## What does the Oil Operations Program Manager do?

Typically, the Oil Operations Program Manager accomplishes the following tasks:

- Interprets environmental laws, regulations, Executive Orders and policies
- Develops strategies to integrate compliance requirements into Center processes
- Interfaces with Federal, State, and local regulators; Center management; and the public
- Advocates for resources and executes actions to ensure compliance

## What is Corrosion?

Corrosion means the breaking down of essential properties in a material due to chemical reactions with its surroundings. In the most common use of the word, this means a loss of electrons of metals reacting with water and oxygen. Weakening of iron, due to oxidation of the iron atoms, is a well-known example of electrochemical corrosion. This is commonly known as rusting.

## What is Cathodic Protection?

Cathodic protection is a technique to control the corrosion of a metal surface by making it work as a cathode of an electrochemical cell. This is achieved by placing in contact with the metal to be protected another more easily corroded metal to act as the anode of the electrochemical cell. Cathodic protection systems are most commonly used to protect steel, water, or fuel pipelines and storage tanks; steel pier piles; ships; offshore oil platforms; and onshore oil well casings.

## What is Release Detection?

A mechanism must be in place to detect releases or leaks from ASTs or its piping. Approved leak detection methods include: interstitial monitoring, automatic tank gauging systems, vapor monitoring, and statistical inventory reconciliation.

## Who needs ICP Training?

The ICP defines oil-handling personnel as those individuals who

(1) use, store, and/or transfer oil;
(2) witness the use, storage, and/or transfer of oil; and
(3) supervise the use, storage, and/or transfer of oil.

Oil-handling personnel include employees who repair or maintain machinery that contains oil, as well as individuals who perform emergency response functions for spills. The definition of oil for ICP purposes includes petroleum-based oils (i.e., gasoline, #2 fuel oil, hydraulic fluid) and non-petroleum oils (i.e., animal fats, vegetable oils).

## Applicable References

- Code of Federal Regulations (CFR) Section 112, Clean Water Act
- GSFC Integrated Contingency Plan (ICP)
- Code of Maryland Administrative Regulation (COMAR) 26.10, Oil Pollution and Tank Management
- COMAR 26.13.05, Contingency Plan
- National Fire Protection Act (NFPA) 30
- National Electric Code (NEC) 70

## Links and Important Contact Information

***Oil Operations Program Manager:***

Joe Hunter, 6-0466

***Security Operations Center:***

6-9111 or (301) 286-9111 from off Center on cell phone

***Environmental Program Management Web site:***

http://environment.gsfc.nasa.gov/

National Aeronautics and Space Administration

# How to Comply with Aboveground Storage Tank Requirements: A Guide for Tank Owners

### Goddard Space Flight Center (GSFC)
### Greenbelt Campus

**by Joseph Hunter**

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**Background**

GSFC manages and stores approximately 288,000 gallons of petroleum and non-petroleum oils. The Center operates under an Oil Operation Permit. This permit, and the Center Integrated Contingency Plan (ICP), require that GSFC has engineering controls, regular inspections, and emergency spill procedures.

GSFC owns more than 30 Aboveground Storage Tanks (ASTs) of various sizes throughout the Center. The largest tanks on Center are a system of three 50,000 gallon tanks located near Bldg. 24, the Central Heating and Refrigeration Plant.

**What is the ICP?**

The ICP is a unique document that incorporates Federal, State, NASA, and GSFC regulations and guidelines in one document. It describes oil handling procedures, secondary containment requirements, and critical emergency response procedures for spills. The ICP is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

**Why Comply?**

Most of the regulations for storage tanks containing petroleum were developed to protect people and water resources. For example, installing an emergency vent on a tank allows expanding gases to escape and helps to prevent an explosion in the event of a fire. Visual inspections and overfill protection help prevent releases of petroleum from entering the storm water system, which ultimately finds its way into the Chesapeake Bay.

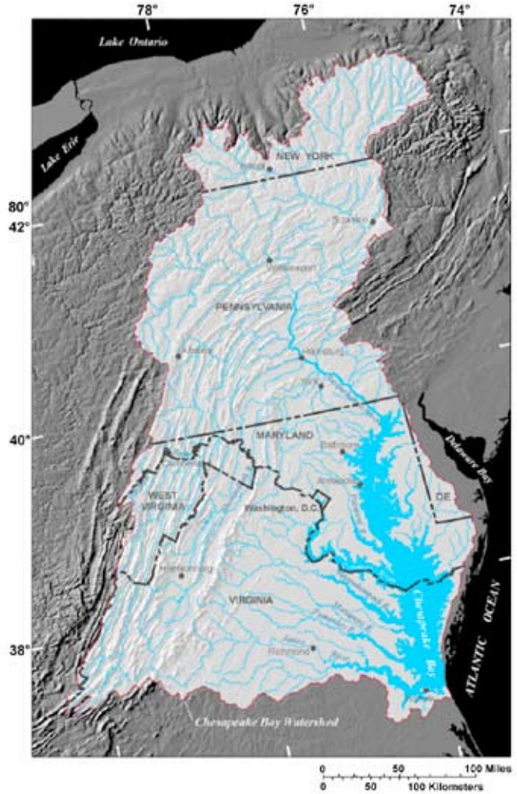


**Figure 1. Location of the Chesapeake Bay watershed.**

The State of Maryland serves as a watershed to the Chesapeake Bay (see figure above). Because of topography, rainwater flows from higher elevations toward the Bay, potentially picking up contaminants along the way. Spills and other harmful activities could pose a negative impact on the Bay if not properly managed.

## Physical Requirements

These are some typical features of a compliant storage tank:

- Secondary Containment
- Overfill Protection
- Leak Detection
- Standard Vent
- Emergency Vent
- Liquid Level Gauge (Clock type is preferred)
- Cathodic Protection (if applicable)
- Adequate Lighting (for night time detection of leaks)
- Adequate Coating
- General Housekeeping
- Spill Kit

## Tank Labeling

Each storage tank shall have the following labels:

- Hazard Warning (Combustible/Flammable diamond or appropriate Department of Transportation (DoT) label)
- Material ID (e.g., #2 Diesel)
- Storage Capacity (e.g., 320 gallons)
- Tank ID number (e.g., AST 27-1)

## Inspection Requirements

Tank owners typically inspect their tanks for the following on a monthly basis or as required:

- Leaks
- Corrosion (rust)
- Oil sheen on rainwater in secondary containment areas

## Record Keeping

Tank owners are required to maintain tank records for three years. These records are subject to review by regulatory agencies:

- Monthly Inspection Log
- Bulk Transfer Checklist
- Secondary Containment Discharge Log
- Cathodic Protection Reading
- Integrity Testing

## Spill Definition

A spill is any un-permitted release into the environment (e.g., on the floor, to the air, on the ground, down a drain).

Labs/work areas do not have to report a release or spill if **ALL** of the following are TRUE:

(1) The material is not oil or petroleum products;
(2) Personnel are trained and knowledgeable about hazards;
(3) Personal Protection Equipment (PPE) normally used in the work area will protect the individual;
(4) There is no greater risk to building(s) or people than during normal use;
(5) Spilled materials did not go down drain; and
(6) There is no effect or impact to people outside the immediate work area.

## Spill Reporting

In the event of a spill:

- Protect yourself and those in the vicinity from the release
- Call the Security Operations Center (SOC) by dialing 911 from on campus (301-286-9111 from off campus) or radio the Facility Operations Center (FOC) from a Goddard-issued radio

## When reporting a spill include the following information:

- Name, code, and phone number of reporting party
- Type of emergency (fire, chemical spill, etc.)
- Location of emergency
- Any injury to personnel
- Cause of emergency (if known)
- Type and name of chemical (if known)
- Estimated quantity and flow rate (if known)
- If it poses a risk to people/environment
- If it is contained or controlled
- If the spill has entered any surface water, drains, etc.

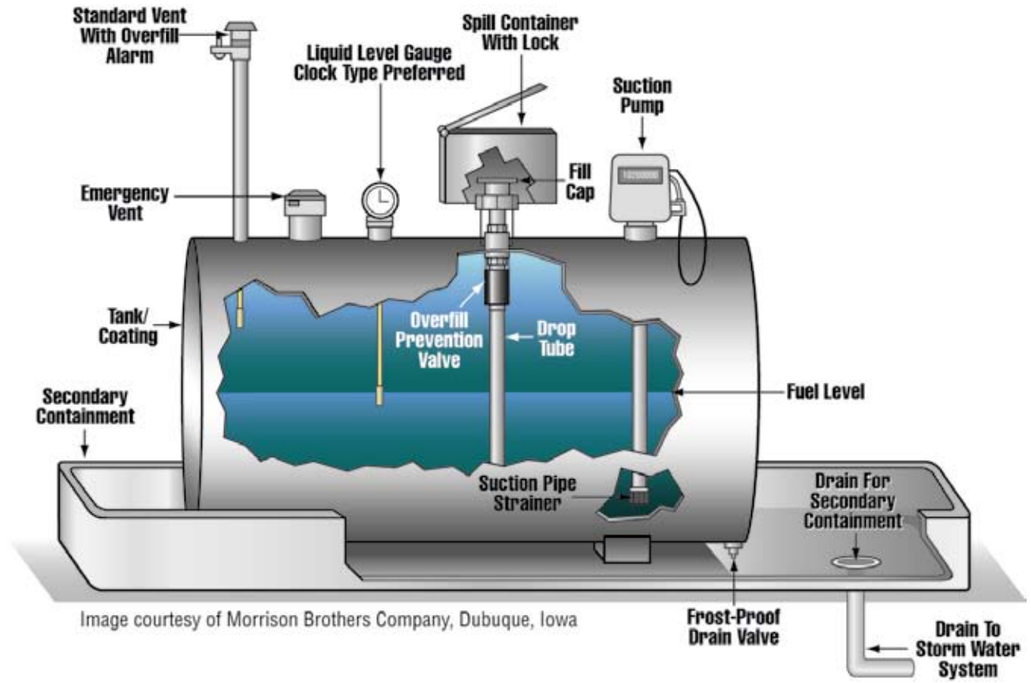


Image courtesy of Morrison Brothers Company, Dubuque, Iowa

## ICP Training

ICP training is available at the SATERN Web site <http://satern.nasa.gov>. The course is entitled "GSFC ICP Training" and the course number is GSFC-003-06. Special training sessions are also available upon request.

## FAQ

### Why does GSFC Greenbelt have to comply with all of these regulations?

First, GSFC is a Federal facility. Federal Facilities are required to follow Federal regulations and Executive Orders. In addition, the Federal Facilities Compliance Act waived sovereign immunity for State regulation and enforcement. Second, GSFC has an Oil Operations permit, which defines how the Center manages its tanks and associated processes. If the Center violates the permit, the Maryland Department of the Environment (MDE) has the authority to levy fines, penalties, and revoke the permit. This would result in GSFC not being able to store any petroleum products.

revoke the permit. This would result in GSFC not being able to store any petroleum products.

### Who is MDE and what do they do?

MDE is the State regulatory agency that was delegated the task of administering and enforcing Federal and State tank regulations by the Environmental Protection Agency. MDE inspects the Center, issues its oil operations permit, and may issue Notices of Violation and fines if GSFC is not in compliance.

### I have a heating oil tank at home. How come I don't have to comply with the same regulations?

The Maryland Code has an exemption for personal use and residential tanks.

### What can happen if I don't comply?

The Center is regularly inspected by Headquarters, MDE, and third party inspectors. Instances of non-compliance may be identified. Uncorrected instances of non-compliance could impair the Center's ability to accomplish the mission.