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LIST OF ACRONYMS

API: American Petroleum Institute
AST: Aboveground Storage Tank
ASTM: American Society for Testing and Materials
BOMO: Bureau of Maintenance and Operations
CAA: Clean Air Act
CAP: Corrective Action Process
CAR: Corrective Action Report
CEM: County Equipment Manager
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CFRP: Combined Facility Response Plan
CMM: County Maintenance Manager
CWA: Clean Water Act
DMEC: District Maintenance Environmental Coordinator
DOT: Department of Transportation
DWMC: District Waste Management Coordinator
EC: Emergency Coordinator
FA: District Facility Administrator
FMD: Facility Management Division
FRP: Fiberglass-reinforced Plastic
FRP: Facility Response Plan
GOP: General Operating Permit
HAZWOPER: Hazardous Waste Operations and Emergency Response (training)
HMIS: Hazardous Material Identification System
HSWA: Hazardous and Solid Waste Amendments of 1984
L&I: Pennsylvania Department of Labor and Industry
MSDS: Material Safety Data Sheet
NFPA: National Fire Protection Association
NRC: National Response Center
NSPS: New Source Performance Standards
OSC: On-Scene Coordinator
OSHA: Occupational Safety and Health Administration
PADEP: Pennsylvania Department of Environmental Protection
PAR: Preventative Action Report
PBR: Permit-by-Rule
PCBs: Polychlorinated Biphenyls
PE: Licensed Professional Engineer
PennDOT: Pennsylvania Department of Transportation
PM: District SEMP Program Manager
PPC: Preparedness, Prevention Contingency (Plan)
PPE: Personal Protective Clothing and Equipment
PCRP: Post Remedial Care Plan
RACR: Remedial Action Completion Report
RAP: Remedial Action Plan
RCRA: Resource Conservation and Recovery Act
R-T-K: Right-to-Know
SARA: Superfund Amendments and Reauthorization Act
SCR: Site Characterization Report
SEMP: Strategic Environmental Management Program
SIR: Statistical Inventory Reconciliation
SOP: Site Operational Procedures
SPCC: Spill Prevention, Control and Countermeasures (Plan)
SPR: Spill Prevention Response (Plan)
SRSP: Spill Prevention and Response Plan
SSIP: Site Specific Installation Permit
STP: Standard Temperature and Pressure (32 °F, 1 atm. pressure)
STSPA: Storage Tank and Spill Prevention Act (Tank Act, Act 32)
SWMA: Solid Waste Management Act
TC: District Storage Tank Coordinator
TMM: Storage Tank Management Manual (Pub. 694)
USEPA: United States Environmental Protection Agency
USGS: United State Geologic Survey
UST: Underground Storage Tank
USTIF: Underground Storage Tank Indemnification Fund
VOCs: Volatile Organic Compounds
TANK GLOSSARY

ABOVEGROUND STORAGE TANK (AST) – Tank Act Definition: Any one or a combination of stationary tanks with a capacity in excess of 250 gallons, including piping, which is used to contain regulated substances, and the volume of which is greater than 90% above the surface of the ground. The term includes any tank which can be visually inspected, from the exterior, in an underground area.

ACCIDENTAL RELEASE: Any release that is neither expected nor intended by the UST/AST system owner or operator.

ALTERNATING CURRENT: Electric current that reverses direction periodically, usually many times per second.

ANCILLARY EQUIPMENT: Electrical, vapor recovery, access or other systems and devices, such as piping, fittings, flanges, valves, and pumps used to distribute, meter, monitor or control the flow of regulated substance to or from a storage tank system.

ANODE: The negative terminal of a primary cell or of a storage battery.

BALL FLOAT VALVE: Device fitted on the bottom of the vent line used to control product delivery to tank.

BEST MANAGEMENT PRACTICES (BMP): Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of U.S. waters including treatment requirements, recycling, reduction, reuse, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

BULK FUEL TERMINAL: Any facility that receives liquid petroleum product by pipeline, ship or barge, and has a product throughput greater than 20,000 gallons per day.

CAPACITY: The quantity of liquid that can be stored within a designed structure; as in tank capacity; and excludes the volume of liquid stored by piping.

CATCH BASIN: Spill protection device (aka catchment basin, spill bucket or containment manhole) used to catch and contain delivery hose spills.

CATHODIC PROTECTION: A technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell.

CERTIFIED INSPECTOR: A person certified by PADEP to conduct inspections of tanks or tank facilities.

CERTIFIED INSTALLER: A person certified by PADEP to install, modify or remove storage tanks.

CHECK VALVE: A device for automatically limiting flow in a piping system to a single direction.
CORRECTIVE ACTION: A term used to describe the investigation and cleanup of a hazardous substance or petroleum product release to air, soil, surface water, and/or groundwater.

COMBUSTIBLE LIQUID: A liquid having a flash point at or above 100°F (37.8°C).

CONCRETE: A mixture usually composed of Portland cement, an aggregate of hard, inert particles, and water, that solidifies to a solid capable of withstanding designed live or dead loads.

CONFINED SPACE: A defined area that has limited or restricted means for entry or exit, and it is not designated for continuous employee occupancy.

CORROSION: A chemical process that destroys structural materials, usually metals.

CORRECTIVE ACTION PROCESS (CAP): Regulations governing a sequence of requirements for confirming or disproving suspected releases; reporting releases; determining the extent of soil, sediment, surface water and groundwater contamination; taking necessary actions to abate risks to human health and the environment; taking steps to prevent further migration of the released substance into the environment; restoring or replacing affected or diminished water supplies and storing contaminated soil at the site of the release as specified in PA 25, Chapter 245, Subchapter D.

DETERIORATION: To diminish or impair in quality, to weaken or disintegrate; decay.

DIKE: A built-up wall or high curbing surrounding a portion of an open area to retain large volumes of uncontrolled liquid flow.

DIRECT CURRENT: Electric current which flows in one direction only, as opposed to alternating current.

DROP TUBE: Thin metal tube placed inside the fill pipe. Required for tank inventory control to reduce amount of disturbance in the tank when product is added.

EMERGENCY CONTAINMENT: A containment structure which serves to convey, capture, and contain the total volume of an unanticipated release of regulated substances from a tank system and which can be expeditiously emptied.

EMPTY TANK: No more than one inch of residue remains in the tank.

EMULSION: An asphalt emulsion is a suspension of extremely small droplets of asphalt coated with water in the presence of an emulsifying agent, which is usually a type of detergent.

FLAMMABLE LIQUID: A liquid having a flash point below 100°F (37.8°C) and having a vapor pressure exceeding 40 pounds per square inch absolute (2068 mm Hg) at 100°F (37.8°C); if a liquid meets this criteria it is known as a “Class I liquid”.

FLASH POINT: The lowest temperature at which substances gives off sufficient vapor to form a mixture which will ignite when a source of ignition is present, under standard conditions.
FLOATING ROOF: A type of tank roof (steel, plastic, sheet, or microballoons) which floats upon the surface of the stored liquid; used to decrease the vapor space and reduce the potential for evaporation.

FLOW-THROUGH PROCESS TANK: A tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process, or for the storage of finished products or by-products from the production process.

FREE PRODUCT: A regulated substance that is present in its liquid phase (i.e., liquid not dissolved in water).

GENERAL OPERATING PERMIT (GOP): A type of tank operating permit that applies to ASTs greater than 21,000 gallons, highly hazardous substance tanks, hazardous substance USTs and field constructed USTs.

HAZARDOUS WASTE: A material consistent with the description listed in 40 CFR 261.3.

HEATING OIL: Petroleum that is No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-heavy and No. 6 technical grades of fuel oil or other petroleum products when used as substitutes for one of these fuels. Heating oil is typically used in the operation of facility heating equipment, furnaces or boilers.

HYDROSTATIC HEAD: The pressure exerted by a liquid measured in terms of the vertical height of a column of the liquid above an established data point.

IGNITABILITY: A solid, liquid or compressed gas that has a flash point less than 140°F and could catch fire under certain circumstances.

IMPERVIOUS: Not allowing entrance or passage; impenetrable.

IMPERVIOUS LINER: A form of secondary containment in which a natural or synthetic material prevents transmission of product. An impervious liner is usually placed on the ground around a tank system to contain released product and provide secondary containment.

IMPRESSED CURRENT SYSTEMS: A type of cathodic protection that uses a rectifier to convert alternating current to direct current.

INERT GAS: A non-reactive gas.

INTERSTITIAL SPACE: The space between the inner and outer walls of a double walled tank or a secondary containment system. May also be called “annular” space.

LARGE SPILL: An unintentional spill or release of material in a quantity such that personnel cannot respond without endangering the welfare of personnel and the environment. This normally requires the assistance of an outside vendor/contractor who is trained in responding to large spill emergencies.
LARGE AST: A single AST having more than or equal to 21,000 gallon capacity.

LARGE AST FACILITY: A facility having in aggregate AST storage capacity exceeding 21,000 gallons and regulated by 25 PA Code 245.501.

LARGE QUANTITY GENERATOR (LQG): A facility that generates over 1,000 kg (2,200 lbs) of hazardous waste or generates more than 1 kg (2.2 lbs) of acute hazardous waste in a calendar month.

LEACHATE: A liquid, including suspended or dissolved components in the liquid that has percolated through or drained from solid waste.

MATERIAL SAFETY DATA SHEET (MSDS): A document containing information and instructions on hazardous materials present in the workplace; MSDSs contain details about hazards and the risks relevant to the substance, requirements for its safe handling, and actions to be taken in the event of fire, spill or overexposure.

MONITORING SYSTEM: Full-time approved system installed for the purpose of early detection of leaks, such as visual or audible alarms, or their equivalent.

MOTOR OIL: A petroleum product used to lubricate the internal parts of an engine, including lubricating and operational fluids for the mechanical components associated with the engine (i.e., hydraulic, transmission, gear or braking systems).

NEW TANK FACILITY: A storage tank facility which did not exist prior to August 5, 1989.

NON-STATIONARY TANK: A tank that receives, stores, or dispenses substances at different service locations. The tank must be designed and constructed to be moved to other service locations and must be periodically moved at least once in any 12-month period.

OIL/WATER SEPARATOR: Mechanical wastewater treatment device that removes oily and greasy contaminants from process or stormwater runoff.

OPERATOR: A person (facility personnel) who manages, supervises, alters, controls or has responsibility for the daily operation of a storage tank.

OVERFILL PREVENTION DEVICE: A device which automatically shuts flow of product into the tank when the tank is not more than 95% full, or a device which alerts the individual delivering the product when the tank is not more than 90% full, by restricting the flow into the tank or triggering a high level alarm.

PERMIT-BY-RULE: A type of tank operating permit that generally applies to manufactured USTs storing petroleum products and ASTs 21,000 gallons or less that are NOT highly hazardous substance tanks.

PLUME: Shape of a contaminated zone, usually elongated.
PRESSURIZED PIPING: The piping in a pumping system which employs positive pressure to push the liquid product from a storage tank to a dispenser (i.e., pump is in the tank).

RECTIFIER: A nonlinear circuit component that allows more current to flow in one direction than the other; ideally, it allows current to flow in one direction unimpeded but allows no current to flow in the other direction.

REGULATED SUBSTANCE: An element, compound, mixture, solution or substance that when released into the environment, may present substantial danger to the public health, welfare or environment.

REMEDIATION: Process of cleaning up contamination.

REMOVAL FROM SERVICE: Activities related to rendering a storage tank system permanently unserviceable. Activities include properly draining and cleaning the storage tank system of product liquids, vapors, accumulated sludges or solids.

REPORTABLE QUANTITY: Defined quantities (in pounds) of specific materials above which releases of the material must be reported to the appropriate authorities. See 40 CFR 302.4, Table 302.4 for complete list.

REPORTABLE RELEASE: A release of regulated substance above the reportable quantity or an unknown quantity released to or posing an immediate threat to surface water or groundwater quality.

RESPONSIBLE PARTY: A person who is responsible or liable for corrective action of a release of hazardous substance or petroleum product.

RESIDUAL WASTE: Garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous.

RETROFIT: A modification of equipment to incorporate changes made in later production of similar equipment; it may be done in the factory or field.

SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM: A corrosion protection system in which the high energy electrons required for cathodic protection are supplied by the corrosion of an active metal.

SECONDARY CONTAINMENT: Containment which prevents any materials spilled or leaked from reaching land or water outside the containment area before cleanup occurs. Secondary containment is provided by impervious liners under tanks, by diking, or by placing tanks in vaults.

SHEEN: An iridescent appearance on the surface of water.
**SMALL AST:** Tank with less than 21,000 gallon capacity, regulated by 25 Pa Code 245.601.

**SMALL QUANTITY GENERATOR (SQG):** A facility that generates more than 100 kg (220 lbs) and less than 1000 kg (2,200 lbs) of hazardous waste or generates no more than 1 kg (2.2 lbs) of acute hazardous waste in a calendar month.

**SMALL SPILL:** An unintentional release of hazardous substance or petroleum product that personnel can respond to with available response equipment and personnel resources without endangering the welfare of personnel or endangering the environment.

**SODIUM CHLORIDE:** Common salt, used in stabilization of roads (i.e., dust control) and in ice control (rock salt).

**SPILL:** An unintentional release of a material from its normal storage container.

**SPILL BUCKET:** The device connected to the fill pipe of a tank which collects drippage and minor spills during fill procedures.

**STORAGE TANK:** For the purpose of this document, a vessel containing a liquid product or liquid compressed gas with a capacity of 30 gallons or greater. For the purpose of this document, this does not include vessels containing roadway line paint, bulk propane storage or waste water associated with septic systems.

**STORAGE TANK FACILITY:** A facility with aboveground or underground storage tanks, and equipment directly associated with storage tanks: ancillary equipment, foundation, containment structure or facility, corrosion protection or facility, release detection system, and/or spill and overfill protection system.

**STATISTICAL INVENTORY RECONCILIATION (SIR):** A mathematical analysis of inventory, delivery, and dispensing data collected over a period of time to determine whether or not a tank system is leaking.

**STATIONARY TANK:** An aboveground storage tank that is permanently affixed to the real property on which the tank is located. Real property can be any stationary permanent physical support on which the tank is resting. This may include the ground, a pad, building structure, saddles, stilts, etc.

**SUCTION PIPING:** The piping in a pumping system which employs negative pressure to pull the liquid product from a storage tank to a dispenser (i.e., pump is at dispenser).

**TANK ACT:** Storage Tank and Spill Prevention Act (PA Act 32 of 1989), codified in PA Title 25, Chapter 245 rules and regulations.

**TANK OPERATOR:** A person who manages, supervises, alters, controls or has any responsibility for the operation of a storage tank.

**TANK HANDLING ACTIVITIES:** Activities to install, modify or remove all or part of a storage tank system or storage tank facility. The term does not include maintenance activities.
**TANK OPERATING PERMIT:** Permit (authorization) to allow a tank owner to operate a storage tank system.

**TIGHTNESS TEST:** Generic term for a tank testing methodology which can meet USEPA performance standards for leak detection.

**UNDERGROUND STORAGE TANK (UST):** A tank (including connected underground pipes), used to contain regulated substances, with a volume (including the volume of underground pipes) 10% or more beneath the surface of the ground.

**VAPOR BALANCE SYSTEM (STAGE I VAPOR RECOVERY):** A combination of pipes, hoses and capture devices which create a closed system between the vapor space of an unloading tank and a receiving tank such that the vapors displaced from the receiving tank are transferred to the tank being unloaded. The system ensures that vapor lines are connected before material can be transferred.

**VAPOR COLLECTION AND CONTROL SYSTEM (STAGE II VAPOR RECOVERY):** Any system certified by the PennDOT and which prevents discharge to the atmosphere of at least 95% by weight of motor vehicle fuel vapors displaced during the dispensing of motor vehicle fuel into motor vehicle fuel tanks.

**VAPOR RECOVERY SYSTEM:** A system designed to capture and retain, without processing, vapors displaced during filling operations at service stations, bulk plants or terminals. Examples are balanced-pressure vapor displacement systems and vacuum-assist systems without vapor processing.

**VOLATILE ORGANIC COMPOUNDS (VOCs):** Carbon containing compounds that readily vaporize from a liquid to a gas at normal temperatures and pressures.

**WASTE CHARACTERIZATION:** Evaluation of a waste material to determine if it is a hazardous waste, a regulated waste or unregulated solid waste. Includes a review of the process which generates the waste and chemical analysis of the waste.

**WATERS OF THE COMMONWEALTH:** Any body of water, including wetlands and groundwater, subject to the jurisdiction of the Commonwealth of Pennsylvania, Department of Environmental Protection, or other state agency, under the Clean Streams Law, or other state law.

**WATERS OF THE UNITED STATES:** Any body of water, including wetlands, subject to the jurisdiction of the United States Environmental Protection Agency of the United States Army Corps of Engineers under the Clean Water Act or other federal law.
1.0 INTRODUCTION

The use of petroleum storage tanks at Pennsylvania Department of Transportation (PennDOT or Department) facilities dates back to the establishment of the PA Department of Highways in 1903. Prior to the enactment of the Storage Tank & Spill Prevention Act (PA Act 32 of 1989 or Tank Act) and the promulgation of comprehensive regulations in 1991, petroleum storage tanks were regulated by the 1927 PA Fire Marshal’s Act that only required permitting for installation.

A wide variety of State and Federal laws govern the management of storage tanks and their contents. Among the most prominent are the Federal Clean Water, Emergency Planning & Community Right-To-Know, and Energy Policy (1995) Acts; and the Commonwealth’s Clean Streams and aforementioned Storage Tank & Spill Prevention Acts. From these laws, numerous, often overlapping regulations and guidance have been authorized. The management of storage tanks is a challenging task, and is expected to become ever more so as legislation and public awareness relative to maintaining a clean environment continues to evolve.

Inconsistent storage tank management can result in corrective actions that cost the Department millions of dollars and decades of effort to address.

PennDOT made a very public commitment to environmental stewardship with the initiation of the Department’s Strategic Environmental Management Program (SEMP) in 1998. The District registrations to the ISO 14001 standard include a focus on stockpile and garage management, which directly impacts storage tank management.

Publication 694 is applicable to all Department storage tanks/containers of 30 gallons or greater, but is not applicable to tanks associated with septic systems, line paint containers and pressure vessels except those used for propane bulk storage (i.e., stationary tanks only). This publication establishes policy and provides guidance to PennDOT District Storage Tank Coordinators (TCs), other staff and consultants relative to the:

1) Management of storage tanks regulated under the PA Storage Tank & Spill Prevention Act (Tank Act).
2) Management of storage tanks containing environmentally sensitive materials which are regulated under other (non-Tank Act) statutes.
3) Management of generally unregulated tanks to which Department policy and Best Management Practices (BMPs) apply.
4) Development and maintenance of Combined Facility Response Plans (CFRPs).

The procedures herein are not an adjudication or regulation. There is no intent on the part of PennDOT to give the procedures in this guidance weight or deference. This document establishes the framework within which PennDOT will exercise its administrative discretion in the future. PennDOT reserves the discretion to deviate from this guidance if circumstances warrant. This guidance is for informational purposes only; it is not regulatory.
This manual will assist the user address the following questions:

- What tank systems are typically used at PennDOT facilities?
- How should tanks be managed to be compliant with all regulatory requirements and PennDOT’s policies?
- When and how should tanks systems be inspected and tested?
- What are the required responses to a tank release? When do I report a release and to whom?
- What training is required for personnel that have tank operational responsibilities?
- What records relating to tanks should be maintained?

This guidance has incorporated all applicable regulatory and policy requirements into one document. This publication supersedes and replaces all previous policy and guidance.

The Bureau of Maintenance & Operation/Materials Technical Leadership Division/SEMP Section is responsible for the interpretation of the contents of this document, as well as the procedural updates and modifications described therein. Questions or comments may be directed to:

Pennsylvania Department of Transportation  
Bureau of Maintenance & Operations – MTLD  
SEMP Section  
400 North Street  
Harrisburg, PA 17120  
Telephone: 717-787-0459

The following summarizes this manual’s chapter contents:

**CHAPTER 2 – STORAGE TANK REGULATIONS**
- Provides an Overview of Federal and State Regulatory Programs for Tanks

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- UST Recordkeeping

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- Describes labeling requirements for all applicable containers and ancillary equipment
- Provides hazard ratings for common PennDOT materials
- Describes typical hazard ratings and codes
- Provides Overview of fire extinguishers, MSDS and emergency shutoff requirements.

CHAPTER 9 – CORRECTIVE ACTIONS
- Defines Reportable Releases from ASTs and USTs
- Provides Requirements for Response to Releases
- Provides Overview of Corrective Action Process for Regulated Storage Tanks

CHAPTER 10 – COMBINED FACILITY RESPONSE PLAN (CFRP)
- Summarizes Spill and Contingency Plan Regulatory Requirements
- Provides Guidance for the Completion and Use of PennDOT’s CFRP Template
CHAPTER 2:

- Provides an Overview of Federal and State Regulatory Programs for Tanks

2.0 STORAGE TANK REGULATIONS

This Chapter introduces the core federal and state Aboveground Storage Tank (AST) and Underground Storage Tank (UST) rules and regulations that establish the legal framework for the management of PennDOT tanks. This regulatory field of programs is broad and at times difficult to negotiate. Thus, this Chapter is intended to be used as a reference guide and is not all encompassing. One should refer to actual regulations for specific requirements. The SEMP Section can provide additional guidance on tank management issues.

2.1 FEDERAL PROGRAMS

2.1.1 Federal UST Laws and Regulations

The federal requirements for USTs were promulgated in 1984 by the enactment of Subtitle I to the Resource Conservation and Recovery Act of 1976 (RCRA). These regulations became effective on December 22, 1988, and are found in the Code of Federal Regulations (CFR); Chapter 40, Parts 280 – Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks, and Part 281 – Underground Storage Tanks & State Program Approval. Subtitle I of the Solid Waste Disposal Act allows state UST programs approved by USEPA to operate in lieu of the federal program. Pennsylvania was granted state program approval in 2003. The UST regulations apply to owners and operators of those tanks with a capacity greater than 110 gallons, contain a regulated substance, and have at least 10 percent of the tank volume (including piping) underground. The federal statutes, however, exclude several types of USTs, including:

- Tanks used to store heating oil for consumptive use on the premises where they are stored;
- Stormwater or wastewater collection system tanks;
- Flow-through process tanks (i.e. an oil/water separator); and
- Tanks used to store RCRA regulated hazardous wastes.

The federal regulations, 40 CFR Part 280, have established:

- Design, construction, installation and notification requirements;
- General operating requirements;
- Leak detection requirements; and
- Release reporting investigation and cleanup.

Regulated Substances include: petroleum; hazardous chemicals; nonpetroleum oils including biodiesel, synthetic fuels and oils, tung oils, wood-derivative oils and inedible seed oils from plants; and pure ethanol for blending with motor fuels. See Section 3.1.1.3 for full definition.
2.1.2 Federal AST Laws and Regulations

Unlike the federal UST program, ASTs are not governed by one particular statute or set of regulations. The federal statutes and regulations that govern ASTs generally regulate the substance contained within the AST as opposed to the tank itself. The major federal programs are described below.

2.1.2.1 Clean Water Act (CWA) [33 U.S.C §1251 et seq.]

The Clean Water Act (CWA) was enacted to maintain the physical, chemical, and biological integrity of the nation’s waters. The CWA regulations pertaining to ASTs are contained within:

2.1.2.1.1 The Oil Pollution Prevention Regulations [40 CFR Parts 110 and 112]

The federal oil pollution prevention regulations address two issues: (1) notification in the event of an oil discharge, and (2) Spill Prevention Countermeasure and Control (SPCC) Plans. The CWA prohibits the discharge of oil in such quantities as may be harmful into the waters of the United States. Pursuant to the federal CWA regulations, any persons in charge of a facility with knowledge of a discharge must notify the National Response Center (NRC). The SPCC regulations apply to facilities that use/store or manage more than 1,320 gallons (in aggregate) of oil in above ground capacity. In addition to vehicle fuels and asphalt tanks, the aggregate above-ground oil capacity also includes generator tanks and all petroleum containers of a size of 55 gallons and above. The Oil Pollution Act (40 CFR Part 110) also applies to all facilities with total oil storage capacity (ASTs and USTs) greater than or equal to 42,000 gallons.

Facilities that must comply with the 40 CFR Parts 110 and 112 requirements are required to prepare SPCC Plans, provide secondary containment for their oil tanks and containers, provide formal inspections and periodic integrity testing of their ASTs. Chapter 10 of this manual provides instruction for the development and use of the PennDOT Combined Facility Response Plan template, which is designed to conform to the SPCC rule requirements.

2.1.2.2 Clean Air Act (CAA) [42 U.S.C §§ 7401 et. seq.]

The federal Clean Air Act (CAA) regulates pollutants that are discharged into the air. Under the CAA, USEPA has established New Source Performance Standards (NSPS, 40 CFR Part 60) for volatile organic compounds emitted from petroleum liquid storage vessels and bulk gasoline terminals. NSPS technology based standards generally require floating roofs and vapor recovery systems or equivalents for certain ASTs. Whether NSPS standards apply to facilities depends on storage capacity of the AST and the vapor pressure of the petroleum liquid stored.

2.1.2.3 Resource Conservation and Recovery Act (RCRA) [42 U.S.C § 6901 et. seq.]

RCRA was designed as a “cradle to grave” federal regulatory program for hazardous wastes. A waste becomes hazardous if it exhibits certain characteristics such as ignitability, corrosivity, reactivity, or toxicity, or is listed as such by USEPA.
CHAPTER 2  STORAGE TANK REGULATIONS

2.1.2.3.1 Hazardous Waste Regulations [40 CFR Part 262 and 40 CFR Part 270]

RCRA regulations apply to removal and disposal of a hazardous waste from ASTs, as per 40 CFR Parts 262 and 270. While PennDOT does not typically store hazardous wastes in ASTs, the reader is referred to PennDOT Pub. 611 – Waste Management Guidance Publication for further guidance for the management of hazardous waste.

2.1.2.3.2 Used Oil Standards [40 CFR Part 279]

USEPA’s used oil standards were developed in response to the Used Oil Recycling Act of 1980 and the Hazardous and Solid Waste Amendments of 1984, and are defined in the Used Oil Regulations of 40 CFR Part 279. Under these regulations, generators of used oil are subject to standards governing used oil activities and standards for ASTs that contain used oil. In short, tanks must be free from all visible leaks, spills, structural damage, and deterioration. Tanks must be clearly labeled as containing waste (used) oil, and storage areas around the tanks must be equipped with oil-impervious floors and secondary containment capable of containing all releases until discovery and cleanup can occur. SPCC requirements also apply to waste (used) oil.

2.1.2.4 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka Superfund) - [42 U.S.C. § 9601 et. seq.]

Under CERCLA, any persons in charge of an onshore facility must notify the NRC as soon as there is knowledge of a release of hazardous substance. Notification regulations under CERCLA are provided in 40 CFR Part 302.

2.1.2.5 Superfund Amendments and Reauthorization Act (SARA Title III) [42 U.S.C § 11001 et. seq.]

SARA Title III applies to extremely hazardous substances that listed in the federal regulations 40 CFR Part 355. Generally, SARA requires notification to state authorities of the presence of regulated substance. Notification of a release is also required under SARA, as well as certain facilities are subject to OSHA’s hazardous chemical requirements to submit Material Safety Data Sheets to local and state authorities along with hazardous chemical inventory forms.

2.2 STATE PROGRAMS

In the Commonwealth, the Pennsylvania Department of Environmental Protection (PADEP) is the principal regulatory authority for storage tanks defined by the rules and regulations promulgated under the Storage Tank and Spill Prevention Act (Tank Act). In simplified terms, the Tank Act establishes requirements for tanks above a certain size that contain a regulated...
substance. However, it must be understood that the Tank Act is not the only law governing tank operations. Tanks that are excluded or exempt from the Tank Act may be captured under other laws and regulations, or other agency jurisdictions. These agencies include the USEPA, State Police, L&I; local Fire Marshal and other local authorities, as well as other PADEP program areas (i.e. Solid Waste Management Act & regulations).

2.2.1 Storage Tank and Spill Prevention Act [Tank Act]

The Commonwealth of Pennsylvania signed into law the Storage Tank and Spill Prevention Act (Tank Act, as amended) in July 6, 1989. Unlike the federal programs, The Tank Act covers both aboveground and underground storage tanks and facilities. The Tank Act provides the PADEP the regulatory authority to regulate the construction, operation and maintenance of storage tank systems, and to provide specific requirements for cleanup actions should release or spill occur. Technical standards were developed for underground and aboveground storage tanks and facilities in Pennsylvania, specifically found at Pennsylvania Code, Title 25, Chapter 245 (25 Pa Code Chapter 245), Subchapter E (Technical Standards for Underground Storage Tanks); and two Subchapters covering ASTs (Subchapter F - Technical Standards for Aboveground storage Tanks and Facilities, and the companion Subchapter G - Simplified Program for Small Aboveground Storage Tanks) provide storage tank operational requirements, including maintenance, recordkeeping, reporting, inspection, testing requirements of tanks. By December 22, 1998, all owners and operators of regulated storage tank systems were required to either upgrade or replace their existing systems to meet the new technical standards and close old tank systems.

The Tank Act also established a formal storage tank registration program for both USTs and ASTs storing petroleum products and hazardous chemicals. Storage tanks abandoned or removed from service prior to the Tank Act (i.e., July 6, 1989) are not regulated under the Act. See Pub. 281: Appendix E: PADEP UST Guidance on Abandoned Tanks for further guidance.

2.2.2 Solid Waste Management Act and related PA Waste Management Regulations

Some tanks, specifically excluded by definition under the Tank Act, are captured and regulated under other PADEP programs. The Commonwealth of Pennsylvania has comprehensive regulations governing the management of municipal and residual wastes promulgated under the Solid Waste Management Act (SWMA) [35 P.S. §§ 6018.101-6018.1003]. Three main categories of waste: hazardous, municipal and residual wastes are covered under this program. The residual waste program, codified in 25 Pa Code Chapters 287-299 was amended a number of times, and the most recent significant change included the addition of 25 Pa Code Chapter 298 – Management of Waste Oil. ASTs and USTs storing waste oil (that is not hazardous) are governed by these regulations. The residual waste program has separate technical and performance standards for storage containers, including ASTs and USTs.

2.2.3 PA Department of Labor & Industry (L&I)/Fire Marshall Regulations

In accordance with the Combustible and Flammable Liquids Act (35 P.S. 1241 – 1252), the former stand-alone Fire Marshall regulations have been incorporated into those of the PA State Police (PSP). These are located in PA Title 37, PART I, Subpart B (37 Pa Code 13 – 14). These
regulations, as they apply to the scope of this publication, govern the management of flammable materials liquids in quantities of 30 gallons or greater.

In 2011, the Office of Chief Counsel (OCC) reviewed these laws and regulations, and concluded that they did not apply to the Department. Specifically, OCC determined that PennDOT does not meet the definition of a “person” which appears in both the Act and the regulations as “any individual, corporation or partnership.” PennDOT, being an executive agency of the Commonwealth, does not fall within this definition.

In light of this legal determination, tank inspection frequencies shall be those mandated by the Tank Act. However, due to health and safety concerns, the Department has decided that the remainder of flammable and combustible liquids management shall conform to the PSP regulations as Best Management Practices (BMPs).
CHAPTER 3: REGULATED VS. NON-REGULATED TANKS

- Defines a Tank Act Regulated Tank
- Provides A Regulatory Determination Guide for ASTs and USTs
- Lists Common PennDOT Tanks/Contents and Their Common Regulatory Status

3.0 REGULATED VS. NON-REGULATED TANKS

Tanks are regulated to various degrees based upon their product content and size. This Chapter provides a process to determine whether or not a storage tank is regulated under the Tank Act, and presents a list of common tanks/contents that fall within the regulated category.

- Most tanks will be regulated under the Tank Act requirements, also referred to as Act 32.
- With few exceptions, if a tank is not regulated under the Tank Act, it is likely subject to other regulatory requirements and/or best management practices defined by PennDOT policies and procedures.

Step-by-step determinations for ASTs and USTs are provided in Sections 3.2 and 3.3, respectively.

3.1 TANK ACT DEFINITIONS OF STORAGE TANKS

3.1.1 Definition of Regulated Tanks

PADEP regulates aboveground and underground storage tank systems that meet a certain size and contain a “regulated substance”.

3.1.1.1 Aboveground Storage Tanks

An AST is defined as the tank itself, along with all piping and dispensing equipment whose aggregate volume is at least 90% above ground and whose capacity is greater than 250 gallons.

3.1.1.2 Underground Storage Tanks

An UST is defined as the tank itself, along with all underground piping, whose aggregate volume is 10% or more beneath the ground surface and whose capacity is greater than 110 gallons.

3.1.1.3 Regulated Substances

A regulated substance is defined as “an element, compound, mixture, solution or substance that, when released into the environment, may present substantial danger to the public health, welfare or environment,” which falls into one or more of the following categories:

- A “hazardous substance” under Section 101 (14) of CERCLA, but not including substances regulated as a hazardous waste under RCRA Subtitle C regulations.
Petroleum, including but not limited to oil, petroleum, and petroleum mixed with ethanol, fuel oil, oil sludge, oil refuse, oil mixed with other nonhazardous wastes and crude oils, gasoline and kerosene.

Other substances determined by PADEP by regulation to present a hazard to public health, safety, or the environment.

Note that Tank Act regulations (25 Pa Code Chapter 245) cover petroleum, hazardous chemicals, non-petroleum oils including biodiesel, synthetic fuels and oils, pure ethanol for blending with motor fuels, among others. Waste management regulations cover materials such as used oils or waste oils that are not hazardous, and used anti-freeze.

3.1.2 Clarification for Use of the Terms “Used Oil” and “Waste Oil”

Tanks, both aboveground and underground, containing used oils or waste oils, are covered under the PADEP residual waste program. When PADEP amended its regulations in 2001 (25 Pa Code Chapter 298 – Waste Oil Management), PADEP redefined the term “waste oil” to include non-hazardous used oils that PennDOT previously labeled as “used oil.” PennDOT allows tanks containing non-hazardous used oils that were previously labeled as “used oil” to continue using that label. When new labels are placed on such tanks; however, the term “waste oil” should now be applied.

The term “waste oil” as defined in 25 Pa Code Chapter 298 should not be confused with “hazardous used/waste oil.”
3.2 HOW TO DETERMINE THE MANNER IN WHICH AN AST IS REGULATED

3.2.1 Determination Process

Utilize the flowchart in Figure 3-1 to determine if you have an AST regulated under the Tank Act.

![Flowchart](image)

3.2.1.1 Step 1 – Is the Tank Considered an AST?

The tank must meet the definition of an AST if it is to be considered regulated. If the tank and its associated piping are at least 90% above ground level AND have an aggregate capacity of greater than 250 gallons, then it is considered an AST. Continue to Section 3.2.1.2. If not, the tank is not regulated as an AST under the Tank Act (see Section 3.2.3, Table 3-1 for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).

Step 2 – Does the AST Contain a Regulated Substance?

The AST must also contain a regulated substance in accordance with Section 3.1.1.3 if it is to be considered regulated. If the AST contains a regulated substance, continue to Section 3.2.1.3.
If not, the AST is not regulated under the Tank Act (see Section 3.2.3, Table 3-1, for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).

3.2.1.2 Step 3 – Is the AST exempt/excluded from Tank Act regulations?

Review the list of exemptions and exclusions listed in Section 3.2.2. If none of the exemptions/exclusions applies to the AST, it is regulated and must be managed as such. If an exception or exclusion applies, the AST is not regulated under the Tank Act (see Section 3.2.3, Table 3-1, for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).

3.2.2 AST Exemptions and Exclusions

Listed below are exemptions to ASTs under the Tank Act regulations (25 Pa Code Chapter 245). Where appropriate, key elements are **bolded** and additional clarification listed in *italics*. The list is prioritized from top to bottom in reference to its applicability to typical PennDOT operations.

Exemptions that may apply to PennDOT operations:

- ASTs with a **capacity of 250 gallons or less**.
- ASTs of **1,100 gallons or less** capacity used for storing **motor fuel** (e.g., gasoline, diesel fuel, gasohol or aviation fuel) or **virgin motor oil** for noncommercial purposes (i.e., not for resale).
- ASTs used for storing non-hazardous **waste oil**. While these tanks are not registered, they must be managed in the same way as registered tanks.
- ASTs used for storing **heating oil for consumptive use** on the premises where stored.
- Aboveground **stormwater** or **wastewater collection systems**.
- Flow-through process tanks, including but not limited to, pressure vessels or process vessels and **oil and water separators**.
- Equipment or machinery that contains regulated substances for operational purposes such as **hydraulic lift tanks** *(elevators)* and **electrical equipment tanks** *(electric transformers)*.
- ASTs that contains a **de minimis concentration** (insufficient concentration to be required to appear on a MSDS, typically <1%) of regulated substances.
3.2.3 Typical Regulatory Status of PennDOT ASTs

Listed in the table below are typical materials stored in ASTs at PennDOT facilities.

<table>
<thead>
<tr>
<th>AST Content</th>
<th>Tank Act Regulated?¹</th>
<th>Regulated Elsewhere?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated Substance. Exempt if capacity &lt;1,100 gallons.</td>
</tr>
<tr>
<td></td>
<td>(see size exclusion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated Substance. Exempt if capacity &lt; 1,100 gallons.</td>
</tr>
<tr>
<td></td>
<td>(see size exclusion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Oil</td>
<td>No</td>
<td>No</td>
<td>Exempt, if solely used for heating premises.</td>
</tr>
<tr>
<td>Kerosene</td>
<td>Yes/No</td>
<td>n/a</td>
<td>Regulated, if not solely used for heating premises (i.e., building). Exempt, if solely used for heating premises only.</td>
</tr>
<tr>
<td>Brine</td>
<td>No</td>
<td>No</td>
<td>Not a regulated substance, by definition.</td>
</tr>
<tr>
<td>Road Oil and Asphalt Emulsions</td>
<td>Yes</td>
<td>n/a</td>
<td>PADEP has made a determination that all road oil tanks are regulated (asphalt not a true solid @ 60 deg. C).</td>
</tr>
<tr>
<td>New Motor Oil</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated Substance. Exempt, if capacity less than 1,100 gallons.</td>
</tr>
<tr>
<td></td>
<td>(see size exclusion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virgin Antifreeze</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated substance, but typically stored in tanks &lt; 250 gallons</td>
</tr>
<tr>
<td></td>
<td>(see size exclusion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>No</td>
<td>Yes</td>
<td>Captured under PA Hazardous Waste Regulations.</td>
</tr>
<tr>
<td>Used Antifreeze</td>
<td>No</td>
<td>Yes</td>
<td>Covered under Residual Waste Regulations.</td>
</tr>
<tr>
<td>Propane⁴</td>
<td>No</td>
<td>Yes</td>
<td>Covered under L&amp;I Permitting as a flammable material (previously Fire Marshal regulations applied).</td>
</tr>
</tbody>
</table>

¹ Refers to Tank Act Definition of Regulated Tanks as codified in 25 Pa Code Chapter 245 only.

² References exemptions and exclusions from 25 Pa Code Chapter 245; and identifies other regulatory programs that are applicable. Abbreviated list of exemptions and exclusion is provided in Section 3.2.2 of this Chapter.

³ With the promulgation of 25 Pa Code Chapter 298 – Waste Oil Management, the term “waste oil” is used for formerly defined “used oil” (non-hazardous waste oil) tanks. See Section 3.1.2.

⁴ Bulk propane tanks are typically leased by PennDOT, and are owned and maintained by a vendor. All stationary bulk propane tanks should be inventoried in the Storage Tank Database.
CHAPTER 3  REGULATED VS. NON-REGULATED TANKS

3.3  HOW TO DETERMINE THE MANNER IN WHICH A UST IS REGULATED

3.3.1  Determination Process

Utilize the flowchart in Figure 3-2 to determine if you have a UST regulated under the Tank Act.

FIGURE 3-2
UST REGULATORY DETERMINATION FLOWCHART

3.3.1.1  Step 1 – Is the Tank Considered a UST?

The tank must meet the definition of a UST if it is to be considered regulated. If the tank itself, along with all underground piping, whose aggregate volume is 10% or more beneath the ground surface AND have an aggregate capacity of greater than 110 gallons, then it is considered a UST. Continue to Section 3.3.1.2. If not, the tank is not regulated as an UST under the Tank Act (see Section 3.3.3, Table 3-2, for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).
3.3.1.2 Step 2 – Does the UST Contain a Regulated Substance?

The UST must also contain a regulated substance in accordance with Section 3.1.1.3 if it is to be considered regulated. If the UST contains a regulated substance, continue to Section 3.3.1.3. If not, the UST is not regulated under the Tank Act (see Section 3.3.3, Table 3-2, for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).

3.3.1.3 Step 3 – Is the UST exempt/excluded from Tank Act regulations?

Review the list of exemptions and exclusions listed in Section 3.3.2. If none of the exemptions/exclusions applies to the UST, it is regulated and must be managed as such. If an exemption or exclusion applies, the UST is not regulated under the Tank Act (see Section 3.3.3, Table 3-2, for guidance in identifying the regulatory program or PennDOT policy applicable to the tank).

3.3.2 UST Exemptions and Exclusions

Listed below are exemptions to USTs under the Tank Act regulations (25 Pa Code Chapter 245). Where appropriate, key elements are bolded and additional clarification listed in italics. The list is prioritized from top to bottom in reference to its applicability to typical PennDOT operations.

Exemptions that may apply to PennDOT operations:

- USTs with a capacity of 110 gallons or less.
- USTs that store heating oil for consumptive use on premises where stored.
- Underground stormwater or wastewater collection systems.
- Flow-through process tanks, including but not limited to, pressure vessels or process vessels and oil and water separators.
- Tanks situated in an underground area (such as a basement, cellar, subsurface vault, mine working, drift shaft or tunnel) if the tank is situated upon or above the supporting surface of the floor and can be visibly inspected. (These tanks are classified as aboveground storage tanks.)
- An underground wastewater treatment tank system (including septic tanks). (Not addressed in this manual.)
- Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks (elevators) and electrical equipment tanks (electrical transformers).
- Surface impoundments, pits, ponds, or lagoons (Not addressed in this manual).
- USTs that contain a de minimis concentration (insufficient concentration to be required to appear on a MSDS, typically <1%) of regulated substances.
### 3.3.3 Typical Regulatory Status of PennDOT USTs

Listed in the table below are typical materials stored in USTs at PennDOT facilities.

<table>
<thead>
<tr>
<th>UST Content</th>
<th>Tank Act Regulated?</th>
<th>Regulated Elsewhere?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated Substance.</td>
</tr>
<tr>
<td>Diesel</td>
<td>Yes</td>
<td>n/a</td>
<td>Regulated Substance.</td>
</tr>
<tr>
<td>Heating Oil</td>
<td>Yes/ No (usually)</td>
<td>n/a</td>
<td>Regulated, if not solely used for heating premises (i.e., building). Exempt, if used for heating premises only.</td>
</tr>
<tr>
<td>Used Oil/Waste Oil²</td>
<td>Yes</td>
<td>Yes</td>
<td>Regulated Substance. Exemptions in 25 Pa Code Chapter 245 (Tank Act) and 25 Pa Code Chapter 298 (Waste Oil Management) cancel each other out.</td>
</tr>
<tr>
<td>Kerosene</td>
<td>Yes/No</td>
<td>n/a</td>
<td>Regulated, if not solely used for heating premises. Exempt, if solely used for heating premises only.</td>
</tr>
<tr>
<td>Used Antifreeze</td>
<td>No</td>
<td>Yes</td>
<td>Covered under Residual Waste Regulations</td>
</tr>
</tbody>
</table>

1 Refers to Tank Act Definition of Regulated Tanks as codified in 25 Pa Code Chapter 245 only.  
2 With the promulgation of 25 Pa Code Chapter 298 – Waste Oil Management, the term "waste oil" is used for “used oil” (non-hazardous waste oil) tanks. See Section 3.1.2.
CHAPTER 4: PROCESS TO PLACE A PERMITTED TANK INTO SERVICE

- Necessary Planning and Coordination
- Tank Specific Permits
- Registration and Permitting Requirements
- Flammable & Combustible Tank Notifications
- Checklists for Placing a Regulated Tank into Service

4.0 PROCESS TO PLACE A REGULATED TANK INTO SERVICE

All regulated storage tanks, both ASTs and USTs must be registered and permitted in Pennsylvania prior to being placed into operation. This chapter applies to the following tank systems:

- Regulated USTs: USTs with a capacity of more than 110 gallons which contain a regulated substance.
- Regulated ASTs: ASTs with a capacity of more than 250 gallons (>1,100 gallons heating oil and motor oil) which contain a regulated substance.
- L&I permitted tanks: vessels which contain a liquid in excess of 30 gallons, in a fixed installation, and its contents have a closed cup flash point of at least 100 degrees F.

4.1 PennDOT APPROVALS and COORDINATION

4.1.1 Planning Activities

Prior to initiating any tank activities, the County shall coordinate with the TC and the District Facility Administrator (FA) to determine the specific storage tank needs. This may include, but should not be limited to: substance needed, capacity requirements, preferred siting, ancillary equipment needs, compatibility with stockpile equipment and operations, timeframe, funding sources, responsibilities, commitments, etc.

4.1.2 Motor Fuel Tank Pre-Approval from BOMO

The planned procurement and installation of all regulated tanks containing motor fuel shall be approved in writing by the Director of the Bureau of Maintenance and Operations (BOMO) before the commencement of any activities related to the subject tanks. The County shall prepare and submit this Request for Approval letter to the Director, BOMO. The following criteria must be included in the letter:

- stockpile location,
- capacity of each tank,
- fuel type to be contained in each tank, and
- each proposed assigned tank number.\(^1\)

\(^1\) See Publication 284 for tank numbering protocol.
Questions and concerns regarding this approval should be directed to the Plant Maintenance Support Section, Maintenance Performance Division, BOMO.

The County shall provide the FA with a copy of the BOMO approval letter. The County shall maintain the original approval letter and a copy of the request letter in its files for the life of the tank(s).

4.1.3 Installation Plan Development

The Facility Management Division (FMD) shall administer the installation of all regulated tanks (see Section 3.1.1). For non-regulated tanks, installation administration is at the discretion of the County. Prior to installation of any tank, the following activities shall occur:

4.1.3.1 Funding and Scheduling

For tank installations administered by the FA, the County and the FA shall determine funding commitments. In addition, the County and FA shall coordinate with the TC to establish an appropriate schedule to establish design criteria, obtain permits, and to install and inspect the tanks and associated systems. These items should be documented. The 4-Year Stockpile Plan may serve as the documentation. Alternately, a memo to the FA’s project file may serve to memorialize these determinations.

For those (non-regulated) tank installations solely administered by the County, planned funding and scheduling requirements are at the discretion of the County. The County shall notify the TC and FA in writing of any tank installation or removal.

4.1.3.2 Tank System Design

All tank systems shall comply with applicable regulations, codes and Department policy. Regulated tank systems shall meet the performance standards established in 25 Pa Code Chapter 245. Setbacks, fire code requirements, etc. shall comply with 37 Pa Code Chapter 13. Labeling and signage shall conform to the requirements specified in Chapter 8 of this publication and Pub. 284 as it applies to tank and containment structure numbering.

FMD shall determine the final design for all regulated tank systems, and any other tanks and systems under its jurisdiction. For all other tanks, the County will determine the final design at its discretion.

4.2 PERMITS and REGISTRATIONS

The TC shall obtain all permits and registrations from PADEP, L&I, and local Fire Marshal, as applicable. Where appropriate, Philadelphia and Allegheny County also govern registrations and permitting of tank operations. Building permits shall be obtained as indicated in Pub. 284. Operating permit details are provided in the following subsections.
Original permits and registrations will be maintained at the facility. The TC will maintain copies at the District office.

### 4.2.1 Tank Act-Specific Operating Permits

Two types of Tank Operating Permits exist:

- Permit-By-Rule, and
- General Operating Permit.

#### 4.2.1.1 Permit-by-Rule

The majority of PennDOT’s storage tank systems are subject to the Permit-by-Rule (PBR) provisions. Tanks must meet the following criteria to qualify:

- ASTs 21,000 gallons or less that are not storing highly hazardous substances; and
- Manufactured USTs storing petroleum.

To meet the Permit-by-Rule requirements, owners or operators of a tank must first properly register the tank with PADEP. See Section 4.2.2 for details and instructions.

#### 4.2.1.2 General Operating Permit

Tanks that do not meet the PBR criteria are subject to General Operating Permit (GOP) requirements. These tanks include, but are not limited to:

- ASTs greater than 21,000 gallons;
- Highly hazardous substance tanks;
- Hazardous substance USTs;
- Field constructed USTs; and
- Facilities with an aggregate above ground tank storage capacity in excess of 21,000 gallons.

In addition to tank registration requirements, tanks within this category have extra submittals as defined in Section 4.3.

### 4.2.2 Tank Act Registration

Tank registrations are applicable for:

- Tanks < 21,000 gallons, and
- For new tank installation, relocation, changes of service, and closures.

**The registration is part of the permitting process** and failure to register equates to not having a valid operating permit.
REGISTRATION and FORMS
Storage tank registration forms and instructions can be obtained from PADEP’s Division of Storage Tanks (Central Office), regional PADEP offices or from the PADEP Web site at www.dep.web.state.pa.us (keyword: Storage Tank).

The registration process requires the submission of a complete registration package. An example copy of a completed registration form (PADEP Form 2570-PM-BWM0514) is provided in Attachment 4-1.

Normally, registration fees are required to obtain a valid permit to operate regulated tanks. **Initial and annual registration fees are waived for PennDOT**, as a state agency.

### 4.2.2.1 Initial Tank Registration

Registration of regulated tanks must be performed **within 30 days of installation or new ownership of the tank system**. A regulated substance may not be placed in the tank and the tank may not be operated until it is properly registered and PADEP issues a certificate that serves as an operating permit for the tank.

**Initial Registration** is used for: initial tank installations, registrations for removal of unregistered tanks, and registration for unregistered tanks closed in place.

Completed registration package, Form 2570-PM-BWM0514, should be mailed to PADEP. If you have any questions on completing form, please contact the SEMP Section for assistance.

**MAILING TANK REGISTRATION PACKAGE:**
The complete PADEP Registration Package must be submitted to:

- **PADEP**
  - Division of Storage Tanks
  - P.O. Box 8762
  - Harrisburg, PA 17105-8762

Other Letters, Forms or Reports, such as Letters of Intent to Close, Closure Notification forms and Registration/Permitting forms for Removing/Closing Unregistered Tank(s) must be mailed to PADEP regional offices for the counties they serve. The Registration Package Instructions, also provided in Attachment 4-1, includes the list of regional PADEP offices.

**PADEP CONTACT INFORMATION:**
- Toll Free in PA: 1-800-42-TANKS
- Local or Out-of-State: 717-772-5599
4.2.2.2 Retroactive Registration

All existing regulated tanks are required to be registered with PADEP. However, if an existing regulated tank has not been registered, PADEP allows retroactive registration. Information on how many years the tank(s) have been operated and the technical characteristics of the tank system are required to obtain registration.

Use Form 2570-PM-BWM0514, provided in Attachment 4-1, for retroactive registrations.

4.2.2.3 Corrections to Registrations

PADEP allows the use of Form 2570-FM-BWM0607, Storage Tank Registration Amendment Form, for indicating change of tank status when the initial registration was filed within the 30 previous days. This form can be used only for tanks with a change of status. A copy of Form 2570-FM-BWM0607 with instruction is provided in Attachment 4-2. Otherwise, the change is considered an Amendment; Section 4.2.2.5 discusses regulatory amendment requirements.

4.2.2.4 Tanks Storing Flammable or Combustible Liquids

There are additional notification requirements for tanks storing flammable or combustible liquids that have a storage capacity greater than 30 gallons. Section 4.3 provides a description on this subject. The TC is responsible to make these notifications.

4.2.2.5 Amendments to Tank Registrations

Amendments to initial tank registrations must be submitted when any of the following actions take place:

- Change in ownership (applies for tanks sold, purchased, relocated, etc.);
- Change in contact information;
- Removal or relocation of a tank;
- Temporary or permanent closure or removal from service of a storage tank;
- Change in use of a storage tank to or from regulated or non-regulated status (exempted tank);
- Change in substance or substances stored; and
- Installation of a new or replacement storage tank at an existing facility.

PADEP Form 2570-FM-BWM0514 is used for submitting amendments to registrations. Owners/operators are required to submit a registration form to amend registration information previously submitted to the Department within 30 days of a change.

4.2.2.6 Tank Operating Permit

For tanks meeting the Permit-By-Rule criteria, a Tank Operating Permit is considered automatically issued by PADEP with the

| Tanks abandoned or out-of-service prior to 1989 are not regulated under the Tank Act. |
proper registration. The Tank Registration Certificate serves as the permit to operate. Additional requirements apply to ASTs and USTs that operate under a General Operating Permit (see subsection 4.2.1.2).

4.2.3 Tank Act Notification Requirements for Large ASTs

Most PennDOT facilities qualify for the PBR criteria. However, if a facility does not meet the PBR criteria, then a General Operating Permit (GOP) is needed if:

- Installing a large AST(s) (greater than 21,000 gallon in capacity);
- The facility qualifies as a large AST facility (aggregate aboveground storage of regulated tanks exceeds 21,000 gallons); or
- facility operates ASTs containing “highly hazardous” substances

Section 4.3.1 provided details on the additional registration and notification requirements.

4.2.3.1 Site Specific Installation Permit

Facilities that do not meet the PBR criteria, by default meet the GOP permit criteria and must apply for a **Site Specific Installation Permit (SSIP)** prior to constructing, installing, or reconstructing the large (>21,000 gallons) AST.

A copy of the PADEP Application Form 2570-PM-BWM0002 and Instructions is provided in Attachment 4-3. Registration of the tank does not constitute an application for an SSIP.

The SSIP requires the following information:

- **Certification** that the tank handling activities and inspection will be performed by certified individuals.
- **Certification** that the storage tank system will comply with technical requirements.
- **Maps and plans of the proposed system or facility**, including boundaries of the proposed facility site, location of proposed monitoring wells, elevation and location of the test borings, adjacent streams and waterways, slope measurements of the land surface, and ownership of public or private groundwater supplies within 2,500 feet of the proposed site.
- **Spill Prevention and Response Plan (SRSP)** *(Proper completion of PennDOT’s CFRP meets this requirement)*.
- **Environmental Assessment Report**, including a detailed analysis of the potential impact on the environment, air and water quality, public health, water uses, and threatened and endangered species. To complete the Environmental Assessment Report, at a minimum, a Categorical Exclusion (CE) study shall be conducted. The District Environmental Unit may be contacted for more information and assistance. PADEP may require a more extensive assessment. It is recommended that the TC contact the PADEP regional office for concurrence with the scope of the study prior to initiating the assessment.

**REMEMBER!**

Update your CFRP if you have a change in facility oil storage or operations. New petroleum tanks, removal of tanks or changes of status or operations must be documented in the CFRP!
Issues that may make it difficult to obtain a SSIP include: tanks located within a 100-year floodplain or large flood areas (unless it is located in an industrial use area prior to August 5, 1989); tanks situated in wetlands without special wetlands permits and authorization under the dam safety and waterway management regulations.

### PENNDOT does not typically install tanks above 21,000 gallons!

This Section applies if:

- **AST has capacity > 21,000 gallons**
- **Facility has more than 21,000 gallons in total of aboveground storage tank capacity**
- **AST that stores “highly hazardous” substances**

#### 4.2.3.2 Municipality and County Notifications

Owners or operators seeking to install large ASTs (capacity greater than 21,000 gallons), or facilities with a collective tank capacity of 21,000 gallons (“large AST facilities”), and ASTs that store “highly hazardous” substances are required to provide notification to the local municipality and county in which the tank(s) will be operational prior to submitting any documentation to PADEP. Notification letters must be sent by certified mail and proof that the municipality and County were contacted must be included with the permit application.

#### 4.2.3.3 Tank Operating Permits

Additional requirements apply to ASTs and USTs that operate under a GOP. These include installation inspections by a PADEP licensed inspector, and depending on the facility location, local inspections may also be needed.

### 4.3 TANK INSTALLATION AND INSPECTION

FMD shall administer the installation of all regulated tanks (see Section 3.1.1). For non-regulated tanks, installation administration is the responsibility of the County or FMD depending on jurisdiction.

**Tank installations inspections of regulated tanks are required to be conducted prior to placement of a new tank into service.**

Installation of all regulated tank systems shall be done by a certified tank handler in compliance with 25 Pa Code 245, Subchapter B, and shall be done by a certified tank inspector.

#### 4.3.1 PA Department of Labor & Industry Notifications & Inspections

L&I is responsible for approving the installation or relocation of tanks, pumps and dispensing devices associated with flammable and combustible liquids, as defined in PA Title 37, Part I, Subpart B - Flammable and Combustible Liquids rules and regulations. These regulations do not apply to the Department (see Section 2.2.3). Since PennDOT maintains a somewhat limited
quantity of flammable materials, operational inspections and inspection frequencies shall be those mandated by the Tank Act. However, due to health and safety concerns, **ALL OTHER** flammable and combustible liquids management, including the initial L&I safety inspection, shall conform to these regulations as Best Management Practices (BMPs).

Liquid substances subject to this requirement include, but may not be limited to: petroleum products, ethanol, gasoline, naphtha, kerosene, fuel oil, or any other flammable or combustible liquid that is stored in stationary tanks, in any capacity exceeding 30 gallons.

The TC is responsible for applying for and receiving all permits. All applicable forms, as listed below are required:

- **Form LIBI-703 – Intent to Install Form** (generic for all applications); and one or more of the following:
  - **Form LIBI-701 – Aboveground Tanks/Pumps/Dispenser Form**
    - Use only for ASTs with related pumps drawing-off devices.
  - **Form LIBI-702 – Underground Tanks/Pumps/Dispensers Form**
    - Use for only installing USTs with related pumps or drawing-off devices.
  - **LIIB-121 - Variance Request Form**
    - (Use if requesting variances from 37 Pa Code, Part I, Subpart B).

Copies of all L&I Forms are provided in Attachment 4-4.

**MAILING L&I NOTIFICATIONS FORMS:**
PA Department of Labor & Industry  
F&C Section  
651 Boas Street, Room 1606  
Harrisburg, PA 17121

PA Department of Labor & Industry Contact Information: 717-787-6614, or Industrial Board: 717-787-6114.

The submission will be reviewed by L&I for completeness and applicability. If approved, a copy of all application forms with permit numbers will be forwarded to the applicant. With this approval, the installation of the tank may proceed. The work must be completed within **one year** of the application approval date.

When the work is completed, the applicant is required to call the L&I inspector to arrange for a safety inspection. This call should be made at least **three days** before the desired inspection date. If the inspection is passed, the applicant is issued a Permit for the Storage and Handling of Flammable and Combustible Liquids. This permit **must be displayed at the site** and made available for examination upon any regulatory agency request. It is recommended that the permit be displayed in the same location as the tank registration(s).
4.3.2 City of Philadelphia and Allegheny County Additional Requirements

For facilities located in the City of Philadelphia, use form provided in Attachment 4-5.

Mail City of Philadelphia Form to:
Department of Licenses and Inspections
1401 John F. Kennedy Boulevard
Philadelphia, PA 19102

Contact Information: 215-686-2463

For facilities located in the Allegheny County, use form provided in Attachment 4-6.

Mail Allegheny County Form to:
Fire Marshal’s Office
400 North Lexington Street, Suite 200
Pittsburgh, PA 15208-2521

Contact Information: 412-473-2552

4.3.3 PADEP Tank Installation and Inspection Requirement (Tank Act)

The Pennsylvania Storage Tank Program requires anyone conducting tank handling and inspection activities to be certified by the PADEP. This applies to initial tank installations. In total, there are 11 categories of certifications – 11 installer/removal categories and three inspector categories, as briefly listed below.

Aboveground Storage Tank Categories:

AMMX Aboveground manufactured metallic storage tank installation and modification,
AMNX Aboveground nonmetallic storage tank installation and modification,
AFMX Aboveground field constructed metallic storage tank installation and modification and removal,
AMR Removal of aboveground manufactured storage tank systems,
AFR Removal of aboveground field constructed and manufactured aboveground storage tank systems,
AMEX Aboveground storage tank system mechanical installation, modification and removal,
ACVL Aboveground storage tank-civil,
IAM Inspection of aboveground manufactured storage tank systems,
IAF Inspection of aboveground field constructed and aboveground manufactured storage tank systems,
TL Storage tank liner (for both AST and UST systems).
Underground Storage Tank Categories:

- **UMX**: Underground storage tank installation and modification,
- **UMR**: Removal of underground storage tank systems,
- **UTT**: Underground storage tank tightness testing,
- **IUM**: Inspection of underground storage tank systems and storage tank facilities,
- **TL**: Storage tank liner (for both AST and UST systems).

FMD should verify the certification of tank installers and inspectors prior to contracting vendors. Full descriptions of activities approved to be handled by certain category can be found in PADEP Fact Sheet, 2570-FS-DEP1647, on PADEP’s website. However, it is prudent to contact the vendors and request copies of their company’s license and individual licenses to confirm the current license status.

### 4.4 FINANCIAL ASSURANCE/INSURANCE

PADEP requires owners of tanks to participate in a state-run insurance fund, Underground Storage Tank Indemnification Fund (USTIF). This insurance is mandated **only for USTs**. PennDOT is self-insured and does not participate in the USTIF program.

**CHECKLIST FOR PERMITTING TANKS**

- [x] Coordinate with the FA and TC for identification and selection of appropriate tank system.
- [x] Determine if Permit-By-Rule (PBR) or General Operating Permit (GOP) requirements apply.
- [x] Make an AST or UST regulated vs. non-regulated determination.
- [x] Submit administratively and technically complete PADEP Permit Registration Package.
- [x] Submit L&I Flammable & Combustible Intent-to-Install Application Package (typically, only petroleum tanks).
- [x] Schedule Certified Installation and Inspections of storage tanks prior to placing into operation.
- [x] If needed, complete Retroactive Tank Registrations.
- [x] Modify CFRP to reflect changes of petroleum storage at your facility, if applicable.
CHAPTER 5: AST OPERATION & MAINTENANCE

- Applies to Tank Act ASTs Only
- Describes Types of AST Facility Categories
- Describes AST Secondary Containment Requirements
- Discusses AST Operation & Maintenance Practices
- Provides AST Inspection Schedules
- Provides AST Recordkeeping Requirements
- Directs to Chapters 8 and 9 for Spill and Release Incident Procedures

5.0 AST OPERATION & MAINTENANCE

This Chapter applies to ASTs which are regulated under the Tank Act (25 Pa Code Chapter 245); this generally means ASTs that have a volume greater than 250 gallons and contain regulated substances (there are exceptions). Additionally, this Chapter describes AST system technical requirements (secondary containment, spill and overfill prevention), and maintenance, inspection, testing and recordkeeping requirements. AST systems employed by PennDOT share common characteristics, but are designed, operated and maintained under site-specific criteria. Consequently, it is not possible to develop a general AST O&M program. The roles and responsibilities of PennDOT’s TCs and Maintenance Facility Personnel are defined at the end of this Chapter.

Chapter 7 provides guidance for ASTs that are not regulated under the Tank Act.

5.1 AST FACILITY TYPES (SMALL vs. LARGE)

The regulatory authorities make a distinction between smaller and larger AST systems. PennDOT facilities typically utilize small ASTs, but there are exceptions. The criteria between these two categories are described below.

5.1.1 Small ASTs Systems and Facilities

Small ASTs systems and facilities are defined as having less than 21,000 aggregate gallons capacity (applicable to regulated substances only), as defined and regulated by the Tank Act (25 Pa Code Chapter 245.601). Most PennDOT facilities use only small ASTs. However, there are exceptions, and therefore, large AST regulatory requirements are also provided in this Chapter.

5.1.2 Large AST Systems and Facilities

Large AST Systems and large AST facilities are defined as having more than or equal to 21,000 gallon capacity or facilities with an aggregate AST storage capacity exceeding 21,000 gallons. The regulations for management of large AST are provided in 25 Pa Code Chapter 245.501. In general, large AST facilities have more stringent tank performance standards.
CHAPTER 5  AST OPERATION & MAINTENANCE

QUICK TIPS & CHECKS:

☑ Independently conduct a check on all facilities for ASTs category to determine the appropriate AST classification (small vs. large).

5.2 AST SYSTEM DESCRIPTION

By regulatory definition, an AST system is a tank or combination of tanks, the piping and connected ancillary equipment that is 90% above the ground surface and/or within a vault or containment structure such that it can visually inspected. Since ASTs are not usually in direct contact with soils and leakage more obvious than USTs, properly installed and managed AST systems tend to be less complex than comparable UST systems. This results in less onerous maintenance and operational requirements.

PennDOT typically installs pre-manufactured tanks such as Supervault™ Multi-Hazard (MH) Secondary Containment ASTs or equivalent. By design, these tanks meet the Tank Act system requirements. The Tank Act often defers to nationally recognized industry codes of practice (codes of practice) for tank owners to meet operational and maintenance schedules. A list of references for tank standards and industry codes of practices is provided in Attachment 5-1. Additionally, each facility should familiarize themselves with their AST manufacturer specifications to properly maintain the facility’s AST system(s).

At minimum, the following technical requirements must be provided for all ASTs.

**Tank Requirements:**

- Tanks must be designed, constructed, installed, or modified, according to current industry codes of practices and manufacturer’s specifications. This information should be located at the facility for reference. If they are not present, contact the TC.
- Tanks must have a stable support or foundation that is capable of supporting the total weight of the tank and its contents.
- Tanks must be fitted with spill and overfill prevention devices.
- The tank system’s exterior must be protected with an appropriate coating or paint.
- Internally lined tanks must meet large AST system regulatory technical requirements.
- Tanks must be labeled or marked so that the substance stored can be readily identified from outside the containment area. This means visible from the side most often seen by those using the tank contents.

**Piping Requirements:**

AST piping must be designed, installed, or modified according to current industry codes of practices and manufacturer’s specifications. Equipment must be compatible with the substance
stored. Piping must be protected from corrosion, excessive wear and deterioration. New piping must be double-walled with interstitial monitoring.

**Containment Structure Requirements:**

AST systems are required to have containment. There are two different types of containment structures: secondary containment and emergency containment. They must also be compatible with the substance stored. For clarification, the definitions for each are provided below along with examples of each type of containment structure.

**Secondary containment** is an additional layer of impervious material creating a space in which a release of a regulated substance from a storage tank may be detected before it enters the environment. Examples of secondary containment are double-walled tank systems, free-standing containment structures, and pits.

**Emergency containment** is a containment structure which serves to convey, capture, and contain the total volume of an anticipated release of regulated substances from a tank system and which is expeditiously emptied. Examples of emergency containment are containment curbs and containment collection systems.

Earthen dikes or walled containment structures without impervious floors are not to be used at PennDOT facilities under any circumstances!

**5.2.1 Secondary Containment for Small AST Systems**

Small AST system must have both secondary and emergency containment, meeting the following requirements:

**Secondary containment** must be provided in or under the tank bottom to provide monitoring capability to satisfy leak detection requirements.

**Emergency containment** must be provided that is sufficiently impermeable to contain any release, such as overfills, leaks, and spills for a minimum of 72 hours, or until the release can be detected and recovered in an expeditious manner. No specific permeability rate is required, except for motor fuel stored in underground vaults (see Section 5.3).

If small ASTs and large ASTs share the same emergency containment structure, it must meet the standards and/or verification requirements for large ASTs.

**Double-walled tanks** may meet both emergency and secondary containment requirements when the tank system is operated with appropriate spill and overfill protection controls identified in Section 5.2.3. When using Supervault™ (or equivalent) double-walled tanks for diesel fuel, gasoline, and kerosene additional emergency containment is not necessary for the tank. However, concrete fuel dispensing or loading area pads are required. The District FA shall review and accept the pad design.
5.2.2 Secondary Containment for Large AST Systems

Large AST and large AST facilities must meet the secondary containment requirements listed below. When properly maintained (no cracking, effective joint seals), concrete or equivalent containment systems are considered “impermeable.”

**New Large ASTs and Large AST facilities** (installed after October 11, 1997) must have:

- A permeability rate of less than $1 \times 10^{-6} \text{ cm/sec}$ at anticipated hydrostatic head; and
- Sufficient thickness to prevent a release from penetrating the containment structure for at least 72 hours and until it can be detected and removed.

**Existing Large AST systems and Large AST facilities** (installed prior to October 11, 1997) must meet the following requirements by the next scheduled out-of-service inspection:

- Same requirements as new systems;
- **OR**
  - Documented evidence that a professional engineer has verified the emergency containment structure is capable of detecting and recovering a release and designed to prevent contamination of surface and groundwater.
- Product transfers must be monitored at all times.
- Stormwater must be removed as soon as possible, or before it fills 10% of the containment structure. If the water comes in contact with the tank or piping, it must be removed immediately.
- Drain valves must be secured in closed position when not in use.

Additional guidance on containment structures (different materials, maintenance concerns, liners, etc.) can be found in PADEP’s Guidance Document (TG-257-0900-022) Verification of Emergency Containment Structures for Aboveground Storage Tanks, included as Attachment 5-2.

5.2.3 AST Spill and Overfill Protection

All ASTs systems are required to have spill and overfill protection controls to prevent releases of products to the environment during filling or material transfer operations. At a minimum, the following must be provided for the ASTs to meet regulatory requirements:

- Spill containment buckets at the tank fill point or containment at the remote fill point.
- An overfill alarm or prevention device, or monitoring gauge and shut down procedures.
- Solenoid valve or antisiphon device, if appropriate.

Spill and overfill protection information and site operational procedures (SOP) for fuel transfer should be included in each individual facility’s CFRP. The CFRP is discussed in Chapter 10.
QUICK TIPS & CHECKS:

☑ Confirm secondary and emergency containment is provided at your facility for all ASTs.
☑ Spill containment and overfill protection must be provided for all ASTs.
☑ Double-walled tanks meet both emergency and secondary containment requirements if they have spill and overfill protection devices.
☑ Concrete pads are required for fuel dispensing and fuel loading areas.
☑ Check containment structures on a routine basis for spills and releases and record inspections.
☑ Clean-up all spills promptly.

5.3 ASTs IN UNDERGROUND VAULTS

PennDOT does not typically utilize underground vaults for storage of AST systems. However, if this option is considered, the tank in the vault is considered an AST, and the vault itself must meet specific design and operational criteria:

- The vault must completely enclose the tank, no openings are allowed (except for assessing, inspecting, filling, emptying or venting the tank).
- The walls and floor must be constructed of reinforced concrete six inches thick.
- The top, walls, and floor must be able to withstand weight from traffic, soil, and groundwater.
- The vault must be compatible with the substance stored, be water tight, and have a permeability of less than $1 \times 10^{-7}$ cm/sec.
- Adjacent vaults may share a common wall, but only one tank per vault.
- There must be sufficient space between the tank and the vault to allow for inspection of the tank and ancillary equipment. Backfill is not allowed around the tank.
- Both the tank and vault must be anchored.
- Each vault must be vented to dilute, dispense, or remove vapors prior to entering the vault.
- A continuous leak detection system must be installed and capable of detecting vapors and liquids, including water. The system must automatically shut down the dispensing system if a release occurs and alert the owner or operator of the problem.
- The vault must have an entry point for personnel, with a warning sign regarding safe entry procedures into a confined space. The entry point must be secured against unauthorized entry and vandalism.
- Each vault must have a suitable fire suppression system.

5.4 MODIFICATIONS TO AST SYSTEMS

PADEP clearly defines what type of activities can be performed routinely by tank operators on their AST systems, and PADEP also defines the activities that are considered modifications which must be performed by PADEP certified individuals. For clarification, guidance is provided below:
Maintenance: The normal operational upkeep of a storage tank system or storage tank facility. If an activity does not alter the design of the storage tank system or facility, does not directly affect the tank or an underground component of the storage tank system, and does not affect the integrity of the storage tank system or storage tank facility, it is a maintenance activity. Maintenance activities may be performed by PennDOT personnel.

Minor Modification: An activity to upgrade, repair, refurbish or restore all or part of an existing storage tank system or storage tank facility which does not alter the design of that storage tank system or storage tank facility, but which may affect the integrity of that storage tank system or storage tank facility.

Major Modifications: An activity to upgrade, repair, refurbish or restore all or any part of existing storage tank system or storage tank facility which: (1) alters the design of that storage tank system, and (2) affects the integrity of the storage tank system or storage tank facility. Any activity affecting the tank portion of the storage tank system, or an activity directly affecting an underground component of the storage tank system, which is only accessible by breaking ground is considered a major modification.

Specifically for ASTs, major modifications are considered:

- Replacement or addition of a tank shell or plate.
- Repair or replacement of the tank bottom or any partial repair or replacement of the tank bottom.
- Penetrations of the tank shell, roof or bottom (other than through existing manways).
- Addition or replacement of pipes directly between the tanks shell, bottom or tank roof, and the first control valve outside the tank.
- Repair or replacement of welds on the tank.
- Installation or addition of equipment or appurtenances such as spill or overfill protection, tank gauging, stairways, platforms, walkways, or other similar additions that may put excessive loads on the tank shell and were not part of the overall design considerations.
- New or additional piping runs or not like kind replacements.

PennDOT personnel shall not engage in AST modifications of any type.

At minimum, modifications must:

- Be performed by a certified installer (AMMX or AFMX). The PADEP Reporting Form 2570-FM-LRWM-0150 (Attachment 5-4) must be completed by the certified personnel and submitted to PADEP.
- Be inspected prior to placing tanks back into service.
- Meet current industry codes of practice such as API, STI, or ASME, or be performed according to manufacturer’s specifications and applicable engineering criteria.

Any/all deficiencies noted during the inspection must be addressed and remedied. The TC must submit repair-related supporting documentation to the PADEP, if requested.
QUICK TIPS & CHECKS:

☑ Modifications of AST systems are not considered (regulated) scheduled inspections/repairs and are not included in the Tank Database automatic notification.
☑ Any electrical work must be completed by a licensed electrician in compliance with L&I requirements.
☑ Use PADEP certified personnel for minor or major AST modification work. See Chapter 4 for the appropriate category. Check the vendor’s certifications!
☑ Review Form 2570-FM-LRWM-0150 for accuracy and completion prepared by certified personnel prior to submission to PADEP.
☑ Keep repair/modification records.

5.5 TEMPORARY OR PERMANENT CLOSURE OF ASTs

AST systems can be temporarily closed or permanently closed. Each procedure shall be coordinated between the TC, County Equipment Manager (or designee) and FA to determine closure schedule and required closure procedures.

5.5.1 Temporary Closures of ASTs

The following must be performed and documented to place an AST into temporary closure (removal from service):

- Empty the AST by removing residual liquid, solid or sludges from ASTs (typically completed under County or District residual waste contract).
- Appropriately dispose removed residual liquids, solids, and sludges.
- Visually examine area around AST for signs of release.
- Conduct routine scheduled inspections. Refer to the inspection frequency discussed in Section 5.8.
- TC shall submit the Tank Registration Amendment Form 2570-FM-BMW0607, as provided in Attachment 4-4 of this manual for reporting the change of tank status to PADEP.

AST systems may remain temporarily closed for up to five years. After five years, it must be permanently closed. Leak detection and a monthly operation maintenance checks are not required on tanks that are temporarily removed from service.

5.5.2 Permanent Closures of ASTs

The following activities must be performed to permanently close an AST system:

- Visually inspect the surface soil and the area surrounding/underlying the storage tank system for evidence of a release.
- If the AST is not removed from site, follow current industry standards to empty, clean and remove hazardous vapors from lines.
- Appropriately dispose removed residual liquid, solid, and sludges.
Submit PADEP Closure Notification Form 2570-FM-BWM0513, included in Attachment 5-5, to the PADEP 30 days prior to permanent closure (TC shall review and accept Closure Notification prior to submission to PADEP).

Submit PADEP Closure Report Form 2570-FM-BWM-0514, included in Attachment 5-6, to the PADEP upon completion of closure activities (TC shall review and accept Closure Report prior to submission to PADEP).

Until PADEP receives notification that a tank is removed from service, the tank is considered to be in-service and must comply with all operational requirements.

QUICK TIPS & CHECKS:

☑ Record “Change-of-Status” of the AST within PennDOT’s Tank Database.
# 5.6 AST MONITORING, MAINTENANCE AND INSPECTION REQUIREMENTS

Table 5-1 summarizes required inspection, testing and monitoring requirements discussed in Sections 5.6 and 5.8.

<table>
<thead>
<tr>
<th>Every 72 Hours</th>
<th>Responsibilities and Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AST PIPING, OVERALL SYSTEM, CONTAINMENT</strong></td>
<td>Tank Operator</td>
</tr>
<tr>
<td></td>
<td>Visual Inspection.</td>
</tr>
<tr>
<td></td>
<td>No documentation needed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monthly</th>
<th>Responsibilities and Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEAK DETECTION</strong></td>
<td>Tank Operator</td>
</tr>
<tr>
<td>Visual inspection otherwise.</td>
<td>Perform maintenance and calibration of various components of tank monitoring system, as needed.</td>
</tr>
<tr>
<td><strong>SPILL AND OVERFILL PROTECTION</strong></td>
<td>Overfill alarms/indicator checks and water removal of spill containment equipment.</td>
</tr>
<tr>
<td>Clean out and testing</td>
<td>Monthly monitoring must be documented.</td>
</tr>
<tr>
<td><strong>ANCILLARY EQUIPMENT</strong></td>
<td>Certified Tester/Inspector</td>
</tr>
<tr>
<td>Required equipment, including product sensors and probes, dispenser pans, containment sumps, measuring devices (including gauge sticks), gauges, hoses, corrosion protection, spill prevention, overfill prevention and other appurtenances whose failure could contribute to a release of product</td>
<td>3rd Party Tests and Inspections must be documented.</td>
</tr>
</tbody>
</table>

**SCHEDULED CERTIFIED INSPECTIONS and TESTING**

| **AST INSTALLATION INSPECTIONS** | Certified Tester/Inspector |
| **AST REPAIR/MODIFICATIONS TESTING/INSPECTIONS** | |
| **AST INTEGRITY TESTING AND INSPECTIONS** | 3rd Party Tests and Inspections must be documented. |
| **TANK AND PIPING TIGHTNESS TESTING** | |
| Additional (as needed) by Certified Testers. Testing of AST system components are required after any repairs, upgrades and modifications before being placed back into service. | |
5.6.1 Undocumented 72 Hour Visual Inspections

AST systems shall be visually inspected every 72 hours. The visual inspection will be of the outside of the AST system to determine if there has been a spill or release from the system. In addition, this inspection will visually assess the integrity of the containment structure and ensure accumulated rainwater is removed in a timely manner. No documentation is needed for this inspection as it simply serves as a preventative measure.

5.6.2 Corrosion Monitoring (Monthly)

Steel ASTs and associated piping must be inspected regularly and monitored and documented monthly for corrosion deterioration. Some ASTs have all exterior elements visible for inspection. For example, an AST supported on cradles, or a vaulted tank, are both completely visible. The on ground AST, however, is not readily accessible at the one place of greatest exposure points of failure – the base plate. Corrosion damage can occur on the underside, eventually pitting the base and allowing product to escape under the tank. Corrosion monitoring requirements vary depending on the tank size, age, placement (raised or on-ground) and what specific form of secondary containment is provided. Corrosion protection methods utilized for ASTs can be cathodic protection, impressed current or a non-corrosive material coating of the inner bottom AST surface.

Periodic third party certified inspections may also be required for certain categories of ASTs.

5.6.3 Leak Detection Monitoring (Monthly)

Monthly leak detection monitoring is required for all regulated ASTs and must be documented. NOTE: For those tanks using a Veeder-Root or similar system, this is typically done automatically and recorded in the system memory.

Approved leak detection methods for small ASTs include either:

- Operation of an automatic sensing device,
- Mechanical device, or
- Visual inspection.

For New Large AST systems (installed after Oct. 11, 1997) approved leak detection methods include either:

- Monitoring the area beneath the tank bottom by using visual, mechanical, or electronic leak detection methods, or
- Monitoring/observation wells located outside the secondary containment structure. This is not a PennDOT-accepted leak detection method.

For Existing Large AST systems (installed before Oct. 11, 1997) approved leak detection methods include either of the following:
- **ASTs with secondary containment** must have a monthly leak detection method in place. NOTE: A monthly visual inspection is acceptable for leak detection. Visual inspections of aboveground piping must be in accordance with the facility operations and maintenance plan.
- **ASTs without secondary containment** under the bottom of the tank, and are in direct contact with the soil, and do not have cathodic protection or an internal liner, must be tested for tightness at the next scheduled service inspection. Testing for tightness must continue at each service inspection until the tank is upgraded.

### 5.6.4 Maintenance Inspections (Monthly)

Visual inspections of AST system components must be conducted on a monthly basis. The purpose of these inspections is to identify any visual signs of potential leaks and to take appropriate corrective measures. All monthly inspections should be documented on the site-specific SEMP Inspection Checklist. Dates of inspections and inspector initials should be included on the SEMP Inspection Records Sheet. Any significant observations and corrective measures initiated should be recorded on the forms. At a minimum, the following AST system components must be visually inspected and recorded:

**AST and Containment:**

- Visual check of AST systems, including ancillary equipment, foundation, and supports for signs of deterioration or malfunction.
- Check of AST vents for restrictions.
- Observe for evidence of a release or regulated substance.
- Inspection of proper operation of leak detection equipment, if installed (automatic sensing device or mechanical device).
- Investigation of conditions that may be a fire or safety hazard, or pose an environmental hazard, including but not limited to;
  - dispenser pans,
  - hoses, and
  - uncollected spend sorbant.
- Inspection of all secondary/emergency containment structures. These systems should be inspected for cracking and frost damage, vehicle and equipment impacts and closed release drains.
- Excess rainwater or precipitation accumulation in the secondary/emergency containment area (greater than 10% of the containment area storage volume) must be drained. Prior to release of accumulated rainwater from the secondary/emergency containment, it must be visually inspected for contamination (sheen or staining). The *Rainwater Release Inspection Log*, maintained in the CFRP Records Binder, must also be completed. If the rainwater is contaminated, it must be properly collected and disposed.
- If a release is detected, the corrective actions, as described in detail in Chapter 9, must be implemented.
Dispenser Hose/Nozzles:

Inspect all product dispenser hoses and nozzles for loose fittings, deterioration, and obvious signs of leakage. At a minimum, this item should be included in a weekly walk-around, and shall be documented on a monthly inspection checklist.

The use of hold open clips or other devices to block the fuel nozzle in the open position is prohibited except at those Department sites that have a dedicated high speed fuel dispenser for fueling Department fuel truck bulk tanks. The person filling the bulk tank must remain with the truck at all times during the fueling process (re: SOL 461-10-02).

Dispenser Sumps:

Open each dispenser and inspect all visible dispenser lines, fittings, and couplings, and inspect the sump beneath the dispenser for any signs of leakage. This item shall be documented on a monthly inspection checklist.

QUICK TIPS & CHECKS:

☑ Record Change of Status of AST within PennDOT’s Tank Database.
☑ Use Facility-Specific Environmental Checklist. If any significant issues are forthcoming, a CAR must be initiated.
☑ Use Rainwater Release Log for document each release of precipitation from diked secondary containment areas.

5.7 CERTIFIED THIRD-PARTY INTEGRITY INSPECTIONS

Third-party certified inspections are required for a subset of small ASTs and all large ASTs. Third-party inspections are performed to evaluate the integrity of the AST systems and make a determination on the tank’s continued service. These inspections must be performed by PADEP certified inspectors with certification(s) in the appropriate AST inspection categories (IAM or IAMF). The TC is responsible to ensure an appropriate and timely third-party integrity inspection is scheduled and performed. Typically, these inspection services are contracted at the District level. Additionally, the TC is responsible for addressing any repairs or deficiencies identified by the inspectors prior to the ASTs being returned back into service.

Initial inspections evaluate current tank conditions, and subsequent inspections are scheduled either within a set timeframe or more frequently if corrosion is identified that may indicate a faster failure of the tank system. There are required In-Service Inspections and Out-of-Service Inspections, and which inspections are required at a facility depends on the tank capacity.

Certified Third-Party inspections must follow criteria set forth through industry codes of practice, tank manufacturer’s instructions, and design engineer’s specifications. Certified inspectors make integrity evaluations/determinations on:
• Containment areas,
• Foundation and tank supports,
• Tank shell and tank roof,
• Appurtenances,
• Ancillary equipment including piping,
• Leak detection method, including monthly leak detection records and maintenance checklists,
• Cathodic protection system, if installed,
• Coatings and protection from deterioration, and
• Tank system integrity and suitability for continued service.

The above list of evaluations and determinations is applicable to both small ASTs and large AST systems. The following additional determinations are for large AST systems only:

• The corrosion rate of the tank shell and piping,
• The life of the tanks shell and piping based on the corrosion rate,
• Tank bottom (when not visible from external inspection) (Out-of-Service Inspections only),
• The next scheduled inspection, based on specified of the corrosion rate life with maximum scheduled yearly interval, and
• Recommendations for maintaining the integrity of the system.

After the inspections are performed, the certified inspector must complete and submit the required Form 2570-FM-BWM0150 to PADEP, included as Attachment 5-4. The TC is responsible to review the inspection form for accuracy and follow up on any required recommendations.

The completed Inspection Report must be kept on file at the facility. It is recommended that the TC maintain copies of the inspection reports.

5.7.1 Certified (Third-party) AST Integrity Inspections (Small Tanks)

The following two categories of small ASTs are required to have scheduled third-party certified inspections:

• ASTs with an aggregate storage capacity greater than 5,000 gallons up to 21,000 gallons that contain a regulated substance;
• ASTs with an aggregate storage capacity greater than 1,100 gallons up to 21,000 gallons that contain highly hazardous substances.

Initial inspection is defined as the first inspection of a tank system after October 11, 1997. The TC is responsible to ensure an appropriate and timely Third-party Integrity Inspections is conducted by a PADEP certified AST inspector.

Small ASTs must have initial inspections conducted per the schedule provided below:
Table 5-2
SMALL ASTs
Initial Inspection Schedule

<table>
<thead>
<tr>
<th>Tank Installation Date</th>
<th>INITIAL INSPECTION is required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New tanks installed after October 11, 1997</td>
<td>Within 10 years of installation</td>
</tr>
<tr>
<td>Existing tanks less than 10 years old (Installed October 11, 1987 to October 11, 1997)</td>
<td>Within the next 6 years (by Oct. 11, 2003) OR Within 10 years after installation, whichever date is later (by 2007)</td>
</tr>
<tr>
<td>Existing tanks over 10 years old (installed before October 11, 1987)</td>
<td>Within the next 5 years (by Oct. 11, 2002)</td>
</tr>
</tbody>
</table>

The criteria and schedule for subsequent inspections is provided below:

Table 5-3
Small ASTs
Subsequent Inspection Schedule

<table>
<thead>
<tr>
<th>Tank Category</th>
<th>Subsequent Inspection Frequency:</th>
</tr>
</thead>
<tbody>
<tr>
<td>For small ASTs storing regulated substances and are &gt;5,000 gallons</td>
<td>Every 10 years and at ¼ of the tank’s corrosion rate life, but not more than 10 years between inspections</td>
</tr>
<tr>
<td>For small ASTs storing highly hazardous substances and are &gt;1,100 gallons</td>
<td></td>
</tr>
</tbody>
</table>

Other small AST inspection/reporting requirements include:

- Conducted according to a current Nationally–recognized association’s code of practice such as API, STI, or ASME, or according to manufacturer’s specifications and applicable engineering criteria.
- Certified inspector must complete and submit the required PADEP documentation (Form 2570-FM-BWM0150) included as Attachment 5-4.
- Any/all deficiencies noted during the inspection must be addressed and remedied.
- The TC must submit repair-related supporting documentation to the PADEP, if requested.
- All associated tank handling activities must be reported to the PADEP by a certified installer.

**AST Tightness Testing Requirements:**

Tightness testing of ASTs is periodically required to meet Tank Act regulatory requirements. Specifically, tightness testing must be performed on new or modified small ASTs when:

- New ASTs are initially installed, or
- ASTs are substantially modified, and
- Tanks that receive major modifications to the tank shell or the tank bottom. Tanks must be tested for tightness prior to being returned to service.

**Note:** ASTs manufactured as shop-built tanks that are initially tested after full assembly at the plant do not require additional testing at installation if the manufacturer certifies that the
tank was tested at the plant and the manufacturer’s installation instructions do not specify additional testing. This exemption may be applied to most PennDOT ASTs regulated under the Tank Act.

5.7.2 Certified (Third party) AST Integrity Inspections (Large Tanks)

The following table provides the Initial and Subsequent In-Service Inspection Schedule for large ASTs (aggregate capacity greater than 21,000 gallons).

<table>
<thead>
<tr>
<th>Tank Installation Date</th>
<th>Initial In-Service Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>New tanks installed after October 11, 1997</td>
<td>Initial inspection within 5 years of installation</td>
</tr>
<tr>
<td>Existing tanks installed between Oct. 12, 1992 and October 11, 1997 that have never been inspected.</td>
<td>Initial inspection by Oct. 11, 1999, or within 5 years of installation, whichever is later.</td>
</tr>
<tr>
<td>Existing tanks that are more than 5 years old (installed before October 11, 1992), that have never been inspected.</td>
<td>Initial inspection by Oct. 11, 1999.</td>
</tr>
<tr>
<td>Existing tanks that were inspected before Oct. 11, 1994.</td>
<td>Initial inspection by Oct. 11, 2000.</td>
</tr>
<tr>
<td>Existing tanks that were inspected between Oct. 11, 1994 and Oct. 11, 1997</td>
<td>Initial inspection due within 6 years of last inspection.</td>
</tr>
</tbody>
</table>

Subsequent In-Service Inspection Schedule

| All Tanks | Based on Initial In-Service Inspection Results. Must be conducted within 1/4 of the corrosion rate life, but no later than 5 years after previous inspection. |

After the initial inspection is conducted, subsequent In-Service Inspections must be conducted within ¾ of the corrosion rate life, but no later than five years after the previous inspection. The certified inspector will determine the tanks corrosion rate life during inspections.

Out-of-Service Inspections:

Out-of-Service Inspections are required in addition to In-Service Inspections, when the large ASTs can’t be fully evaluated from the exterior. An example of this tank type is a large vertical tank that sits directly on the ground or concrete pad. Out-of-Service inspections require the tank to be emptied of product prior to the inspections.

Large ASTs that can be fully examined from the exterior and are not internally lined are exempt from Out-of-Service Inspections.

The following table provides a schedule for Initial and Subsequent Out-of-Service Inspection Schedule:
Table 5-5  
**Large ASTs Initial Out-of-Service Inspections**

<table>
<thead>
<tr>
<th>Date of Tank Installation</th>
<th>Inspection Frequency</th>
</tr>
</thead>
</table>
| New tanks installed after October 11, 1997 | Initial inspection* based on either measured or similar service corrosion rates.  
Note: The corrosion rate, if it is unknown, must be determined by measuring the actual thickness of the tank bottom within ten years after installation. |
| Existing tanks (installed before Oct. 11, 1997) without a known corrosion rate. | Initial inspection* within 10 years after installation, or by Oct. 11, 2000, whichever is later. |
| Existing tanks (installed before Oct. 11, 1997) with a known corrosion rate. | Initial inspection* at ½ corrosion rate life after either installation or previous Out-of-Service Inspection, or by Oct. 11, 2000, whichever is later. |

**Subsequent Out-of-Service Inspection Schedule**

| All Tanks | Based on Initial Out-of-Service Inspection Results. Must be conducted within 1/2 of the corrosion rate life, but no later than 20 years after previous inspection. |

**Subsequent** Out-of-Service inspection is based on ½ of the corrosion rate life, but no later than 20 years between inspections.

**QUICK TIPS & CHECKS:**

- **Identify which large ASTs need In-Service and Out-of-Service Inspections.**
- **Schedule In-Service and Out-of-Service Inspections with Certified Inspectors.**
- **Address any repairs or deficiencies identified by the inspector prior to placing the AST back into service.**
- **Review Inspection Report for accuracy prior to submittal to PADEP.**
- **File Inspection Report at facility or District Office.**

5.8 **AST REGISTRATION**

ASTs must be annually registered with PADEP. The TC is responsible for completing and submitting tank registrations. Registration Certificates must be posted at the facility location, as described in Section 5.4. Tank Registration procedures are provided in Chapter 4 of this manual. For regulated ASTs, the annual registration constitutes meeting tank Permit-By-Rule requirements.

5.9 **AST RELEASES**

When a release from an AST is suspected or detected, there are Department policies and regulatory guidelines that must be followed. A release of a regulated substance exceeding the
reportable quantity must be reported to the PADEP regional office as-soon-as-possible, but within 2 hours of confirmation of the release.

Reportable Quantities (RQs) are established by U.S. EPA under the Superfund, Emergency Planning and Community Right-to-Know Programs. The list of materials and their RQs may be found at 40 CFR 302.4 (Subchapter J). Pub. 611, Section 8.1.1 utilizes “rule-of-thumb” guidance that petroleum releases (outside containment) of greater than 5 gallons must be reported.

For more information, see Chapter 9 for Corrective Action procedures and Chapter 10 for spill response procedures and countermeasures for releases from ASTs and associated operations.

5.10 AST RECORDKEEPING

All records and reports related to ASTs shall be kept for the operational life of the AST system and at least 5 years after its permanent closure. The following records are required to be maintained for AST systems.

**PennDOT’s Record Retention Policy addresses documentation requirements for ASTs, and specifies retention time requirements for records from pre-installation through post-closure or removal activities. Generally, if there is a doubt whether or not to retain a record, PennDOT recommends retention.**

These are specific records that must be available at the tank facility:

**Retention for operational life of AST system or longer...**

- Tank Records (As-Built, Photos, Manufacturer Specifications and Warranties, system upgrades);
- Tank and Tank Component Repairs Records/Reports;
- Original Tank Registration & Permits and Notifications;
- Operational Records;
  - History of Usage,
  - Physical Inspection checklists/reports,
  - Monitoring Records,
  - Leak / incident documentation,
  - Tank Handling Activity Reports;
- Tank Reports (tank handling reports, closure reports);
- System Calibration (if applicable);
- Corrosion Protection Records;
- Release Reporting and Spill Incident Records;
- Integrity Testing Records;
- AST Regulatory Records;
- Records of modifications to the tank or storage tank system;
- Operating Permits, if required;
- Third-party inspection and testing reports;
- Tightness Testing (until next test performed);
- Inspection Records;
- Training Records (Oil handling training - CFRP related).
13-Months Retention...

- Operational Maintenance Records (leak detection, spill containment system),
- Inventory Records,
- Current registration certificates,
- Monthly leak detection records and maintenance checklists for the past 12 months.

It is recommended that tank records are scanned and stored electronically for long term storage.

5.11 PENNDOT RESPONSIBILITIES

PennDOT has internal policies and procedures and assigned roles and responsibilities for proper management of AST systems. The TC has a key role for the District’s tank management program. Maintenance and facilities personnel have more day-to-day active roles for implementing proper tank management activities, including routine maintenance, inspection and testing responsibilities.

TC Responsibilities:

- Maintains District tank inventory,
- Maintains tank compliance records,
- Coordinates all operations-related tank registrations and permits,
- Ensures third-party inspections are completed in a timely fashion,
- Keeps updated on regulatory requirements,
- Coordinates tank upgrades, modification and replacement activities with the County and FA,
- Coordinates with facilities for tank system testing operations,
- Coordinates with facilities personnel for CFRP annual reviews, updates and 5-year PE certifications (if applicable),
- Assists facility managers in responding to spills and releases, and any follow-up corrective actions,
- Maintains list of contractors, vendors and consultants for tank handling activities and corrective actions,
- Assist contractors in clean-up procedures and tank upgrades,
- Identifies training requirements for facilities personnel on tank handling activities,
- Maintain inspection checklists and forms.

Tank Operator/Maintenance Personnel Responsibilities:

- Maintains familiarity with AST system and component manufacturer requirements,
- Perform routine operational and maintenance activities on AST systems per manufacturer requirements,
- Performs operation and maintenance activities on secondary containment structures,
- Perform monthly inspections and routine system checks on AST system components,
- Makes release or other emergency notifications in conformance with the CFRP,
- Ensures tank registrations are posted,
- Maintains appropriate signage,
- Assist TC in review and updates to CFRPs,
- Assist TC in spill and release reporting requirements.
CHAPTER 6: UST OPERATION & MAINTENANCE

- Applies to Tank Act USTs Only
- Describes UST System Components
- Discussed UST Operational and Maintenance Practices
- Provides UST Inspection and Testing Schedules
- Describes UST Operator Training Requirements
- Provides UST Recordkeeping Requirements
- Directs to Chapters 9 and 10 for Spill and Release Incidence

6.0 UST OPERATION & MAINTENANCE

This Chapter applies to USTs which are regulated under the Tank Act (25 Pa Code Chapter 245). NOTE: Chapter 7 provides guidance for USTs not regulated under the Tank Act. UST systems employed by PennDOT share common characteristics, but are designed, operated and maintained under site-specific criteria. Consequently, it is not possible to develop a general UST O&M program. Each facility must evaluate its individual system and develop a site-specific program. This Chapter provides UST system design and operational requirements, inspection and testing requirements and guidance for regulatory compliance in recordkeeping, reporting and inspections. Additionally, roles and responsibilities of TCs and Maintenance Facility Personnel are defined at the end of this Chapter.

Tank Act UST systems must be:

- Cathodically protected against corrosion, constructed of non-corrosive material; or if constructed of steel, clad with a non-corrosive material;
- Constructed or lined with material which is compatible with the substance stored;
- Equipped with leak detection;
- Equipped with spill and overfill protection equipment;
- Installed by a certified installer; and
- Inspected by a certified inspector, when required.

6.1 UST SYSTEM DESCRIPTION

Since USTs are in direct contact with soils and leakage is often not readily obvious, properly installed and managed UST systems must rely on a variety of technical components to ensure system integrity. For these reasons, UST systems tend to be more complex than comparable AST systems. This results in more extensive maintenance and operational requirements. Only prefabricated, shop-built (manufactured) USTs may be installed at PennDOT facilities. The schematic below illustrates basic UST system components and includes the storage tank itself, the delivery and fill lines, joints, unions, valves, sumps, dispensers, pumps, etc. The tank system essentially includes all materials and components that convey, store, control or potentially come in contact with the material it stores. An overview of the technical requirements for the key system components is provided below.
Tanks Requirements:

The technical requirements for UST are provided in 25 Pa Code Chapter 245, Subchapter E for the following types of USTs:

- Fiberglass-reinforced plastic (FRP),
- Steel that is cathodically protected,
- Steel-FRP composite,
- Metal without additional corrosion protection measures (Not to be utilized by PennDOT and is presented for information purposes only). This option is applicable only with corrosion expert determination and compliance demonstration for operating life of tank.

Piping Requirements:

UST system piping; new or replaced, must be designed, constructed and protected from corrosion in accordance with national recognized codes and standards and meet the following technical requirements:

- Fiberglass-reinforced plastic (or other nonmetallic, non-corrodible and UL listed material),
- Steel that is cathodically protected,
- Metal without additional corrosion protection (N/A for PennDOT facilities),

Spill and Overfill Prevention Equipment Requirements:

All UST systems are required to have spill prevention equipment to prevent release of products to the environment during filling or material transfer operations. Examples of spill containment
equipment include; spill catchment basins or spill containment buckets. At minimum, the following must be met:

- automatically shut off the flow when the tank is 95 percent full; or
- alert the operator when the tank is more than 90 percent full by restricting the flow or triggering a high level alarm; or
- restrict flow 30 minutes prior to overfilling, alert the operator with a high level one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

6.1.1 Leak Detection & Monitoring Systems

The following subsections describe leak detection and monitoring requirements for most tanks. Smaller petroleum USTs (< 2,000 gallons) may use a combination of leak detection methods which are described in Section 6.5.

All regulated UST systems and piping must be equipped with a monitoring system capable of detecting a product release. The leak detection system must be capable of detecting a release from any portion of the tank and piping that routinely contains product. Furthermore, the leak detection system must be routinely calibrated and maintained in accordance with the manufacturer’s requirements. The facility shall establish their testing and calibration schedule and maintain the schedule, and maintain records that document these actions.

Monthly Monitoring must be accomplished using one of the following leak detection methods:

- Secondary containment with interstitial monitoring,
- Automatic tank gauging,
- Soil vapor monitoring (not used by PennDOT),
- Ground water monitoring (not used by PennDOT),
- Statistical inventory reconciliation,
- Manual tank gauging (only for < 2,000 gallons capacity), or
- Other methods approved by PADEP.

It is common to see the statistical inventory control combined with another method such as automatic gauging method, but such a combination of methods is not required. Regardless of the method(s) selected, the leak detection system must be calibrated, maintained, and used consistently to be effective and in compliance with 25 Pa Code Chapter 245 requirements.

UST Tightness Testing with inventory control is no longer an approved method of leak detection. By December 22, 2008, all UST systems that used this system must be monitored by one of the previously mentioned methods.

Automated monthly monitoring systems must be initially calibrated by the manufacturer. A manufacturer’s representative should also provide operational and maintenance training to PennDOT personnel upon installation of the system(s). PennDOT personnel shall follow the manufacturer’s operating instructions and periodically have the equipment calibrated, as
necessary. These leak detection methods are briefly discussed below in the following subsections, and are schematically shown below.

**LEAK DETECTION METHODS**

![Diagram of leak detection methods](image)

### 6.1.1.1 Secondary Containment with Interstitial Monitoring

Leak detection utilizing secondary containment systems consist of a barrier, an outer wall, a vault, or a liner around the UST and piping. In some systems, the leaked product from the inner tank or piping is directed towards an “interstitial” monitor located in the void between the inner tank or piping and the outer barrier. Other monitors check for a change in condition that indicates a hole in the tank, such as a loss of vacuum or a change in the level of a monitoring liquid between the walls of a double-walled tank. Interstitial monitoring methods can range from a simple dipstick to a continuous, automated vapor or liquid sensor.

### 6.1.1.2 Automatic Tank Gauging Systems

Automatic tank gauging systems use a probe permanently installed in the tank to monitor product level and temperature. These systems use internal software to automatically calculate and record the changes in product volume that can indicate a leaking tank. The system is also typically equipped with high product level alarms to warn against overfills. By regulatory standards, the automatic tank level monitor must be able to detect a 0.2 gallon per hour leak rate. *(Note: Automatic tank gauges that were installed prior to December 22, 1990 that do not meet these requirements were required to be replaced by November 10, 2008.)*
6.1.1.3 Vapor Monitoring

Vapor monitoring measures volatile gas-phase products in the soil around the UST which could indicate leakage from the tank or dispenser. Fully automated vapor monitoring systems have permanently installed equipment to continuously or periodically gather and analyze soil gas samples collected from subsurface wells. Typically, a visual or audible alarm will indicate the presence of fuel vapors. Before this system can be used, a site evaluation is required by a Pennsylvania licensed registered professional, demonstrating its usability given site-specific conditions. **This method is not used by PennDOT and is described herein for informational purposes only.**

6.1.1.4 Ground Water Monitoring

Ground water monitoring wells are used to identify the presence of liquid product from the tank system in the ground water. As such, this method is only appropriate for the use with chemical products that are immiscible in water and have a specific gravity of less than one. This method requires the installation of monitoring wells at strategic locations in the ground near the tank, piping and dispensing system. These wells are either periodically checked manually (e.g., bailers, interface probes) or by using permanently installed electronic equipment to detect floating product. For this method to be used as the sole leak detection method, the water table should not be located more than 20-feet below ground surface, and the soil between the wells and UST must consist of sand, gravel, or other similar coarse/permeable materials. To be considered effective, this method must be able to detect the presence of 1/8 inch of free product on top of groundwater in the monitoring well. Monitoring wells should be clearly marked and secured against tampering. Before this system can be used, a site evaluation is required by a Pennsylvania licensed professional, demonstrating its usability. **This method is not used by PennDOT and is described herein for informational purposes only.**

6.1.1.5 Statistical Inventory Reconciliation (SIR)

Statistical inventory reconciliation (SIR) uses sophisticated computer software to conduct a statistical analysis of product inventory, delivery, and dispensing data to determine whether the tank system is leaking. The SIR method must be able to detect a 0.2 gallon per hour leak rate or a release of 150 gallons within a month with a probability of detection of at least 95 percent and a probability of false alarm of no more than five percent.

6.1.1.6 Manual Tank Gauging

For smaller USTs, up to 2,000 gallons capacity, an approved, non-automated leak detection method is manual tank gauging. This method can be used as the sole method of release detection without converting to a monthly monitoring method, and it involves placing the UST out-of-service each week for at least 36-58 hours, and performing several stick readings before and after the idle time.

For 1,001 to 2,000 gallon USTs installed before November 10, 2007, manual tank gauging combined with tank tightness testing can be used for up to ten years after installation, or after cathodic protection was first added. **By November 2017 all tanks must convert to one of the**
following approved methods of leak detection or be closed: secondary containment with interstitial monitoring, automatic tank gauging or statistical inventory reconciliation (soil vapor and groundwater monitoring methods are not used by PennDOT and therefore cannot be considered as options for conversions).

6.1.1.7 Other Approved Leak Detection Methods

On a case-by-case basis, PADEP may approve an alternate release detection technology that meets the performance standard of detecting a leak at a rate of 0.2 gallon per hour, with a probability of detection of at least 95 percent and a probability of false alarm of no more than five percent. Due to the availability of already-existing approved method, PennDOT does not pursue these approvals.

6.1.1.8 Leak Detection for Heating Oil USTs

PADEP regulations exempt heating oil USTs from release detection or such tightness testing requirements; however, it is recommended and encouraged by PennDOT. Heating oil UST systems may be subject to annual leak detection testing if they are located at a facility that meets the federal SPCC rule requirements. PennDOT incorporates SPCC rule requirements into its CFRP, as discussed in Chapter 9.

QUICK TIPS & CHECKS:

☑ Confirm leak detection systems are properly operating at your facility. Calibration and maintenance of leak detection systems must be done routinely!
☑ Perform and document weekly leak detection system checks. Printouts must be kept as proof of conformance.
☑ Record manual tank gauging readings and conduct inventory reconciliation routinely!

6.1.2 Leak Detection for UST Piping

All regulated tanks, except emergency generators, must have release detection for the UST piping systems and perform regular release detection checks. There are two types of underground piping systems: pressurized and suction. The PennDOT design preference is to use suction piping. The method(s) of release detection for piping is dependent on the piping system characteristics, but it must be demonstrated by performing periodic leak tests and verify that the leak test equipment is operating properly.

6.1.2.1 Pressurized Piping

In a pressurized piping system, the product is essentially “pushed” through the piping to the point of end use, such as the dispenser at a service station. These systems commonly use a submerged, centrifugal pump located inside the tank. If a hole or break occurs in the pressurized pipe lines, very large releases can occur rapidly because the pump continues to push the product through the piping. Pressurized systems must be equipped with an automatic line leak detector (below).
6.1.2.1.1 Line Leak Detectors for Pressurized Pipes

Pressurized piping systems must be equipped with an automatic line leak detector that is capable of shutting off the pump when a release is detected. Some older systems provide an audible or visual alarm and may be used only if the system is designed to detect a leak of three gallons per hour at 10 pounds per square inch line pressure within one hour. Current line leak detector systems are required to shut off the pump. The line leak detector must be annually tested by a certified tester to demonstrate that it is operating as per the manufacturer’s specifications.

One of the following leak detection testing methods must be used for pressurized piping:

- Annual line tightness test (can be used only if 0.1 gallon per hour or less leak rate can be detected),
- Monthly interstitial monitoring (required for all new piping systems) – Note: Line testing is not required if monthly monitoring is conducted, as long as the method is capable of detecting 0.2 gallons per hour leak rate,
- Monthly line leak test (0.2 gallon per hour leak rate),
- Monthly vapor monitoring (not to be used by PennDOT),
- Monthly groundwater monitoring (not to be used by PennDOT), or
- Monthly statistical inventory reconciliation.

6.1.2.2 Suction Piping

A suction piping system normally uses a pump at or near the point of end use to “draw” the product from the tank to the pump. The pump creates a lower pressure in the piping at the end point to allow atmospheric pressure to push the product along the suction piping to the pump chamber where it is discharged to the end use. Suction piping systems may utilize a single check valve or none, depending on the system. PennDOT’s design preference is to use suction piping.

To meet release detection requirements for suction piping, one of the following release detection testing methods (as described earlier in this section) must be used by the facility:

- Monthly interstitial monitoring (required for all new piping systems),
- Monthly vapor monitoring (not used by PennDOT),
- Monthly groundwater monitoring (not used by PennDOT),
- Monthly statistical inventory reconciliation, or
- Line tightness testing every three years.

Release detection for suction piping is not required if:

- The below-grade piping operates at less than atmospheric pressure; and
- The piping is sloped to allow the product to drain back into the tank when the suction is released; and
- The piping has a check valve that is located directly below and is close to, or within, the suction pump. No more than one check valve is allowed in each suction line.
QUICK TIPS & CHECKS:

☑ Confirm if your UST piping system is suction or pressurized.
☑ Identify what type of leak detection system is used for UST piping and routinely perform maintenance and checks on system.

6.2 SPILL AND OVERFILL PROTECTION

The basic standard for new and upgraded tank systems provides for two forms of spill and overfill prevention equipment, including a method of preventing the release of product when the transfer hose is disconnected during the fill operations (i.e., a catchment basin), and overfill prevention equipment that will either:

- automatically shut off the flow when the tank is 95 percent full; or
- alert the operator when the tank is more than 90 percent full by restricting the flow or triggering a high level alarm; or
- restrict flow 30 minutes prior to overfilling, alert the operator with a high level one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

USTs are not required to use spill and overfill protection equipment when the UST is filled by transfer of no more than 25 gallons at a time or when alternative equipment is used that has been approved by PADEP.

6.2.1 Spill Protection

All existing regulated USTs must be equipped with spill and overfill protection. Many UST releases result from fuel spills at the fill pipe when the delivery truck hose is disconnected. Although these spills are usually small, the cumulative effects of these spills can cause significant environmental problems. Similarly, there are numerous cases where the delivery operator overfilled the tank and product was released through the vent pipe. These releases are clearly the result from human error and can be avoided by following correct tank filling procedures. Prior to fuel delivery, the volume of product in the UST must be determined and delivery volume verified. During the filling operation, the attendant must continuously monitor the process to prevent spillage. Additionally, the UST must be equipped with a “catchment basin.” A catchment basin (also called spill bucket or containment manhole) is a bucket sealed around a fill pipe and designed to catch and contain delivery hose spills. Automatic shut-off devices, catch basin and ball floats shown below.
Catchment basins should be kept clean and dry. Some catchment basins may be equipped with pumps or drains to remove accumulated liquids. In the event that a catchment basin needs to be pumped, a determination should be made whether the liquid is contaminated and a hazardous waste. See Pub. 611 for waste management guidance. (Note: Inspection of this bucket is a required maintenance item.)

For petroleum USTs, a check for water must be performed monthly and excess water must be promptly removed. Water may not exceed the tank manufacturer’s recommendations, or 2 inches of accumulation in the bottom of the tank, whichever is less.

6.2.2 Overfill Protection

Overfills have the potential to result in large volumes of released product. When an overfill occurs, potentially large volumes of fuel can be released at the fill pipe and through loose fittings on the top of the tank. Although the tightness of these fittings may not normally be compromised, the added pressure from overfilling beyond the tank’s capacity can cause failure of the fittings and result in significant leaks.

There are generally three main types of overfill protection devices: automatic shutoff devices, overfill alarms, and ball float valves. These are discussed briefly below.

6.2.2.1 Automatic Shutoff Devices

Automatic shutoff devices are installed in the tank fill pipe and designed to slow down and then stop the delivery of fuel when the product has reached a certain level in the tank. This device usually has one or two valves that are operated by a float mechanism. Some automatic shutoff devices work in two stages. The first stage drastically reduces the flow of product to alert the delivery truck driver that the tank is nearly full. The driver then can close the delivery valve and still have room in the tank for the product that remains in the hose. However, if the driver does not pay attention and the liquid level rises higher, the valve closes and no more fuel can be delivered, thus leaving the driver with a delivery hose full of product.

6.2.2.2 Overfill Alarms

Overfill alarms use probes installed in the tank to activate an alarm or restrict flow when the tank is 90 percent full. In addition, the system must restrict flow into the tank 30 minutes before overfilling or alert the operator with an alarm one minute before overfilling. The alarm should provide enough time for the operator to close the delivery truck shut-off valve and be located where the operator can see or hear them easily. The alarms must be connected to an electrical circuit that is always active.
6.2.2.3 Ball Float Valves

Ball float valves are placed at the bottom of the vent line several inches below the top of the UST. The ball floats on the liquid product and rises with the product level during fuel delivery until it restricts vapor flowing out of the vent line (before the tank is full). If all the tank fittings are tight, the ball float valve can create enough back pressure to restrict product flow into the tank, which can notify the driver to close the shut-off valve. However, if the tank has any loose fittings, sufficient back pressure will not occur, resulting in an overfill release. As such, the use of ball float valves is generally not recommended. Furthermore, tank manufacturers do not recommend using ball float valves with suction piping, pressurized delivery, or Coaxial Stage I Vapor Recovery.

QUICK TIPS & CHECKS:

☑ Confirm what types of spill prevention and overfill devices are used with your facility’s UST systems.
☑ Routinely inspect spill buckets for liquid accumulation. Any excess liquids need to be released or collected and properly disposed (if contaminated with product).
☑ Audible or visual high liquid level alarms must be functioning and operational.
☑ Always be present during fuel transfer operations. UST product levels must be checked prior to fuel transfer to avoid overfill of system.
☑ Know where your spill response equipment is located to use in case of spills or overfills.
☑ Clean-up all spills promptly.

6.3 CORROSION PROTECTION

Tank Act regulations require that USTs be protected from the effects of corrosion. Corrosion can occur from inside or outside a tank. Corrosion measures include non-corrosive material use such as fiberglass construction, steel-fiber-glass composite construction, or steel coated with a suitable dielectric material that is protected with a cathodic electrical current system, or use of a sacrificial anode. Corrosion protection is required for all new UST systems and for existing USTs.

6.3.1 Impressed Current Systems

A common type of cathodic protection is the impressed current system. This cathodic protection system uses impressed current from an external source and is appropriate for steel tanks, piping and other steel equipment, and often selected as the method of choice for steel tanks upgrades. Specifically, the impressed current system uses a rectifier to convert alternating current to direct current. This current is sent through an insulated wire to the “anodes,” which are special bars buried in the soil near the UST. The current flows through the soil near the UST and returns to the rectifier through an insulated wire attached to the UST. The UST is protected from corrosion because the current going to the UST overcomes the corrosion-causing current normally flowing from the metallic tank to the surrounding soil. The aboveground switch control to these devices
must be secured against accidental disconnections. The impressed current system is the only acceptable system (vs. galvanic anode protection system) to be used for the repair, retrofit, and upgrade of existing UST systems.

USTs protected with impressed current systems must be designed such that the system cannot be de-energized at any time, except during repair or maintenance activities, and must be inspected every 60 days to ensure proper operations.

### 6.3.2 Sacrificial or Galvanic Anode Cathodic Protection Systems

Sacrificial or galvanic anode cathodic protection systems employ a metal anode more easily oxidized (corroded) than the metal (tank or piping elements) to be protected. Sacrificial anodes are electrically bonded to the tank system and are buried in the soil. Newer USTs are available with sacrificial anode cathodic protection systems attached by the tank manufacturers. Alternatively, sacrificial cathodic protection systems can installed separately. Sacrificial anode designs are not acceptable for upgrades to existing tank systems because they are not always effective in retrofit applications.

![Galvanic/Sacrificial Anode System Diagram](image)
QUICK TIPS & CHECKS:

✔ If you have steel USTs or piping, you must know what type of corrosion protection system is used at your facility!

✔ For steel tanks that utilize impressed current systems, identify where the aboveground rectifier is located. The system should be hooked up to backup power if long power outages are common. Also, aboveground switch control devices must be secured against accidental disconnects.

✔ For sacrificial or galvanized anode cathodic protection systems, check the manufacturer specifications for monitoring the anode depletions, and schedule replacements in time to keep corrosion system operational.

6.3.3 Lining, Non-Corrosive Coatings (External and Internal)

New tanks may be purchased already equipped with liners or coatings installed by their manufacturers. Interior lining is intended as a repair or preventative measure to extend tank life, but should not be used as a permanent solution where tank replacement should be considered. All lining installations must be performed by qualified specialists. While utilized principally as a repair method, internal tank coatings or linings are also useful as a preventative maintenance strategy. Coatings are corrosion and chemical-resistant materials which are sprayed, brushed, rolled or troweled onto the surface of a storage tank. Coatings serve one of two main purposes: (1) they protect the tank surface from attack or degradation by a corrosive or incompatible liquid or environment, and (2) they protect the stored material from contamination by corrosion products.

❗ Coating of steel tanks must be done carefully to minimize damage and future deterioration with age.

6.4 SMALLER PETROLEUM UST LEAK DETECTION ALTERNATIVES

Although the same leak detection and monitoring techniques may be used, alternately the Tank Act regulations allow smaller USTs (<2,000 gallons in capacity) storing petroleum products to use manual tank gauging method for leak detection, solely or in combination with periodic tightness testing (every five years), as specified below:

- USTs with a capacity of 550 gallons or less may use manual tank gauging solely as a leak detection method.
- USTs with a capacity of 551-1,000 gallons may use tank gauging solely as leak detection method only if they use longer test times as described in the manual tank gauging subsection 6.1.1.6.
- USTs with a capacity of 1,001-2,000 gallons may use the combination of manual tank gauging and periodic tightness testing as a leak detection method. This combination can be used for 10-years after upgrading an old tank with corrosion protection and spill/overfill devices or after installing a new tank that has corrosion protection and spill/overfill devices. During the 10-year period, UST should be tightness tested every 5 years. After November 10, 2017, this combination method will no longer be an
acceptable leak detection method. **Tanks without corrosion protection and spill/overfill devices need to be tested annually.**

### 6.5 HAZARDOUS SUBSTANCE AND WASTE USTs

PennDOT does not routinely use UST for storage of hazardous substances or hazardous waste. The Tank Act specifies that:

- Existing USTs must meet the same release detection requirements as stipulated for the petroleum USTs
- New hazardous substance USTs must have secondary containment and use a monthly release detection method.

### 6.6 MODIFICATIONS TO UST SYSTEMS

The Tank Act makes a distinction between maintenance activities on tanks that can routinely performed by PennDOT’s tank operators and modifications (major and minor) that must be performed by PADEP certified individuals.

**Major Modifications:** An activity to upgrade, repair, refurbish or restore all or any part of existing storage tank system or storage tank facility which: (1) alters the design of that storage tank system, and (2) affects the integrity of the storage tank system or storage tank facility. Any activity affecting the tank portion of the storage tank system, or an activity directly affecting an underground component of the storage tank system, which is only accessible by breaking ground is considered a major modification.

**Minor Modification:** An activity to upgrade, repair, refurbish or restore all or part of an existing storage tank system or storage tank facility which does not alter the design of that storage tank system or storage tank facility, but which may affect the integrity of that storage tank system or storage tank facility. Any electrical work must be completed by a licensed electrician in compliance with L&I requirements.

**Maintenance:** The normal operational upkeep of a storage tank system or storage tank facility. If an activity does not alter the design of the storage tank system or facility, does not directly affect the tank or an underground component of the storage tank system, and does not affect the integrity of the storage tank system or storage tank facility, it is a Maintenance Activity.

If a tank modification needs to be performed to bring the tank or tank system into compliance, a certified installer (UMX) must be hired to do the work. The PADEP Form 2570-FM-LRWM 575 - Modification Report Form is used to inform PADEP of the tank modification activities. The UST Modification Report must be submitted to PADEP within 30 days of completing the tank handling activity. Attachment 6-2 provides UST Modification Report Forms and Instructions.
QUICK TIPS & CHECKS:

☑ Schedule only PADEP certified personnel for UST modifications (major or minor)! See Chapter 4 for listing of appropriate category.
☑ Modifications are not considered regularly scheduled inspections/repairs and are not included in the Tank Database automatic notification system.
☑ Any electrical work must be completed by a licensed electrician in compliance with L&I requirements.
☑ Review UST Modification Forms for correctness and completion prior to sending to the PADEP. This must be submitted to PADEP within 30 days of completing work.

6.7 TEMPORARY OR PERMANENT CLOSURES OF USTs

UST systems can be temporarily closed or permanently closed. Either procedure must be coordinated between the TC, County Equipment Manager (tank operator) and FA to determine closure schedule and required closure procedures.

6.7.1 Temporary Closures of USTs

The following requirements apply for temporary UST closures:

- Remove all liquid, solids, or sludges from UST.
- Appropriately dispose of removed residual liquids, solids and sludges.
- Inert the UST, as often as necessary, to levels that will preclude an explosion. To inert a tank is to render the UST non-explosive by displacing oxygen present with carbon dioxide, nitrogen or another inert gas.
- The UST may be filled with a non-corrosive material that is not a regulated substance;
- Disconnect power service from all pumps associated with the use of the UST.
- Continue to monitor for leaks by maintaining the UST’s leak detection until empty.
- Retain your leak detection records for the most recent 13 month period of active operation until either:
  - the UST has been placed back into service for 13 months, or
  - 5 years following permanent closure of the tank AND PADEP acceptance of the Closure Report.
- Continue to monitor and maintain corrosion protection systems.
- Submit the Tank Registration Amendment Form 2570-FM-BMW0514, provided in Attachment 4-1.

If the UST remains temporarily closed for more than 3 months, you must leave vent lines open, but cap and secure all other lines, pumps, man-ways, and ancillary equipment.

After 12-months of temporary closure, you must permanently close the UST.

⚠️ USTs can be temporarily closed for up to 12-months. PennDOT’s policy discourages the temporary closures of USTs.
6.7.2 Permanent Closures of USTs

PennDOT requires all USTs to be removed as a permanent closure method.

The following requirements apply for permanent UST closures:

- Select a certified vendor for UST closure operations.
- Prepare and submit PADEP Closure Notification Form (PADEP Form 2530-FM-LRWM0159) to appropriate regional office. This form must be received by the appropriate PADEP regional office at least 30 days prior to initiation of the closure activities. Form and instructions are provided in Attachment 6-3.
- The tank must be emptied and cleaned by removing all liquids, dangerous vapor levels, and accumulated sludge.
- Determine if soil or groundwater impact exists. If there is evidence of impact, you will have to take the corrective actions that immediately stop and contain the release, investigate the extent of impact, report releases to appropriate authorities, and prepare Corrective Action Plans, if needed.
- Use PADEP technical document, "Closure Requirements for Underground Storage Tank Systems" (253-4500-601) as guidance.
- All Closure Activities must be observed by TC to ensure that the closure is completed properly and clean closure was attained.
- Review UST Closure Report for accuracy. Closure Reports must be reviewed for accuracy, maintained by PennDOT, and the PennDOT database should be updated to reflect UST closure.
- Closure Reports or other supporting documentation must be maintained by the TC for a minimum of 5 years following the PADEP acceptance of the Closure Report.

Chapter 9 provides additional guidance on UST closures, UST releases and corrective actions.
QUICK TIPS & CHECKS:

- **Temporary UST Closures are not recommended by PennDOT. If used, submit Tank Registration Amendment Form to PADEP for tank change-of-status notification.**
- **Submit UST Closure Notification Forms 30 days before closure activities are scheduled!**
- **Carefully review Tank Closure Reports prior to submittal to PADEP for accuracy and completion.**
- **Determine how the District will maintain the records and update the PennDOT UST Database.**

### 6.8 UST MONITORING, MAINTENANCE AND INSPECTION REQUIREMENTS

Table 6-1 summarizes the required inspection, testing and monitoring requirements.

<table>
<thead>
<tr>
<th>System and Frequency</th>
<th>Responsibility and Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MONTHLY</strong></td>
<td></td>
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<tr>
<td><strong>TANK</strong></td>
<td></td>
</tr>
<tr>
<td>• Leak Detection Monitoring System Check/Tests</td>
<td></td>
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<tr>
<td>• Automatic Tank Gauging Verification</td>
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<td>• SIR</td>
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<td>• Vapor Recovery System</td>
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<td>• Groundwater Monitoring System</td>
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<tr>
<td><strong>PIPING</strong></td>
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<tr>
<td>• Leak Detection Monitoring System Check/Tests</td>
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<tr>
<td><strong>SPILL CONTAINMENT</strong></td>
<td></td>
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<tr>
<td>• Dispenser pans</td>
<td></td>
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<tr>
<td>• Hoses</td>
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<tr>
<td>• Sumps</td>
<td></td>
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<tr>
<td>• Emergency Response Materials</td>
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<tr>
<td><strong>CORROSION PROTECTION</strong></td>
<td>System Verification</td>
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<tr>
<td><strong>SIGNAGE and LABELS</strong></td>
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<tr>
<td><strong>PRODUCT</strong></td>
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<tr>
<td>• Water in fuel</td>
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<tr>
<td>• Fuel ports sealed correctly</td>
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<tr>
<td><strong>TRIENNIAL (every 36 months)</strong></td>
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<tr>
<td><strong>UST SYSTEM SERVICE CHECKS</strong></td>
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<tr>
<td>• Leak Detection System Checks</td>
<td></td>
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<tr>
<td>• Integrity Testing (pressure testing, if applicable)</td>
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<tr>
<td>• Cathodic System Check</td>
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<tr>
<td>• Corrosion System Check</td>
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<tr>
<td>• Alarm System Testing</td>
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<tr>
<td>• System Components Inspections:</td>
<td></td>
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<tr>
<td>• Fuel fill ports</td>
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<tr>
<td>• Dispensing lines</td>
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<tr>
<td>• Vent piping</td>
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<tr>
<td><strong>Certified Tester/Inspector</strong></td>
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<tr>
<td>• Part of Leak Detection Preventative Maintenance</td>
<td></td>
</tr>
<tr>
<td>• Perform maintenance and calibration of various components of tank monitoring system.</td>
<td></td>
</tr>
<tr>
<td>• Overfill alarms/indicator checks and water removal of spill containment equipment.</td>
<td></td>
</tr>
<tr>
<td>• Check anodes/impressed current system or other components as per manufacturer’s recommendations.</td>
<td></td>
</tr>
</tbody>
</table>
6.8.1 Certified (Third-party) UST Facility Inspections

All UST systems, regardless of date of installation, are required to undergo first-time initial inspections by a certified third party. Initial inspection is defined as the first inspection after Oct. 11, 1997. The schedule of initial inspections is provided below:

<table>
<thead>
<tr>
<th>Tank Installation Date</th>
<th>Initial (or first-time) Inspection is required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanks installed before Dec. 1, 1989</td>
<td>By October 11, 1999</td>
</tr>
<tr>
<td>Tanks installed after Oct. 11, 1997</td>
<td>6 to 12 months after installation</td>
</tr>
</tbody>
</table>

Subsequent inspections are required every three years. Any time there is a change in ownership, a facility inspection must be completed six to 12 months after the ownership change. PADEP Facility Operations Inspection Form 2570-FM-BWM0501a and accompanied instructions is used for UST certified inspections and is provided in Attachment 6-4.

**What to Expect During a Third-Party UST Inspection:**

Prepare for the third-party UST inspection by organizing tank records that may be requested and conducting an internal pre-inspection of facility UST system and components to make sure all are operational and functioning.

1. The inspector will need to see records regarding all system components that cannot be verified by visual inspection. For example: The construction material of the tank is not visible. Tank invoice or tank installer’s Tank Handling Activities Report can be requested for review to confirm tank construction. Other documentation that should be available includes:

   - Tank handling reports,
   - Installation details and associated documentation,
   - As-built drawings,
   - Construction records (installation date, construction materials), and
   - Upgrades to UST systems.
2. Registration Certificate (displayed).
3. Cathodic Protection Records (for steel USTs).
4. Tank and Piping Release Detection Records. These records may include monthly monitoring records, tightness tests, manufacturer’s certification of test performance, construction details for suction piping, and results of annual line leak detector tests on pressurized piping.

The Underground Storage Tank Facility Operation Inspection Form needs to be reviewed for accuracy by facility personnel. The completed inspection form is signed by certified inspector and facility tank operator (usually the County Equipment Manager or designee) or TC. The certified inspector is responsible to send copies of the signed form PADEP local region and central offices.

6.8.2 UST System Installations, Modifications, Repairs and Upgrade Inspections

The correct operation of UST systems starts with the proper installation of system components. To better assure that installation, modifications, repairs and upgrades are performed correctly, PADEP requires that certified personnel perform the upgrades and inspect the UST system prior to the tank being placed back into service. Chapter 4, Section 4.3.3 provides a description of the UST personnel certification categories.

6.8.3 Routine Maintenance Inspections (Monthly)

Visual inspections of UST system components must be conducted on a monthly basis by the UST operator. The purpose of these inspections is to identify any visual signs of potential leaks and to take appropriate corrective measures. All monthly inspections should be documented on the site-specific SEMP Inspection Checklist. Dates of inspections and inspector initials should be included on the SEMP Inspection Records Sheet. Any significant observations and corrective measures initiated should be recorded on the forms. At a minimum, the following UST system components must be visually inspected and recorded:

Dispenser Hose/ Nozzles:

Inspect all product dispenser hoses and nozzles for loose fittings, deterioration, and obvious signs of leakage. At a minimum, this item should be included in a weekly walk-around, and shall be documented on a monthly inspection checklist.

The use of hold open clips or other devices to block the fuel nozzle in the open position is prohibited except at those Department sites that have a dedicated high speed fuel dispenser for fueling Department fuel truck bulk tanks. The person filling the bulk tank must remain with the truck at all times during the fueling process (re: SOL 461-10-02).
Dispenser Sumps:

Open each dispenser and inspect all visible dispenser lines, fittings, and couplings, and inspect the sump beneath the dispenser for any signs of leakage. This item shall be documented on a monthly inspection checklist.

Piping Sumps:

- Inspect the piping sumps located on the top of each UST for liquid. If liquid is present, determine if it is water only (i.e. rainwater) or if it contains product.
- If water is present and no product is present, pump the water out and place in a designated container.
- If product is present, notify the on-site manager immediately; pump out the product and in a designated container; and evaluate the source and implement corrective actions.

Fill Ports:

Inspect all tank fill ports and other access points to make sure that the covers and caps are tightly sealed. This item shall be documented on a monthly inspection checklist.

Catchment Basin:

For petroleum USTs, a check for water accumulation within catchment basins must be performed monthly and excess water must be promptly removed. Water may not exceed the tank manufacturer’s recommendations, or 2 inches of accumulation in the bottom of the tank, whichever is less. This item shall be documented on a monthly inspection checklist.

Spill Supplies:

Inspect the emergency spill response supplies. If the supplies are low, restock the supplies. At a minimum, this item should be included in a weekly walk-around, and shall be documented on a monthly inspection checklist.

Impressed Current UST Systems:

USTs protected with impressed current systems must be designed such that the system cannot be de-energized at any time, except during repair or maintenance activities, and must be inspected every 60 days to ensure proper operations. This item shall be documented every other month on an inspection checklist.

Sacrificial or Galvanic Anode Cathodic protected UST Systems:

Monitor the anode depletions per manufacturer specifications, and schedule replacements in time to keep corrosion system operational. This item shall be documented on a monthly inspection checklist as applicable.
CHAPTER 6  UST OPERATION & MAINTENANCE

Water in Tanks:

Check for water in petroleum tanks monthly. Excess water shall be promptly removed as necessary. Water may not exceed the tank manufacturer’s recommendations, product supplier’s guidelines, or 2 inches of accumulation in the bottom of the tank, whichever is less. No amount of water is desirable in gasoline containing ethanol. Therefore, water should not be allowed to accumulate in tanks containing ethanol.

6.9  UST REGISTRATIONS

UST must be annually registered with PADEP. The TC is responsible for tank registrations. Registration Certificates must be posted at the facility location, as described in Section 8.1. Tank Registration details are provided in Chapter 4 of this manual.

6.10  UST RELEASES

When a release from an UST is suspected or detected, there are Department policies and regulatory guidelines that must be followed. Additionally, PADEP considers all releases of regulated substances from USTs and associated piping to the subsurface reportable, with the only exception - a release to the interstitial space of a double-walled UST. For more information, see Chapter 9 for corrective actions for UST subsurface releases and Chapter 10 for spill response procedures and countermeasures for releases from USTs from aboveground activities (tank fueling, dispensing, etc.) activities.

6.11  UST RECORDKEEPING

Since there are many tank management records and reports that must be maintained, it is very important that the facility maintenance personnel and TC establish and use a structured file system to ensure that all records and reports can be readily stored and retrieved.

All records and reports related to USTs shall be kept for the operational life of the UST system and at least 5 years after its permanent closure, according to PennDOT policy.

The following records are required to be maintained for UST systems, according to PennDOT policies to meet regulatory recordkeeping requirements.

PennDOT’s Record Retention Policy addresses documentation requirements for USTs, and specifies retention time requirements for records from pre-installation through post-closure UST activities. Generally, if there is a doubt whether or not to retain a record, PennDOT recommends retention.

Retention for operational life of UST system or longer:

- Tank Records (As-builts, Photos, Manufacturer Specifications and Warranties, system upgrades).
- Tank and Tank Component Repairs Records/Reports.
- Tank and Tank Component Modifications and Repair Records/Reports.
- Original Tank Registration & Permits.
- Tank Reports (tank handling reports, alternative leak detection method approvals, site surveys related to corrosion protection and leak detection equipment, etc., closure reports, site investigative reports, remedial action reports, etc.).
- System Calibration, Maintenance and Test and Sampling Records for Leak Detection, Corrosion Protection, Spill Containment System (Need to keep the most recent at minimum one year after service is performed).
- Schedule of release detection calibration and maintenance, including history of usage.
- Vapor Recovery Records (Site Evaluation Report; Sampling, testing and monitoring results).
- Groundwater Monitoring (Site Evaluation Report, Sampling, testing and monitoring results).
- Corrosion Protection Systems (Corrosion Expert Design Analysis/report; Testing – initial, 6 months after repairs, 3 year thereafter tests).
- Line Leak Detection Tests;
- Release Reporting Records.
- Integrity Testing Records (other than tank testing, non-destructive shell thickness measurements, ultrasonic test results, next test schedules).
- Spill Incident Records.
- UST Closure Records (UST Closure Report, Site Investigation Report for Permanent Closure or Change-in-Service, PADEP Amended Registration).

3-Years+ Retention:

- Tightness Testing (Regulatory criteria – until next test performed).
- Cathodic Protection Inspections (60 day minimum inspection cycle).
- Inspection Records (weekly, monthly inspection checklists).
- Training Records (Oil handling training (CFRP related), leak detection training (Operators A, B, C), Tank Operator Drill Records).

12-Months Retention:

- Operational Maintenance Records (leak detection, cathodic protection, spill containment systems) - last 12 months (may be longer if tank is being permanently taken out of service (see Section 6.7.2).
- Inventory Records, Fuel Deliveries, Reconciliations
- Current registration.

6.12 UST TRAINING REQUIREMENTS

Amendments to the Tank Act Regulations, effective December 26, 2009, that addressed the Federal Energy Act of 2005 amendment, add underground storage tank operator training requirements to the existing regulations. The revisions require that three distinct classes of storage tank operators must be designated by tank owners and trained no later than August 8, 2012. Required and acceptable forms of training are addressed for each class of operator. There
are also related recordkeeping requirements, but no new reporting requirements. The regulations require that PADEP approve the training provider(s) and course contents.

Table 6-2 summarizes the tank operator classifications and the training content.

<table>
<thead>
<tr>
<th>Operator Class Description</th>
<th>Operator Class</th>
<th>Training Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A Operator (BOMO/SEMP Section Personnel)</td>
<td>Class A Operator (BOMO/SEMP Section Personnel)</td>
<td>Broad overview of regulatory requirements</td>
</tr>
<tr>
<td>Class B Operator (Tank Coordinators)</td>
<td>Class B Operator (Tank Coordinators)</td>
<td>In-depth training on implementing regulatory requirements</td>
</tr>
<tr>
<td>Class C Operator (CEM/Foreman and anyone who is trained to respond)</td>
<td>Class C Operator (CEM/Foreman and anyone who is trained to respond)</td>
<td>Actions to take in event of a leak or other emergency</td>
</tr>
</tbody>
</table>

PennDOT has established the training course to comply with these regulations. PA Title 25, Chapter 245.436(d)(2) allows for a 30 day “grace period” from the time an A or B Operator assumes the job and appropriate training is provided. A and B Operators shall be trained within 30 days of assuming their positions. C Operators shall be trained prior to assuming their positions. The SEMP Section and the TCs (Class A and B Operators, respectively) will be trained initially. TCs will not administer training, but should direct District personnel designated as Class C operators to the appropriate link to complete independent “on-line” training.

Rosters of Class A, B and C Operators and emergency procedures in the event of a tank alarm shall be posted alongside the tank registrations. The TC shall maintain copies of relevant Class A, B and C Operators’ Certificates of Training. The copies of certificates may be kept in either hard copy or electronic formats. For convenience, it is recommended that the copies are kept in electronic format.

### 6.13 PENNDOT RESPONSIBILITIES

PennDOT has internal policies and procedures and assigned roles and responsibilities for proper management of UST systems. The TC has a key role for the District’s Tank management program. Maintenance and facilities personnel have more day-to-day active roles for
implementing proper tank management activities, including routine maintenance, inspection and testing responsibilities.

**TC Responsibilities:**

- Maintains District tank inventory,
- Maintains tank compliance records,
- Coordinates all tank registrations and permits,
- Ensures third-party inspections are completed in a timely fashion,
- Keeps updated on regulatory requirements,
- Coordinates tank upgrades, modification and replacement activities,
- Coordinates with facilities for tank system testing operations,
- Coordinates with facilities personnel for CFRP annual reviews, updates and 5-year PE certifications (if applicable),
- Assists facility managers in responding to spills and releases, and any follow-up corrective actions,
- Maintains list of contractors, vendors and consultants for tank handling activities and corrective actions,
- Assist contractors in clean-up procedures and tank upgrades,
- Identifies training requirements for facilities personnel on tank handling activities,
- Assists in the development and maintenance of site-specific SEMP Inspection Checklists as they relate to tanks.
- Trains Class C operators and maintains relevant Class A, B and C Operators training certificates.

**Tank Operator/Maintenance Personnel Responsibilities:**

- Are familiar with UST system and component manufacturer requirements,
- Perform routine operational and maintenance activities on UST systems, per manufacturer and regulatory requirements,
- Perform routine inspections and system checks on UST system components,
- Maintain UST system checks, printouts and records at facilities,
- Alert TC (B Operator) to suspect or actual releases or spills at facilities,
- Ensures tank registrations, Class C Operator rosters and emergency procedures are posted,
- Assist TC in review and updates to CFRPs,
- Assist TC in spill and release reporting requirements.
CHAPTER 7:

- Describes Requirements for Tanks Not Regulated under the Tank Act

7.0 OTHER STORAGE TANKS

This Chapter discusses regulatory requirements for tanks that are excluded from the Tank Act regulations, either because of their size or materials/liquids they store. However, while these tanks may not be regulated under the Tank Act, they are subject to other regulatory programs, including waste, fire and safety regulations as well as local codes and Department policy.

The most prevalent tanks used by PennDOT that are exempt from the Tank Act are:

- **Heating oil and kerosene tanks** used for heating purposes; and
- Tanks associated with maintenance operations;
  - New motor oil or petroleum motor fuel ASTs <1,100 gallons,
  - Used antifreeze and waste oil tanks (regulated under Solid waste management Act just like regulated tanks),
  - Small ASTs (<250 gallons),
  - Small USTs containing a regulated substance (<110 gallons),
  - Oil/Water Separators,
  - Brine Tanks, including brine makers,
  - Propane tanks,
  - Drums (virgin product or waste containers as low as 30 gallons).

7.1 PENNSYLVANIA CLEAN STREAMS LAW

All tanks that store environmentally sensitive (potentially polluting) materials and wastes are subject to standards established by the PADEP Water Quality Program under the Clean Streams Law. These standards, at minimum, require secondary containment for tanks and written contingency plans for leaks and spills, as described below.

**Secondary Containment Requirements:**

With the exception of gaseous (at STP) products, all containers subject to this Chapter (such as storage tanks or drum storage areas at PennDOT maintenance facilities) must include secondary containment. Secondary containment must be capable of holding the volume contained in the largest storage tank plus 10% (a reasonable allowance for precipitation and freeboard), and may be in the form of double-walled tank systems, independent structures, or spill pallets depending on the size of the container and the operational requirements of the facility. No storage areas should contain open storm or sewer drains or other outlets through which leaking substances may flow.
Contingency Plans:

All facilities that store hazardous or environmentally sensitive materials in tanks (including pressurized cylinders) or in drum storage areas are required to develop a Preparedness, Prevention, and Contingency (PPC) Plan to reduce the potential of discharge of the materials to the environment. PennDOT utilizes a Combined Facilities Response Plan (CFRP) to meet the PPC Plan requirement (see Chapter 10). ASTs and USTs and their components including secondary containment structures, are subject to periodic inspections that must be documented through the use of standardized forms. All forms and records shall be maintained as described in Sections 5.10 (ASTs) and 6.11 (USTs).

7.2 NON-TANK ACT REGULATED TANKS

This subsection addresses tanks that are exempt from the Tank Act, but are regulated under other statutes or Department policy, and are routinely used in PennDOT’s operations. Technical, operational and maintenance requirements are summarized for each tank type. Other applicable policies, procedures or publications are included when PennDOT requires additional practices to be followed. Some local codes may be more stringent and are not included in this document. It is the responsibility of the individual facility to ensure compliance with all applicable local codes.

7.2.1 Tanks Storing Flammable and Combustible Substances

USTs (<110 gallons) and ASTs (>30 gallons per PSP [former Fire Marshall] requirements, but <250 gallons in capacity) storing flammable or combustible substances are excluded from the Tank Act due to size, but must still meet fire and safety codes and require notification to L&I, which administers this part of the program, for new installations and relocations.

Typical substances that meet PSP’s definition of flammable and combustible substances are:

- Petroleum products, gasoline, kerosene, fuel oil (diesel).
- Substances that do not meet this definition are: motor oil, antifreeze, and transmission fluid.

Petroleum storage tanks require: signage, spill prevention and must meet fire and safety requirements. ASTs must have secondary containment.

ASTs, 55-gallons or above in capacity, are considered to contribute to oil storage capacity under the federal SPCC rules and regulations, and must be counted towards the facilities aggregate above ground oil storage quantities, as described in the CFRP (see Chapter 9). See Chapter 9 for spill response and reporting requirements and Chapter 5 for secondary and emergency containment details.
ASTs storing petroleum products must have monthly visual inspections performed. Inspection criteria should include:

- Compatibility of container with product,
- Soundness of container (i.e., no leaks or damage),
- Location away from or protection from ignition source,
- 110% of secondary containment maintained,
- Adequacy of emergency response equipment.

**Signage:**

All tanks covered in this chapter shall comply with the labeling provisions specified in Chapter 8.

**Emergency Response Equipment:**

Fire extinguishers with a minimum rating of 2-A:20-B:C must be easily accessible and located within 50 feet from pumps, dispensers or storage tank fill-pipe opening(s). This classification denotes that this portable fire extinguisher:

- Could extinguish approximately twice as much Class A fires as a 1-A rated fire extinguisher;
- Could extinguish approximately 20 times as much Class B fires as a 1-B rated fire extinguisher; and
- Is suitable for use on Class C fires (energized electrical equipment).

Class A, B, and C fires are defined as:

- Class A fires are ordinary materials like burning paper, lumber, cardboard, plastics, etc.
- Class B fires involve flammable and combustible liquids such as gasoline, kerosene, and common organic solvents used in the laboratory.
- Class C fires involve energized electrical equipment, such as appliances, switches, panel boxes, power tools, hot plates and stirrers. Water can be a dangerous extinguishing medium for Class C fires because of the risk of electrical shock unless a specialized water mist extinguisher is used.

Additionally, Material Safety Data Sheets (MSDSs), safety and spill equipment must be available and located in designated areas, as specified in the facilities CFRP. Some required supplies include, but are not limited to, spill kits, drums, alarms, and phones. Appropriate spill response material (spill kit) shall be located where readily available to the dispensing location.

### 7.2.2 New (Virgin) Motor Oil

ASTs storing new motor oil are typically used at PennDOT maintenance garages in both indoor and outdoor locations. ASTs with capacities below 1,100 gallons are exempt from Tank Act, but must meet secondary containment requirements and must be addressed in contingency plans. New motor oil counts towards the facility’s aggregate oil storage quantities, and is subject to
federal SPCC rules and regulations incorporated into the facility’s CFRP. These ASTs are excluded from L&I notifications, because they do not meet the definition of flammable or combustible material. However, consistent with PADEP pollution prevention guidance, these tanks must be inspected monthly for the following criteria:

- Soundness of Container and any associated piping (i.e., no leaks or damage), and
- 110% of secondary containment maintained

7.2.3 Heating Oil Tanks

ASTs and USTs storing heating oil that are solely used for heating premises are exempt from the Tank Act requirements. Heating oil ASTs are subject to secondary containment and contingency plan requirements. Both count towards the facility’s aggregate oil storage quantities, and both are subject to federal SPCC rules and regulations incorporated into the facility’s CFRP. New heating oil tanks must be equipped with secondary containment and leak alarms.

7.2.4 Kerosene Tanks

ASTs and USTs storing kerosene that are solely used for heating premises are exempt from the Tank Act requirements. However, such ASTs are subject to secondary containment and contingency plan requirements. Both count towards the facility’s aggregate oil storage quantities, and both are subject to federal SPCC rules and regulations incorporated into the facility’s CFRP.

Kerosene tanks used for other than heating purposes, unless excluded for size, are subject to the AST and UST requirements detailed in Chapters 5 and 6 respectively.

7.2.5 Brine Tanks (including Brine Makers)

Brine is not considered a regulated substance, thus exempt from the Tank Act requirements. However, brine is considered an environmentally sensitive substance and must be managed accordingly. PennDOT stores all brine supplies in ASTs. These ASTs and associated piping and equipment must have secondary containment and be included in the facility’s CFRP. Brine tank systems and containment structures shall be constructed in a manner consistent with the provisions provided in Pub. 284.

If maintenance personnel are always present during brine making operations and the brine maker is emptied before the personnel leave the premises, secondary containment for the brine maker is not required.

Stormwater from secondary containment shall be managed in accordance with the Stormwater Management Policy contained in Pub. 284. Drain valves on the secondary containment may be left in the open position for extended periods of time to facilitate stormwater drainage only if the brine tanks and associated piping are empty.
7.2.6 Residual Waste Tanks

Most tanks storing waste (used motor) oil or used antifreeze are exempt from Tank Act requirements because these substances are defined as residual waste, and subject to the Waste Oil Management and Residual Waste regulations. However, these tanks must be managed in conformance with the Tank Act technical requirements relative to tank design and management (see Chapters 5 & 6) and the Residual Waste regulations relative to accumulation and disposal practices (see Pub. 611, Section 6 – Residual Waste). All records related to installation, repairs/upgrades, routine inspections, integrity testing, etc. related to operation of the tanks should be kept per Chapter 5 and 6 recordkeeping instructions.

7.2.6.1 Waste (Used Motor) Oil Tanks

Upon the issuance of new labels, aboveground storage tanks shall no longer be labeled “Used Motor Oil.” The term “Waste Oil” shall now be used. In the past to avoid interpretive conflicts with PADEP, the term, “Used Motor Oil” was used. Existing “Used Motor Oil” labels may still be used as long as they are reasonably legible. Records maintenance for recycling is described in Pub. 611, Chapter 6 - Residual Waste.

PennDOT typically installs manufactured double-walled ASTs with automatic tank gauging for used oil storage. Upgrading to automatic leak detection is recommended, but not required.

Small manufactured double-walled, often compartmentalized, USTs are also commonly used for waste oil storage. **Note: waste oil USTs with a capacity of > 110 gal are regulated under the Tank Act.** Refer to Chapter 6 for management requirements.

Waste oil collected from these tanks should be recycled, according to PennDOT policy and District contracts.

7.2.6.2 Used Antifreeze Tanks

ASTs and USTs storing used antifreeze are exempt from the Tank Act requirements because used antifreeze is classified as a residual waste (unless the waste exhibits hazardous waste characteristics, which makes it a hazardous waste). These tanks must be properly labeled with the words, “Used Antifreeze,” or “Residual Waste.” Records maintenance for recycling is described in Pub. 611, Chapter 6 - Residual Waste.

PennDOT typically installs manufactured double-walled ASTs or double –walled, often compartmentalized, small USTs with automatic tank gauging for used antifreeze storage. Upgrading to automatic leak detection is recommended, but not required. Used antifreeze collected from these tanks should be recycled, according to PennDOT policy and District contracts.
7.2.7 Hazardous Waste Tanks

7.2.7.1 ASTs Storing Hazardous Waste

ASTs storing hazardous waste are subject to PA Hazardous Waste Regulations (25 PA Code Chapter 261-262), and should be managed in conformance with the stipulations described in Pub. 611, Chapter 4 – Hazardous Waste. In accordance with Pub. 611, generally accepted operating practices are provided as follows:

All tanks storing hazardous waste are constructed or compatible with the material they store, provide secondary containment and release detection, and have documented daily inspections. All tanks are labeled as “Hazardous Waste,” and have clearly marked start accumulation dates. Tanks are emptied within a 179-day (small quantity generator) or 90-day (large quantity generator) accumulation period (as applicable) and the waste properly manifested to an approved disposal facility.

Hazardous Waste Tank Management Practices:

- The tank system shall be selected to be compatible with hazardous waste contained in them (i.e., will not react with the waste and will not corroded by waste);
- Tanks shall be opened only to add or remove waste and should utilize best management methods to minimize potential leakage;
- If the same storage tank is utilized for different hazardous waste, the tank system must first be emptied and cleaned to prevent the residue from potentially reacting with subsequent hazardous waste stored.
- Hazardous waste up to 55 gallons may be accumulated at a satellite location for up to 1 year (PADEP rule-of-thumb), prior to being transported to the 179/90 day facility storage area. Satellite accumulation containers must be labeled as “Hazardous Waste” and include an accumulation start date label.
- Tanks need to be separated from containers which hold other hazardous wastes that could cause dangerous chemical reactions, specifically:
  - Reactive or ignitable waste should be located at least 50 feet away from property line (recommended for Small Quantity Generators).
  - Incompatible waste must be kept segregated. If wastes are segregated, mark the containers with content type in addition to hazardous waste label.
  - Secondary containment (a base and dike capable of containing leaks, spills, and accumulated rainfall or equivalent) is required, with adequate capacity to contain 110% of the largest container.
  - Adequate spacing around tank is required for emergency response access and response.

Labeling Requirements:

- Label Tank with the words, “Hazardous Waste.” If applicable, indicate the primary component(s) of the waste material as well. Always include a label indicating the start accumulation date.
Recordkeeping Requirements:

- Manifest Records (see Pub. 611)
- Biennial Report (for Large Quantity Generators) (see Pub. 611)
- Personnel Training Records (see Pub. 611)
- Hazardous Waste Contingency Plan (only for Large Quantity Generators) (see Pub. 611)
- Tank and system integrity records. Maintained by TC, retain records for 3 years or longer per Department policy.
- Weekly inspections (Maintained at facility or County 01, retain records for 3 years or longer per Department policy.
- Incident reports (see Chapter 9 for specifics).

7.2.7.2 USTs Storing Hazardous Waste

USTs storing hazardous waste are regulated under 25 Pa Code Chapter 264a, Subpart J – Tank Systems, and as incorporated from 40 CFR Part 264 and should be managed in conformance with the stipulations described in Pub. 611, Chapter 4 – Hazardous Waste. With few exceptions, all new UST systems (installed after July 14, 1986) must be equipped with secondary containment and leak detection, corrosion protection of tank and components, and have integrity testing performed by certified personnel. Essentially, hazardous waste USTs must be managed in accordance to Tank Act technical and operational requirements or be replaced.

Tank inspections must be performed and documented to thoroughly identify leaks, deterioration, corrosion, or structural fatigue in any portion of the tank or system components. Secondary containment systems and cathodic protection devices also require regular inspection. Minimum inspection frequencies are provided below:

| Table 7-1 |
| HAZARDOUS WASTE USTs |
| INSPECTION REQUIREMENTS FOR USTs WITH FULL SECONDARY CONTAINMENT |
| Overfill controls | Each operating day* for interim status tanks |
| Visual inspection of aboveground portion of the tank to detect corrosion or releases | Each operating day* |
| Analysis of monitoring and leak detection data (e.g., pressure or temperature gauges, monitoring wells, and leak detection devices) | Each operating day* |
| Construction materials and externally accessible portions of tank and secondary containment system to detect erosion or signs of releases (e.g., wet spots, dead vegetation) | Each operating day* |
| Proper operation of cathodic protection system | Within six months of initial installation and annually thereafter |
| Sources of impressed current | Bimonthly |

*USEPA has clarified that “each operating day” has been defined as “every day the tank is in operation (i.e., storing or treating hazardous waste) and not necessarily just on days the facility is open for business.”
CHAPTER 7  OTHER STORAGE TANKS

If hazardous waste remains in tank or tank system component when not operating, the UST must be inspected every 72 hours! [25 Pa Code Chapter 264a.195]

7.2.8 Oil/Water Separators

Oil/water separators are not considered storage tanks, but process flow tanks, and are not subject to Tank Act requirements. However, these units must be inspected and included in the CFRP, see Chapter 9. They are designed to separate oil/water and particulate components of a receiving wastewater, and as such store oily waste until emptied or cleaned. Some oil/water separators are equipped with high oil level alerts alarms to alert operators when the oil storage component should be emptied of used oil. Double wall separators usually are monitored with leak detection systems situated in their interstitial space. If so equipped, high level alarms and leak detection systems shall be checked monthly to ensure tank integrity.

The facility manager or designee shall establish a schedule for emptying and inspecting their oil/water separator(s). At a minimum, an oil/water separator shall be emptied and visually inspected annually. Records relating to waste disposal should be maintained, as described in Pub. 611, Chapter 6 - Residual Waste.

7.2.9 Propane Tanks

Bulk propane tanks are typically leased by PennDOT, and are owned and maintained by a vendor. Propane tanks must be located, installed and operated per NFPA Title 58 Codes, Chapter 6, including, but not limited to:

- Tanks (<2,000 gallon water capacities) must be installed at least 10 feet from all building and property lines;
- Tanks (>2,001 gallon water capacities) must be installed at least 50 feet from all building and property lines;
- Tanks between 501-30,000 gallons water capacities must be located at least 3 feet from each other;
- Adequate protection must be provided for tank and appurtenances against vehicular damage, including: a curb, bollard, containers, or other physical barriers; and
- Proper signage.
CHAPTER 8

- Describes labeling requirements for all applicable containers and ancillary equipment
- Provides hazard ratings for common PennDOT materials
- Describes typical hazard ratings and codes
- Provides Overview of fire extinguishers, MSDS and emergency shutoff requirements.

8.0 SIGNAGE & EMERGENCY RESPONSE EQUIPMENT

8.1 SIGNAGE

Tanks and tank systems must have proper signage. L&I specifies signage requirements for storage tanks dispensing flammable liquids. Proper signage includes product labeling, PennDOT safety signs, and fire-protection placards and signs. Signs and labels shall be placed on the side most visible to the user, be legible and in good condition.

Pennsylvania’s Worker Right-To-Know (34 PA Code Chapter 309) and L&I regulations require that AST systems be labeled so that the substance stored is readily identified outside of the contaminant area (visible from the side most often seen by those using the tank contents). This should be coordinated with the District’s Safety Coordinator.

Product information needed for labeling is available upon request to the manufacturer/supplier (34 Pa Code, Chapter 309.7(a)(1)).

Tanks storing hazardous substances shall be labeled with one of the following (34 Pa Code Chapter 309):

- The chemical name or common name (relating to common name usage);
- A hazard warning (NFPA or HMIS label); or
- The name, address and telephone number of the manufacturer of the substance.

Tanks storing hazardous mixtures shall be labeled, tagged or marked with the following:

- The common name, but if none exists, then the trade name.
- The chemical or common name of special hazardous substances comprising 0.01% or more of the mixture.
- The chemical or common name of hazardous substances constituting 1.0% or more of the mixture.
- A hazard warning (HMIS or NFPA label).
- The name, address and telephone number of the manufacturer of the substance.

Tanks storing chemical mixtures shall be labeled with the following:

- The common name but, if none exists, then the trade name.
- A hazard warning (HMIS or NFPA label), if appropriate.
- The name, address and telephone number of the manufacturer of the substance.
- The chemical name or common name of either the top five substances by volume or those substances constituting 5.0% or more of the mixture.

Examples of proper labeling and typical AST signage is provided below.

<table>
<thead>
<tr>
<th>NFPA Hazard Ratings of Typical PennDOT Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Name</td>
</tr>
<tr>
<td>Calcium Chloride</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
</tr>
<tr>
<td>Unleaded Gasoline</td>
</tr>
<tr>
<td>Diesel Fuel</td>
</tr>
<tr>
<td>Antifreeze</td>
</tr>
<tr>
<td>ATF (transmission fluid)</td>
</tr>
<tr>
<td>Asphalt Emulsifier</td>
</tr>
<tr>
<td>Heat Transfer Oil</td>
</tr>
<tr>
<td>Gear Oil 80 – 140</td>
</tr>
<tr>
<td>C-2, C-3 Oil</td>
</tr>
<tr>
<td>Kerosene</td>
</tr>
<tr>
<td>Tack Coat</td>
</tr>
<tr>
<td>Motor Oil</td>
</tr>
<tr>
<td>Seal Tight Tilt-Crete (form release)</td>
</tr>
<tr>
<td>Dural Treat (curing compound)</td>
</tr>
<tr>
<td>Linseed Oil (concrete sealant)</td>
</tr>
</tbody>
</table>

**Fuel Dispensing Islands/Stations** must post the following signs:

“EMERGENCY STOP”
“NO SMOKING OR OPEN FLAMES”
“STOP MOTOR”
“NO TOPPING OFF”
“IT’S UNLAWFUL TO DISPENSE FLAMMABLE OR COMBUSTIBLE LIQUIDS INTO ANY PORTABLE CONTAINER UNLESS THE CONTAINER IS CONSTRUCTED OF METAL AND IS APPROVED BY THE FIRE MARSHAL”

⚠️ If the dispensing location differs from the tank location, “NO SMOKING” signage must be posted at both locations.
Dispensers with “hold-open” dispensing nozzles must have the following signage:

“ANY PERSON USING A HOLD OPEN DISPENSING NOZZLE SHALL REMAIN OUTSIDE THE VEHICLE AT THE REFUELING POINT DURING REFUELING”

The use of hold open clips or other devices to block the fuel nozzle in the open position is prohibited except at those Department sites that have a dedicated high speed fuel dispenser for fueling Department fuel truck bulk tanks. The person filling the bulk tank must remain with the truck at all times during the fueling process (re: SOL 461-10-02).

Compressed/Liquefied Gas Cylinder Storage Area must have the following signage:

“NO SMOKING OR OPEN FLAMES”

PADEP Registration Certificates shall be placed:

- In areas visible to the public. A protected (e.g., glass-covered) bulletin board in the garage area is acceptable. For satellite facilities with no garage, certificates may be posted on a protected board or a reasonable equivalent, such as a picture frame inside the staging building or site office.

- Near the tank (inside the garage on an office bulletin board is acceptable).

UST Operator(s) Roster and Emergency Procedures shall be placed:

- Adjacent or alongside the PADEP storage tank Registration Certificate.

PennDOT Signage. Must be accurate and legible with 1 inch high lettering (minimal). These must include:

- Tank Number
- Contents ID

Fire Protection and Hazard Communication:

- Hazard Materials Identification System (HMIS) Label - The HMIS label provides hazardous information. The system utilizes colored bars for type of hazard, numbers for the degree of hazard (four being the most hazardous), and symbols to convey the hazards of chemicals used in the workplace. NOTE: The HMIS label has been recently updated (HMIS III). Previous versions of the HMIS label may be kept in service until they wear out or are faded.
Diesel:
- Health = 0
- Flammability = 2
- Physical Hazard = 0
- Special = None

Unleaded Gasoline
- Health = 1
- Flammability = 3
- Physical Hazard = 0
- Special = None

- In addition, the HMIS system provides information on the type of personal protective equipment (PPE) that should be used when handling this material. In this category a letter is used to indicate what combination of PPE should be used:
  - A = Safety glasses
  - B = Safety glasses, gloves
  - C = Safety glasses, gloves, chemical apron
  - D = Face shield, gloves, chemical apron
  - E = Safety glasses, gloves, dust respirator
  - F = Safety glasses, gloves, chemical apron, dust respirator
  - G = Safety glasses, gloves, vapor respirator
  - H = Splash goggles, gloves, chemical apron, vapor respirator
  - I = Safety glasses, gloves, dust and vapor respirator
  - J = Splash goggles, gloves, chemical apron, dust and vapor respirator
  - K = Air line hood or mask, gloves, full chemical suit, boots
  - X = Ask Supervisor

- National Fire Protection Association (NFPA) Label – The NFPA in the United States uses a standard called NFPA 704 as a chemical hazard label. NFPA 704 sometimes is called a "fire diamond" because the diamond-shaped sign indicates flammability of a substance and also communicates essential information about how emergency response teams should deal with a material if there is a spill, fire or other accident.

  - Understanding the Fire Diamond - There are four colored sections on the diamond. Each section is labeled with a number from 0-4 to indicate the level of hazard. On this scale, 0 indicates "no hazard" while 4 means "severe hazard". The red section indicates flammability. The blue section indicates health risk. Yellow indicates reactivity or explosively. The white is section is used to describe any special hazards.
8.2 EMERGENCY RESPONSE EQUIPMENT

Fire extinguishers are required with a minimum rating of 2-A:20-B:C; must be easily accessible; and located within 50 feet from pumps, dispensers or storage tank fill-pipe opening(s). This classification denotes that this portable fire extinguisher:

- Could extinguish approximately twice as much Class A fires as a 1-A rated fire extinguisher.
- Could extinguish approximately 20 times as much Class B fires as a 1-B rated fire extinguisher.
- Is suitable for use on Class C fires (energized electrical equipment).

Class A, B, and C fires are defined as:

- Class A fires are ordinary materials like burning paper, lumber, cardboard, plastics, etc.
- Class B fires involve flammable and combustible liquids such as gasoline, kerosene, and common organic solvents used in the laboratory.
- Class C fires involve energized electrical equipment, such as appliances, switches, panel boxes, power tools, hot plates and stirrers. Water can be a dangerous extinguishing medium for Class C fires because of the risk of electrical shock unless a specialized water mist extinguisher is used.

Additionally, Material Safety Data Sheets (MSDSs), safety and spill equipment must be available and located in designated areas, as specified in the facilities CFRP. Some required supplies include, but are not limited to, spill kits, drums, alarms, and phones. Appropriate spill response material (spill kit) shall be located at the pump island or pump location, and spill kits shall be readily available to respond to spills at all storage tank locations. Appropriate spill response supplies are based upon the material and the quantity stored. The determination of needed spill response supplies and their location(s) should be determined during the development and periodic review of the facility CFRP.

An Emergency Shutoff Switch must located within 100 feet of the fueling island or dispenser location, which allows shut down of the entire system from a location other than the fueling
island or dispenser location. It shall be identified with a sign, clearly visible from the dispensing location and unobstructed.

QUICK TIPS & CHECKS:

☑  Make sure your signage is visible and legible!
☑  Refresh color paint on UST manholes, if needed.
☑  Keep registration at your facility in a location that is clearly visible to the public (inside garage is acceptable).
CHAPTER 9: CORRECTIVE ACTIONS

- Defines Reportable Releases from Storage Tanks - ASTs and USTs
- Requirements for Response to Releases from ASTs and USTs
- Provides Overview of the Corrective Action Process for Regulated Storage Tanks

9.0 CORRECTIVE ACTIONS

When a release occurs from tank, there are Department and regulatory guidelines/policies that must be followed. This chapter applies to all releases associated with filling, operating, and dispensing of liquids from ASTs and USTs, and is designed to provide a summary of the steps you must follow to meet the regulatory requirements of the Tank Act, Land Recycling and Environmental Remediation Standards Act (Act 2), Solid Waste Management Act (SWMA), and Pennsylvania Clean Streams Law.

There are specific actions that must be taken to respond to releases of regulated and unregulated materials from storage tanks. The Department operates storage tanks, such as those containing gasoline and diesel fuel that are regulated under the Tank Act, as well as other storage tanks that are exempt from the Tank Act, such as those containing heating oil, used oil (nonhazardous), or kerosene that are regulated under other statutes.

As a result of the Tank Act, PADEP established regulations for release confirmation, release reporting, and corrective action requirements for owners and operators of regulated ASTs and USTs. The regulations are issued under 25 Pa Code Chapter 245, Subchapter D – Corrective Action Process for Owners and Operators of Storage Tanks and Storage Tank Facilities and Other Responsible Parties (Corrective Action Process (CAP) Regulations). These regulations provide guidance for confirming or disproving suspected releases, reporting releases, determining the extent of contamination, remedial actions, preventive measures, restoring diminished water supplies, and storing contaminated soil at the site of the release.

The regulations, procedures and PADEP’s interpretation thereof can be daunting. As a result, it is easy for the uninitiated to make mistakes, which could lead to the unintentional spread of contamination, repetition of clean-up activities, and/or unidentified threats to human health and the environment. The result of which may be significant negative impacts to the maintenance facility and operations. Therefore, it is strongly recommended that at the onset of corrective actions the SEMP Section be contacted for additional guidance.
9.1 RELEASES FROM STORAGE TANKS

9.1.1 Reportable Releases

Under the Commonwealth’s Clean Streams Law, a reportable release to the environment is when any pollutant is discharged to surface or groundwater, including sewers, drains, and ditches, regardless of whether it was from a regulated tank or not (including salt brine tanks). If it is determined that any environmental receptors were impacted, tank owners/operators must contact PADEP immediately. There is no minimum reportable quantity and practically all substances are reportable.

Releases must be reported in all circumstances except when all of the following are true:

- The owner/operator has control over the release, AND
- The release is completely contained, AND
- Within 24 hours the total volume of the release is recovered or removed by corrective action or interim remedial action, as defined in Section 9.3.

AND one of the following is also true:

- The release is to the interstitial space of a double-walled tank (AST or UST);
- The material was released to an aboveground surface, is petroleum, and was less than 25 gallons;
- The release of a hazardous substance to an aboveground surface is less than its reportable quantity under CERCLA (40 CFR 302), or the PADEP Bureau of Waste Management Division of Storage Tanks Regulated Substances List (May 2009, Doc# 2570-BK-DEP2724). A copy of the PADEP document is provided in Attachment 8-1.

9.1.2 Investigating Releases from USTs and Underground Piping

Because UST systems and underground piping are hidden from direct observation of; unusual equipment conditions, discrepancy of inventory reconciliation or problems with monitoring; results from other leak detection methods are utilized to investigate suspected releases to identify or confirm that an UST is the source of the release.

Some general conditions indicative of a suspected release from a UST are:

- Evidence of regulated substance or vapors in soils, basements, sumps, sewer lines, utility lines, surface or groundwater;
- Unusual operating conditions, erratic behavior in dispensing equipment;
- Water is present in UST;
• Laboratory analytical results from testing, sampling, or monitoring that show impact from a regulated substance; and
• Holes in UST during inspection, repair(s), or removal.

These and other indicators in the environment are the suggestions of a release. Four possible scenarios indicative of a potential release are summarized in Table 9-1. Multiple flowcharts depicting the response process for each situation are presented as Figures 9-1 through 9-5.

<table>
<thead>
<tr>
<th>Table 9-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INVESTIGATING SUSPECTED RELEASES FROM USTs</strong></td>
</tr>
<tr>
<td><strong>(Investigate and Complete within 7 days)</strong></td>
</tr>
<tr>
<td>Free Product Discovery</td>
</tr>
<tr>
<td>If free regulated product is discovered at UST site or immediate vicinity then:</td>
</tr>
<tr>
<td>UST Equipment Failure</td>
</tr>
<tr>
<td>If faulty equipment or unusual conditions observed then:</td>
</tr>
<tr>
<td>Inventory Discrepancy</td>
</tr>
<tr>
<td>If inventory reconciliation shows discrepancy then:</td>
</tr>
<tr>
<td>Monitoring Problems</td>
</tr>
<tr>
<td>If monitoring results from leak detection method shows problem with automated tank gauging and/or interstitial monitoring then:</td>
</tr>
</tbody>
</table>

During closure by removal of a regulated or unregulated UST and/or underground piping, a site assessment must be completed. If ‘obvious contamination’ is observed or if any of the above conditions are noted during the site assessment, then a release must be reported. Due to observed conditions listed above, it may become necessary to collect samples of soil, soil vapor, and/or groundwater. If laboratory analytical results for samples collected in association with a UST or underground piping indicate impact from the regulated substance above PADEP cleanup standards, then a release must be reported. Lastly, spills to the ground surface that occur during the operation of a UST system or underground piping must be treated as possible reportable releases; a determination must be made following the procedures in Section 9.1.1.

### 9.2 NOTIFICATION REQUIREMENTS

When a reportable release occurs, a two-step notification process must be followed, which includes making an initial verbal notification followed up by a written notification. The On-Scene Coordinator (OSC) shall be responsible for the release reporting. The OSC is determined by County management and documented in the List of Emergency Contacts within the CFRP. Figure 9-5 depicts the process that must be followed when responding to a reportable release.
Investigating Suspected Releases:

The District should immediately notify BOMO Program Services Unit of a suspected release and within 7 days initiate and complete an investigation to confirm whether a release has occurred. Figures 9-1 through 9-4 should be used to determine a suspected release.

⚠️ Investigate and Complete within 7 Days!

**FIGURE 9-1**
**DISCOVERY OF FREE REGULATED PRODUCT**
(USTs & ASTs)
**FLOWCHART**

- NOTIFY TANK COORDINATOR

  - CLASS C OPERATOR TO CHECK OPERATION OF THE MONITORING & DISPENSING EQUIPMENT PER MANUFACTURER SPECIFICATIONS

  - TANK COORDINATOR TO ARRANGE FOR CERTIFIED TANK HANDLER TO TEST TANK & DELIVERY PIPING FOR LEAKS PER CURRENT PADEP GUIDANCE

  - NO LEAK FOUND

  - LEAK FOUND

  - IS ENVIRONMENTAL CONTAMINATION THE BASIS FOR SUSPECTING THE LEAK?
    - YES
      - CHECK ON-SITE FEATURES FOR PRESENCE OF PRODUCT – CLASS C OPERATOR TO CHECK SURFACE AREA AROUND UST SYSTEM, SUMPS IN NEARBY BUILDINGS, OIL/WATER SEPARATOR AND/OR NEARBY DRAINAGE DITCHES, IF PRESENT
        - RELEASE FOUND
          - SEE FIGURE 9-5 (UST) or FIGURE 9-5A (AST)
        - NO RELEASE FOUND
          - NO FURTHER ACTION REQUIRED
    - NO
      - NO FURTHER ACTION REQUIRED

- SEE FIGURE 9-5 (UST) or FIGURE 9-5A (AST)

**FIGURE 9-2**
**FAULTY EQUIPMENT (USTs & ASTs)**
**FLOWCHART**

- NOTIFY TANK COORDINATOR

  - TANK COORDINATOR TO ARRANGE FOR CERTIFIED TANK HANDLER TO VERIFRY PROPER OPERATION OF EQUIPMENT

  - REPAIR/REPLACE FAULTY EQUIPMENT

  - REPAIR/REPLACEMENT CONFIRMED RELEASE
    - SEE FIGURE 9-5 (UST) or FIGURE 9-5A (AST)
  - REPAIR/REPLACEMENT CONFIRMED NO RELEASE
    - NO FURTHER ACTION REQUIRED

- NO FURTHER ACTION REQUIRED
FIGURE 9-3
INVENTORY RECONCILIATION SHOWS DISCREPANCY FOR TWO MONTHS IN A ROW (USTs & ASTs) FLOWCHART

TAKE SECOND MONTH OF DATA RECORDED FROM INVENTORY RECONCILIATION

DISCREPANCY CONFIRMED RELEASE – NOTIFY TANK COORDINATOR

SEE FIGURE 9-5 (UST) or FIGURE 9-5A (AST)

NO DISCREPANCY

NO FURTHER ACTION REQUIRED

FIGURE 9-4
MONITORING PROBLEMS (USTs & ASTs) FLOWCHART

MONITORING RESULTS FROM LEAK DETECTION METHOD SHOWS PROBLEM WITH AUTOMATIC TANK GAUGING AND INTERSTITIAL MONITORING

REPEAT TEST PER TANK SYSTEM MANUFACTURER SPECIFICATIONS

FAIL – NOTIFY TANK COORDINATOR

TANK COORDINATOR TO ARRANGE CERTIFIED TANK HANDLER TO REPAIR, REPLACE, RECALIBRATE

INITIAL RESULT CONFIRMED RELEASE

SEE FIGURE 9-5 (UST) or FIGURE 9-5A (AST)

PASS

NFA REQUIRED

INITIAL RESULT NOT A CONFIRMED RELEASE

NO FURTHER ACTION REQUIRED
**CHAPTER 9  CORRECTIVE ACTIONS**

**FIGURE 9-5**  
**UST DETERMINATION OF REPORTABLE RELEASE FLOWCHART**

---

- **RELEASE REPORTABLE**
  - **YES**
    - NOTIFY PADEP REGIONAL OFFICE, BOMO AND BEQ WITHIN 2 HOURS AND PROVIDE THE FOLLOWING:
      - NAME OF SUBSTANCE
      - TIME OF OCCURRENCE
      - WHERE THE RELEASE OCCURRED
      - RELEVANT, AVAILABLE INFORMATION CONCERNING CONTAMINATION OF SURFACE AND GROUNDWATER, SOIL OR SEDIMENT AND INTERIM REMEDIAL ACTIONS PLANNED, INITIATED, OR COMPLETED
    - COMPLETE NOTIFICATION OF REPORTABLE RELEASE & CONTAMINATION REPORT (ATTACHMENT 9-2) WITHIN 15 CALENDAR DAYS AND SUBMIT TO PADEP REGIONAL OFFICE
    - CORRECTIVE ACTION PROCESS REQUIRED – GO TO FIGURE 9-6

- **NO**
  - THE FOLLOWING RELEASES UNREPORTABLE:
    - RELEASE TO INTERSTITIAL SPACE
  - WITHIN 24 HOURS UNDERTAKE CORRECTIVE ACTION BY RECOVERING AND REMOVING REGULATED SUBSTANCE
  - NO FURTHER ACTION REQUIRED
CHAPTER 9  CORRECTIVE ACTIONS

FIGURE 9-5A
AST DETERMINATION OF REPORTABLE RELEASE FLOWCHART

THE FOLLOWING RELEASES UNREPORTABLE:

- Release to interstitial space
- <25 gallons to a containment sump
- <5 gallons to a synthetic impermeable surface
- <1 gallon to unprotected soil within 24 hours

Undertake corrective action by recovering and removing regulated substance.

- Notify PADEP Regional Office, BOMO and BEQ within 2 hours and provide the following:
  - Name of substance
  - Time of occurrence
  - Where the release occurred
  - Relevant, available information concerning contamination of surface and groundwater, soil or sediment and interim remedial actions planned, initiated, or completed.

Did release enter water supply involving a facility with a combined above ground storage capacity of 21,000 gallons or more?

- Yes
  - Complete notification of reportable release & contamination report (Attachment 9-2) within 15 calendar days and submit to PADEP Regional Office.
  - Corrective action process required – go to Figure 9-6.

- No
  - Notify in 2 hours City Emergency Agency, Pennsylvania Emergency Management Agency, BOMO’s Emergency Coordinator, downstream water companies, and municipalities and industrial users within 20 miles.

Release reportable

- Yes
  - Notify PADEP Regional Office, BOMO and BEQ within 2 hours and provide the following.

- No
  - No further action required.
9.2.1 Verbal Notification

As detailed in the CFRP, verbal notification is made via telephone by the OSC for reportable spill or releases:

National Response Center (NRC):

The OSC must notify the NRC using the reportable spill hotline 1-800-424-8802 when a release or oil is determined to be of a “harmful quantity.” A “harmful quantity” of oil is that which: violates applicable water quality standards; causes a film, sheen, or discoloration on the surface of the water; causes a sludge or emulsion beneath the surface, or adjoining shorelines, of the water.

U. S. Coast Guard:

The OSC must notify the U.S. Coast Guard at 1-800-253-7465 in the event a waterway has been impacted by a spill or release.

PADEP Central Office (Spill Hotline):

The OSC must notify PADEP’s Central Office at 717-787-4343 or 800-541-2050 within 24 hours of a reportable release.

The OSC should be prepared to provide the following information for the verbal notification:

- Name of person reporting the incident;
- Facility name, location, and contact information;
- Date, time, and location of the incident;
- Facility tank identification number;
- Regulated substance involved;
- Estimated quantity of regulated substance involved;
- The extent of contamination of land, water or air, if known.
- Interim remedial actions planned, initiated, or completed.

The OSC shall take charge of any emergency response action as soon as possible, but must do so within no more than 2 hours following a reportable release.

Additional agencies must be verbally notified if there is a release from an AST facility with a total capacity greater than 21,000 gallons that enters a surface water body or threatens the surface water supply of downstream users. The OSC will determine the severity of the spill and will contact other agencies, as necessary. Additional agencies that need to be contacted in this situation include the Municipal Emergency Agency, Pennsylvania Emergency Management Agency, BOMO’s TC, Downstream Water Companies, and Municipalities and Industrial Users within 20 miles. All relevant contacts shall be listed in the facility’s CFRP.
9.2.2 Written Notification

The CAP Regulations also require written notification of the reportable release. The OSC with aid from the TC shall submit a written report within 15 days of the verbal report, which is to be provided to PADEP, the municipality where the release occurred, and any other municipality impacted by the release. The form that must be submitted is entitled “Notification of Reportable Release/ Notification of Contamination”, a copy of which is included in Attachment 9-2. The written notification must include the same information provided in the telephone notification and also should include any new information obtained within the previous 15 days.

Additional written notification is required if impacts related to the same release are discovered after the initial written notification is submitted to PADEP. The form referenced above can be used in this situation and must be submitted to PADEP within 15 days of discovery of the new impact.

9.3 INTERIM REMEDIAL ACTIONS

All releases from ASTs and USTs shall be addressed as soon as possible. When responding to a reportable release, those timely activities that help maintain or restore public health and safety and prevent additional release of a regulated substance to the environment are referred to as Interim Remedial Actions. This applies to contamination observed during routine tank maintenance and/or upgrade activities such as the removal of an existing UST. Typically, interim remedial actions will involve excavation of impacted material from an area in the vicinity of an AST or after an UST is removed.

When responding to a reportable release from a tank system, the following actions must also be completed to limit the extent of environmental impact:

- Immediately pump regulated substance out of tank;
- Remove impacted media and prevent/ limit the migration of contamination;
- In case of removal, pump out regulated substance and all impacted liquids from tank grave, as necessary;
- Pump out observed regulated substance and/or impacted liquids from tank monitoring wells or oil/water separators, as applicable;
- Monitor the plume of contaminants in the underlying groundwater;
- Assess local water supplies involving local residents and/or businesses, and
- If water supplies are impacted, coordinate and provide temporary water supply within 48 hours and possible permanent water supply within 90 days.

Depending on the size and nature of the release, equipment availability and capabilities of available Department personnel, and response plan contingencies, these actions may be accomplished by Department forces, District contractors, Central Office consultants, or any combination thereof. In any event, the OSC should coordinate all remedial actions with the TC. The TC should contact the SEMP Section should further assistance be needed.
Impacted material generated from interim remedial actions can be stored on site for up to 90 days for hazardous wastes and 179 days for residual wastes if it is:

- Completely and securely covered the entire time on site with impermeable material;
- Stored to deter public access; and
- Not presenting a threat to human health or the environment.

Disposal of impacted material may be handled through existing Department residual waste contracts, if available.

When a spill or release of a regulated substance impacts soil, this will involve the excavation and removal of the impacted media. Whether these types of activities are completed by the Department or an outside vendor/contractor, post-excavation samples must be collected. This is necessary to demonstrate to PADEP that the cleanup or interim remedial action was effective by meeting an attainment standard. Doing so affords the Department a release of liability associated with the spill.

Confirmatory soil samples shall be collected according to PADEP’s Systematic Random Sampling (SRS) protocol(s) as defined in their Land Recycling Technical Guidance Manual guidelines. General guidelines on the number of samples are as follows:

- A minimum of 8 samples must be collected for excavations up to 125 cubic yards in size;
- For excavations greater than 125 and less than 3,000 cubic yards, a minimum of 12 samples must be collected.

These post-excavation samples should be collected prior to backfilling any excavation and must be analyzed by a certified laboratory for the appropriate compounds. In some instances, it may be necessary to keep the excavation “open” until the results of the post-excavation samples are received. In either case, PPS may provide assistance on how to proceed when excavation and removal of impacted media is necessary.

Where an UST is removed and impact is observed to extend beyond the 3-foot boundary of the UST system, then additional confirmatory sampling and remedial actions will be necessary, as discussed in Section 9.5.

According to the CAP Regulations, owners/operators still must take corrective action(s) for non-reportable releases to completely recover or remove the substance that was released.
9.4 CORRECTIVE ACTION (not reportable quantity) REPORTING REQUIREMENTS

9.4.1 PennDOT Reporting Requirements

For releases and/or spills from ASTs, The Department requires that the incident be documented and logged for record keeping purposes. Details on these procedures are provided in the CFRP. When a tank is to be closed and/or corrective actions are required, the TC shall be responsible for meeting all reporting requirements.

When a release has been confirmed and the CAP Regulations must be followed, the SEMP Section Chief is to be notified immediately for assistance to ensure that PADEP’s requirements are met.

9.4.2 PADEP Reporting Requirements

For releases from ASTs and USTs, no notification is required if the release is non-reportable, as defined by the CAP Regulations. If the release is reportable and interim remedial actions were successful as demonstrated by confirmatory sample results, then a summary report must be submitted to PADEP. However, if these confirmatory sample results indicate impact is still present, further remediation and/or investigation are required (see Section 9.5).

9.5 SITE INVESTIGATION AND ACT 2 CLOSURE

When interim remedial actions do not produce a “clean” closure, post-excavation samples indicate that the remediation is not complete, or remaining impact needs to be fully defined, site investigation activities must be completed as stated in the CAP Regulations and the SEMP Section Chief must be informed to provide technical guidance and project management if needed.

Regulations state that a Site Characterization Report (SCR) must be submitted to PADEP within 180 days of the reportable release. Within 45 days of submittal of the SCR, a Remedial Action Plan (RAP) must be submitted to PADEP for review and approval. Commonwealth procurement policies may make complying with these timeframes a challenge. Coordinate with the PADEP Regional Office if additional time is required. Be prepared to offer assurances that the work is proceeding in an appropriate manner and that PADEP will be kept informed. Every effort should be made to conform to the regulatory timeframes.

For UST closures, the contamination associated with a reportable release must be summarized in an Underground Storage Tank System Closure Report (UST Closure Report), as required by PADEP. The UST Closure Report documents the closure of UST(s) and the extent of any contamination. Where there is a reportable release and a more detailed discussion of interim remedial actions is necessary, or further investigation is completed to define the source and impact of the release (i.e., “Obvious, Localized Contamination- Sample Results Do Not Meet
Standards” or “Obvious, Extensive Contamination” is noted on the UST Closure Report), an SCR and RAP must be submitted to PADEP as above.

These report documents are designed to meet the requirements of the CAP Regulations and to summarize investigation activities completed to fully define the extent of impact from the reportable release, and to present plans on how the contamination will be remediated. Once the above reports (SCR and RAP) are approved by PADEP, a Remedial Action Completion Report (RACR) must be submitted to PADEP for review and approval. The Department will be afforded a release of liability associated with the product release once the RACR is approved in its entirety.

This regulatory process is summarized in Figure 9-6. These activities include the characterization of impact to affected media such as soil, groundwater and/or soil gas. The goal of this process is to define and meet appropriate cleanup standards as adopted under the Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2).

Once a site has been fully characterized and an SCR has been submitted and approved by PADEP, a RAP can be submitted for their review and approval. The RAP defines the overall goals of the cleanup and how they will be achieved. The Act 2 cleanup standards that will be used to demonstrate attainment are also defined in this report. Once PADEP approves this report, the proposed cleanup actions are implemented. As indicated in Figure 9-6, if the remedial goals are obtained, then a RACR can be submitted to PADEP for review and approval. The end of the CAP is achieved when the RACR is approved by PADEP.

Depending on the Act 2 cleanup standard attained for the site, a Post-Remedial Care Plan (PRCP) may be presented in the RACR as a condition for regulatory closure. PRCPs include actions that must be taken subsequent to the remedial actions completed as proposed in the RAP. These activities typically include quarterly monitoring and reporting for attenuation of impact to groundwater.

It may be necessary for the Department to place an Environmental Covenant (EC) on the property to complete the remedial action. ECs are required whenever engineering or institutional controls are necessary to demonstrate attainment of an Act 2 cleanup standard, as stated in the Uniform Environmental Covenants Act or Act 68 of 2007 (UECA). The EC is filed with the county Recorder of Deeds after being executed by the Department and approved by PADEP. The EC may create ongoing obligations for the Department such as monitoring and maintenance of the controls instituted to meet the Act 2 standard.
CHAPTER 9  CORRECTIVE ACTIONS

FIGURE 9-6
STORAGE TANK CORRECTIVE ACTION REQUIREMENTS
FLOWCHART

CONFIRM RELEASE FROM REPORT TO PENNDOT PPS

PERFORM INTERIM REMEDIAL ACTIONS AND SITE CHARACTERIZATION

INTERIM REMEDIAL ACTIONS INCLUDE BUT ARE NOT LIMITED TO:
- Pump product out of tank
- Mitigate & monitor fire explosions & safety
- Prevent/Limit migration of contamination
- Recover Free product
- Monitor plume of contaminants
- Removal of impacted media

IF CONTAMINATION AND/OR INTERIM REMEDIAL ACTIONS AFFECT OR DIMINISH THE WATER SUPPLY:
- A temporary supply must be provided within 48 hours
- A permanent supply must be established within 90 days

ON-SITE STORAGE OF CONTAMINATED SOIL-90 DAYS COMPLETELY AND SECURELY COVERED

COMPLETE A SITE CHARACTERIZATION AND SUBMIT A SITE CHARACTERIZATION REPORT TO THE DEP REGIONAL OFFICE WITHIN A MAXIMUM OF 180 DAYS OF REPORTING THE RELEASE

A SITE CHARACTERIZATION REPORT INCLUDES BUT IS NOT LIMITED TO:
- Reporting interim remedial actions taken and measured effects
- Define source, extent, of contamination
- Indicate affected areas, ground water & soil characteristics & site conditions
- Report on analysis of physical field data
- Provide insight on potential remedial action plan schedule

DEVELOP A REMEDIAL ACTION PLAN FOR SUBMISSION TO PADEP REGIONAL OFFICE WITHIN 45 DAYS OF SITE CHARACTERIZATION REPORT SUBMISSION

ARE REMEDIAL GOALS OBTAINED?

YES
- DEVELOP REMEDIAL ACTION COMPLETION REPORT FOR SUBMISSION TO PADEP
  - PADEP APPROVES
  - MAINTAIN ALL DOCUMENTS ON FILE

NO
- DEVELOP REMEDIAL ACTION REPORT AND REVISE RAP
  - DEP MAY REQUIRE QUARTERLY PROGRESS REPORTS UNTIL FURTHER NOTICE
CHAPTER 10:

- Provides Summary of Spill and Contingency Plan Regulatory Requirements
- Provides Guidance for the Completion and Use of PennDOT’s Combined Facility Response Plan (CFRP) Template

10.0 COMBINED FACILITY RESPONSE PLAN

State and federal laws require the development and implementation of environmental and emergency response plans for all activities involving the storage, use and management of potentially polluting substances. These laws and resultant regulatory programs are in place to limit the potential for environmental degradation or endangerment of public health and safety. These programs encourage the use of preventative approaches to address accidental releases of toxic, hazardous, or other polluting materials. Because of the number of programs applicable to PennDOT operations, many plans may be required for a single facility. In addition, the various programs overlap each other resulting in repetition and confusion for the regulated entity. To streamline the approach, the Department has implemented the use of a Combined Facility Response Plan (CFRP). The CFRP meets all applicable regulatory requirements and must be used by all PennDOT facilities.

This Chapter introduces state and federal incident prevention and emergency response programs, and an overview of their applicability. Following the introduction to these programs, PennDOT’s Combined Facility Response Plan (CFRP) is discussed. Editable copies of the CFRP templates (SPP and non-SPCC sites) are available at P:\penndot shared\SEMP Section-BOMO\Response Plan Template.

10.1 STATE AND FEDERAL POLLUTION INCIDENT PREVENTION AND EMERGENCY RESPONSE PROGRAMS

Pollution prevention and emergency response programs fall under two categories; those governed and mandated by the federal government and those governed and mandated by the Commonwealth. The primary federal program designed to address oil contingencies is SPCC rules as required by 40 CFR Part 112 for most on-shore facilities, and the Facility Response Plans (FRP) which is usually applicable for larger facilities. State programs require the preparation of Preparedness Prevention and Contingency (PPC) Plans and Spill Prevention Response (SPR) Plans for facilities storing regulated substances. Determining which program is applicable to a specific facility is based on various factors including, but not limited to the types of material, their quantities and activities conducted at the facilities.

PennDOT facilities that store potentially polluting substances and oil are required to have PPC and SPCC Plans developed. A summary of the plans and requirements is provided in Table 10-1.
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Prevention /Control of accidental discharge of polluting materials to surface water or groundwater</td>
<td>To minimize and abate hazards to human health and the environment from fires, explosions, or release of solid wastes to air, soil, or surface water</td>
<td>Prevention/Control of accidental discharge of regulated substances and downstream notification requirements</td>
<td>Prevention of accidental discharges of oils and hazardous substances into the waters of the United States</td>
</tr>
<tr>
<td>Types of Industrial Activities Affected</td>
<td>All industrial activities having potential for accidental pollution</td>
<td>Activities which generate, store, recycle, treat, transport, or dispose of solid wastes; activities associated with drilling and operating oil and gas wells</td>
<td>Activities pertaining to above ground storage facilities with &gt;21,000 gallons of regulated substances</td>
<td>Non-transportation related activities with potential for discharge of oil and hazardous substances</td>
</tr>
<tr>
<td>Activities Covered</td>
<td>Transportation, storage, processing or raw materials, intermediates, products, fuels, wastes</td>
<td>Generation, storage, transport, recycle, treatment, disposal of hazardous wastes; processing and disposal of residual or municipal wastes; road spreading operations, brine disposal</td>
<td>Storage and handling of regulated substances</td>
<td>Production, storage, processing, refining, handling, transferring, distributing of oils and hazardous substances</td>
</tr>
<tr>
<td>What Pollution Materials are Addressed?</td>
<td>All polluting materials</td>
<td>Any hazardous, residual, municipal, or medical wastes</td>
<td>Hazardous Substances and Petroleum</td>
<td>Oil and hazardous substances defined pursuant to Sec. 311 of the Clean Water Act</td>
</tr>
</tbody>
</table>

Further information on these programs can be obtained through USEPA and PADEP websites.

10.1.1 Pollution Incident Prevention and Emergency Response Programs at a Glance

10.1.1.1 Facility Response Plan (FRP)

A FRP is a federal requirement under the Clean Water Act for facilities storing or using very large quantities of oil (>1 million gallons) and that could be reasonably expected to cause substantial harm to the environment in the case of a release to navigable waters. The purpose of
a FRP is to demonstrate a facility’s preparedness to respond to a worst-case oil discharge. PennDOT does not have facilities that meet this criterion.

10.1.1.2 Spill Prevention Response (SPR) Plans

The Storage Tank and Spill Prevention Act [Tank Act] requires owners of aboveground storage tank (AST) facilities with a total aboveground capacity greater than 21,000 gallons of regulated substances to develop and submit a SPR Plan. The purpose of an SPR plan is to establish procedures that prevent spills or releases and identify the methods to contain and control contamination in the event of an accidental release. A distinguishing characteristic of the SPR plan is that the facility must perform notification to downstream water users when a release occurs. PennDOT may have several facilities that meet the 21,000 gallon aboveground storage capacity criteria.

10.1.1.3 Spill Prevention, Control and Countermeasures (SPCC) Plans

A SPCC Plan is a federal program requirement that is mandated by the USEPA under the federal Clean Water Act (40 CFR Part 112). The purpose of an SPCC plan is to prevent accidental discharges of oils and hazardous substances into the waters of the United States. SPCC plans are required at facilities with an aggregate an aboveground oil storage capacity greater than 1,320 gallons, or underground storage capacity of tanks and equipment exceeds 42,000 gallons. SPCC Plans must be signed and certified by a Professional Engineer. Many PennDOT facilities meet these criteria and are required to have SPCC Plans.

10.1.1.4 Preparedness, Prevention and Contingency (PPC) Plans

A PPC Plan is a requirement of PADEP to satisfy the release response criteria of several regulatory programs (air, water, waste). PPC plans establish procedures to prevent accidental releases of toxic, hazardous or other polluting materials from manufacturing or commercial industries. In general, a PPC plan is required for any manufacturing or commercial installation that has the potential to cause pollution of the air, land or water, or for causing endangerment of public health and safety through accidental releases. Thus, if your facility stores or uses hazardous substances, material, wastes, or potential pollutants a PPC Plan is required.

Facilities with Potential Water Impacts are those that conduct activities that could lead to an accidental discharge of polluting materials to surface water or groundwater. Facilities that fall within this category must maintain a PPC plan for all industrial activities having the potential for accidental pollution. The PPC plan must address activities such as: the transportation, storage or processing of raw materials, intermediates, products, fuels and wastes for all polluting materials!

Facilities with Potential Environmental and Human Health and Safety Impacts due to Waste Generation are those that conduct activities that could result in fires, explosions, or releases of solid wastes to air, soil or surface water. Facilities that fall into this category must maintain a PPC plan for activities which generate, store, recycle, treat, transport or dispose of solid wastes,
and any activities associated with drilling and operating oil and gas wells. This includes facilities that generate, store, transport, recycle, treat or dispose of hazardous wastes, facilities that process and dispose of residual or municipal wastes, road spreading activities and brine disposal. Simply put, the PPC plan must address all hazardous, residual, municipal or medical wastes generated on-site provided the threshold amounts or facility locations do not trigger SPCC, SPR or FRP requirements. PPC plans for waste facilities must address additional hazards such as fires and explosions. By the very nature of the hazards that are addressed, plans for these sites also require additional local notification, emergency coordination and evacuation requirements.

**10.2 PENNDOT’S COMBINED FACILITY RESPONSE PLAN**

The CFRP is a facility’s plan to prevent the release of contamination to the environment from storage tanks and other containers, and to quickly and effectively mitigate the effects should an accidental release occur. The CFRP should serve as the cornerstone of a facility’s emergency preparedness and response activities that are part of a District’s Strategic Environmental Management Program (SEMP). The CFRP template must be used by all Department facilities that require an environmental response plan and must be exclusive to a particular facility. No other plan format is acceptable.

The CFRP has been designed to provide a reasonably simple and uniform approach to response plan development and maintenance. It contains standardized language and straight-forward data entry fields that allow District or County personnel to develop and maintain the plan. It is intended to be flexible, so as to allow revisions that reflect facility-specific conditions. All references to tables and figures in the following subsections apply to the CFRP template document, unless specifically referenced to other sections of this manual.

**10.2.1 Template Layout and Use Policy**

The CFRP is divided into three (3) basic areas:

- The Preface;
- The Body; and
- The Appendices.

**10.2.1.1 The Preface**

The Preface is that part of the plan before the Table of Contents. It contains the most critical information needed during a release response, the development of an initial plan or a facility inspection. Other than completing the data entry fields, no changes to the Preface template should be made. The subsections of the Preface are as follows:
Emergency Contact List (Table 1):

This list contains the most important information required during a crisis, specifically, who is in charge, who needs to be informed of the problem, what information do you need to provide, and who do you call for assistance. While all parts of the CFRP should be current, this list must be updated immediately upon any contact change. Due to the frequent changes in personnel experienced by the Department, simply updating this list is not considered a plan review or revision and does not have to be formally recorded as such.

Plan Review and Signature Page:

This page assigns ownership of the plan to an individual. It also includes a provision for the TC to establish whether the federal SPCC regulations apply to the facility. This will determine the need for a Licensed Professional Engineer (PE) to review and certify the plan, as well as the ability to streamline the plan by removing the federal SPCC sections.

Professional Engineer Certification Statement:

If needed, this is the location where a Licensed Professional Engineer (PE) must certify the plan following the federal SPCC mandated review.

Certification of the Applicability of the Substantial Harm Criteria Checklist:

If needed, this is a statement required by the federal SPCC regulations. The statement check boxes are already filled out in the template and will not change for a PennDOT facility.

10.2.1.2 The Plan Body

This part of the plan contains specific details relative to types and amounts of materials on-site, location of materials, ways that the materials may enter the environment, measures used to prevent releases, procedures to mitigate accidental releases, and plan administration, etc. Within the template, specific direction, standardized language and data entry fields are included in each section consistent with: regulatory requirements, Best Management Practices (BMPs), and Department policy. Descriptions and general guidance to develop each section of the plan are included below. While revisions within individual sections are permitted, revision of section title or sequence is prohibited unless provided for in the remainder of this Chapter.

Note that each section of the SPCC Sites (usually 01 stockpiles) template is cross referenced to the applicable regulations. The reasons for this are:

- It is a requirement under the federal SPCC regulations, and
- It makes it easier for an inspector to determine which part of the plan actually applies to his/her program area.
The TC determines whether the federal SPCC requirements apply to the subject facility as documented on the Plan Review and Signature Page, and whether to use the 01 (SPCC) or non-01 (non-SPCC) template.

In previous versions of the CFRP template, records and forms were maintained in the appendices. In the current version, the appendix only contains mapping. Forms and records may now be maintained separately.

### 10.2.1.3 Forms and Records

Attached to the CFRP Template, is the CFRP Blank Forms and Tools document. This document contains the CFRP Plan Review Checklist, which provides the plan owner a list and schedule of items to accomplish in order to maintain the CFRP in compliance with regulatory requirements and conformance to Department policy. The CFRP Blank Forms and Tools document also contains all the blank forms that may need to be completed to document associated activities.

To make paper handling easier, the completed forms (records) may be maintained in a separate CFRP Records Binder. The District SEMP Manager (SEM PM) should be consulted if additional information relative to documents and records is needed.

### 10.2.1.4 Roles and Other Policy

The location of the official Department CFRP template is on the PennDOT server at:

P:\penndot shared\SEMP Section- BOMO\Response Plan Template.

At a minimum, the CFRP must be reviewed and updated **annually.** The CFRP may be completed by District and County personnel, or by an appropriate consultant. Roles are defined as the following:

**On-Scene Coordinator (OSC):**

- Has primary authority and responsibility to direct response activities.
- Responsibilities include, but are not necessarily limited to; evaluating resources necessary to address a spill, coordinating with local, state and emergency response authorities, overseeing spill cleanup, identify information needed for notification, determining the characteristics of release including quality and chemical makeup, implementing actions to contain a release, activate internal alarms and notifying personnel and assessing risks to human health and the environment.
- At 01 maintenance facilities, the role is typically filled by the County Maintenance Manager (CMM) or his/her designee.
- At non-01 maintenance facilities, the role is typically filled by the senior Foreman.
- For maintenance facilities, the OSC shall be named by the CMM.
Alternate OSC:

- Assumes all primary OSC responsibilities if the primary OSC is not readily available.
- For maintenance facilities, the Alternate OSC shall be named by the CMM.

County Maintenance Manager (CMM):

- Provides support for the OSC or Alternate OSC.
- May be contacted in the event that the OSC or Alternate OSC cannot be reached.
- In non-emergency situations the CMM reviews and evaluates the CFRP annually.
- Reviews and provides signature on the CFRP document and review log annually.

TC or District Maintenance Environmental Coordinator (DMEC):

- The primary resource for facility-specific information to the OSC and CMM.
- In non-emergency situations, the TC or DMEC determines whether or not the facility is subject to the SPCC requirements (40 CFR Part 112).
- If necessary, acts as the liaison between the site and USEPA.
- Reviews the CFRP and review log annually.

SEM Program Manager:

- Provides guidance or support to the DEMC or TC.

Licensed Professional Engineer (PE):

- Only when the SPCC rules apply to a facility, the PE certifies any/all technical amendments made to the CFRP.

To aid in developing or updating the CFRP, the subsequent subsections provide an overview of key plan elements. More specific instructions are incorporated into the CFRP Template.

10.2.2 Introduction (CFRP Section 1.0)

The section contains general facility information including: site setting, site activities and operations, site security, material and waste inventory, spill history, identification of spill areas, identification of drainage pathways, and distance to navigable waterways.

Site Location Map (Figure 1):

This location map must be a 7 ½ minute United State Geologic Survey (USGS) Quadrangle Map with the location of the facility identified on the drawing along with nearest downgradient water body and direction and distance from the facility.
Facility Layout and Site Drainage Map (Figure 2):

The required features to be identified on the map are provided in the appendix of the CFRP. Specific attention to detail needs to be given when identifying structures (e.g., garages, administration, wash bays, salt storage, etc.), ASTs, USTs, smaller material storage locations, and layout of stormwater drainage patterns and approximate location of subsurface structures. The AST, UST, and smaller material storage locations should be consistent with Table 2 - Material and Waste Inventory.

Material and Waste Inventory (Table 2):

The table, maintained in the CFRP Records Binder, lists materials found at a typical 01 maintenance facility. These include; ASTs, USTs, oil-filled electrical equipment, (e.g., transformers, emergency generators, elevators), oil-water separators, and facility refueling trucks. Be sure to also include new and used antifreeze fluids and motor oils stored in drums, liquid asphalt ASTs, and salt brine and liquid calcium chloride. It is critical to determine the maximum storage capacity for each material/waste and their respective storage locations to allow for appropriate response planning. The tank identification number specified must be consistent with Figure 2.

The facility capacity is determined by the full container size, whether it is full or not. Capacities of permanently closed ASTs or UST (in accordance with PADEP requirements) are not included in the aggregate capacity calculation. USTs that store oil (includes gasoline or petroleum) that are regulated under the Tank Act are excluded from the underground oil storage capacity for SPCC purposes. However, when excluded or exempt from the Tank Act (such as heating oil USTs), they must be counted for SPCC purposes.

Spill History Information (Table 3):

The table, maintained in the CFRP Records Binder, should be updated when and if a spill occurs with all of the required information. If a release triggers a reportable incident to the USEPA or PADEP, the incident should include a Corrective Action Report – Preventative Action Report (CAR – PAR). As part of the District SEM Program, this report will be used to track and evaluate significant or recurrent spill concerns, as needed.

Implementation Schedule for Plan Elements Not Currently in Place:

This item provides a list of any missing or incomplete aspects of the plan and a schedule of when they will be implemented. Each missing or incomplete aspect of the plan must be addressed and discussed within the applicable elements of the plan and implemented as-soon-possible and be in conformance with all USEPA and PADEP regulations and requirements. Typically, all plan elements are already in place. However, this may be needed if significant operational, equipment or drainage changes occur at a stockpile and additional significant response elements need to be added to the CFRP.
10.2.3 Description of Plan Implementation (CFRP Section 2.0)

This section contains information on the organizational structure for implementation of the CFRP, by listing the chain-of command, outlining the duties and responsibilities of the OSC and describing how the plan is distributed.

Organizational Structure of Site for Plan Implementation:

The individuals within the Maintenance District and their responsibilities for implementing, maintaining, and updating the CFRP are outlined in Section 10.2.1.4 of this publication.

Emergency Contacts and Chain-of-Command:

In an emergency, the listed emergency contacts must be notified in the order shown in CFRP Table 1 – List of Emergency Contacts. The list may also be posted on bulletin boards or other appropriate locations within the facility so that the OSC can contact others in the event of an emergency.

The OSC or another District authority should contact the emergency response contractor listed in Table 1 of the CFRP in the event that facility personnel cannot resolve the situation.

Duties and Responsibility of the OSC:

This section discusses the duties and responsibilities of personnel who are involved with the management and/or the implementation and oversight of the Plan.

OSC Responsibilities include, but are not limited to:

- Determining human and equipment resources required to respond to a spill based on an assessment of the magnitude of the spill;
- Coordinating spill response efforts between both local and state agencies and all regional emergency response authorities;
- Overseeing and monitoring the spill response activities to ensure that response teams take appropriate action to prevent threats to human health or the environment;
- Identifying the character, source, amount, and the extent of the release, as well as other items needed for notification;
- Determining the type and quantities released;
- Implementing actions to prevent further release and contain what has already been released;
- Activating internal alarms and hazard communications to notify all site personnel of an emergency, and
- Assessing the risk to human health and the environment.
Alternate OSC Responsibilities:

- Alternate OSC responsibilities are all responsibilities of the OSC if he/she is not readily available.

10.2.4 Spill and Release Prevention (CFPR Section 3.0)

This section provides information on pre-release planning by inventorying of all ASTs on-site. It includes information on the location of the ASTs, contents, standard setup and maintenance. The section also details miscellaneous material waste stored or disposed of on-site, presents material compatibility considerations, puts forth general preventive maintenance recommended for ASTs and USTs, establishes a general housekeeping program, lists external factors that could be relevant to site operations and creates an employee training program.

10.2.4.1 Pre-Release Planning

Petroleum Containing ASTs and Dispensing Equipment:

This section summarizes the standard setup and maintenance of the ASTs necessary to reduce the possibility of potential releases. The location of all ASTs must be shown on Figure 2: Facility Layout and Site Drainage Map. Refer to Chapter 5 of this publication for AST operation and maintenance, testing, and inspection guidance.

For petroleum containing ASTs and dispensing equipment, specific information on the location (e.g., distance from tank in feet) of fire extinguishers and emergency telephones and contacts should be included in the provided fields within this section of the CFRP.

Non-Petroleum Containing ASTs:

The physical location of these tanks (e.g., salt brine, antifreeze, etc.) should be provided in this section. The location of all ASTs must be shown on Figure 2: Facility Layout and Site Drainage Map.

USTs and Dispensing Equipment:

If there are USTs at the facility, they should be shown on Figure 2: Facility Layout and Site Drainage Map. Refer to Chapter 6 of this publication for UST operation and maintenance, testing, and inspection guidance.

10.2.4.2 Material Compatibility

Consideration must be given to material storage practices, particularly as they relate to vehicle maintenance activities when mixing materials and prohibiting mixing of incompatible materials which may result in fire, explosion, and unusual corrosion (i.e., corrosive materials are stored separate from flammable materials).
10.2.4.3 Preventative Maintenance

A preventative maintenance program, including monthly inspections is in place for equipment and tanks containing environmentally sensitive materials. Waste storage areas are inspected weekly. The following is a description of activities conducted during the routine weekly inspections:

- Hoses, fittings, and valves of storage vessels and tanks are checked weekly and are tightened or replaced, as needed.
- Ground cables, hoses, and valves are checked on fuel delivery systems used by the facility.

The CMM or his/her designee is responsible to complete the required inspections of the facility’s systems and materials in accordance with the SEMP environmental checklist to check for problems. Typically, these inspections are completed by the County Equipment Manager (at a 01 stockpile) or a Foreman (at a non-01 stockpile).

THE RECORDS GENERATED FROM THESE INSPECTIONS INCLUDE:

1. Facility-Specific SEMP Inspection Records Sheet and associated CARs resulting from significant non-conformances.
2. Rainwater Release Inspection Log, as necessary.

10.2.4.4 Housekeeping Program

General housekeeping practices reduce the possibilities of accidental spills and safety hazards to site personnel. These facility practices include:

- Small spills are quickly cleaned up with absorbent materials;
- Environmentally sensitive materials are stored in neat, orderly fashion in approved containers;
- Regular refuse pick up and disposal is completed through District contracts;
- Waste oil and antifreeze, used motor oil, used fluorescent bulbs, waste aerosol cans, used batteries and oil filters are collected and recycled through District contracts; and
- Scrap metal, scrap drums, and scrap tires are collected and recycled through District contracts.

The District should review and update contact and contract information for the District-contractor responsible for hazardous or residual waste disposal to ensure prompt disposal of all waste materials.

The CMM (or his/her designee) should include, and update as necessary, the contact information for person/firm responsible of janitorial services cleanup.
10.2.4.5 Personnel Training

PennDOT trains oil-handling personnel, through initial job training and periodic plan familiarization and practice, in the operation and maintenance of equipment to prevent discharges; and to convey discharge procedure protocols, applicable pollution control laws, rules, and regulations; and general facility operation. This includes Operator B and C training for those sites with regulated USTs.

Training records with adequate documentation are maintained for all employees in accordance with applicable Department policy. The facility training coordinator maintains copies of the training records.

10.2.5 Spill Response Procedures (CFRP Section 4.0)

Guidelines for a variety of different spill scenarios such as general spill response procedures, small spill response procedures, and large spill response procedures are included in this Section. The section also discusses proper spill containment, cleanup and disposal practices. Other topics found include a description of countermeasures undertaken by the facility or emergency response contractors, internal and external communication and alarm systems, evacuation plans for facility personnel, emergency response equipment, emergency assistance, response and reporting criteria and information on the downstream notification requirements.

General Spill Response Procedures:

Once a determination is made whether the spill is small or large, as defined in this section, follow the appropriate general response procedures for large and small spills (see pages 19 and 20 of the CFRP template – SPCC sites, respectively).

The Spill Incident Report Form should be completed in its entirety and Table 3 of this plan should be updated accordingly.

A CAR/PAR may be issued if deemed appropriate.

10.2.5.1 Containment, Cleanup, and Disposal Practices for Spills

This section contains procedures and protocols for the containment and cleanup of spills including disposal practices for spills.

The OSC must assess the threat and determine whether the cleanup can be performed in-house or if contractor assistance is needed. The emergency response contractor’s contact information is provided in Table 1 and should be updated as necessary.

All contaminated media, residue, and cleanup materials must be disposed of properly and all applicable regulations adhered to.
For hazardous waste, follow the facility handling, accumulation, and disposal requirements, consult with the OSC, and seek guidance from the DMEC and the SEMP Section.

**The OSC is responsible for:**

- Providing direction to site personnel to clean minor spills/releases caused through normal maintenance and facility. Smaller amounts of contaminated soil, along with other sorbent materials may be placed in 55-gallon drums, and
- Notifying the clean-up contractor for disposal of larger spill cleanup residue.

### 10.2.5.2 Spill Contingency Plans for Potential Spill Areas

Spill contingency plans for potential spill areas at each facility are included in this section of the CFRP. Each site-specific contingency plan contains the following information:

- Spill response procedures;
- Name and phone number of the OSC and Alternate OSC;
- Figure(s) showing potential spill site and surface flow direction;
- Secondary/emergency containment structures and drainage destinations;
- Types of materials present; and
- Cleanup procedures.

If there is a spill at a location other than one of the identified potential spill sites, go to the General Spill Response Procedures at the beginning of Section 4.0 of the CFRP.

### 10.2.6 Countermeasures (CFRP Section 5.0)

This section addresses specific countermeasures which will be undertaken by facility personnel in the event of a release. Some considerations may be valve activations, equipment isolations, flow diversions, boom deployment, etc.

#### 10.2.6.1 Emergency Response Contractors

If the District maintains such a contract, the Contract Number should be included in the provided field. In lieu of a District contract, the SEMP Section’s Agencywide Remediation Services Contract Number may be used. Additionally, the emergency response contractor(s) must be identified in Table 1 of this plan to ensure prompt response.

#### 10.2.6.2 Internal and External Communications with Alarm Systems

Internal communications or alarms used to provide immediate emergency instruction to personnel and those used to summon emergency assistance from the local police or fire departments should be included in this section.
10.2.6.3 Evacuation Plan for Facility Personnel

The plan should be consistent with the continuity of the Site Operations Plan and a diagram of the site evacuation route(s) posted at every entrance/exit. A sample evacuation plan, Figure 3, is included in Appendix A of the CFRP.

10.2.6.4 Emergency Response Equipment

The facility must have spill response equipment available to allow site personnel to respond safely and quickly to emergency situations. Spill response equipment and supplies that should be available to personnel at the site are listed in Table 5 – Emergency Response Equipment and Supplies and should be maintained in the CFRP Records Binder.

It is the OSC’s responsibility to appoint facility personnel to inspect and maintain the emergency equipment listed in Table 5. At a minimum an inspection of the equipment and supplies should be conducted after each spill incident, and re-stocked if necessary.

10.2.6.5 Emergency Assistance, Response, and Reporting

The specific reporting time periods and the information required to be communicated when reporting a spill is contained within this section. The OSC should familiarize himself/herself with Table 1 of the CFRP and all of applicable regulatory requirements. A Spill Incident Report Form is included in the CFRP Blank Forms and Tools document and must be completed by the OSC or designee to document the spill. The completed form shall be forwarded to the District SEM PM. Table 3 of the CFRP must also be updated.

Reporting Petroleum Releases:

Discharge information must be reported in writing to the USEPA Regional Administrator (Mail report to the following address: USEPA Region 3, 1650 Arch Street (3PM52) Philadelphia, PA 19103-2029, also provided at http://www.epa.gov/region03/comments.htm;) within 60 days if either of the following occurs:

1. Single spill incident greater than 1,000 gallons of oil into navigable waters, or
2. Two reportable oil spills of more than 42 gallons within any 12-month period.

The report must contain the following information:

- Facility name and location;
- Facility owner or operator names;
- Facility maximum storage or handling capacity and normal daily throughput;
- Facility description, including maps, flow diagrams, and topographical maps;
- The cause of the spill, including a failure analysis of system or subsystem where the failure occurred;
- The corrective action or countermeasures taken (e.g., equipment repairs or replacement);
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- Any other preventative measures taken; and
- Other information that the Regional Administrator may require.

Discharge information must be reported in writing to the PADEP (See the CFRP Blank Forms and Tools document or http://www.portal.state.pa.us/portal/server.pt/community/about_dep/13464/office_locations/585263#sunbury for PADEP contact information) within 15 days or less of a qualifying discharge event.

In accordance with Pub. 611, a good rule-of-thumb for a qualifying event or reportable release is a release of petroleum to an aboveground surface greater than 25 gallons. For a complete list of materials and their reportable quantities, refer to 40 CFR Part 302.4, Table 302.4.

There are three (3) specific situations when a release does not have to be reported:

- A release to the interstitial space of a double-walled AST or UST;
- A release of petroleum to an above ground surface that is less than 25 gallons, and
- A release of a hazardous substance to an aboveground surface that is less than its reportable quantity under CERCLA.
  
  **AND ONLY IF:**
  
  - The release is under control at all times;
  - It is completely contained, and
  - It is completely contained within 24 hours of its occurrence.

The report must include:

- Name, address, and telephone number of the owner or operator;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident;
- Name and quantity of materials involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to health or the environment, if applicable; and
- An estimate of the quantity and disposition of recovered material that resulted from the incident.

For all other petroleum releases, the OSC must report the release to the applicable PADEP regional office, by telephone, as soon as possible, but not more than 24 hours after the release.

**Additional Notification Requirements for Large Aboveground Storage Tanks/Facilities:**

If there is a release from a large AST (>21,000 gallons) which threatens the water supply of downstream users, they must be notified within 2 hours of the release. The Downstream Notification List in Table 1 of the CFRP should contain an up-to-date listing of the downstream users listed in numerical order in which they should be contacted. This notification table, which
should be updated annually by the OSC, provides a list of sites, including addresses and contact information of the identified that may be impacted by a large spill or release from the facility.

The additional notification requirements are:

- 20-mile downstream Notification List;
- An annual notification requirement; and
- An annual notification list update.

The specific details on each of the above are detailed in Section 5.7 of the CFRP – SPCC Sites.

### 10.2.7 Site Inspection and Operational Procedures (CFRP Section 6.0)

This section contains information on inspecting systems in areas identified as potential spill areas and provides standard operating procedures for inspecting these systems. The primary tool to accomplish this is the facility-specific SEMP Checklist and the annual stockpile assessment. Inspection requirements for the facility-specific SEMP Inspection Checklist are developed based upon the environmentally sensitive issues, equipment and materials contained at the individual facility.

Specific requirements for AST and UST periodic testing and inspection are included in Chapters 5 and 6, respectively, of this manual. Third party inspections of regulated storage tanks are completed in conformance with Sections 5.8 (ASTs) and 6.10 (USTs) as applicable.

![Periodic non-destructive integrity testing is required for storage tanks. Its schedule and type are dictated by national codes of practices. The age of tank, material construction and location of tank contribute to selecting the appropriate schedule of testing. Keep testing results and record recommendations for next test schedule.](image)

Pollution prevention common standard operating procedures based upon best management practices, such as stormwater release from containment and vehicle refueling procedures, are included in this section of the CFRP.

### 10.2.8 Plan Management (CFRP Section 7.0)

**Professional Engineers Certification:**

The *Professional Engineers Certification Form* is found on the certification page in the front of the CFRP template. This page includes the signature of the certifying Professional Engineer that has examined the CFRP and certifies the plan has been prepared in accordance with good engineering practices.

The TC will review the petroleum storage status of the facility and determine if the provisions of 40 CFR Part 112 (SPCC Plans) are applicable. The TC will indicate this on Plan Review and Signature Page found in the front of the CFRP.
Combined Facility Response Plan Review and Revisions:

The CMM is required to review the CFRP at least annually from the date it was created or from the date it was last reviewed. The CMM should amend this CFRP within six months of the review to include more effective prevention and control measures if the measures will significantly reduce the likelihood of a discharge or the measures have been field-proven at the time of the review. Implementation of amendments to this CFRP is required within six months following amendment. The CMM shall indicate their initial approval of this CFRP in Plan Review and Approval Page near the front of the CFRP template. The CMM shall document completion of any subsequent review of this CFRP (whether or not the review results in any changes to this CFRP) by signing and dating the Plan Review and Signature Page near the front of the CFRP.

External Support Services:

Technical amendments made to this CFRP may be reviewed by a professional environmental consultant. The designated consultant will conduct an investigation of the site and will compare the results of the investigation to the data that was included in the initial CFRP development. If the facility is subject to the requirements of 40 CFR Part 112 (refer to Plan Review and Approval on Page v of this CFRP), a Professional Engineer must certify each technical amendment made to this CFRP. Any Updates to the facility CFRP are documented using A Record of Change to the CFRP Form (Table 12) maintained in the separate CFRP Records Binder.

The CFRP shall be amended whenever there is a change in facility design, construction, operation, or maintenance which materially affects the facility's potential for the discharge of environmentally harmful material into or upon navigable waters of the United States or adjoining shorelines.

Other circumstances that may warrant a review and update of this CFRP are:

- Any significant changes to federal and Commonwealth regulations that could affect this CFR;
- A request by the USEPA, PADEP, or any local municipal authorities;
- A change in the personnel responsible for managing the plan;
- A change to adjacent features that could impact navigable waterways that are shared by the facility;
- The addition of any adjacent commercial and industrial facilities that may impact the site and navigable waterways the various site may share; and
- Additions or deletion of any outside contractor who is targeted to respond to any large on-site spill emergencies and subsequent site cleanups.

10.2.9 Summary of Plan Compliance with USEPA Regulations (CFRP Section 8.0)

This section contains information regarding the facility compliance with various USEPA regulations regarding site spill prevention programs. While not necessarily helpful to the user, this “boilerplate” language is required by USEPA regulations.