

MARYLAND DEPARTMENT OF

THE ENVIRONMENT

26.10.02 - .11

TANK MANAGEMENT

FEBRUARY 4, 1991



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## 26.10.02 Underground Storage Tanks

### .01 Program Scope

- A. A person may not pump, discharge, spill, throw, drain, deposit, or cause to be deposited, oil, other matter containing oil, into, near, or in an area likely to pollute, waters of the State.
- B. A person violating these regulations, is subject to sanctions under Environment Article, Title 4, Subtitle 4, Annotated Code of Maryland, in addition to the permit and license modification, suspension, or revocation proceeding and in addition to any other sanctions provided by law.
- C. Responsibility for the prompt control, containment, and removal of any released regulated substance shall be with the person responsible for the discharge, the owner of the property, the owner of the regulated substance, the owner of the storage system, and the person-in-charge of the facility, vessel, or vehicle involved in the release. For releases occurring from improperly abandoned storage systems, the current land owner, and any person who owned, leased, or was otherwise responsible for a system at the time it was abandoned shall also be responsible. This responsibility shall continue until removal of the released regulated substance has been accomplished to the satisfaction of the Department.
- D. These regulations are not intended to and do not relieve the owners or operators of the duty to comply with all other government regulations.
- E. For purposes of this Chapter and COMAR 26.10.03 - .11, all hazardous substances, as defined in Regulation .04 B. (48) of this Chapter are designated as controlled hazardous substances.
- F. Controlled hazardous substances as defined by §E. above, and Regulation .04 B. (48) (a) of this Chapter, are exempt from the provisions of Environment Article §§ 7-205, 7-209, 7-224, 7-226, 7-232, 7-249 and 7-253, Annotated Code of Maryland.

### .02 Applicability

- A. The requirements of COMAR 26.10.02 - .11 apply to all owners and operators of an UST system as defined in Regulation .04 of this Chapter except as otherwise provided in §§ B and C. of this Regulation. Any UST system listed in §C. of this Section shall meet the requirements of Regulation .03.
- B. The following UST systems are excluded from the requirements of COMAR 26.10.02 - 26.10.11:
  - (1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Resource Conservation and Recovery Act or a mixture of such hazardous waste and other regulated substances;
  - (2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act (33 U.S.C. §466 et. seq.);
  - (3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
  - (4) Any UST system whose capacity is 110 gallons or less, unless otherwise determined by the Department;
  - (5) Any UST system that contains a de minimus concentration of regulated substances;
  - (6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use;
  - (7) Any residential UST system as defined under COMAR 26.10.02.04 (64);
  - (8) Any farm UST system as defined under COMAR 26.10.02.04 (64);
- C. Deferrals.
  - (1) COMAR 26.10.03, 26.10.04, 26.10.05, 26.10.08 and 26.10.10 do not apply to any of the following types of UST systems:

- (a) Wastewater treatment tank systems;
  - (b) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A;
  - (c) Airport hydrant fuel distribution systems; and
  - (d) UST system with field-constructed tanks.
- (2) COMAR 26.10.05 does not apply to any UST system that stores fuel solely for use by emergency power generators.

**.03 Requirements for Deferred UST Systems**

- A. An underground storage system installed on or after March 15, 1985, shall be protected by one or more of the following methods:
- (1) It shall have a properly installed and maintained cathodic protection system of either the impressed current or sacrificial anode type which satisfies one or more of the following:
    - (a) Engineered by an accredited corrosion specialist or cathodic protection specialist of the National Association of Corrosion Engineers.
    - (b) Installed according to requirements found in National Association of Corrosion Engineers Standard Number RP-02-85, "Control of External Corrosion on Metallic Buried Partially Buried, or Submerged Liquid Storage Systems", which is incorporated by reference. The provision of the referenced documents, although stated as suggestions or discretionary requirements, are by this reference intended to be mandatory requirements for the described activities.
    - (c) Supplied by the original tank manufacturer for use on a tank approved by Underwriters Laboratories for general storage of petroleum products.
    - (d) Supplied by the original tank manufacturer for a tank certified by the manufacturer to have been made to American Society of Mechanical Engineers specifications.
  - (2) It shall be constructed of a non corrosive material such as special alloys approved by the Department, fiberglass reinforced plastic or fiberglass reinforced plastic coated steel in accordance with Steel Tank Institute specifications, ACT-100 or equivalent specifications, and meet the following requirements:
    - (a) Certified by the manufacturer that it has been built to American Society of Mechanical Engineer standards;
    - (b) Approved by an accredited corrosion specialist of the National Association of Corrosion Engineers for use at precise locations; or
    - (c) Approved for use and storage of petroleum products by Underwriters Laboratories.
- B. An underground storage system installed on or after March 15, 1985, that is protected by a cathodic protection system shall meet all of the following requirements:
- (1) It shall have a test system installed to measure structure to soil potential as per the Department of the Environment's "Specifications and Drawings for Cathodic Protection of Buried Underground Storage System Piping";
  - (2) It shall be tested on an annual basis to determine if the cathodic protection system is in proper working order.
  - (3) The test results shall be recorded and kept at the facility or other location in control of and designated by the owner or person-in-charge for a period of 5 years and shall be made available to the Department upon request.
  - (4) If inadequate cathodic protection is indicated by a structure to soil potential measurement of less than 0.85 negative volts or by any other NACE accepted test, repairs shall be made to the cathodic protection system within 60 days of the test measurement.



- C. On or after March 15, 1985, an underground storage system protected by impressed current systems shall be designed so that the impressed current source cannot be de-energized, at any time, including during closure of the oil storage facility, except to perform service work on the storage system or the impressed current cathodic protection system.
- D. UST systems installed on or after March 15, 1985 shall be designed and installed to prevent releases due to structure failure for the operational life of the UST system.
- E. UST systems installed on or after March 15, 1985 shall be constructed or lined with material that is compatible with the stored substance.

.04 Definitions

A. In COMAR 26.10.02 - 26.10.11, the following terms have the meaning indicated.

B. Terms defined.

- (1) "Aboveground release" means any release, discharge, or spill to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.
- (2) "Administration" means the Hazardous and Solid Waste Management Administration of the Maryland Department of the Environment.
- (3) "Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.
- (4) "Belowground release" means any release or discharge to the subsurface of the land or to groundwater, or both. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.
- (5) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.
- (6) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.
- (7) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, this person shall have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.
- (8) "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.
- (9) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.
- (10) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.
- (11) "Consumptive use" with respect to heating oil means consumed on the premises.
- (12) "Control" means the possession of the power to direct or cause the direction of the actions of a person, place, or thing.

- (13) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. This person shall be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.
- (14) "Department" means the Maryland Department of the Environment.
- (15) "Discharge" means any spilling, leaking, pumping, pouring, emitting, emptying, dumping, addition, or introduction of any oil or other regulated substance into waters of the State, or the placing of any pollutant in a location where it is likely to pollute.
- (16) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system such as the tank from the piping.
- (17) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.
- (18) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.
- (19) "Existing tank system" means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before December 22, 1988. Installation is considered to have commenced if:
- (a) The owner or operator has obtained all federal, State, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and if,
    - (1) Either a continuous on-site physical construction or installation program has begun; or
    - (2) The owner or operator has entered into contractual obligations, which cannot be cancelled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within a reasonable time.
- (20) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank shall be located on the farm property and for sole use in farm activities. "Farm" includes fish hatcheries, rangeland, and nurseries with growing operations.
- (21) "Flow-through process tank" is 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 before their introduction into the production process or for the storage of finished products or by-products from the production process.
- (22) "Free product" refers to a regulated substance that is present as a nonaqueous phase liquid.
- (23) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.
- (24) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under Subtitle C of the Resource Conservation and Recovery Act (42 U.S.C. 6901 - 6991;)) or any mixture of such substances and petroleum, and which is not a petroleum UST system.



- (25) Heating oil.
- (a) "Heating Oil" means petroleum that is:
- (i) No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5--light, No. 5--heavy, and No. 6 technical grades of fuel oil;
  - (ii) Other residual fuel oils including Navy Special Fuel Oil and Bunker C; and
  - (iii) Other fuels when used as substitutes for one of these fuel oils.
- (b) Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
- (26) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
- (27) "Implementing agency" means the Maryland Department of the Environment.
- (28) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations, including gas production plants, for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
- (29) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing oil or regulated substance.
- (30) "Motor fuel" means petroleum or a petroleum-based substance that is:
- (a) Motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol; and
  - (b) Typically used in the operation of a motor engine.
- (31) "New tank system" means a tank system that shall be used to contain an accumulation of regulated substances and for which installation has commenced after December 22, 1988.
- (32) "Noncommercial purposes" with respect to motor fuel means not for resale.
- (33) "Oil" means oil of any kind and in any liquid form including, but not limited to, petroleum, petroleum by-products, fuel oil, sludge containing oil or oil residues, oil refuse, oil mixed with waste, crude oils, and regardless of specific gravity, every other nonedible, nonsubstituted liquid petroleum fraction unless that fraction is specifically identified as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601. Oil includes aviation fuel, gasoline, kerosene, light and heavy fuel oils, diesel motor fuels, and asphalt, but does not include liquified petroleum gases, such as liquified propane, liquified natural gas, or any edible oils.
- (34) "Oil storage facility" means any installation, structure, or premises, aboveground or underground, in which oil is stored. "Oil storage facility" does not include any farm tank or residential tank which stores 1,100 gallons or less of oil for noncommercial or personal use.
- (35) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
- (36) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under these regulations.
- (37) "Operator" means any person in control of, or having responsibility for, the daily or periodic operation of the UST system.

- (38) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.
- (39) "Owner" means:
- (a) In a case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
  - (b) In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned the UST system immediately before the discontinuation of its use.
- (40) "Person" means an individual, trust, firm, joint stock company, federal agency, corporation, State, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government.
- (41) "Person-in-charge" means the owner or person designated by an owner, operator, or permittee as the one with direct supervisory responsibility for an activity or operation at a facility, such as the transfer of oil to or from any points in the facility.
- (42) "Person responsible for the discharge" means:
- (a) The owner of the discharged oil;
  - (b) The owner, operator, or person-in-charge of the oil storage facility, vessel, or vehicle involved in the discharge at the time of or immediately before the discharge; and
  - (c) Any other person who through act or omission causes the discharge.
- (43) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimus quantities of other regulated substances. This system includes those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, heating oils, lubricants, petroleum solvents, and used oils.
- (44) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.
- (45) "Pipeline facilities", including gathering lines are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.
- (46) "Pollution" means every contamination or alteration of the physical, chemical, or biological properties of any waters of the State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, liquid, gaseous, solid, radioactive, or other substance into any waters of the State, as will render the waters harmful, detrimental, or injurious to public health, safety, or welfare, domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, livestock, wild animals, or birds, fish, or other aquatic life.
- (47) "Precision test" means a test approved by the Department and conducted in accordance with the standards set forth in the "HPPA 329 Underground Leakage of Flammable and Combustible Liquids", which is incorporated by reference. For commercial names of tests approved by the Department, see COMAR 26.10.07.
- (48) "Regulated substance" means any substance identified in (a) and (b) below:
- (a) Defined in §101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. §§6901 - 6911i) but not including any substance regulated as a hazardous waste under Subtitle C of RCRA (Resource Conservation and Recovery Act); and
  - (b) Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure, which are 60°F and 14.7 pounds per square inch, absolute. "Regulated substance" includes but is not limited to, petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through



processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, heating oil, lubricants, petroleum solvents, and used oils.

- (49) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST into groundwater, surface water, subsurface soils, or into an area likely to pollute waters of the State.
- (50) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it.
- (51) "Repair" means to restore a tank or UST system component that has caused a release of product from the UST system, or that has malfunctioned in any way.
- (52) "Residential tank" is a tank located on property of a single-family residence used solely for personal use.
- (53) "SARA" means Superfund Amendments and Reauthorization Act of 1986.
- (54) "Secretary" means the Secretary of the Maryland Department of the Environment.
- (55) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from this receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.
- (56) "Similar oil handling facility" means any facility that stores and dispenses oil for use as a motor fuel.
- (57) "Spill" means any release of oil or a regulated substance.
- (58) "State" means the State of Maryland.
- (59) "Storm-water or wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.
- (60) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials, although it may be lined with man-made materials, that is not an injection well.
- (61) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of nonearthen materials such as concrete, steel, fiberglass, and plastic, that provide structural support.
- (62) "Underground area" means an underground room, such as a basement, cellar, shaft, or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.
- (63) "Underground oil storage facility" means a single location that has an underground storage tank regulated by this Subtitle.
- (64) "Underground storage tank" or "UST" means any one or combination of tanks, including underground pipes connected thereto, and the volume of which, including the volume of underground pipes connected to it, is 10 percent or more beneath the surface of the ground. This term does not include any:
  - (a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
  - (b) Septic tank;
  - (c) Pipeline facility, including gathering lines, regulated under:
    - (i) The Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. App. §1671 et seq.,



- (ii) The Hazardous Liquid Pipeline Safety Act of 1979, 49 U.S.C. App. §2001 et seq., or
  - (iii) For an intrastate pipeline facility, State laws comparable to the provisions of the laws referred to in §8 (64)(c)(i) or (ii) of this regulation;
  - (d) Surface impoundment, pit, pond, or lagoon;
  - (e) Storm-water or wastewater collection system;
  - (f) Flow-through process tank;
  - (g) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations;
  - (h) Storage tank situated in an underground area, such as a basement, cellar, mineworking, drift, shaft, or tunnel, if the storage tank is situated upon or above the surface of the floor; or pipes connected to any tank which is described in §8 (64) (a) - (h) of this regulation.
- (65) "Upgrade" means the addition or retrofit of some systems such as interior lining or cathodic protection, or both, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product.
- (66) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
- (67) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.
- (68) "Waters of the State" include:
- (a) Both surface and underground waters within the boundaries of the State subject to its jurisdiction, including that portion of the Atlantic Ocean within the boundaries of the State; and
  - (b) The Chesapeake Bay and its tributaries; and
  - (c) All ponds, lakes, rivers, streams, public ditches, tax ditches, and public drainage systems within the State, other than those designed and used to collect, convey, or dispose of sanitary sewage; and
  - (d) The flood plain of free-flowing waters determined by the Department on the basis of the 100-year flood frequency.

**.05 General Operations Permit**

All underground storage systems regulated pursuant to this subtitle are permitted provided the following conditions are met:

- A. All applicable requirements of COMAR 26.10.03 -26.10.11 are met;
- B. The facility is made available for inspection by the Department;
- C. All records relative to these regulations and the Environment Article pertaining to the facility or operation of the facility are available for inspection by the Department; and
- D. Any survey or other documents provided by the Department are completed in a timely manner.

**26.10.03 UST Systems: Design, Construction, Installation and Notification**

**.01 Performance Standards for New UST Systems**

- A. In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems shall meet the requirements of this Chapter:

tanks. Each tank shall be properly designed and constructed, and any portion underground shall be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified in §§ (1) - (5) of this Regulation.

- (1) The tank is constructed of fiberglass-reinforced plastic; Agency note: The following industry codes may be used to comply with this subsection:
- (a) Underwriters Laboratories Standard 1316, "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products";
  - (b) Underwriter's Laboratories of Canada CAN4-S615-M83, "Standard for Reinforced Plastic Underground Tanks for Petroleum Products"; or
  - (c) American Society of Testing and Materials Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks".
- (2) The tank is constructed of steel and cathodically protected in the following manner:
- (a) The tank is coated with a suitable dielectric material,
  - (b) Field-installed cathodic protection systems are designed by a corrosion expert,
  - (c) Impressed current systems are designed to allow determination of current operating status as required in COMAR 26.10.04.02F, and
  - (d) Cathodic protection systems are operated and maintained in accordance with COMAR 26.10.04.02 or according to guidelines established by the Department;

Agency Note: The following codes and standards may be used to comply with this subsection:

- (a) Steel Tank Institute "Specification for STI-P3 System of External Corrosion Protection of Underground Steel Storage Tanks";
- (b) Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks";
- (c) Underwriters Laboratories of Canada CAN4-S603-M85, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids," and CAN4-G03.1-M85, "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids," and CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coating and Galvanic System"; or
- (d) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids."

(3) The tank is constructed of a steel-fiberglass-reinforced-plastic composite:

Agency Note: The following industry codes may be used to comply with this subsection:


- (a) Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks", or
- (b) The Association for Composite Tanks ACT-100, "Specification for the Fabrication of FRP Clad Underground Storage Tanks".

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

- (a) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and



- (b) Owners and operators maintain records that demonstrate compliance with the requirements of §B (4) (a), above, for the remaining life of the tank; or
- (5) The tank construction and corrosion protection are determined by the Department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than §B (1) - (4) of this Regulation.

 C. Piping. The piping that is in contact with the ground shall be properly designed, constructed; and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified.

- (1) The piping is constructed of fiberglass-reinforced plastic;

Agency Note: The following codes and standards may be used to comply with this subsection:

- (a) Underwriters Laboratories Subject 971, "UL Listed Non-Metal Pipe";
- (b) Underwriters Laboratories Standard 567, "Pipe Connectors for Flammable and Combustible Liquids and LP Gas";
- (c) Underwriters Laboratories of Canada Guide ULC-107, "Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids";
- (d) Underwriters Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors"; or
- (e) Department of the Environment's specifications for control of corrosion to Ancillary Metallic Buried Fuel Systems.

- (2) The piping is constructed of steel and cathodically protected in the following manner:

- (a) The piping is coated with a suitable dielectric material,
- (b) Field-installed cathodic protection systems are designed by a corrosion expert,
- (c) Impressed current systems are designed to allow determination of current operating status as required in COMAR 26.10.04.02,
- (d) Cathodic protection systems are operated and maintained in accordance with COMAR 26.10.04.02;

Agency Note: The following codes and standards may be used to comply with this subsection:

- (a) National Fire Protection Association Standards 30 & 30A, "Flammable and Combustible Liquids Code";
- (b) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems";
- (c) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";
- (d) National Association of Corrosion Engineers Standard RP 02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems"; and
- (e) Department of the Environment's Specifications and Drawings for Cathodically Protecting Buried Underground Storage System Piping.

- (3) The piping is constructed of metal without additional corrosion protection measures provided that:

- (a) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life, and

- (b) Owners and operators maintain records that demonstrate compliance with the requirements of §C(3)(a), above, for the remaining life of the piping; or

Agency Note: National Fire Protection Association Standard 30 & 30A, "Flammable and Combustible Liquids Code"; and National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used to comply with §(4) of this subsection.

- (4) The piping construction and corrosion protection are determined by the Department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is not less protective of human health and the environment than the requirements in §C(1)-(3) of this regulation.

D. Spill and Overfill Prevention Equipment.

- (1) Except as provided in §D(2) below, to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators shall use the following spill and overfill prevention equipment:
  - (a) Spill prevention equipment that shall prevent release of product into the environment when the transfer hose is detached from the fill pipe by use of a spill catchment basin; and
  - (b) Overfill prevention equipment that shall:
    - (i) Automatically shut off flow into the tank when the tank is no more than 95 percent full, or
    - (ii) Alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high level alarm.
- (2) Owners and operators are not required to use the spill and overfill prevention equipment specified in §D(1), above, if:
  - (a) Alternative equipment or method is used that is determined by the Department to be no less protective of human health and the environment than the equipment specified in §D(1)(a) or §D(1)(b); or
  - (b) The UST system is filled by transfers of no more than 25 gallons at one time.

E. Installation.

- (1) All tanks and piping shall be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory, in accordance with the manufacturer's instructions, and in accordance with COMAR 26.10.06.
- (2) Tank and piping system installation practices and procedures described in the following codes may be used to comply with these requirements:
  - (a) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems";
  - (b) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or
  - (c) American National Standards Institute Standard B31.3, "Petroleum Refinery Piping," and American National Standards Institute Standard B31.4 "Liquid Petroleum Transportation Piping System".
- (3) On or after March 15, 1985, two permanent monitoring pipes shall be installed in opposing corners of new or replacement storage system installations. The monitoring pipes shall:
  - (a) Extend to a minimum depth of 2 feet below the bottom of the tanks in the tank field;
  - (b) Be constructed of schedule 40 PVC;



- (c) Be a minimum of 2 inches in diameter;
  - (d) Be screened from the bottom to within 2 feet of ground surfaces;
  - (e) Have a minimum slot size of 0.020 inches and maximum slot size of 0.025 inches with not less than 30 slots per foot;
  - (f) Be completed by:
    - (i) Backfilling around the outside with fine pea gravel to prevent clogging, or
    - (ii) Wrapping in an appropriate filter cloth to prevent clogging;
  - (g) Be capped by a threaded cap or removable plug and protected from traffic with manhole and cover;
  - (h) Be identified to avoid confusion with product fill lines.
- (4) Precision Test.
- (a) A new storage system installed or an existing storage system repaired or upgraded on or after March 15, 1985, shall be tested for tightness by the "precision test" method upon completion of installation; repair or upgrade and before operation of the system.
  - (b) When a precision test is performed, the following information shall be kept on file at the facility or at a location designated by and in control of the owner or person-in-charge of the storage system, and shall be made available for reasonable inspection by the Department upon request:
    - (i) Commercial name of the test equipment;
    - (ii) The name of the testing company;
    - (iii) The name of the person conducting the test;
    - (iv) A certification that the person conducting the test has completed a training course in the proper use of the test equipment as given by the manufacturer of the test equipment or his authorized agent, or the Department;
    - (v) The data accumulated by the test; and
    - (vi) The results of the test as to whether the storage system is tight.

F. Requirements for Garages, Service Stations, Marinas, and Similar Oil Handling Facilities.

- (1) Storage Systems shall be installed and operated in accordance with the requirements of COMAR 26.10.02-.11.
- (2) The oil distribution company shall be responsible for monitoring inventory control of the storage system when the facility operates under the meter marketing plan.
- (3) All sewers and drains serving these facilities, and receiving oil-bearing wastes or wastewaters from operations at these facilities, shall be provided with adequately permitted and properly maintained oil separating systems.
- (4) The ultimate disposal of used oil shall be undertaken in a manner that will prevent water pollution, such as salvaging or sale to a salvage company, or use as fuel, or other methods in accordance with State, federal, and local codes.
- (5) Marine fuel delivery nozzles shall be equipped with a self-closing valve that will shut off the flow of fuel when the hand is removed from the nozzle. Hold open devices may not be used on these nozzles.
- (6) Each pipeline conveying oil to a wharf, pier, or dock shall be provided with a readily accessible shut-off valve located on shore, near the approach to the wharf, pier, or dock, and outside any diked area. Valves shall be grouped at one location.

- G. Certification of Installation. All owners and operators are required to have any installation or repair work done only by individuals certified by the State pursuant to COMAR 26.10.06.


.02 Upgrading of Existing UST Systems

- A. Alternatives Allowed. Not later than December 22, 1998, all UST systems containing a regulated substance, as defined in 40 CFR 280, Subpart A, shall comply with one of the following requirements:
- (1) New UST system performance standards under this Chapter.
  - (2) The upgrading requirements in §§B-D below; or
  - (3) Closure requirements under COMAR 26.10.10, including applicable requirements for corrective action under COMAR 26.10.09.
- B. Tank Upgrading Requirements.
- (1) Steel tanks shall be upgraded to meet one of the requirements of this Section in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory:
  - (2) Cathodic protection.  
A tank shall be upgraded by cathodic protection if the cathodic protection system meets the requirements of Regulation .018(2)(b)(c) and (d) of this Chapter and the integrity of the tank is ensured using one of the following methods:
    - (a) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes before installing the cathodic protection system.
    - (b) The tank has been installed for less than 10 years and is monitored monthly for releases in accordance with COMAR 26.10.05.04 E-1.
    - (c) The tank has been installed for less than 10 years and is assessed for corrosion holes by conducting two tightness tests that meet the requirements of 26.10.05.04D. The first tightness test shall be conducted before installing the cathodic protection system. The second tightness test shall be conducted between 3 and 6 months following the first operation of the cathodic protection system.
    - (d) The tank is assessed for corrosion holes by a method that is determined by the Department to prevent releases in a manner that is no less protective of human health and the environment than §B(2)(a)-(c), above.
  - (3) Internal Lining Combined With Cathodic Protection.  
A tank may be upgraded by both internal lining and cathodic protection under the following conditions:
    - (a) The lining is installed in accordance with the requirements of COMAR 26.10.04.04.
    - (b) The cathodic protection system meets the requirements of Regulation .018(2)(b)(c) and (d) of this Chapter.
    - (c) Tanks not meeting the recommendations of API Publication 1631 may not be relined.
    - (d) A storage system to which an interior lining has been applied shall have a cathodic protection system installed to prevent further corrosion of the system. This system shall be of the impressed current or sacrificial anode type and the installation shall be approved by an accredited corrosion specialist of the National Association of Corrosion Engineers.
    - (e) A storage system which has had an interior lining applied shall be tested by the precision test before being placed back into service.
    - (f) The owner or person-in-charge of the underground storage system shall maintain a written certification from the contractors performing the work in §B(3)(a), (c), and (e), above. This written certification shall state



that all work has been done in accordance with the requirements of this regulation. The certification shall be made available for inspection by the Department.

- (4) The following codes and standards may be used to comply with this section:
- (a) American Petroleum Institute Publication 1631, "Recommended Practice of the Interior Lining of Existing Steel Underground Storage Tanks";
  - (b) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems"; and
  - (c) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems."

-  C. Piping Upgrading Requirements. Metal piping that is in contact with the ground shall be cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and shall meet the requirements of Regulation .01C(2)(b)(c) and (d). The codes and standards listed in Regulation .01 C (2) may be used to comply with this requirement.
- D. Spill and Overfill Prevention Equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all existing UST systems shall comply with new UST system spill and overfill prevention equipment requirements specified in Regulation .01 D.

#### .03 Notification Requirements.

- A. On or before July 1, 1990, the owner, operator, or person-in-charge of an underground storage tank shall register the underground storage tank with the Department on a form provided by the Department.
- B. Owners required to submit notices under §A of this regulation shall provide notices to the Department for each tank they own. Owners may provide notice for several tanks using one notification form, but owners who own tanks located at more than one place of operation shall file a separate notification form for each separate place of operation.
- C. Notices required to be submitted under §A of this regulation shall provide all of the information required in Sections I through VI of the prescribed form for each tank for which notice shall be given. Notices for each tank installed after July 1, 1990, shall also provide all of the information in Section VII of the prescribed form for each tank for which notice shall be given.
- D. All owners and operators of new UST systems shall certify in the notification form compliance with the following requirements:
  - (1) Installation of tanks and piping under Regulation .01E;
  - (2) Cathodic protection of steel tanks and piping under Regulation .01B and C;
  - (3) Financial responsibility under COMAR 26.10.11; and
  - (4) Release detection under COMAR 26.10.05.02 and .03.
- E. All owners and operators of new UST systems shall ensure that the installer certifies in the notification that the methods used to install the tanks and piping complies with the requirements in Regulation .01E.
- F. A person who sells a tank intended to be used as an underground storage tank shall notify the purchaser of the tank of the owner's notification obligations under §A above. The form provided by the Department shall be used to comply with this requirement.
- G. Unless an underground storage tank is registered with the Department in accordance with the provisions of §A or B of this regulation, oil may not be sold to or received by the underground oil storage tank, with the exception of oil necessary to conduct the initial precision test for new storage systems.



- H. For the purposes of this regulation, if any underground storage tank registered with the Department under §A or B of this regulation is removed, or no longer in use, the owner, operator, or person-in-charge of the underground storage tank shall notify the Department on an amended form not later than 30 days after the removal or discontinuance of use.

26.10.04 General Operating Requirements

.01 Spill and Overfill Control

- A. Owners and operators shall ensure that releases due to spilling or overfilling do not occur. The owner and operator shall ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling. The transfer procedures described in National Fire Protection Association Publication 385 may be used to comply with this requirement. Further guidance on spill and overfill prevention appears in American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," and National Fire Protection Association Standard 30 and 30A, "Flammable and Combustible Liquids Code."
- B. An underground storage system installed after April 21, 1978, shall have provisions for taking direct measurements of content level by the stick method.
- C. The person-in-charge shall measure the liquid level of metered storage systems each day of operation, and shall reconcile the results with pump meter readings and receipt of product. These records shall be kept for 5 years at the facility or a location under the control of and designated by the owner or person-in-charge and shall be made available to the Department for inspection.
- D. Inventory variations exceeding 1/2 of 1 percent of the metered quantity of product over a period of 30 days shall be reported to the owner of the storage system, and an investigation shall immediately be initiated to determine the cause of the inventory variation. If inventory variation is reconciled and there is no indication of a leak, the cause of the variation as determined by the investigation shall be noted in the daily inventory records.
- E. If the investigation required by §D, above, indicates a loss of product, the owner or person-in-charge shall follow the procedures of COMAR 26.10.08.
- F. The Department may require a precision test if the person-in-charge of a storage system has failed to reconcile daily inventory records as specified in §C and D of this regulation.
- G. The Department may require a precision test of the storage system and installation of monitoring wells if there is reason to believe there is or may have been a loss of product from a storage system.
- H. Except for an underground storage tank, regulated by COMAR 26.10.03.02 and protected against corrosion and installed as provided in COMAR 26.10.03, an underground storage tank which has been buried for 15 years or more, or a storage system for which no installation date can be determined, shall meet the following requirements:
- (1) It shall be tested for tightness in accordance with the precision test;
  - (2) The precision test shall be repeated on a storage system at intervals of not greater than 5 years;
  - (3) Storage systems with a total capacity of 550 gallons or less may be tested in accordance with COMAR 26.10.07.02.
- I. The Department can require additional procedures for an underground storage system not having a vent that can be seen by a person positioned at the fill.
- J. A high liquid level gauge, an alarm system, or a pump cut-off device shall be installed by the owner or the authorized person-in-charge on any underground storage tanks from which the Department determines an overflow of oil is possible. Since these emergency devices can fail to operate, their use for spill prevention purposes shall be considered

only as auxiliary and supplementary to the use of personnel engaged in the transfer operation.

- K. Before each filling of an underground storage system which is not required to maintain daily inventory reconciliation records and which has provisions for measurement of contents, the liquid level shall be gauged and the measurement shall be recorded in writing. These records shall be maintained for 1 year and shall be made available for inspection by the Department.
- L. All fill lines for an underground storage system shall be clearly marked to indicate the size of the tank and the type of product stored. The markings shall be as follows:
  - (1) A permanent tag or sign installed immediately adjacent to the fill which states the size of the storage system and the specific type of product being stored; or
  - (2) A color code shall be implemented according to the following requirements:
    - (a) Color markings shall be painted or placed around the fill or manhole cover in a manner that will readily identify the product in the storage system,
    - (b) The color code shall be printed on a sign not less than 8 X 10 inches with letters not less than 3/4-inch high, posted at the facility in a prominent location and be available for inspection at all times to show the tank size and type of product,
    - (c) A different color code shall be used for each product or grade of product, or both, being stored at the facility.
- M. Pipes or other openings not for transfer of product at the facility may not be any color which could be associated with a product stored at the facility.
- N. The owner, operator, and other responsible parties shall report, investigate, and cleanup any spills and overfills in accordance with COMAR 26.10.08.04.

#### .02 Operation and Maintenance of Corrosion Protection

- A. All owners and operators of steel UST systems with corrosion protection shall comply with the requirements of this regulation to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances.
- B. All corrosion protection systems shall be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that are in contact with the ground.
- C. An underground storage system protected by impressed current systems shall be designed so that their impressed current source cannot be de-energized at any time, including during closure of the underground storage facility, except to perform service work on the storage system or the impressed current cathodic protection system.
- D. All UST systems equipped with cathodic protection systems shall be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:
  - (1) All cathodic protection systems shall be tested within 6 months of installation and at least every year thereafter; and
  - (2) The criteria that are used to determine that cathodic protection is adequate as required by this section shall be in accordance with a code of practice developed by a nationally recognized association; the National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used to comply with this Section.
- E. If inadequate cathodic protection is indicated by a structure to soil potential measurement of less than 0.85 negative volts or other NACE accepted test, repairs shall be made to the cathodic protection system within 60 days of the test measurement.



- F. UST systems with impressed current cathodic protection systems shall also be inspected every 60 days to ensure that the equipment is running properly.
- G. For UST systems using cathodic protection, records of the operation of the cathodic protection shall be maintained in accordance with regulation .05 of this Chapter to demonstrate compliance with the performance standards in this regulation. These records shall provide the following:
  - (1) The results of the last three inspections required in §F above; and
  - (2) The results of testing from the last two inspections required in §D above.

**.03 Compatibility**

- A. Owners and operators shall use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.
- B. Owners and operators storing alcohol blends may use the following codes to comply with the requirements of this Section:
  - (1) American Petroleum Institute Publication 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations"; and
  - (2) American Petroleum Institute Publication 1627, "Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations."

**.04 Repairs Allowed**

- A. Owners and operators of UST systems shall ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs shall meet the requirements of this Chapter.
- B. Repairs to UST systems shall be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory. The following codes and standards may be used to comply with this section:
  - (1) National Fire Protection Association Standard 30 & 30A "Flammable and Combustible Liquids Code";
  - (2) American Petroleum Institute Publication 2200, "Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines"; and
  - (3) American Petroleum Institute Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks".
- C. Repairs to fiberglass-reinforced plastic tanks shall be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory; in accordance with COMAR 26.10.06.
- D. Metal pipe sections and fittings that have released product as a result of corrosion or other damage shall be replaced. Fiberglass pipes and fittings shall be repaired in accordance with the manufacturer's specifications.
- E. Repaired tanks and piping shall be tightness tested in accordance with COMAR 26.10.05.04D, 26.10.05.05C, and 26.10.07 before being placed back into service.
- F. Within 6 months following the repair of any cathodically protected UST system, the cathodic protection system shall be tested in accordance with Regulation .02D and F of this Chapter to ensure that it is operating properly.
- G. UST system owners and operators shall maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with the requirements of this regulation.

**.05 Reporting and Recordkeeping**

- A. Owners and operators of UST systems shall cooperate fully with inspections, monitoring and testing conducted by the Department as well as requests for document submission, testing, and monitoring by the owner or operator pursuant to the Environment Article §4-401 et. seq., Annotated Code of Maryland.
- B. Reporting. Owners and operators, shall submit the following information to the Department:
- (1) Notification for all UST systems described in COMAR 26.10.03.03, which includes certification of installation for new UST systems described in COMAR 26.10.03.01G.
  - (2) Reports of all releases including releases pursuant to COMAR 26.10.08.01, Spills and Overfills, COMAR 26.10.08.04, and Confirmed Releases, COMAR 26.10.08.02.
  - (3) Corrective actions planned or taken including initial abatement measures pursuant to COMAR 26.10.09.03, initial site characterization under COMAR 26.10.09.04, free product removal pursuant to COMAR 26.10.09.05, investigation of soil and groundwater cleanup required by COMAR 26.10.09.06 and corrective action plan pursuant to COMAR 26.10.09.07; and
  - (4) A notification before permanent closure or change-in-service pursuant to COMAR 26.10.10.02.
- C. Recordkeeping. Owners and Operators shall maintain the following information:
- (1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used, as required in COMAR 26.10.03.01B(4) and 26.10.03.01C(3).
  - (2) Documentation of operation of corrosion protection equipment pursuant to Regulation .02 of this Chapter;
  - (3) Documentation of UST system repairs pursuant to Regulation .04G of this Chapter;
  - (4) Recent compliance with release detection requirements pursuant to COMAR 26.10.05.06; and
  - (5) Results of the site investigation conducted at permanent closure pursuant to COMAR 26.10.10.05.
- D. Availability and Maintenance of Records.
- (1) Owners and operators shall keep the records required either:
    - (a) At the UST site and immediately available for inspection by the Department; or
    - (b) At a readily available alternative site and be provided for inspection to the Department upon request.
  - (2) In the case of permanent closure records required under COMAR 26.10.10.05, owners and operators are also provided with the additional alternative of mailing closure records to the Department if they cannot be kept at the site or an alternative site as indicated above.

**26.10.05 Release Detection.**

**.01 General Requirements for All UST Systems.**

- A. Owners and operators of new and existing UST systems shall provide a method, or combination of methods, of release detection that:
- (1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;
  - (2) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition; and



- (3) Meets the performance requirements in Regulation .04 or .05 with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, methods used after December 22, 1990 except for methods permanently installed before that date, shall be capable of detecting the leak rate or quantity specified for that method in regulation .04C, D and E or regulation .05 B and C with a probability of detection of 0.95 and a probability of false alarm of 0.05.
- B. When a release detection method operated in accordance with the performance standards in regulations .04 and .05 indicates that a release may have occurred, owners and operators shall notify the Department in accordance with COMAR 26.10.08.
- C. Owners and operators of all UST systems shall comply with the release detection requirements of this Chapter and of Table 1, as follows:

Table 1

Schedule for Phase-in of Release Detection

<u>Year System Was Installed</u>	<u>Year When Release Detection is Required</u> ( By December 22 of the year indicated )				
	1989	1990	1991	1992	1993
Before 1965 or date unknown:	RD		P		
1965-1969			P/RD		
1970-1974			P	RD	
1975-1979			P	RD	
1980-1988			P		RD
New tanks	Immediately upon installation				

- P = Shall begin release detection for all pressurized piping in accordance with regulations .02 C (2).
- RD = Shall begin release detection for tanks and suction piping in accordance with Regulations .02 B and C (2) and .03.

- D. Any existing UST systems that cannot apply a method of release detection that complies with the requirements of this Chapter shall complete the closure procedures in COMAR 26.10.10.02 by the date on which release detection is required for that UST system under §C of this regulation.

**.02 Requirements for Petroleum UST Systems:**

- A. Owners and operators of petroleum UST systems shall provide release detection for tanks and piping as described in this regulation.
- B. Tanks. All UST systems shall take daily inventory as described in Regulation .04 B, below. In addition, tanks shall be monitored at least every 30 days for releases using one of the methods listed in Regulation .04 E - I, except that:
- (1) UST systems that meet the performance standards in COMAR 26.10.03.01 and .02, and the monthly inventory control requirements in Regulation .04 B or C, below, shall use tank tightness testing, conducted in accordance with Regulation .04 D, at least every 5 years until December 22, 1998, or until 10 years after the tank is installed or upgraded under COMAR 26.10.03.02 B;

- (2) UST systems that do not meet the performance standards in COMAR 26.10.03.01 or .02, may use monthly inventory controls, conducted in accordance with Regulation .04 B or C, below, and annual tank tightness testing, conducted in accordance with Regulation .04 D until December 22, 1998, when the tanks shall be upgraded under COMAR 26.10.03.02 or permanently closed under COMAR 26.10.10.02; and
- (3) Tanks with capacity of 550 gallons or less and not metered may use weekly tank gauging, conducted in accordance with Regulation .04 C, below.

C. Piping.

- (1) Underground piping that routinely contains regulated substances shall be monitored for releases in a manner that meets one of the requirements of this section.
- (2) Pressurized Piping.  
Underground piping that conveys regulated substances under pressure shall:
  - (a) Be equipped with an automatic line leak detector conducted in accordance with Regulation .05B; and
  - (b) Have an annual line tightness test conducted in accordance with Regulation .05 C or have monthly monitoring conducted in accordance with Regulation .05 D.
- (3) Suction Piping. Underground piping that conveys regulated substances under suction shall either have a line tightness test conducted at least every 3 years and in accordance with Regulation .05 C, or use a monthly monitoring method conducted in accordance with Regulation .05 D. Release detection is not required for suction piping that is designed and constructed to meet the following standards:
  - (a) The below-grade piping operates at less than atmospheric pressure;
  - (b) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;
  - (c) Only one check valve is included in each suction line;
  - (d) The check valve is located directly below and as close as practical to the suction pump; and
  - (e) A method is provided that allows compliance with §C (3) (b) - (d) above, to be readily determined.

.03 Requirements for Hazardous Substance UST Systems

- A. Owners and Operators of hazardous substance UST systems shall provide release detection that meets the requirements of this regulation.
- B. Release detection at existing UST systems shall meet the requirements for petroleum UST systems in Regulation .02. By December 22, 1998, all existing hazardous substance UST systems shall meet the release detection requirements for new systems in §C, below.
- C. Release detection at new hazardous substance UST systems shall meet the following requirements:
  - (1) Secondary containment systems shall be designed, constructed and installed to:
    - (a) Contain regulated substances released from the tank system until they are detected and removed;
    - (b) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and
    - (c) Be checked for evidence of a release at least every 30 days. The provisions of 40 CFR §265.193, Containment and Detection of Release, may be used to comply with these requirements.



- (2) Double-walled tanks shall be designed, constructed, and installed to:
  - (a) Contain a release from any portion of the inner tank within the outer wall; and
  - (b) Detect the failure of the inner wall.
- (3) External liners, including vaults, shall be designed, constructed, and installed to:
  - (a) Contain 100 percent of the capacity of the largest tank within its boundary;
  - (b) Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances; and
  - (c) Surround the tank completely, so that it is capable of preventing lateral as well as vertical migration of regulated substances.
- (4) Underground piping shall be equipped with secondary containment that satisfies the requirements of §C (1), above, that is, trench liners and jacketing of double-walled pipe. In addition, underground piping that conveys regulated substances under pressure shall be equipped with an automatic line leak detector in accordance with Regulation .05B of this Chapter.
- (5) Other methods of release detection may be used if owners and operators:
  - (a) Demonstrate to the Department that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in Regulation .06 C - 1, below, can detect a release of petroleum;
  - (b) Provide information to the Department on effective corrective action technologies, health risks, chemical and physical properties of the stored substance, and the characteristics of the UST site; and
  - (c) Obtain approval from the Department to use the alternate release detection method before the installation and operation of the new UST system.

**.06 Method of Release Detection for Tanks**

- A. Each method of release detection for tanks used to meet the requirements of Regulation .02, above, shall be conducted in accordance with this Regulation.
- B. Inventory Control.
  - (1) Product inventory control, or another test of equivalent performance, shall be conducted monthly to detect a release of at least 1/2 of 1 percent of the metered quantity on a monthly basis in the following manner:
    - (a) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;
    - (b) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest 1/8 of an inch;
    - (c) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;
    - (d) Deliveries are made through a drop tube that extends to within 1 foot of the tank bottom;
    - (e) Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 cubic inches for every 5 gallons of product withdrawn; and
    - (f) The measurement of any water level in the bottom of the tank is made to the nearest 1/8 of an inch at least once a month.



- (2) Practices described in the American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," may be used, where applicable, as guidance in meeting the requirements of this section.

C. Manual Tank Gauging.

- (1) Manual tank gauging shall meet the following requirements:
- (a) Tank liquid level measurements are taken at the beginning and ending of a period of at least 36 hours during which no liquid is added to or removed from the tank;
  - (b) Level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;
  - (c) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest 1/8 of an inch;
  - (d) A leak is suspected and subject to the requirements of COMAR 26.10.08 - 26.10.10, if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

<u>Nominal Tank Capacity</u>	<u>Weekly Standard (one test)</u>	<u>Monthly Standard (average of four tests)</u>
550 gallons or less	10 gallons	5 gallons
551 - 1,000 gallons	13 gallons	7 gallons
1,001 - 2,000 gallons	26 gallons	13 gallons

- (2) Only tanks of 550 gallons or less nominal capacity may use manual tank gauging as the sole method of release detection. Tanks of 551 to 2,000 gallons shall use the method in place of manual inventory control in §B (1), above. Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet the requirements of this Chapter.

D. Precision Tightness Testing. A precision test as defined under COMAR 26.10.02.04 shall be capable of detecting a 0.05 gallon per hour leak rate from any portion of the tank system while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table. Only tests approved by the Department as set forth in COMAR 26.10.07 shall be used.

E. Automatic Tank Gauging. Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control shall meet the following requirements:

- (1) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and
- (2) Inventory control, or another test of equivalent performance, is conducted in accordance with the requirements of §B of this regulation.

F. Vapor Monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone shall meet the following requirements:

- (1) The materials used as backfill are sufficiently porous, such as pea gravel or sand, to readily allow diffusion of vapors from releases into the excavation area;

- (2) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile, such as gasoline, to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;
- (3) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days;
- (4) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;
- (5) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;
- (6) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in §F (1)-(4) of this regulation and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tanks that routinely contains product; and
- (7) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

G. Groundwater Monitoring. Testing or monitoring for liquids on the groundwater shall meet the following requirements:

- (1) The regulated substance stored is immiscible in water and has a specific gravity of less than one;
- (2) Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil or soils between the UST system and the monitoring wells or devices is not less than 0.01 centimeters/second, that is, the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials;
- (3) The slotted portion of the monitoring well casing shall be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;
- (4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;
- (5) Monitoring wells or devices shall intercept the excavation zone or as close to it as is technically feasible;
- (6) The continuous monitoring devices or manual methods used can detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells;
- (7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in §G (1) -(5) of this regulation and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and
- (8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

H. Interstitial Monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it shall be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

- (1) For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product. The provisions outlined in the Steel Tank Institute's "Standard for Dual Wall



Underground Storage Tanks<sup>2</sup> may be used as guidance for aspects of the design and construction of underground steel double-walled tanks.

- (2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier provided that:
  - (a) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable, at least  $10^{-6}$  centimeters/second for the regulated substance stored, to direct a release to the monitoring point and permit its detection;
  - (b) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;
  - (c) For cathodically protected tanks, the secondary barrier shall be installed so that it does not interfere with the proper operation of the cathodic protection system;
  - (d) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days;
  - (e) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under these conditions; and
  - (f) Monitoring wells are clearly marked and secured with bolts or a lock to avoid unauthorized access and tampering.
- (3) For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

I. Other Methods. Any other type of release detection method, or combination of methods, can be used if approved by the Department, provided:

- (1) It can 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 0.95 and a probability of false alarm of at most 0.05; or
- (2) The Department may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in §§D - I of this regulation. In comparing methods, the Department shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator shall comply with any conditions imposed by the Department on its use to ensure the protection of human health and the environment.

#### .05 Methods of Release Detection for Piping

- A. Each method of release detection for piping used to meet the requirements of Regulation .02 of this Chapter shall be conducted in accordance with this Regulation.
- B. Automatic Line Leak Detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm may be used only if they detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour. An annual test of the operation of the leak detector shall be conducted in accordance with the manufacturer's requirements.
- C. Line Tightness Testing. A periodic test of piping shall be conducted only if it can detect a 0.10 gallons per hour at 1.5 times the operating pressure.

- D. Applicable Tank Methods. Any of the methods in Regulation .04 F - 1 of this Chapter shall be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

#### .06 Release Detection Recordkeeping

All UST system owners and operators shall maintain records in accordance with COMAR 26.10.04.05 demonstrating compliance with all applicable requirements of this Chapter. These records shall include the following:

- A. All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, shall be maintained for 5 years from the date of installation;
- B. The results of any sampling, testing, or monitoring shall be maintained for 1 year;
- C. Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site shall be maintained for at least 1 year after the service work is completed, and any schedules of required calibration and maintenance provided by the release detection equipment manufacturer shall be retained for 5 years from the date of installation.

#### 26.10.06 Underground Storage System Installer Certification

##### .01 General

An underground storage system shall be installed, upgraded or repaired only in the presence and under the direction of an individual who is a certified underground storage system installer. In order for a system installer to be certified, the individual shall meet all applicable conditions of this Chapter.

##### .02 Requirements

An installer shall be allowed to install underground storage systems provided the following requirements are met:

- A. All applicable requirements of COMAR 26.10.02 - 26.10.05 have been followed;
- B. The underground storage system installer's certification test has been taken at the date, time, and place stipulated by the Department and passed with a score of 90 percent or better;
- C. A \$100 application fee for certification has been remitted to the Department, made payable to the Maryland Oil Disaster Containment, Clean-up and Contingency Fund; and
- D. Written approval and certification are granted by the Secretary.

##### .03 Certification Test Scores

- A. A person receiving a score of below 90 percent on the test in Regulation .02 B, above, may not install, upgrade, or repair any underground storage system in Maryland.
- B. A person receiving a score of between 70 percent and 90 percent on the test described in Regulation .02 B may take a retest after 24 hours of receipt of the test score, but must retest within 60 days of notification of the test score.
- C. A person receiving a score of less than 70 percent may request to be retested at any subsequent test offering and shall comply with Regulation .02C, above.

##### .04 Final Certification

Final certification under this Chapter shall be valid for 2 years from the date of issuance, provided all applicable requirements of this Chapter are met.

##### .05 Proof of Final Certification



An underground storage system installer with final certification shall have proof of final certification at all times the installer is at the installation or repair site.

**.06 Suspension, Refusal, or Revocation**

Certification of an underground storage system installer may be suspended, refused, or revoked by the Department upon written notice from the Department of the facts that warrant suspension or revocation. Unless the suspension or revocation is ordered summarily as an emergency action under State Government Article, §10-405(b), Annotated Code of Maryland, the revocation shall be in effect 10 days after receipt of notice, unless, within 10 days after the date on which the notice of suspension, or revocation is served, the installer in writing requests a hearing. The Department shall promptly schedule a hearing and after that give a decision, upon service of which, if unfavorable to the installer, the refusal, suspension or revocation shall be in effect.

**.07 Reapplication**

An individual whose certification was refused or revoked under Regulation .06, above, may not apply for a new certificate for 2 years from the date of refusal or revocation.

**26.10.07 Approved Precision Test Equipment.**

**.01 Specific Approved Equipment**

- A. The following test methods listed in this Chapter are approved by the Department for conducting precision tests on underground storage systems.
- B. The following specific test methods are approved:
  - (1) Petro-Tite Tank Tester, Licensed by Heath Consultants Incorporated, 100 Tosca Drive, Stoughton, Massachusetts 02072;
  - (2) Leak Lokator LD2000, Licensed by Hunter Environmental Services, Inc., 115 DeWalt Avenue, N.W., Suite 400, Canton, Ohio 44702;
  - (3) EZY-CHEK, Licensed by Horner Creative Metals, Inc., 211 East Gove, Kawkawlin, Michigan 48631;
  - (4) Tank Auditor, Licensed by Leak Detection Systems, Inc., 13 Main Street, Hingham, Massachusetts 02043;
  - (5) Ainley Tank Integrity Tester, Licensed by Soil Test Environmental Division, 36 Albrecht Drive, P.O. Box 8004, Lake Bluff, Illinois 60044-9902;
  - (6) Testronics Tank Tester System, Licensed by Steam Kat Corp., P.O. Box 1686, Salisbury, Maryland 21801;
  - (7) Accu-test Leak Computer by Acutest Corporation; and
  - (8) VPLT Tank Leak Testing System by Pan American Environmental Systems, 7315 North Atlantic Avenue, Cape Canaveral, Florida 32920-3792.
- C. Any other test method approved in writing by the Secretary shall also be valid until revoked.
- D. Other test methods may be approved in writing by the Secretary provided the applicant can demonstrate that the test equipment meets or exceeds manufacturers' claims, and that the system satisfies the definition of "precision test" set forth in COMAR 26.10.02.04 8 (47).
- E. The State may waive the demonstration requirements of §D, above, provided the applicant can verify that the test method has been approved or certified for use in a state with equivalent or more stringent certification standards than those contained in this regulation.
- F. Approval of test equipment may be suspended or revoked by the Department upon written notice from the Department of facts that warrant suspension or revocation. Unless the suspension or revocation is ordered summarily as an emergency action under State Government Article, §10-405(b), Annotated Code of Maryland, the revocation shall be in

effect 10 days after receipt of notice, unless within 10 days after the date on which the notice of suspension or revocation is served, the company, in writing, requests a hearing. The Department shall promptly schedule a hearing and return a decision, upon service of which, if unfavorable to the company, the suspension or revocation shall be in effect.

**.02 Hydrostatic Test for Underground Storage Tanks with a Total Capacity of 550 Gallons or Less**

- A. The precision test requirements of COMAR 26.10.04 and .05 may be satisfied by the use of a hydrostatic test if the underground tank to be tested has a total capacity of 550 gallons or less.
- B. When a hydrostatic test is conducted, it shall be conducted according to the following guidelines:
- (1) Equipment supplied by the tank system shall be turned off. This includes boilers, pumps, engines, etc.
  - (2) The tank shall be filled to capacity with product or water.
  - (3) A 2-inch diameter calibrated sight tube shall be attached to the tank fill. If necessary, remove the fill cap assembly to use the fill pipe threads to achieve a tight connection. If the fill pipe threads cannot be used, the sight tube may be attached to the vent or other tank opening. In this situation, the following apply:
    - (a) A calibrated sight tube may be fabricated from a 2-inch clear cast acrylic tubing.
    - (b) The tubing should be glued to the appropriate PVC fittings to provide a liquid tight connection to the tank.
    - (c) A side plug or petcock may be incorporated near the bottom of the tubing to facilitate draining of the sight tube after the test.
    - (d) The tube should be calibrated in 1/4-inch increments to simplify measurements. Taking caution to insure that tank openings below the test level are liquid tight, the sight tube shall be filled to 2 feet above grade with product or water.
    - (e) The sight tube shall be shielded from direct sunlight and other adverse weather conditions to reduce thermal expansion and evaporation.
    - (f) The tank pressure and temperature shall be allowed to stabilize for at least 24 hours before beginning the test.
  - (4) **Test Procedures.**  
Upon beginning the test, the liquid level in the sight tube shall be accurately marked. The liquid level shall then be observed for a 1-hour period during which time any fluctuations in the liquid level shall be accurately marked and documented.
  - (5) **Test Results.**
    - (a) A fluctuation of more than 4 inches in the liquid level in the sight tube during the 1-hour test period shall indicate that the tank system has failed the test.
    - (b) Failures shall be reported to the Department in accordance with COMAR 26.10.04.05.
    - (c) A written record of all tests shall be maintained in accordance with COMAR 26.10.03.01E(4).

**26.10.08 Release Reporting, Investigation and Confirmation**

**.01 Reporting of Suspected Releases**



- A. If a storage system fails a test for tightness or is otherwise determined to be leaking, the person conducting the test, the owner, and the person-in-charge of the storage system shall notify the Department within two (2) hours.
- B. Owners and operators of UST systems shall report to the Department pursuant to §A. above, and follow the procedures in Regulation .03 for any of the following conditions:
- (1) The discovery by owners or operators of released regulated substances at the UST site or in the surrounding area, such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water;
  - (2) Unusual operating conditions observed by owners and operators, such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank, unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and
  - (3) Monitoring results from a release detection method required under COMAR 26.10.05.02 and .03 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result.

**.02 Investigation Due to Off-Site Impacts**

Owners, operators, and other responsible parties of UST systems shall follow the procedures in Regulation .03, below, to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances, such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby waters of the State, that have been observed by the Department or brought to its attention by another party.

**.03 Release Investigation and Confirmation Steps**

Unless corrective action is initiated in accordance with COMAR 26.10.09, owners, operators, and other responsible parties shall immediately investigate and confirm all suspected releases of regulated substances requiring reporting under Regulation .01 of this Chapter within 72 hours or another reasonable time period specified by the Department, using either the following steps or another procedure approved by the Department:

- A. System test. Owners and operators shall conduct tests according to the requirements for tightness testing under COMAR 26.10.05.04 D and .05 C, that determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping, or both. Upon notification that a storage system has failed a test, the person-in-charge or owner, or both, of the storage system shall take the following steps:
- (1) Immediately notify the Department that the storage system has failed a test for tightness;
  - (2) Within 72 hours, begin an investigation to determine whether the leak is occurring in the tank or piping system;
  - (3) If the tank is determined to be leaking immediately remove the product;
  - (4) If the piping system is determined to be leaking, immediately drain and discontinue the use of the piping system;
  - (5) The storage system shall either be repaired or removed in accordance with COMAR 26.10.10;
  - (6) Owners and operators shall conduct a site check as described in §B of this regulation if the test results for the system, tank, and delivery piping do not indicate that a leak exists, but environmental contamination is the basis for suspecting a release;
  - (7) After repairs have been made to a storage system which has previously failed a test for tightness, a precision test shall be performed to verify that the condition which caused the original failure of the test has been corrected.



8. Site Check.

- (1) Owners, operators and other responsible parties shall measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners, operators and other responsible parties shall consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence and source of the release.
- (2) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners, operators and other responsible parties shall begin corrective action in accordance with COMAR 26.10.09.
- (3) If the test results for the excavation zone or the UST site do not indicate that the release has occurred, the Department will determine if further investigation is required.

.04 Reporting and Cleanup of Spills and Overfills

Owners, operators and other responsible parties shall contain and immediately clean up a spill or overflow and report to the Department within 2 hours and begin corrective action in accordance with COMAR 26.10.09. A release of hazardous substance equal to or in excess of its reportable quantity shall also be reported immediately, rather than within 24 hours, to the Department, and to the National Response Center under §§ 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and to the Department and appropriate local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986.

26.10.09 Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances.

.01 General

Owners, operators of petroleum or hazardous substance UST systems; and other responsible parties shall, in response to a confirmed release from the UST system, comply with the requirements of this Chapter.

.02 Initial Response

- A. Upon confirmation of a release in accordance with COMAR 26.10.08.03 or after a release from the UST system is identified in any other manner, owners, operators and other responsible parties shall perform the following initial response actions within 24 hours of a release or within another reasonable period of time determined by the Department:
  - (1) Report the release to the Department as in COMAR 26.10.08;
  - (2) Take immediate action to prevent any further release of the regulated substance into the environment; and
  - (3) Identify and mitigate fire, explosion, and vapor hazards.
- B. Standards set forth in the National Fire Protection Association Number 329, 1987, "Underground Leakage of Flammable and Combustible Liquids," are by this reference intended to be mandatory requirements for this Regulation.

.03 Initial Abatement Measures and Site Check

- A. Unless directed to do otherwise by the Department, owners, operators, and other responsible parties shall perform the following abatement measures:
  - (1) Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.
  - (2) Visually inspect any above ground release or exposed belowground releases and prevent further migration of the released substance into surrounding soils and ground water.

- (3) Continue to monitor and mitigate any additional fire and safety hazards and vapors or free product that have migrated from the UST excavation zone into subsurface structures, such as sewers or basements.
- (4) Begin corrective action in accordance with this Chapter if the investigation under COMAR 26.10.04.01E indicates that a leak exists in the system, tank or piping.
- (5) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner, operator and other responsible parties shall comply with applicable State and local requirements.
- (6) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site check required by COMAR 26.10.08.03B or the closure site assessment of COMAR 26.10.10.03 A. In selecting sample types, sample locations, and measurement methods, the owner, operator, and other responsible parties shall consider the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release.
- (7) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with Regulation .05 of this Chapter.

- B. Within 20 days after release confirmation, or within another period of time required by the Department, owners, operators and other responsible parties shall submit a report to the Department summarizing the initial abatement steps taken under §A (1) and the resulting information or data.

#### .04 Initial Site Characterization

- A. Unless directed to do otherwise by the Department, owners, operators and other responsible parties shall assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial assessment measures in Regulations .02 and .03 of this Chapter. This information shall include, but is not necessarily limited to the following:
- (1) Data on the nature and estimated quantity of release;
  - (2) Data from available sources or site investigations, or both, concerning the following factors:
    - (a) Surrounding populations,
    - (b) Water quality,
    - (c) Use and approximate locations of wells potentially affected by the release,
    - (d) Subsurface soil conditions,
    - (e) Locations of subsurface sewers,
    - (f) Climatological conditions, and
    - (g) Land use;
  - (3) Results of the site check required under Regulation .03 A (5); and
  - (4) Results of the free product investigations required under Regulation .03 A (6) to be used by owners, operators, and other responsible parties to determine whether free product shall be recovered under Regulation .05.
- B. Within 45 days of release confirmation or another reasonable period of time determined by the Department, owners, operators and other responsible parties shall submit the information collected in compliance with this regulation to the Department in



that demonstrates its applicability and technical adequacy, or in a format and according to the schedule required by the Department.

#### .05 Free Product Removal

At sites where investigations under Regulation .03 A (7) indicate the presence of free product, owners, operators and other responsible parties shall remove free product to the maximum extent practicable as determined by the Department while continuing, as necessary, any actions initiated under Regulations .02 - .04, above, or preparing for actions required under Regulations .06 and .07 below. In meeting the requirements of this Regulation, owners, operators, and other responsible parties shall:

- A. Conduct free product removal in a manner that contains the spread of contamination from entering previously uncontaminated areas by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, State, and federal regulations;
- B. Use abatement of free product migration as a minimum initial objective for the design of the free product removal system;
- C. Handle any flammable products in a safe and competent manner to prevent fires or explosions; and
- D. Unless directed to do otherwise by the Department, prepare and submit to the Department, within 30 days after confirming a release, a free product removal report that provides at least the following information:
  - (1) The name of the person or persons responsible for implementing the free product removal measures,
  - (2) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations,
  - (3) The types of free product recovery system used,
  - (4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located,
  - (5) The type of treatment applied to, and the effluent quality expected from, any discharge,
  - (6) The steps that have been or are being taken to obtain necessary permits for any discharge; and
  - (7) The disposition of the recovered free product.

#### .06 Investigations for Soil and Ground Water Cleanup

- A. In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the ground water, owners, operators, and other responsible parties shall conduct investigations of the release, the release site, and the surrounding area potentially affected by the release if any of the following conditions exist:
  - (1) There is evidence that ground water wells have been affected by the release; that is, as found during release confirmation or previous corrective action measures;
  - (2) Free product is found to need recovery in compliance with Regulation .05;
  - (3) There is evidence that contaminated soils may impact ground water; that is, as found during conduct of the initial response measures or investigations required under Regulation .01 - .05; and
  - (4) The Department requests an investigation, based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

- B. Owners, operators and other responsible parties shall submit the information collected under §A, above as soon as practicable or in accordance with a schedule established by the Department.

#### .07 Corrective Action Plan

- A. At any point after reviewing the information submitted in compliance with Regulations .02 - .04, the Department reserves the right to require owners, operators and other responsible parties to submit additional information or to develop and submit a corrective action plan for responding to contaminated soils and groundwater. If a plan is required, owners, operators and other responsible parties shall submit the plan according to a schedule and format established by the Department. Additionally, owners, operators and other responsible parties may, after fulfilling the requirements of Regulations .02 - .04 of this Chapter, be required to submit a corrective action plan for responding to contaminated soil and ground water. In either case, owners, operators and other responsible parties are responsible for submitting a plan that provides for adequate protection of human health and the environment as determined by the Department, and shall modify their plan as necessary to meet this standard.
- B. The Department will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the Department should consider the following factors as appropriate:
- (1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;
  - (2) The hydrogeologic characteristics of the facility and the surrounding area;
  - (3) The proximity, quality, and current and future uses of nearby surface water and ground water;
  - (4) The potential effects of residual contamination on nearby surface water and ground water;
  - (5) An exposure assessment; and
  - (6) Any information assembled in compliance with this regulation.
- C. Upon approval of the corrective action plan or as directed by the Department, owners, operators and other responsible parties shall implement the plan, including modifications to the plan made by the Department. They shall monitor, evaluate, and report the results, implementing the plan in accordance with a schedule and in a format established by the Department.
- D. In the interest of minimizing environmental contamination and promoting more effective cleanup, owners, operators and other responsible parties shall begin cleanup of soil and ground water before the corrective action plan is approved provided that they:
- (1) Notify the Department of their intention to begin cleanup;
  - (2) Comply with any conditions including verbal directions imposed by the Department, including halting cleanup or mitigating adverse consequences from cleanup activities; and
  - (3) Incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the Department for approval.

#### 26.10.10 Out-of-Service UST Systems and Closure.

##### .01 Temporary Closure

- A. When an UST system is temporarily closed, owners and operators shall continue operation and maintenance of corrosion protection in accordance with COMAR 26.10.04.02, and any release detection in accordance with COMAR 26.10.05., COMAR 26.10.08, and 26.10.09 shall be complied with if a release is suspected or confirmed. However, release detection is not required as long as the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5



centimeters (approximately 1 inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.

- B. When an UST system is temporarily closed for 3 months or more, owners and operators shall also comply with the following requirements:
- (1) Leave vent line open and functioning;
  - (2) Cap and secure all other lines, pumps, manways, and ancillary equipment; and
  - (3) Fill tank or tanks with water and an appropriate corrosion inhibitor to protect from internal corrosion.
- C. When an UST system is temporarily closed for more than 6 months, owners and operators shall permanently close the UST system if it does not meet either performance standards in COMAR 26.10.03.01 for new UST systems or the upgrading requirements in COMAR 26.10.03.02, except that the spill and overfill equipment requirements do not have to be met. Owners and operators shall permanently close the substandard UST systems at the end of this 6-month period in accordance with Regulations .02 - .05, below, unless the Department provides an extension of the 6-month temporary closure period. Owners and operators shall complete a site assessment in accordance with Regulation .03 of this Chapter before such an application for an extension can be made.

#### .02 Permanent Closure and Changes-in-Service:

- A. At least 30 days before beginning either permanent closure or a change-in-service under §B and C, below, or within another reasonable time period determined by the Department, owners and operators shall notify the Department of their intent to permanently close or make the change-in-service, unless this action is in response to corrective action. The required assessment of the excavation zone under Regulation .03 of this Chapter shall be performed after notifying the Department but before completion of the permanent closure or a change-in-service.
- B. To permanently close a tank, owners and operators shall empty and clean it by removing all liquids and accumulated sludges. All lines shall be disconnected and capped. All tanks taken out-of-service permanently shall also be either removed from the ground or filled with an inert solid material approved by the Department.
- C. Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators shall empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with Regulation .03, below.
- D. If the tank is removed the following should be done:
- (1) All flammable or combustible liquids shall be removed from the system;
  - (2) The tank shall be purged of all explosive vapors before disposal;
  - (3) All lines shall be disconnected and capped; and
  - (4) All product or product-saturated soils found in the tank excavation shall be removed and disposed of as required by the Department.
- E. If the tank is disposed of, the following shall be done:
- (1) It shall be retested for flammable vapors and, if necessary, purged of all explosive vapors;
  - (2) Holes or openings shall be made in the tank to render it unfit for further use; and
  - (3) Tanks may not be crushed or cut up on-site if the operation poses a threat to public safety.
- F. A previously used tank which is removed from the ground may not be reinstalled unless the original manufacturer provides a written certification that the used tank is suitable for service. The original manufacturer's written certification shall be kept on file at the

facility or at a location designated by the owner or person-in-charge of the storage system and be made available for reasonable inspection by the Department for the life of the storage system. All installation requirements of this Chapter shall apply when a previously used tank is installed.

- G. The following cleaning and closure procedures may be used to comply with this regulation:
- (a) American Petroleum Institute Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks";
  - (b) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";
  - (c) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks,"; and
  - (d) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard...Working in Confined Space"

#### .03 Assessing the Site at Closure or Change-in-Service

- A. Before permanent closure or a change-in-service is completed, owners and operators shall measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators shall consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release. The requirements of this section are satisfied if one of the external release detection methods allowed in COMAR 26.10.05.04 F and G is operating in accordance with the requirements in COMAR 26.10.05.04 at the time of closure, and indicates no release has occurred.
- B. If contaminated soils, contaminated ground water, or free product as liquid or vapor is discovered under §A, above, or by any other manner, owners and operators shall begin corrective action in accordance with COMAR 26.10.09.

#### .04 Applicability to Previously Closed UST Systems

When directed by the Department, the owner and operator of an UST system permanently closed before December 22, 1988, shall assess the excavation zone and close the UST system in accordance with this Chapter if releases from the UST may, in the judgment of the Department, pose a current or potential threat to human health or the environment.

#### .05 Closure Records

- A. Owners and operators shall maintain records in accordance with COMAR 26.10.04.05 that are capable of demonstrating compliance with closure requirements under this Chapter.
- B. The results of the excavation zone assessment required in Regulation .03 of this Chapter shall be maintained for at least 5 years after completion of permanent closure or change-in-service in one of the following ways:
- (1) By the owners and operators who took the UST system out of service;
  - (2) By the current owners and operators of the UST system site; or
  - (3) By mailing these records to the Department if they cannot be maintained at the closed facility.
- C. Records which document temporary and permanent abandonment of underground storage systems, shall be kept and made available for reasonable inspection by the Department at the facility or at a location designated by the owner or person-in-charge, and shall contain the following information:
- (1) Tank size;
  - (2) Location of tank on the property;
  - (3) Date of abandonment;



- (4) Method or methods used for abandonment of the system; and
- (5) The name of the contractors who performed the work.

#### 26.10.11 Underground Storage Tank Financial Responsibility

##### .01 Incorporation by Reference:

- A. The State incorporates by reference the provisions contained in 40 CFR Part 280.90 - 280.112, as contained in 53 FR 43370 - 43382, as amended through October 31, 1990, with the exclusions contained in §B, below.
- B. Exclusions.
  - (1) "Director of the Implementing Agency" means the Secretary of the Department of the Environment.
  - (2) "EPA" means the State of Maryland.
  - (3) The requirements for "owner or operator" as contained in 40 CFR Part 280.90 - .112, are to be assumed solely by the "owner", as defined in 40 CFR 280.12 and COMAR 26.10.02.04.

