Where the delivery driver connects the product and/or vapor recovery hoses to the tank.
 - Contain drips and spills of fuel that occur during delivery.
 - They typically range in size from 5 to 25 gallons, and lids range from 1 to 2 feet in diameter. Spill buckets may also be installed within a larger sump for secondary containment.



Tank Types, System Components, Operation, Maintenance & Inspection

Accessing Sumps And Spill Buckets

You may need to access the sump and spill buckets to check for leaks, water seepage or damage. Use appropriate tools and observe safety measures.

- Large screwdriver, pry bar, wrench, or hammer to open sump lids.
- Composite lids may require a specialized tool.
- Square, rectangular, or oval sump lids can fall through the opening and damage the piping, submersible pump, or tank.
- Round lids may swing down and damage the turbine head or line leak detector.
- Follow equipment manufacturer's recommendations for special instructions. May need a key to remove dispenser cover to access dispenser sumps.
- Use safety precautions in high traffic areas.



Tank Types, System Components, Operation, Maintenance & Inspection

What to look for when inspecting turbine, dispenser, and transition/intermediate Sumps?

- **Are the lids tight and sealed correctly?**
 - Ensure the sump lids create a tight seal when closed and are securely fastened.
 - Seals often dry out, crack, and require replacement.
 - Water in your sumps may be an indication of a bad seal.
- **Are the sump walls intact?**
 - Ensure the walls of the sump are intact and not slumping or warping.
 - If not contained, check the sidewalls for caving or slumping.



Tank Types, System Components, Operation, Maintenance & Inspection

Maintenance and inspection of sumps and spill buckets

Maintaining sumps and spill buckets involves accessing and inspecting on a regular basis.

- Establish a schedule and a checklist to assess the sump and spill buckets.
- Record all findings and steps taken to correct.
- Serious problems (e.g., obvious leaks occurring on the piping and equipment, cracked spill buckets or side-walls, cracked or missing seal around the lid), are best handled by a UST contractor.



Tank Types, System Components, Operation, Maintenance & Inspection

Observations to make during maintenance and inspection

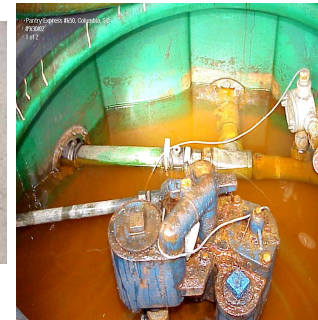
- **Is the sump free of debris, liquid, or ice?**
 - Debris, liquid, and ice can damage equipment, reduce capacity and interfere with equipment operation.
 - Water will reduce capacity and may cause metal equipment to corrode.
 - Long term contact with petroleum may damage some types of components.
 - Properly dispose of any debris, filters, liquid, or ice in the sumps.



Tank Types, System Components, Operation, Maintenance & Inspection

Observations (continued).

- **Is the sump free of cracks or holes?**
 - Check for cracks around areas where wiring conduit and piping enter.
- **Are sump components leak free?**
 - Check that piping, fittings, and connections are not leaking or dripping fuel.
- **Is the sump free of staining or new staining?**
 - No new stains present since last inspection. Good notes and photographs aid this assessment.



Tank Types, System Components, Operation, Maintenance & Inspection

- **Are sensors positioned correctly?**
 - Ensure they are positioned properly in the lowest part of your sump and below the piping entry.
 - Sensors should not be raised as the result of false alarms or for any other reason.

Sump sensor in contained turbine sump



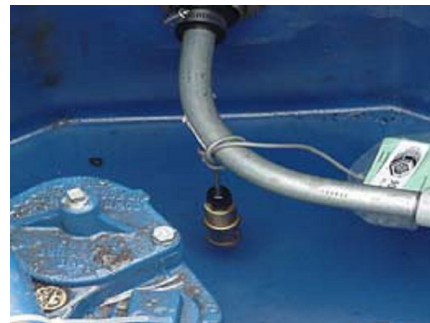
Tank Types, System Components, Operation, Maintenance & Inspection



Float Sump Sensor:



Liquid Sump Sensor:



Tank Types, System Components, Operation, Maintenance & Inspection

- **Are all penetrations in good condition?**
 - Check all areas where electrical wires, conduits, and piping enter the sump are sealed.



Seals in poor condition



Seals in good condition



Tank Types, System Components, Operation, Maintenance & Inspection

- **Are the test boots positioned correctly and in good condition?**
 - Check that they are not cracked or torn, and positioned correctly in the sump.



Tank Types, System Components, Operation, Maintenance & Inspection

- **Is the piping and other equipment in good condition?**
 - Sumps may contain various types of piping and equipment such as leak detection equipment, turbine motors, line leak detectors, sensors, conduits, and flex connectors.



Tank Types, System Components, Operation, Maintenance & Inspection

Look for the following conditions during inspection of the piping:

- For metal piping, check that the piping is not severely corroded, in contact with the ground.
- For fiberglass piping, check to ensure the piping is not cracked, or delaminated.



Tank Types, System Components, Operation, Maintenance & Inspection

Look for the following conditions during inspection of the piping (continued):

- For flexible piping:
 - Is not bulging, swelling, or growing
 - Has not become soft, spongy, or discolored; and
 - Is not otherwise distorted or degraded
 - Flexible connectors are not twisted or misaligned, are not cracked, kinked, etc.
- Check that pump head, line leak detector, and sensors, are not visibly damaged, severely corroded, etc.



Tank Types, System Components, Operation, Maintenance & Inspection

Metal flexible connector is twisted:



Flexible piping is kinked:



Flexible piping is bulging:



Tank Types, System Components, Operation, Maintenance & Inspection

When inspecting spill buckets observe the following:

- Ensure the lids to spill buckets are in good condition to keep water out and create a good seal and are secured tightly.
 - Some spill buckets contain a rubber gasket inside the cover; check to ensure the rubber gasket is in good condition and creates a proper seal when the lid is closed.



Cracked Lid:



Gasket Lid:



Tank Types, System Components, Operation, Maintenance & Inspection

Is the spill bucket free of cracks or holes?

- Examine the spill buckets for evidence of cracks or holes. If you have a metal bucket, check for corrosion and rust. Also check for deformations in the spill buckets or separation of the spill bucket from the fill pipe.



Tank Types, System Components, Operation, Maintenance & Inspection

Are The Drain Valves Operational?

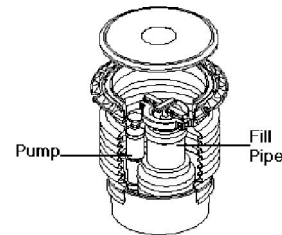
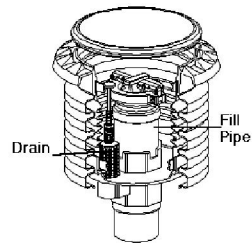
- Some spill buckets have drain valves. Check to ensure the drain valve is free of debris and operational (e.g., it can close tightly and be opened to drain fuel in the spill bucket).



Tank Types, System Components, Operation, Maintenance & Inspection

Spill bucket drains (continued).

- Some spill buckets are equipped with a valve that allows you to drain accumulated liquid into the UST. Others may be equipped with a manual pump so spilled fuel can be transferred to your UST system by pumping it through the fill pipe or removing the fuel and disposing of it properly.



Tank Types, System Components, Operation, Maintenance & Inspection

In the event of an ATG alarm

- Investigate the alarm:
 - Is it a low level or high level fuel alarm?
 - Inform the supervisor of the alarm?
 - Has the facility been inspected by a certified petroleum maintenance vendor?
 - Is the site currently running tests for repair?



Tank Types, System Components, Operation, Maintenance & Inspection

Automatic Tank Gauges:

- Determines if there has been fuel loss from a system's tank or fuel lines.
 - ATGs have many capabilities:
 - Keeps track of fuel levels.
 - Will sound an alarm if there is a low level or high level of fuel (i.e. overfill alarm).
 - Is the site currently running tests for repair?



Tank Types, System Components, Operation, Maintenance & Inspection

Inspection Checklist:

How often are the pumps checked? _____

How often are the sumps checked for leakage? _____

What type of ATG is used? _____

How often is a line leak test completed? _____

How often is the tank checked? _____

Who do you call when the ATG alarm goes off?



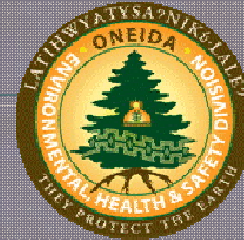
Facility Contact Information

Owner/Operator Contact:

Facility Manager Contact:

Equipment Service Contact:

Other Emergency Contact:



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Quick References

National Response Center:
1-800-424-8802

EPA Region 5 UST Program Contact:
Kevin Hill - Environmental Scientist
(312)886-6087

EPA Local On-Scene Coordinator
Kathy Clayton
(920)662-5424

For Compliance Assistance:
Shawn Suri, Compliance Assistance Inspector
(920)869-4559



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