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**Maine Department of Environmental Protection**

**Chapter 691**

**RULE FOR UNDERGROUND OIL**

**STORAGE FACILITIES**

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Chapter 691 RULE FOR UNDERGROUND OIL STORAGE FACILITIES

**SUMMARY**: This Chapter requires registration of all new and existing underground petroleum tanks. It establishes standards for installation of new facilities, and for the operation, maintenance and closure of all types of underground oil storage facilities. This Chapter also outlines requirements for reporting and investigating evidence of a possible leak and clean up of leaks, discharges or other oil pollution at underground storage facilities, certain wastewater treatment units, and certain aboveground oil storage tanks associated with field constructed underground oil storage tanks or airport hydrant systems and aboveground tanks with underground piping.

**1. Legal Authority.** This Chapter is authorized under the *Oil Storage Facilities and Ground Water Protection Law*, 38 M.R.S. §§ 561-570-M. These sections of Maine law authorize and direct the development of rules for the registration, siting, design, installation, replacement, operation and closure of underground oil storage facilities and tanks, except tanks used to store propane, and the procedures, methods, means and equipment to be used in the investigation of discharges and the removal of oil and petroleum pollutants.

**2. Preamble.** It is the purpose of this Chapter, consistent with legislative policy, to provide necessary controls over underground oil storage facilities to ensure the protection of Maine's ground water resources from oil discharges and leaks and of public health, safety, welfare, and the overall environment. It is also the purpose of this Chapter to require the investigation and cleanup of oil discharges from aboveground oil storage tanks associated with field constructed underground oil storage tanks and airport hydrant systems.

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**3. Definitions.** The following terms as used in this Chapter have the following meaning:

**A. A/B Operator.** “A/B Operator” means the owner, employee or agent who has either primary responsibility for operation and maintenance of the facility or responsibility for the day-to-day on-site operation and maintenance of the facility.

**B. Ancillary equipment.** "Ancillary equipment" means devices including but not limited to, piping fittings, flanges, valves and pumps used to distribute, meter or control the flow of oil to or from an underground oil storage tank.

**C. Board.** "Board" means the Maine Board of Environmental Protection.

**D. Cathode.** "Cathode" means the electrode of an electrochemical cell at which the chemical process of reduction occurs.

**E. Cathodic protection tester.** "Cathodic protection tester" means an underground oil storage tank installer or inspector certified by the Maine Board of Underground Storage Tank Installers (BUSTI), who also meets the requirements of Appendix M of this Chapter.

**F. Cathodically protected.** "Cathodically protected" means the use of a technique to prevent the corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be protected against corrosion through the application of either a galvanic or an impressed current cathodic protection system. Cathodic protection techniques are those that are consistent with the National Association of Corrosion Engineers (NACE) International publication, “Standard Practice, External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection,” NACE S P 0285, or “Standard Practice, Control of External Corrosion on Underground or Submerged Metallic Piping Systems”, NACE SP 0169.

**G. Cathodic protection monitoring.** "Cathodic protection monitoring” means a process of measuring the structure to electrolyte potential to determine whether a cathodically protected structure is being adequately protected against corrosion. Cathodic protection monitoring shall be performed according to the requirements of Appendix A.

**H. Class I liquids.** "Class I liquids” means liquids having a flash point below 100 degrees F.

**I. Commissioner.** "Commissioner" means the Commissioner of the Department of Environmental Protection, or his or her designee.

**J. Compatible.** “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 underground storage tank.

**K. Containment sump.** “Containment sump” means a liquid-tight container that protects the environment by containing leaks and spills of oil from piping, dispensers, pumps and related components in the containment area. Containment sumps may be single walled or secondarily contained and include sumps located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump), and spill buckets.

**L. Contamination.** "Contamination" for the purposes of this Chapter only and only as applied to ground water, surface water, sediment and soils, means oil pollution attributable to an underground oil storage facility or the underground piping of an aboveground oil storage facility and exceeding any one of the following standards:

(1) The presence of free product, an oil sheen or oil saturated soils;

(2) Primary drinking water standards adopted in rule by the Maine Department of Health and Human Services, *Rules Relating to Drinking Water*, 10-144 C.M.R. ch. 231;

(3) *Maximum Exposure Guidelines (MEG) for Drinking Water* published on December 31, 2016 by the Maine Center for Disease Control and Prevention in the Department of Health and Human Services;

(4) A statistically significant increase in the concentration of measured parameters at on-site or down-gradient locations by comparison with representative background values, as demonstrated by statistical methods and procedures using a 95 percent level of confidence, approved by the Commissioner and consistent with the provisions of *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,* 40 C.F.R. §264.97 as amended up to July 1, 2018 (except that where the "Regional Administrator" is referred to, the "Commissioner" is meant);

(5) Water where volatile or extractable petroleum hydrocarbon fractions or target compounds are documented;

(6) Soils visibly stained or discolored by heavy oil; or

(7) Soils where volatile or extractable petroleum hydrocarbon fractions or target compounds equal or exceed reporting levels in Table 1 of Appendix Q of this Chapter.

**M. Continuous electronic monitoring.** "Continuous electronic monitoring" means the use of a monitoring device capable of automatic, continuous unattended operation, which will provide a clear, audible or visual indication of the presence of liquid hydrocarbons or hydrocarbon vapors outside of a primary hydrocarbon container or the loss of the primary containment structure's integrity.

**N. Corrosion expert.** "Corrosion expert" means a person who is certified by the Commissioner pursuant to 38 M.R.S. §567-A and Appendix N of this Chapter, as qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks.

**O. Corrosion-induced leak.** "Corrosion-induced leak" means any discharge of oil from an underground oil storage facility or tank caused by the deterioration of materials that comprise the facility or tank because of a reaction with the internal or external environment of the facility or tank.

**P. Daily inventory.** "Daily inventory" means accounting practices for oil stock control, including at a minimum: (1) a record of all bulk liquid receipts; (2) a record of all liquid dispersed from the facility; (3) a daily reconciliation between sales, use, receipts and inventory-on-hand; and (4) a monthly summary of inventory results maintained in accordance with the requirements of section 5(D)(1) of this Chapter.

**Q. Department.** "Department" means the Maine Department of Environmental Protection composed of the Board and the Commissioner.

**R. Dispenser.** “Dispenser” means equipment located aboveground that supplies product from the underground oil storage facility.

**S. Dispenser system.** “Dispenser system” means the dispenser and the equipment necessary to connect the dispenser to the underground oil storage facility.

**T. Discharge.** "Discharge" means any spilling, leaking, pumping, pouring, emitting, escaping, emptying, or dumping.

**U. Double-walled tank.** "Double-walled tank" means an underground oil storage tank providing no less than 300-degree secondary containment, interstitial space monitoring and secondary containment for pressurized product delivery pipe connections.

**V. Emergency situation.** "Emergency situation" means any unforeseen circumstances where the installation or replacement of an underground oil storage facility or tank is required to protect the public health, safety, and welfare.

**W. Existing underground oil storage facility or existing underground oil storage tank.** "Existing underground oil storage facility" or "existing underground oil storage tank" means any facility or tank, as defined in subsections OOO and PPP, that was fully installed as of April 19, 1990, and the location of which has not changed.

**X. Facilities used for consumption on the premises.** "Facilities used for consumption on the premises” means underground oil storage facilities not used to store motor fuels or waste oil, or in the marketing and distribution of oil to others. This includes underground heating oil storage facilities where the product is consumed on the premises or by the owner or operator of the facility.

**Y. Facilities used for marketing and distribution.** "Marketing and distribution facility" means any underground oil storage facility where oil is stored for eventual resale.

**Z. Electrical equipment tank.** Electrical equipment tank” means a tank that is a piece of underground equipment that contains dielectric fluid that is necessary for the operation of the equipment such as transformers or buried electrical cable.

**AA.** **Equipment or machinery tank.** “Equipment or machinery tank” means a tank that contains oil that is used for operational purposes such as a hydraulic lift tank or electrical equipment tank.

**BB. Field constructed tank.** “Field constructed tank” means a tank constructed in the field, including a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field.

**CC. Free product.** "Free product" means nonaqueous phase liquid oil or petroleum.

**DD. Gallon.** "Gallon" means a unit of volume in the U.S. Customary System, used in liquid measure, equal to four (4) quarts, or 3.785 liters.

**EE. Gasoline.** "Gasoline" means a volatile, highly flammable liquid with a flash point of less than 100 degrees F obtained from the fractional distillation of petroleum.

**FF. Heavy oil.** "Heavy oil" means forms of oil that must be heated during storage, including, but not limited to #5 and #6 oils.

**GG. Impressed current cathodic protection system.** "Impressed current cathodic protection system” means a cathodic protection system that relies on direct current supplied by a power source external to the electrode system.

**HH. In service.** "In service" means that a tank or facility has had product added or removed for its intended purpose.

**II. Leak.** "Leak" means a loss or gain of:

1. 0.1 gallons or more per hour as determined by a precision test or other facility integrity test methods approved by the Commissioner capable of detecting a 0.1 gallon or more per hour product loss or gain; or

(2) fluid to or from an underground oil storage facility, including, but not limited to, interstitial spaces and containment sumps.

**JJ. Manifolded piping system.** “Manifolded piping system” means a system where two or more pipes are merged into a single pipe. This includes vapor vent pipes from two or more tanks merging into one vent pipe, or pressurized product pipes from two or more tanks merging into one pressurized product pipe.

**KK. Master tank.** “Master tank” means a tank containing a submersible turbine pump that delivers product to fuel dispensers through a pressurized product pipe, and passively receives fuel from a subordinate tank through a siphon bar connecting the two tanks.

**LL. Monitoring well.** "Monitoring well" means a dug or drilled, cased well or other device used to detect oil in ground water and appropriately constructed.

**MM. Motor fuel.** "Motor fuel" means a complex blend of petroleum hydrocarbons and additives typically used in the operation of a motor engine such as motor gasoline, aviation gasoline, #1 fuel, or #2 diesel fuel or any blend containing one or more of these substances, such as gasoline blended with alcohol.

**NN. Occurrence.** "Occurrence" means a contamination incident or prohibited discharge associated with one or more tanks or piping at an underground oil storage facility or an aboveground oil storage facility within one year.

**OO. Oil.** "Oil" means oil, oil additives, petroleum products and their by-products of any kind and in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with other nonhazardous waste, crude oils. and all other liquid hydrocarbons regardless of specific gravity. For the purposes of this Chapter, oil does not include propane.

**PP. Operator.** "Operator" means any person who is in control of, or having responsibility for, the daily operation of an underground oil storage facility or tank.

**QQ. Out-of-service underground oil storage facility or tank.** "Out-of-service underground oil storage facility" and "out-of-service underground oil storage tank" means any such facility or tank, as defined in subsections OOO and PPP, which is neither receiving nor dispensing oil, but to be returned to service or awaiting abandonment pursuant to section 11 of this Chapter.

**RR. Owner.** "Owner" means any person whom alone, or in conjunction with others owns an underground oil storage facility.

**SS. Person.** "Person" means any natural person, firm, association, partnership, corporation, trust, the State and any agency of the State, governmental entity, quasi-governmental entity, the United States and any agency of the United States and any other legal entity.

**TT. Piping line tightness test.** "Piping line tightness test" means a test to determine the presence of a leak in the piping components of a facility. Volumetric and non-volumetric tests may be used. All piping tightness tests must be conducted in accordance with the requirements of Appendix B.

**UU. Pneumatic test.** "Pneumatic test" means an air pressure test, performed in accordance with the requirements of Appendix C of this Chapter.

**VV. Precision test.** "Precision test" means a tank or piping line tightness test, approved by the Commissioner, that is capable of detecting a leak, a loss or gain of 0.1 gallons per hour with a probability of detection of at least 95 percent and a probability of false alarm of five (5) or less percent as determined by an independent testing laboratory using protocols approved by the U.S. Environmental Protection Agency (EPA) or a nationally recognized independent testing organization, including, but not limited to, the American Society for Testing and Materials (ASTM) and the National Work Group on Leak Detection Evaluations. A precision test method specifically for testing the integrity of the interstitial space of a double-walled tank, and that lacks an independent third party approval of its protocols, must be reviewed and approved by the Commissioner prior to use. For the purpose of this Chapter, precision test also means test methods approved by the Commissioner to determine the integrity of spill buckets, dispenser, tank top, piping and other containment sumps.

**WW. Private water supply.** "Private water supply" means any dug, drilled or other type of well or spring or other source of water, which collects water for human consumption and is not a public water supply.

**XX. Public drinking water supply.** "Public drinking water supply" means any well or other source of water that furnishes water to the public for human consumption for at least 15 connections, regularly serves an average of at least 25 individuals daily at least 60 days out of the year, or that supplies bottled water for sale.

**YY. Repair.** “Repair” means to restore to proper operating condition a tank, piping, containment sump, corrosion prevention equipment, leak detection equipment or other underground oil storage tank system component that has failed to function properly or that has caused or may cause a release of product from the underground oil storage tank system.

**ZZ. Replace.** “Replace” means to remove a tank and install another tank, or to remove and replace 25 percent or more of a single underground piping run that does not meet the design standards for new installations in section 5(B).

**AAA. Replacement facility.** “Replacement facility” means an underground oil storage facility where one or more of the following major components are replaced: a tank; piping; leak detection equipment; or overfill prevention or containment equipment. Minor repairs to a facility component, or other repairs conducted in accordance with the requirements of this Chapter, do not trigger the definition of a replacement facility.

NOTE: Except where specified otherwise in the rule, only the major component replaced will need to meet the rule’s design and installation requirements for new and replacement facilities. It is not the intent of this definition to require the upgrade of an entire facility in the event one component is replaced. An example of a specific section in the rule that requires an upgrade is when an existing dispenser and the equipment used to connect the dispenser to the underground piping are removed and replaced with a new dispenser. In this example the continuous electronic monitoring and under-dispenser containment requirements are triggered. See section 5(C)(5) and (6).

**BBB. Safe Suction piping.** “Safe suction piping” also known as European safe suction, means underground product piping connected to a suction pump that continuously slopes back to the tank at least 1/8 inch per foot, and has a single check valve located as close to the pump as possible, such that product will drain back to the tank, if the integrity of the piping is compromised.

**CCC. Secondary containment.** "Secondary containment" means a system installed so that any material that is discharged or has leaked from the primary containment is prevented from reaching the soil or ground water outside the system for the anticipated period of time necessary to detect and recover the discharged material. Such a system may include double-walled tanks and piping, double-walled sumps or another method approved by the Commissioner that is technically feasible and effective, and meets the requirements of section 5(B)(2).

**DDD. Self-structural systems.** “Self-structural systems” means a retrofit system that is designed to meet equivalent structural requirements of an underground tank standard, without any structural contribution from the host tank.

**EEE. Sensitive geologic area.** "Sensitive geologic area" means any of the following: (1) significant ground water aquifers, as defined in subsection FFF below; (2) locations within 1,000 feet of a public drinking water supply; or (3) locations within 300 feet of a private drinking water supply. Sensitive geologic areas around surface water bodies shall include all areas within 1000 feet of the intake point of a public water system, except on rivers and streams where it will only include areas within a 1000 feet of the intake point and upstream on either shore. All areas within 300 feet of the intake point in a lake, pond or other surface water body used for a private water supply system shall be considered a sensitive geological area, except on rivers and streams where it will only include areas 300 feet upstream on either shore of the intake point. For the purpose of this Chapter, a well or other source of water that is a public drinking water supply solely because the water is used to make beverages for public sale or consumption is deemed to be a private drinking water supply.

**FFF. Significant ground water aquifer.** "Significant ground water aquifer" means a porous formation of ice-contact and glacial outwash sand and gravel, as identified by the current Maine Geological Survey maps, that contains significant recoverable quantities of water which is likely to provide drinking water supplies.

NOTE: Significant Sand and Gravel Aquifer Maps are available from the Maine Geological Survey, Department of Agriculture, Conservation and Forestry, 22 State House Station, Augusta, Maine 04333-0022. <http://www.maine.gov/dacf/mgs/pubs/online/aquifers/aquifers.htm>

**GGG. Siphon bar.** “Siphon bar” means piping that connects two tanks and allows fuel to be drawn from the tank that contains a higher product level to equalize the product level of both tanks.

**HHH. Site assessment.** "Site assessment" means a determination at the time of facility or tank closure, of the occurrence of a prohibited leak or discharge of oil, and of the presence or absence of oil contamination in the soils or the waters of the State.

**III. Spill bucket.** “Spill bucket” means a liquid tight spill container for each tank chamber, which is sealed around the fill pipe and will collect any spillage during product delivery.

**JJJ. Statistical inventory reconciliation.** "Statistical inventory reconciliation” means a process of evaluating the various sources of errors present in daily inventory records and capable of detecting a leak or discharge of 0.1 gallons per hour with a 95 percent probability and a 5 percent chance of a false alarm as determined by an independent vendor using EPA's approved standardized test procedures, conducted in accordance with the requirements of section 5(D)(2).

**KKK. Subordinate tank.** “Subordinate tank” means a tank that is connected to an adjacent “master” tank via a siphon bar and does not distribute fuel to a dispenser.

**LLL. Tank tightness test.** "Tank tightness test" means a precision test, as defined under subsection VV. Tank tightness tests may include volumetric tank tightness tests or non-volumetric tank tightness tests. Tank tightness tests must be conducted in strict accordance with Appendix B and the manufacturer's test instructions and any protocols identified by an independent testing laboratory as required to meet the performance standards of subsection VV.

**MMM. Tank Warranty.** “Tank warranty” means the length of time the manufacturer guarantees the tank against corrosion or structural failure.

**NNN. Under-dispenser containment.** “Under-dispenser containment” or “dispenser sump” means a liquid tight container under the dispenser designed to prevent the intrusion of water and that prevents leaks from the associated dispenser and piping from reaching soil or ground water.

**OOO. Underground oil storage facility.** "Underground oil storage facility" also referred to as "facility," means any underground oil storage tank or tanks, as defined in subsection PPP, together with associated piping, ancillary equipment, containment systems, and dispensing facilities located under any land at a single location and used, or intended to be used, for the storage or supply of oil, as defined in this Chapter. Underground oil storage facility also includes piping located under any land at a single location associated with above ground storage tanks and containing 10 percent or more of the facility's volume capacity.

NOTE: Underground piping associated with an aboveground oil storage facility, regardless of percent of facility volume, must be installed, operated, maintained and abandoned in accordance with this Chapter and other requirements of 38 M.R.S. §570-K governing aboveground oil storage facilities. Piping associated with oil terminals, most aboveground home heating oil facilities, and liquefied petroleum and natural gas facilities are exempt.

**PPP. Underground oil storage tank.** "Underground oil storage tank" also referred to as "tank," means any container, 10 percent or more of its volume being beneath the surface of the ground and which is used, or intended to be used, for the storage, use, treatment, collection, capture or supply of oil as defined in this subchapter, but does not include any tanks situated in an underground area if these tanks or containers are situated upon or above the surface of a floor and in such a manner that they may be readily inspected. For the purpose of this Chapter, "underground oil storage tank" does not include underground propane storage tanks, wastewater treatment tank systems such as underground oil water separators that are regulated by the *Clean Water Act* §§ 402 or 307(b) (1972) (33 U.S.C., §1317(b) or §1342 (2016)), storm water andemergencycatch basins, and equipment or machinery tanks such as hydraulic lift tanks and electrical equipment tanks. Overflow tanks associated with oil-water separators are still considered an underground oil storage tank.

**QQQ. Underground oil storage tank inspector.** Any person certified under the *Underground Oil Storage Tank Installers* *Law*, 32 M.R.S. §§ 10001-10016 and *Certification of Underground Oil Storage Tank Inspectors*, 06-481 C.M.R. ch. 6 (last amended February 15, 2015) to inspect underground oil storage tanks and facilities.

**RRR. Underground oil storage tank installer.** Any person certified under 32 M.R.S. §§ 10001-10016 and *Certification of Underground Oil Tank Installers*, 06-481 C.M.R. ch. 3 (last amended February 15, 2015) to install underground oil storage tanks and facilities.

NOTE: BUSTI, 06-481 C.M.R. ch. 3, refers to underground oil storage tank installers as underground oil tank installers. These terms apply to the same types of individuals.

**SSS. Volumetric tank tightness test.** "Volumetric tank tightness test" means a hydrostatic tank tightness test or precision test conducted at constant hydrostatic pressure at the bottom of the tank; where instrumentation noise is 3 to 5 times less than the minimum detectable leak rate; where temperature sensors provide adequate spatial coverage of tank; and where calibration of all instrumentation can be field checked. A volumetric or hydrostatic tank tightness test must be performed in accordance with Appendix B of this Chapter.

**TTT. Waste oil.** "Waste oil” means petroleum-based oil which, through use or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties. It must have sufficient liquid content to be free flowing. Waste oil is further defined in the Department’s *Waste Oil Management Rules*, 06-096 C.M.R. ch. 860, §4.

**UUU. Waste oil dealer.** "Waste oil dealer” means any person in the business of transporting or handling more than 1,000 gallons of waste oil for the purpose of resale in a calendar month. A person, who collects or stores waste oil on the site of generation, whether or not for the purpose of resale, is not a waste oil dealer.

**VVV. Waste oil tank.** "Waste oil tank” means an underground oil storage tank used for the collection and storage of waste oil.

**WWW.** **Wastewater treatment tank.** “Wastewater treatment tank” means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

**4. Registration of Underground Oil Storage Facilities**

**A.** All underground oil storage tanks and facilities must be registered regardless of use, size or type of petroleum product stored therein and regardless of whether the tanks and facilities are in service or out of service.

**B.** A person may not install, or cause to be installed, a new or replacement underground oil storage tank, piping or facility without first having: (1) filed registration materials with the Commissioner in accordance with subsection I, which materials have been deemed complete by the Commissioner at least 10 business days but no more than 2 years prior to installation; (2) sent a copy of the materials and any subsequent amendments to the chief administrative official of the municipality having jurisdiction, or in the case of an unorganized township to the Maine Land Use Planning Commission (LUPC); (3) retained a copy to be made available on site to Department employees, agents or authorized representative and to municipal officials; and (4) paid the registration fee in accordance with subsection J.

**C.** No person may retrofit an existing underground oil storage facility with leak detection, overfill prevention equipment or other design or installation changes without first having filed a registration amendment in accordance with subsection M.

**D.** Registration materials that are not in conformance with this Chapter will not be accepted by the Commissioner.

**E.** Written acknowledgment from the Commissioner is acceptable evidence that a new, retrofitted or replacement tank or facility has been properly registered. The Commissioner will determine the completeness of the registration materials and notify the registrant within 10 business days of receipt.

**F**. A person who installs, or causes to be installed, a new or replacement underground storage facility, or retrofits an existing facility, after 10 business days of the Commissioner's receipt of the registration form, without first having received confirmation that the registration is complete, does so at the person’s own risk. If it is determined that the facility was not installed in accordance with the regulations, the tank owner shall bring the facility into conformance with these regulations.

**G.** When an emergency situation occurs, the time requirement of subsection B may be waived by the Commissioner upon petition of a facility registrant if: (1) the registrant can demonstrate to the Commissioner that an emergency situation exists; and (2) the municipality or LUPC having jurisdiction has been notified by the registrant that the facility is being installed without the 10 day notice due to an emergency situation.

**H.** For existing facilities, the information required for registration must be submitted to the Commissioner and a copy provided to the chief administrative official of the municipality having jurisdiction, or in the case of an unorganized township to LUPC in accordance with this section. No person may operate, maintain or store oil in an underground oil storage facility, unless each underground oil storage tank at that facility has been properly registered with the Commissioner and a copy of the registration materials has been received by the chief administrative official of the municipality having jurisdiction, or in the case of an unorganized township to LUPC.

**I.** Registrations must be submitted on forms developed by the Commissioner and containing the following information:

(1) The name, mailing address and telephone number of the owner;

(2) The name, mailing address and telephone number of the operator;

(3) The name, street address and telephone number of the facility;

(4) The name, mailing address and telephone number of an individual to contact with questions on the registration materials submitted;

(5) The location of the facility compatible with the State of Maine Geographic Information System (GIS). If a new facility or a facility expansion, adequate GIS location information to determine if the facility meets the siting restrictions of the *Wellhead Protection Law,* 38 M.R.S. §§ 1391-1400 and *Siting of Oil Storage Facilities*, 06-096 C.M.R. ch. 692;

(6) The location of the facility relative to a sensitive geologic area, including: (a) whether a private water supply exists within 300 feet of the tanks; (b) if any person owns, operates, or utilizes any private water supply within 300 feet of the tanks; (c) whether a public water supply exists within 1,000 feet of the tanks; and (d) whether the facility is located on a significant ground water aquifer, as defined by this Chapter;

(7) The location of the facility relative to a 100 year flood plain as mapped by the Federal Emergency Management Agency (FEMA), or in the absence of such maps, as indicated by the presence of flood plain soils or the flood of record;

NOTE: FEMA maps are available at most municipal offices.

(8) The size of each tank and each internal storage compartments (if more than one) measured in gallons;

(9) The type of tank(s) and piping, including the materials used for construction and the type of pumping system;

(10) The type of product(s) stored in each tank;

(11) For a new or replacement facility or retrofitting of an existing facility, the installer's name, signature and certification number assigned by BUSTI;

(12) For a new or replacement facility, a site drawing of the facility containing the location of all new or replacement tanks, including: (a) distance and direction measurements in the Universal Transverse Mercator (UTM ) map projection using the North American Datum (NAD83) coordinate units in meters or in Latitude/Longitude decimal degree coordinates (not degrees in minutes and seconds) and have sub-meter accuracy and precision and that are sufficient to locate all underground portions of the facility; (b) details of secondary containment and interstitial space leak detection monitoring equipment; (c) locations of any monitoring wells; (d) all piping associated with the new or replacement facility; (e) the depth to ground water that would be encountered during the tank installation, if known; and (f) the depth to bedrock that would be encountered during the tank installation, if known;

NOTE: The Maine Geological Survey Surficial Materials Map contains helpful information on determining likely depth to bedrock. The Department of Environmental Protection project files for underground storage tank sites and neighboring sites also contain helpful information on likely depth to groundwater and bedrock. These two sources should be consulted prior to filing a registration form for a new installation in order to assist the Maine Certified Underground Oil Storage Tank Installer with water management and excavation planning.

(13) The best estimate of the date of installation for each existing tank and its warranty expiration date, if available;

(14) For new and replacement tanks, the expiration date of the tank manufacturer's warranty;

(15) For retrofitting an existing underground oil storage facility, the information required in paragraphs 1, 2, 3, 4, 8, 9, 11 and 12 above must be provided on the required registration amendment, as well as information on the type of leak detection, overfill prevention, or other equipment to be installed;

(16) Any other information required by federal law or regulation; and

NOTE: The Federal *Resource Conservation and Recovery Act*, 42 U.S.C. §§ 6991-6991a requires an underground tank notification program and specifies informational requirements for that program. Registration forms meeting all federal and state informational requirements are available from the Department. A tank owner is not required to send a copy of the completed form to EPA in addition to the Commissioner.

(17) Certification of the accuracy of the information by the tank owner or the owner's permanent full time employee. The certification cannot be signed by the installer or other subcontractor, unless the tank is owned by the installer.

**J. Registration fees.** The owner or operator of an underground oil storage facility shall pay a registration fee every three years to the Commissioner of $100 for each tank located at the facility, except that single family homeowners are not required to pay a fee for a tank at their personal residence. Registration payments must be paid on or before January 1st of every third calendar year upon receipt of a bill from the Commissioner in order to maintain an effective registration for the upcoming three years. Registrations for new tanks shall include payment of the three year registration fee. Registration of a replacement facility shall not require that an additional fee be paid or accompany the registration amendment if the registration fee has been previously paid.

**K.** It is the responsibility of the facility owner to register all tanks. Where the facility owner cannot be determined, or is disputed, it is the responsibility of the property owner to register all facilities and tanks located on the property.

**L. Registration number.** The Commissioner will assign a unique registration number to each facility and to each tank at a facility. These registration numbers shall be provided to the owner or operator and shall be used for re-registration every three years and in all subsequent correspondence regarding registered facilities and tanks. The owner or operator shall post the registration number or certificate in a prominent location at the facility.

**M. Registration amendments.** The owner or operator of an underground oil storage tank shall file an amended registration form with the Commissioner and LUPC or municipality having jurisdiction whenever there is a change in the information required pursuant to section 4(I). Such amendments must be received by the Commissioner within 10 business days of the change, except that amendments for installation of leak detection, overfill and spill protection, other underground oil storage facility equipment, the reinstallation of tanks, or the retrofitting of secondary containment in an existing tank must be submitted at least 10 business days before installation. No amendment is required for repairs. No amendment is required for facility abandonment or closure but instead notice must be provided to the Commissioner in accordance with section 11 of this Chapter. There is no fee for filing an amended registration.

NOTE: A change in the facility ownership or operator requires the submission of a registration amendment. See section 4(P) regarding filing amended registration forms.

**N. Supplier notification requirement.** Any person who sells a tank intended to be installed as an underground oil storage tank shall notify the purchaser in writing of the purchaser's registration obligations under this section.

**O.** Wherever these rules require that information or notice be submitted to the Commissioner or Department, failure to provide such notice or information in the manner required by this Chapter or providing false information constitutes a violation of this Chapter.

**P. Notifications at time of facility sale or transfer.** Prior to the sale or transfer of any real estate where an underground oil storage facility is located, the owner of the real estate shall file a written notice with the purchaser or transferee. The notice shall disclose the existence of the underground oil storage facility, its registration number or numbers, the real estate where the facility is located, whether or not the facility has been abandoned in place and that the facility is subject to this Chapter, including the registration requirements of this section. A change in facility ownership requires the new owner or operator to amend the facility registration within 10 business days of the transfer of ownership by providing the Commissioner written notice of the change, including the facility name and registration number; and the name, mailing address and telephone number of the new owner.

**5. Regulation of underground oil storage facilities used to store motor fuels or used in the marketing and distribution of oil**

**A. Applicability**

(1) This section and its requirements apply to all facilities and tanks used to store motor fuels or used in the marketing and distribution of oil to others, except where noted below.

(2) Tanks supplying fuel to a generator are considered a motor fuel tank and are governed by this section.

(3) This section does not apply to field constructed tanks and airport hydrant systems, which must comply with sections 8 and 10 of this Chapter, respectively.

NOTE:All new and replacement underground piping associated with aboveground storage tanks must be installed, operated, maintained and removed in accordance with these rules and 38 M.R.S. §570-K.

**B. Design and installation standards for new and replacement facilities**

(1) General design requirements

(a) All new and replacement tanks must be constructed of fiberglass reinforced plastic (hereafter "fiberglass"), cathodically protected steel, or other equally noncorrosive material approved by the Commissioner. Piping and below ground ancillary equipment in contact with soil or water must be constructed of fiberglass, cathodically protected steel or other corrosion-resistant or noncorrosive materials approved by the Commissioner.

(i) It is the responsibility of the facility owner to demonstrate to the satisfaction of the Commissioner that the materials are noncorrosive or corrosion resistant and meet or exceed the performance standards listed below.

(ii) All new or replacement facilities must be listed and constructed in accordance with the standards contained in the following:

* Fiberglass Tanks –
	+ Underwriters Laboratories (UL) Standard 1316, Glass-Fiber- Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols and Alcohol-Gasoline Mixtures; or
	+ Underwriters Laboratories of Canada (ULC) S615, Standard for Fibre Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids;
* Cathodically Protected Steel Tanks -
	+ Steel Tank Institute (STI) STI-P3®, Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks;
	+ UL Standard 1746, External Corrosion Protection Systems for Steel Underground Storage Tanks;
	+ ULC S603, Standard for External Corrosion Protection for Steel Underground Tanks for Flammable and Combustible Liquids, and S631, Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protections Systems;
	+ Steel Tank Institute (STI) Standard F841, Standard for Dual Wall Underground Steel Storage Tanks;
	+ NACE International, SP0 285-2 011, External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, and UL Standard 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids; or
	+ Petroleum Equipment Institute (PEI) RP-100, Recommended Practices for Installation of Underground Liquid Storage Systems;
* Steel Clad or Jacketed Tanks –
	+ UL 1746, External Corrosion Protection Systems for Steel Underground Storage Tanks, STI F894;
* Composite Tank Standard –
	+ STI F894, ACT-100 ® Specification of External Corrosion Protection of FRP Composite, or STI Specification F922, STI Specification for Permatank;
* Non-Metallic and Fiberglass Piping – UL Standard 971, Non-metallic Underground Piping for Flammable Liquids, or ULC Standard S660, Standard for Non-metallic Underground Piping for Flammable Liquids and Combustible Liquids; Pipe Connectors –
	+ UL Standard 567, Standard for Emergency Breakaway Fitting, Swivel Connectors and Pipe Connectors for Petroleum Products and LP Gas;
* Flexible Connectors –
	+ CAN/ULC -S633, Flexible Underground Hose Connectors for Flammable and Combustible Liquids; and
* Steel Piping -
	+ National Fire Protection Association (NFPA) Standards 30, Flammable and Combustible Liquids Code, 30-A, Code for Motor Fuels Dispensing Facilities and Repair Garages, or 31, Standard of the Installation of Oil Burning Equipment;
	+ American Petroleum Institute (API) Publications 1632, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems;
	+ NACE International Standard SP0169, Control of External Corrosion on Underground or Submerged Metallic Piping Systems or NACE SP0285, External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection; or
	+ STI Recommended Practice R892, Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems.

NOTE: Fiberglass clad steel and other steel composite tanks need not be provided with galvanic or impressed current cathodic protection if constructed with secondary containment and interstitial space monitoring in accordance with the standards of this subsection.

(iii) Impressed current cathodic protection systems must be designed by a corrosion expert and according to the standards described in the NACE International SP0285 and SP0169, and installed under the supervision of a corrosion expert and by a Maine Certified Underground Oil Storage Tank Installer.

(b) All facility construction materials must be chemically and physically compatible with the product to be stored. For facilities storing gasoline with more than 10 percent ethanol or storing diesel with more than 20 percent biodiesel or any other regulated substance identified by the Department, the facility owner must demonstrate that the facility is compatible with these oil products by one of the following methods:

(i) UL or other nationally recognized independent testing laboratory certification or listing approved by the Commissioner;

(ii) A written statement of compatibility from the equipment or component manufacturer that indicates an affirmative statement of compatibility and specifies the range of biofuel blends the equipment or component is compatible with; or

(iii) Another method demonstrating compatibility of facility components and equipment with the oil product to be stored approved by the Commissioner.

Documentation of facility and oil product compatibility shall be maintained at the owner’s place of business for the life of the facility component or equipment.

NOTE: Gasoline underground oil storage facilities with a monthly throughput of 10,000 gallons or more in any one month are required to install vapor control equipment in accordance with *Gasoline Dispensing Facilities Vapor Control*, 06-096 C.M.R. ch. 118 of the Department’s air quality rules.

(2) Leak detection

(a) All new and replacement facilities must be designed to provide secondary containment for all facility components routinely containing product, including tanks, product piping, other below ground ancillary equipment and product dispensers. New and replacement tanks and product piping must have continuous interstitial space monitoring. All piping sumps including dispenser sumps and pans shall be provided with continuous leak detection monitoring.

(b) Interstitial space monitoring of tanks and piping must be able to detect a loss or gain in the interstitial space from a leak in the primary or secondary containment structure.

(c) Safe suction piping and siphon bars designed and installed in accordance with this Chapter are not required to have secondary containment.

(3) Overfill and spill prevention equipment. Facility owners and operators shall take measures to prevent releases due to spilling or overfilling. New and replacement facilities must include:

(a) For a new facility, a liquid tight double walled spill bucket with electronic or mechanical interstitial space monitoring, of a minimum capacity of 15 gallons for each tank fill, which is sealed around the fill pipe and will collect any spillage during product delivery. For replacement facilities, when only the spill bucket is retrofitted or replaced, the largest capacity double walled spill bucket with electronic or mechanical interstitial space monitoring feasible from 5 to 15 gallons must be installed.

(b) Overfill prevention equipment that will:

(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 flow into the tank or triggering a high-level audible alarm (vent whistles are not considered a high-level alarm).

(c) A ball float valve, also known as a ball float vent valve, may not be installed after October 13, 2018.

(d) Dispenser s umps or pans of adequate dimensions must be located and installed under all product dispensers in such a manner as to collect all product leaks and discharges from dispenser piping and equipment to prevent oil reaching the environment. Dispenser sumps must be liquid tight and allow for visual inspection and access to the components in the containment system. Dispenser sumps must be equipped with continuous leak detection equipment including leak detection sensors and alarms. If the facility operates unattended at any time, then the dispenser sump sensor(s) must shut down all submersible pumps.

NOTE: Because double walled containment sumps with continuous monitoring do not require triennial sump testing, owners should carefully consider the initial costs of this design as compared to the anticipated cost associated with triennial sump testing.

(e) Bulk plants and other distribution facilities where oil is transferred to tank trucks or railroad tank cars must include a system to prevent oil spills and overfills from reaching the environment. Installation of a system to catch or direct the flow of loading area spills and overfills is required. Any such system must be able to hold at least the maximum capacity of the largest single compartment of a tank car or tank truck loaded or unloaded at the facility, and must include one of the following:

(i) An impermeable curbed loading or unloading pad sloped or connected to a catchment basin, an underground oil storage tank or other containment system which in combination provide sufficient containment capacity to meet this Chapter;

(ii) An impermeable curbed loading or unloading pad sloped or connected to an oil water separator discharging to a public wastewater treatment facility or the waters of the State, licensed by the Department pursuant to the law on waste discharge licenses, the *Pollution Control Law*, 38 M.R.S. §413 and the *Oil Discharge Prevention and Pollution Control Law*, 38 M.R.S. §543; or

(iii) Other loading or unloading rack overfill containment system approved by the Commissioner.

Subsurface discharges of potentially oil contaminated storm water are prohibited unless licensed by the Department in accordance with 38 M.R.S. §§ 413 and 543.

(4) General facility installation requirements

(a) No person may install an underground oil storage facility or a portion thereof unless that person is a properly Certified Underground Oil Storage Tank Installer with the appropriate class of certification and has paid the required certification fee. A Maine Certified Underground Oil Storage Tank Installer shall be present and supervising all aspects of the UST facility installation.

(b) An underground oil storage tank installer may not install an underground storage facility if the installer has been placed on inactive status or if the installer’s certification has been suspended or revoked under 32 M.R.S., §10015, and has not been reinstated.

(c) An underground oil storage facility may not be installed unless the entire facility has been registered in accordance with section 4 of this Chapter.

(d) An underground oil storage tank or piping may not be installed within one foot of the closest bedrock. In sensitive geologic areas with known contamination, bedrock may not be blasted without the Department’s prior approval.

NOTE: Blasting in contaminated sensitive geologic areas can spread contamination to drinking water supplies where contamination is not currently present.

(e) All phases of the installation of an impressed current cathodic protection system must be conducted under the direct supervision of a corrosion expert. The tank, piping and other portions of the facility other than the impressed current system may be installed by a Maine Certified Underground Oil Storage Tank Installer without such supervision.

(f) All new and replacement steel tanks and piping with cathodic protection must be monitored within 6 to 12 weeks of completion of installation by a cathodic protection tester in accordance with Appendix A of this Chapter.

(g) Owners of new and replacement facilities shall ensure that the installer(s) provides certification of proper installation to the Commissioner within 30 days of completion of installation that the facility's materials, design and installation are in compliance with the requirements of this Chapter. This certification shall be provided in writing on a form provided by the Commissioner and signed by the Certified Underground Oil Storage Tank Installer responsible for the installation. The certification shall be submitted to the Department before fuel is dispensed from the tank for consumption or resale, unless an alternate schedule for submitting the Certificate of Proper Installation is agreed to by the Department, the Maine Certified Underground Oil Storage Tank Installer and the tank owner.

(h) For all new installations and replacements of tanks and piping the facility owner shall maintain a to-scale, as-built drawing of the facility at the facility or the owner’s primary place of business. The drawing is to show the location of tanks, piping, dispensers and other major underground facility components to facilitate safe facility maintenance, repairs, replacement and remediation.

(i) No used or previously installed double-walled fiberglass, cathodically protected steel, or other tank meeting the requirements of section 5(B) may be reinstalled, unless the owner has supplied the Commissioner with satisfactory documentation that the manufacturer will warranty that tank against internal and external corrosion and structural failure for a period of at least 10 years, after which the tank and piping must be properly abandoned in accordance with section 11. Reinstallation of a tank requires an amendment of the facility registration in accordance with section 4(M). The warranty documentation shall accompany the submission of the registration amendment. Used piping may not be reinstalled. A tank that has been reinstalled cannot operate beyond 30 years from the original date of installation unless the tank owner receives written permission from the Department pursuant to section 5(F).

(j) The facility owner shall ensure that no permanent structures, underground utilities or other objects are installed or constructed in proximity to the tank, so as to impede the ability to safely remove the tank as determined by a Maine Certified Underground Oil Storage Tank Installer or a Maine registered engineer,

(k) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

(5) Installation requirements for new and replacement tanks

(a) New and replacement tanks and facilities must be installed in conformance with the requirements of Appendix D, except field constructed tanks which must be installed in accordance with section 8 of this Chapter.

(b) If a tank is replaced, all associated underground piping not meeting the design requirements of this Chapter shall be replaced. Underground piping meeting the requirements of this chapter must be precision tested in accordance with Appendix B prior to continued use. If product piping is replaced and structural damage to the associated tank has occurred, impairing its physical integrity, the tank also must be replaced or repaired. Any replacement tank must be designed and installed in accordance with this Chapter. Repairs of damaged fiberglass, cathodically protected steel and other Commissioner approved noncorrosive material tanks may only be made if conducted in accordance with sections 5(D) (13) or (14). Tanks that cannot be repaired must be abandoned in accordance with section 11.

(6) Installation requirements for new and replacement piping

(a) All underground piping must be designed and installed in conformance with the requirements of Appendix E, except airport hydrant piping, which must comply with section 10. If replacement piping is installed for 25 percent or more of a non-compliant piping run, the entire piping run must be replaced.

(b) All underground piping in contact with soil or water must be constructed of fiberglass or cathodically protected steel. Other noncorrosive materials may be used when approved by the Commissioner.

(i) It is the responsibility of the tank owner to demonstrate to the satisfaction of the Commissioner that the materials are noncorrosive.

NOTE: Galvanized piping does not meet the requirement for corrosion protection of tanks or piping, and does not meet the criteria for cathodic protection as stated in the NACE International, Standard Practice SP0285.

(ii) All new or replacement non-metallic product piping must be listed by UL for underground use. Cathodically protected piping must be constructed and installed in conformance with the NACE International, Standard Practice, SP0169, or PEI Recommended Practice RP100.

(iii) Other than field coating limited to vertical fill pipes, vertical vent risers and piping joints, field coating of steel pipe for product delivery lines is prohibited except where supervised and inspected by a corrosion expert.

(c) Product lines must be installed in a single trench between the tank area and each pump island. Underground vent lines must be installed in a single trench. All product and vent lines shall slope toward the tank or a sump with leak detection at a minimum slope of 1/8 inch per foot, or in accordance with the manufacturer’s instructions.

NOTE: The Department recommends placing colored, plastic tape in the excavation trench for fiberglass reinforced piping and plastic piping runs to warn excavator operators and to help locate piping in the future.

(d) Secondary containment and cathodic protection of vertical, direct drop fill pipes is not required if the fill pipe is constructed of Schedule 40 steel and is uniformly coated with a minimum of 1/8 inch of fiberglass resin, bitumastic coating or epoxy coating. The pipe surface must be properly prepared and the coating allowed to cure. Offset fill pipes require secondary containment and interstitial leak detection.

(e) Piping shall be installed such that in-line piping leak detectors and overfill prevention equipment operate in accordance with manufacturers’ specifications and the requirements of this Chapter.

(6-A) Replacement of the flexible primary product piping in a double-walled piping system. Primary piping that is part of double-walled piping may be replaced without excavation and removal of the entire piping run when there is no evidence of a possible piping discharge and when the following conditions and requirements are met:

(a) Flexible primary piping can be removed by pulling the entire length of old piping through the four (4) inch diameter secondary containment or chase piping, and can be replaced with new double-walled piping fed through the existing chase piping;

(b) The original chase piping may only be used as the conduit for the replacement piping, not as secondary containment;

(c) The facility is equipped with dispenser, tank top and piping containment sumps installed in accordance with section 5(B);

(d) The replacement piping is double-walled with an interstitial space for leak monitoring, and is installed in accordance with all applicable requirements of this Chapter, including Appendix E;

(e) The facility registration is amended in accordance with section 4(M); and

(f) A modified site assessment is conducted and submitted to the Commissioner in accordance with section 11(A) and Appendix P of this Chapter.

(7) Installation requirements for leak detection and overfill/spill prevention equipment

(a) Leak detection and overfill/spill prevention alarms and shutoff equipment must be installed and operating prior to the start of the facility's operation and in accordance with manufacturer specifications, including proper calibration of electronic equipment. Installation of a ball float valve for overfill prevention is prohibited after October 13, 2018.

(b) Piping, tank and dispenser containment sumps and pans must be liquid tight. New and replacement piping, tank and dispenser containment sumps must be tested to 4 inches above the highest penetration or seam in the sidewall.

(c) Penetrations of a containment sump for piping or other sump entrance must be liquid tight and must be at least three (3) or more inches above the leak detection sensor activation level. The three (3) inch penetration location requirement does not apply to the bottom access hole in a tank sump for the installation of a pressurized product pump or to provide access to the tank for suction dispenser piping. The bottom access hole must be liquid tight.

NOTE: The Department recommends that sump penetrations be at least 4 inches or more above the leak detection sensor whenever possible to facilitate low level sump testing.

**C. Retrofitting requirements for existing facilities**

(1) Existing facility owners shall retrofit or institute a leak detection method, capable of detecting a leak in the tank, product piping and other portions of the facility normally containing product. Such leak detection must be capable of detecting a leak within 30 days of occurrence with a probability of detection of at least 95 percent and a 5 percent or less probability of a false positive as determined by an independent testing laboratory, using EPA approved testing protocols. Leak detection methods found to meet the above performance standards and tested using other protocols approved by nationally recognized independent testing organizations may be used. Examples include, but are not limited to, the American Society of Testing and Materials and the National Work Group on Leak Detection Evaluations.

Acceptable methods are listed in section 5(C)(2) below. Facility owners shall have leak detection in operation by December 1, 1990, for facilities with pressurized piping and by December 1, 1991, for facilities with safe suction piping.

Existing facilities with secondary containment with interstitial space monitoring for all tanks, product piping and associated below ground ancillary equipment are considered to meet this requirement.

Facilities with suction piping installed such that the piping is sloped so that the contents of the pipe will drain back into the tank if suction is lost, and only one check valve is located in a piping line with the check valve located directly below and as close as possible to the pump, may have until December 1, 1993 to implement leak detection.

Where an existing tank has leak detection meeting the requirements of this Chapter, the associated product piping must be provided leak detection in accordance with the time schedule and other provisions of this subsection. If the mandatory removal date for a nonconforming facility under 38 M.R.S., section 563-A, precedes the leak detection compliance schedule outlined above, the facility owner shall comply with the removal schedule in section 563-A.

(2) Acceptable leak detection methods for tanks installed before September 16, 1991 are any one of the following:

(a) Monthly statistical inventory reconciliation of daily product inventory data in accordance with Appendix I and an annual precision test of all tanks and piping. All facilities using this method must install drop tubes in the fill pipes. An annual statistical inventory reconciliation, conducted in accordance with section 5(D)(2) or other Commissioner approved methods of facility leak detection capable of detecting a leak rate of 0.1 gallons per hour with a 95 percent probability of detection and 5 percent probability of false alarm, may be substituted for a precision test for the purposes of this paragraph. In addition, all pressurized piping must be retrofitted with an automatic in-line leak detector capable of detecting a leak of 3 or more gallons per hour at 10 pounds per square inch line pressure within 1 hour of its occurrence with a 95 percent probability and a 5 percent probability of false alarm.

(b) Automatic tank gauging, that can detect a 0.2 gallon per hour loss, conducted at least once every 30 days, and monitoring of associated existing piping, by implementing one of the leak detection methods listed below in paragraph C(2)(c) of this section.

(c) When an existing tank is to be monitored for leaks by automatic in-tank gauging, associated existing piping must be monitored for leaks using one of the following methods:

(i) Secondary containment with continuous interstitial space monitoring;

(ii) For pressurized piping, either an automatic mechanical in-line leak detector and an annual piping line tightness test; or an electronic in-line leak detector capable of detecting a piping leak of 0.1 gallons per hour; or

(iii) Replacement with safe suction piping designed and installed in accordance with requirements for new and replacement piping in this section and Appendix E.

(d) Where only existing piping requires leak detection, one of the following methods must be used:

(i) Secondary containment with continuous interstitial space monitoring;

(ii) For pressurized piping, an automatic mechanical in-line leak detector, and an annual piping line tightness test; or an electronic in-line leak detector capable of detecting a 0.1 gallon per hour leak;

(iii) Replacement with safe suction piping designed and installed in accordance with requirements for new and replacement piping in this section and Appendix E.

(e) Other facility leak detection systems approved by the Commissioner that can detect at least a 0.2 gallon per hour leak rate with at least a 95 percent probability and a 5 percent or less chance of false alarm, as determined by an independent testing laboratory using EPA approved testing protocols, or by other testing protocols approved by a nationally recognized independent testing organization.

(3) Overfill and spill prevention equipment must be retrofitted at all facilities constructed of fiberglass, cathodically protected steel or other noncorrosive materials approved by the Commissioner in accordance with section 5(B) by December 22, 1998.

(4) Facilities that do not comply with the retrofitting requirements of this subsection shall cease operation on the date upon which retrofitting was required, and close in accordance with section 11 of this Chapter.

(5) A dispenser system is considered new when both the dispenser and the equipment needed to connect the dispenser to the underground oil storage facility are installed. The equipment necessary to connect the dispenser to the underground oil storage facility includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser and the underground piping.

(6) The replacement of the dispenser and the equipment needed to connect the dispenser to the underground oil storage facility triggers the requirement to install a dispenser sump and continuous leak detection equipment, including leak detection sensors and alarms.

**D. Monitoring, maintenance, operating and inspection requirements**

(1) Daily inventory requirements. The owner or operator of a facility with single-walled tanks that do not have an automatic gauge system for leak detection shall maintain and reconcile daily inventory for each day that oil is being added to or withdrawn from the facility or tank.

(a) Daily inventory must be conducted so as to be able to detect a leak or discharge of at least 1 percent of throughput on a monthly basis and must include all the following:

(i) The daily measurement of product and water levels in each tank for each day product is added or removed. Measurement of product levels may be made by a stick gauge reading. Water level measurements may be made by using water paste and a gauge stick. Electronic or mechanical level measuring devices which measure product and water levels are also acceptable. Product level and water levels are to be measured to the nearest one-eighth of an inch (1/8").

(ii) The measurement of product levels, before and after any deliveries.

(iii) Product dispensing is metered and recorded within Maine Department of Agriculture, Conservation and Forestry's weight and measure standards or an accuracy of six (6) cubic inches for every five (5) gallons of product withdrawn.

(iv) Daily reconciliation of tank measurements and pump meter readings shall be performed to determine daily loss or gain of product. The reading of pump meter readings and product delivery receipts shall not in itself constitute adequate inventory records.

(v) A log book shall be kept at the facility which includes each measurement and the initials of the individual taking and recording the pump meter readings and the actual product and water level measurements.

(b) All inventory data must be summarized monthly and must include the total cumulative loss or gain for the preceding month.

NOTE: See Appendix I for an example of a daily inventory data sheet. Practices described in the API Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets", may be used, where applicable, as guidance in meeting the daily inventory requirements of this Chapter.

(2) Statistical Inventory Reconciliation

(a) On or before October 13, 2018, the owner of each single-walled tank that does not have an automatic tank gauge system for leak detection shall be responsible for having a monthly statistical inventory reconciliation performed for each of the owner’s tanks, and reporting the results of the reconciliation to the Commissioner on or before the 1st day of each month. The reconciliation must include an evaluation of the various sources of error present in daily inventory records, including the following:

(i) Identifying and removing large measurement errors;

(ii) Identifying unrecorded additions or removals of oil;

(iii) Detecting errors in metering oil from the tank;

(iv) Estimating the potential for temperature differential to induce spurious trends or conceal real trends;

(v) Establishing that residual errors contain no systematic components and reflect the normal errors of measurement;

(vi) Evaluating the quality of the data provided and the adequacy of operator procedures to detect leaks if present;

(vii) Identifying persistent daily physical loss which could be consistent with leakage; and

(viii) Determining values and dates for any delivery errors and any unexplained one time gains or losses.

(b) The report of the reconciliation results also must contain the following facility information:

(i) Name of the facility;

(ii) Municipality in which the facility is located;

(iii) Name of the owner;

(iv) Registration numbers assigned by the Commissioner to the facility and to the tanks;

(v) Certification by tank owner and the agent conducting the reconciliation that the results are true and accurate to the best of his or her knowledge; and

(vi) Dates of inventory data used in the reconciliation.

(c) The requirement for statistical inventory reconciliation must be met only if the inventory records submitted are capable of being analyzed with conclusive results. The following attributes constitute cause for invalidation of a reconciliation:

(i) Excessively large and other clearly erroneous measurements of inventory-on-hand;

(ii) Excessively large unexplained removals or additions of product;

(iii) Failure to take daily readings of inventory-on-hand;

(iv) Excessive data recording errors; or

(v) Evidence of the use of an incorrect conversion chart or persistent faulty gauging.

(d) A statistical inventory reconciliation resulting in an inconclusive finding due to poor quality product inventory readings, pump error, tank tilt or other reasons, must be redone following correction of likely errors, using new daily inventory data and submitted to the Commissioner within 30 days of receipt of the initial statistical reconciliation.

(e) All tank owners shall maintain the results of all statistical inventory reconciliation for each underground storage tank in accordance with section 5(D) (16). Only statistical inventory reconciliation by methods meeting the definition and performance standards of section 3(JJJ) shall be accepted by the Commissioner.

(3) Operation and Monitoring Requirements for Galvanic Cathodic Protection Systems

(a) All galvanic cathodic protection systems must be operated and maintained to continuously provide adequate corrosion protection to the underground metal components of the facility routinely storing or containing oil, and in a manner that ensures no leaks occur during the operational life of the facility. Adequate corrosion protection is indicated by a cathodic protection test reading of at least negative 0.85 volts. Steel composite tanks without secondary containment and continuous interstitial space monitoring must comply with this requirement.

(b) Cathodically protected steel underground storage tanks or piping that fail to achieve the minimum level of adequate corrosion protection of negative 0.85 volts or less within six (6) months after a failing reading shall be properly abandoned in accordance with section 11 of this Chapter.

(c) All cathodically protected tanks and piping must have an accurate structure to soil potential reading performed upon installation or repair and annually thereafter. The cathodic protection testing must be conducted by a qualified Certified Underground Oil Storage Tank Installer or Inspector who is approved as a cathodic protection tester in accordance with Appendix M.

(d) When repairs to cathodic protection systems are made or underground work is performed at the site, the cathodic protection shall be monitored 6 to 12 weeks after such work has been completed, to assure that the system is functioning properly. Repairs must be conducted in accordance with Appendix A and must be documented on a form developed by the Commissioner and submitted to the Department within 30 days.

(e) Monitoring must be performed in accordance with the requirements of Appendix A.

(f) Repairs of a galvanic cathodic protection system must be completed by a Maine Certified Underground Oil Storage Tank Installer within 180 days of a failed test, and in accordance with section 5(D)(14). If anodes are added to a tank, the owner shall ensure that the Maine Certified Underground Oil Storage Tank Installer submits written documentation that all repairs were conducted in accordance with the recommended practices of STI or NACE, as applicable.

(g) The results of all monitoring and repairs must be kept in a logbook in accordance with section 5(D)(16).

(4) Monitoring Requirements for Impressed Current Cathodic Protection Systems

(a) All impressed current cathodic protection systems must be operated and maintained to continuously provide adequate corrosion protection to all underground metal components of the facility routinely storing or containing oil, and in a manner that ensures that no leaks occur during the operating life of the facility. Adequate corrosion protection is indicated by cathodic protection tests, conducted in accordance with Appendix A.

(b) A monthly voltage reading and inspection of the rectifier meter on all facilities must be performed using the impressed current system of corrosion protection. All readings, inspection results and repairs must be recorded in a logbook, which must be kept in accordance with the record keeping requirements of 5(D)(16).

(c) A certified installer, or a certified inspector who has also been certified in accordance with Appendix M of this Chapter as a cathodic protection tester, shall measure the structure to soil and structure-to-structure potentials, the rectifier voltage and current output as part of an on-site test and inspection at least once per year.

(d) Repairs to an impressed current cathodic protection system must be supervised by a corrosion expert and adhere to NACE International Standards SP0285 and SP0169.

(5) Operation, maintenance and testing of in-line leak detectors. In-line leak detection devices must be maintained to properly operate in accordance with this Chapter at all times while the piping contains oil. The facility owner or operator shall ensure all in-line leak detectors are tested for proper operation in accordance with manufacturer instructions upon installation and at least once each calendar year thereafter. This test must include an assessment of proper operation by simulating a leak. Tests of in-line leak detectors must be conducted by a Certified Underground Oil Storage Tank Installer, or Inspector who is also certified by the manufacturer of the equipment, where such manufacturer certification is available. Improperly operating leak detectors must be repaired or replaced by a Certified Underground Oil Storage Tank Installer, within 30 days. A log of all tests, maintenance, and repairs must be maintained by the owner in accordance with the record keeping requirements of section 5(D)(16).

(6) Overfill and spill prevention

(a) The facility owner or operator shall ensure that a representative of the owner, operator or oil transporter is physically present during and monitors all product deliveries or transfers. The owner or operator or oil transporter must 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.

(b) Operation, maintenance and testing of overfill and spill prevention equipment. All overfill and spill prevention equipment must be maintained to properly operate at all times while the facility is in operation, and in accordance with the requirements of this Chapter. Overfill and spill prevention alarms and shutoff systems must be tested at least annually and recalibrated, if necessary, in accordance with manufacturer's instructions. Testing and recalibration must be conducted by a Maine Certified Underground Oil Storage Tank Installer, or Inspector who is also certified by the manufacturer of the equipment, if such manufacturer certification is available. Repairs of automatic overfill and spill prevention alarm and shutoff systems must be done by a Maine Certified Underground Oil Storage Tank Installer, or for certain minor repairs an Inspector in accordance with section 5(D)(14)(d), within 30 days. A log recording all tests, maintenance and repairs must be maintained by the owner in accordance with section 5(D)(16). Spill buckets must be kept clean of water and debris such that the spill buckets’ full capacity is maintained and available to catch overfills. Spill buckets must be inspected and, if necessary, cleaned before and after each product delivery.

Loading rack catchment and containment systems at new and replacement bulk plants or other distribution facilities shall be maintained by the owner or operator in accordance with API Standard 2610 and to capture an overfill or spill incident of at least the largest single compartment of a tank car or tank truck loaded or unloaded at the facility.

(c) All tanks may only be filled by way of a liquid tight connection from the delivery vehicle in accordance with National Fire Protection Association (NFPA) 30-A section 9.2.

(d) The use of fuel delivery equipment or methods that bypass or prevent overfill equipment from functioning properly is prohibited.

(e) Containment sumps must be tested every three years in accordance with section 5(D)(18) by either a Maine Certified Underground Oil Storage Tank Installer or Inspector who is also certified by the manufacturer of the equipment, if such manufacturer certification is available. Testing must be conducted in accordance with manufacturer’s instructions, or in accordance with PEI/ RP 1200 Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, or an alternate procedure approved by the Commissioner.

The following containment sumps are not required to be tested:

1. Double walled dispenser, piping sumps, and spill buckets that are installed and maintained with continuous monitoring of the interstitial space of both walls (mechanical or electronic) that are checked for alarms at least weekly by an A/B operator, and annually by a Maine Certified Underground Oil Storage Tank Installer or Inspector;
2. Single-wall spill buckets located in a single or double wall sump which provides secondary containment for the spill bucket, and when the sump is monitored at least weekly by an A/B operator, and annually by a Maine Certified Underground Oil Storage Tank Installer or Inspector; and
3. Vapor recovery buckets.

(f) Liquids used in the testing must be managed and disposed of in accordance with Appendix T and all applicable local, state and federal requirements.

(7) General operation, maintenance and testing of leak detection equipment requirements

(a) All leak detection equipment must be maintained to operate at all times while the facility contains oil, and in accordance with the performance standards of this Chapter and the manufacturer's instructions.

(b) The owner or operator must perform weekly inspections. The weekly inspections must be performed in accordance with *Operator Training for Underground Oil and Hazardous Substance Storage Facilities*, 06-096 C.M.R. ch. 693, §5.

(c) The owner or operator of a facility with electronic leak detection equipment for tanks or piping must check for alarms at least weekly, and must maintain a log of the results at the facility in accordance with section 5(D)(16).

(d) Continuous automated or electronic leak detection equipment must be tested, including a determination that all leak detection sensors are functioning properly, at least annually and recalibrated if needed. All leak detection sensors must be individually tested for proper operation following the manufacturer’s instructions. Sensors must be visually inspected for any damage. Each sensor must trip the alarm on the console to demonstrate the leak detection system is functioning properly. At least annually, conduct an inspection to determine that the probes and sensors are free of residue, the floats move freely, that the shaft is not damaged, and ensure that cables are free of kinks and breaks. Testing and recalibration must be conducted in accordance with the manufacturer's instructions by either a Maine Certified Underground Oil Storage Tank Installer, or Inspector who is also certified by the manufacturer of the equipment, if such manufacturer certification is available.

(e) Repairs of continuous, automated or electronic leak detection equipment must be conducted within 30 days by a Maine Certified Underground Oil Storage Tank Installer, or for certain minor repairs an Inspector in accordance with section 5(D)(14)(d). If the leak detection system is not properly operating within 30 days of discovery of a problem, the Commissioner must be notified in writing by the owner or operator.

(f) A log of all tests, maintenance and repairs must be maintained by the owner in accordance with section 5(D)(16).

(g) Test records must include at a minimum the following information: facility name, address and registration number, tank(s) and piping tested (tank number), test method used, test date(s), test's leak detection threshold, date and time of last product delivery, length of any applicable waiting period, product level during test, and the length of time of the test.

(8) Automatic tank gauging (ATG) systems

 (a) Testing must be conducted at a tank capacity or a range of tank capacities as specified in the equipment manufacturer’s instructions.

(b) ATG systems must monitor at the tank bottom for water level gains of more than 1/2 inch.

(c) ATG systems must be operated with a back-up system to preserve test data in the event of a power outage.

(d) ATG systems must print or record test results at least once every 30 days. Test records must be maintained in accordance with section 5(D)(16) and must include the test dates; the tests' leak detection threshold; water levels; the date and time of the last prior product delivery; the length of any applicable waiting period; product level; and test length. Annually the ATG and other controllers must be tested for proper operation, and the test must at a minimum include the following components and criteria: test alarm, verify system configuration, and test battery backup.

NOTE: Care should be taken to ensure that settings are not lost. It is a good practice to print out the ATG settings and keep them in a safe place in case power is ever lost or if they are accidentally erased. This would allow the settings to be easily reentered in accordance with manufacturer’s instructions.

(9) Precision testing

(a) Results of all annual precision tests conducted to meet the annual leak detection requirements of section 5(C)(2)(a) for an existing facility and the requirements of section 5(F) for operating beyond the tank warranty, must be submitted to the Commissioner or the Commissioner’s representative by the facility owner by July 1 of each year. Precision test results must also be maintained and be available for inspection in accordance with section 5 (D)(16) of this Chapter. Each test record must contain the following information: facility name, address, and registration number; tank(s) and piping tested (tank number); tank volume and product stored; test method used; test date; test's threshold; length of waiting period; product level during test; the actual length of time to conduct test; and the name and certification number of the supervising certified installer, if required to be present by Appendix B.

(b) The Commissioner may require precision testing as defined in this Chapter of all tanks and piping at a facility showing evidence of a possible leak, as defined in section 5(D)(10) below, or where an actual oil discharge has been discovered.

(c) Results of precision tests conducted in follow-up to evidence of a possible leak and in accordance with section 12(B) of this Chapter, must also be submitted to the Commissioner by the person conducting the test.

(10) Evidence of a possible leak or discharge

(a) Evidence of a possible leak or discharge requires further investigation to determine if an actual discharge or leak has occurred, and includes, but is not limited to, any one of the following:

(i) Monitoring results from a facility’s leak detection equipment or method indicating a possible leak, release or discharge.

(ii) Any unexplained loss or gain of 1.0 percent of the throughput of each storage system over a 30-day period, as indicated by the recording and reconciliation of daily inventory records.

(iii) Failure of a piping line tightness test, as defined in section 3(TT) or a tank tightness test as defined in section 3(LLL), which indicate a leak of 0.1 gallons per hour or greater.

(iv) Failure of a precision test as defined in section 3 (VV), other than a piping or tank tightness test which indicates a loss or gain of 0.1 gallons per hour or greater.

(v) Unexplained losses detected through a statistical reconciliation of inventory records or an indication in the statistical inventory reconciliation that the inventory data provided were insufficient to perform an accurate reconciliation.

(vi) The excessive accumulation of water in a tank evidenced by a rise in water level of greater than one-half inch (1/2") for an 8 to 12 hour period, except where the cause of the water accumulation is storm water runoff intrusion and is promptly corrected.

(vii) Presence of water-product phase separation in a single-walled tank containing ethanol.

(viii) Reduced flow in a remote pumping system equipped with an in-line leak detector, unless the system returns to normal operating flows within one hour of the first discovery that day.

(ix) Pump hesitation, vibration, meter stripping or air elimination, attributable to a loss of prime for product lines, which operate under a suction system.

(x) Evidence of the presence of oil or water entering into the interstitial space of a secondary containment facility, or a significant drop in the liquid level of a hydrostatically monitored interstitial space as specified by the tank or leak detection equipment manufacturer's instructions.

(xi) Discovery of oil or an oil sheen in a piping sump or dispenser sump, whether or not cleaned up.

(xii) A failing precision or tightness test of a spill bucket, piping sump or dispenser sump.

(11) Leak or discharge reporting requirements

(a) A tank owner or operator shall report to the Commissioner as soon as possible, but no later than within 24 hours any evidence of a possible leak or discharge of oil, including but not limited to those listed in section 5(D)(10).

(b) A Certified Underground Oil Storage Tank Installer or Inspector finding evidence of a possible leak or discharge of oil must report it to the facility owner or operator, and the Commissioner, as soon as possible, but no later than within 24 hours of discovery.

(c) Actual oil leaks and discharges, whether or not cleaned up, shall be reported to the Commissioner by the facility owner or operator, and the Certified Underground Oil Storage Tank Installer or Inspector within two (2) hours of discovery. This 2 hour reporting requirement applies to, but is not limited to, the reporting of the following:

(i) Overfills not fully captured or contained by a spill bucket or sump;

(ii) Other spills;

(iii) Visual or olfactory evidence of oil in soil or water including, but not limited to, in a tank or piping excavation, nearby surface waters, or facility ground water monitoring well;

(iv) Oil or oil vapors on or under abutting properties, including nearby utility conduits, sewer lines, buildings, and drinking water supplies; and

(v) Soil and water contamination as defined in section 3(L) , setting forth the definition of “contamination”.

NOTE: TO REPORT A LEAK, SPILL OR OTHER DISCHARGE OF OIL, CALL TOLL FREE 1‑800‑482‑0777.

(d) Notwithstanding the above, discharges of 10 or less gallons of oil that occur on the facility premises and above the surface of the ground onto a concrete or asphalt paved surface, and not reaching ground water or surface waters of the State need not be reported to the Commissioner if the owner or operator complies with all of the following requirements:

(i) The discharge is fully cleaned up within 24 hours of discovery.

(ii) A written log is maintained at the facility or the owner's place of business in accordance with section 5(D)(16), recording for each discharge the date of discovery, its source, the general location of the discharge on the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.

(iii) The spill log must be made available upon request within 24 hours for inspection by personnel and authorized agents of the Commissioner and the municipality.

(e) Under 38 M.R.S. §568(4)( A), any person who causes or is responsible for a discharge from an underground oil storage facility is not subject to any fines or civil penalties for the discharge if the person promptly reports and removes that discharge in accordance with the rules and orders of the Commissioner and the Board, except that a person who violates any laws or rules administered by the Department under 38 M.R.S. §§ 561-570-M is subject to fines and penalties.

(12) Product compatibility. Only oil and petroleum products chemically and physically compatible with the materials, from which the tank, piping and other components of the facility routinely containing product are constructed, may be stored.

A facility owner who intends to store gasoline with more than 10 percent ethanol or diesel with more than 20 percent biodiesel or any other regulated substance identified by the Department, must provide written notification to the Commissioner at least 30 days before switching products. The facility owner must maintain documentation demonstrating that the facility is compatible with these oil products by one of the following methods:

(a) UL or other nationally recognized independent testing laboratory certification or listing approved by the Commissioner;

(b) A written statement of compatibility from the equipment or component manufacturer that indicates an affirmative statement of compatibility and specifies the range of biofuel blends the equipment or component is compatible with; or

(c) Another method demonstrating compatibility of facility components and equipment with the oil product to be stored and approved by the Commissioner.

Written documentation of facility and oil product compatibility shall be maintained at the owner’s place of business for the life of the facility component or equipment.

(13) Interior relining of new and existing facilities

(a) Tanks may be relined provided that, prior to lining, the tank has passed a precision test and is free of perforations, except fiberglass tanks that have failed may be relined or repaired if the cause of failure will be completely repaired to the satisfaction of the Commissioner and a warranty is provided by the person performing the repairs. The warranty must be for a minimum of 10 years and must warranty the tanks against internal and external corrosion and structural failure. A fiberglass tank that once failed a precision test, and was subsequently lined, must be precision tested prior to be placed back in operation. If a fiberglass tank with a leak is lined, the tank must be properly abandoned pursuant to section 11 of this Chapter upon expiration of the warranty.

(b) The following requirements also apply to relining activities:

(i) After relining, fiberglass tanks must pass a precision test.

(ii) The material used as a liner must be compatible with the product to be stored in the tank.

(iii) The lining procedure must be performed in accordance with the procedures outlined in API Recommended Practice No. 1631.

(iv) Piping may not be relined.

(v) The owner of the facility shall amend the facility's registration in accordance with section 4(M) of this Chapter and maintain records of relining for the remaining operating life of the lined tank that demonstrate compliance with section 5(D)(13).

(14) Repairs other than relining

(a) Repairs are allowed in accordance with this paragraph to tanks and piping constructed of fiberglass, cathodically protected steel and other noncorrosive materials approved by the Commissioner.

(b) Repairs of corrosion induced or product incompatibility caused leaks are prohibited. Tanks and piping with corrosion or chemical reaction induced leaks must be closed in accordance with section 11.

(c) Repairs, other than those prohibited in paragraph (b) above, to fiberglass, cathodically protected steel and other approved noncorrosive material tanks and piping must be properly conducted by a BUSTI Certified Underground Oil Storage Tank Installer who is also certified by the manufacturer, or by the manufacturer's authorized representative under the supervision of a Maine Certified Underground Oil Storage Tank Installer. A Maine Certified Underground Oil Storage Tank installer must also be certified by the tank or piping manufacturer, when such manufacturer certification is available, to conduct a repair on a tank or piping without a representative of the manufacturer, so not o void the manufacturer warranty.

(d) Repairs of a facility leak detection system, overfill prevention equipment or other ancillary equipment including containment sumps must also be conducted by an underground oil storage tank installer certified by the BUSTI and by the manufacturer of the equipment being repaired, when such manufacturer certification is available.

The following minor repairs of existing equipment or components, when not requiring excavation, may be conducted by an underground oil storage tank inspector certified by the BUSTI and by the manufacturer of the equipment being repaired, when such certification by the equipment manufacturer is available:

(i) Replacement of a defective mechanical or electronic line leak detector with one of the same design;

(ii) Replacement of a drop tube;

(iii) Replacement of a drop tube overfill prevention device with one of the same design; and

(iv) Replacement of a leak detection system sensor or control panel with one of the same make and model.

(e) Containment sumps must be tested for tightness immediately following a repair in accordance with *Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities,* PEI RP 1200, the manufacturer’s instructions, or an alternative procedure approved by the Commissioner. If the repair consists only of replacement of a lid, sump testing is not required.

(f) Tank and piping repairs are to be conducted in accordance with manufacturer specifications or in accordance with the National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code".

(g) Repairs jeopardizing the manufacturer's original warranty are prohibited.

(h) Repaired tanks and piping must be tested before going back into operation, in accordance with the manufacturer’s instructions.

(i) Repairs to a cathodic protection system must be conducted in accordance with the NACE International Standard Practices SP0285 and SP0169, and in accordance with the following requirements:

(i) Field coated cathodically protected steel underground piping may not be repaired and must be properly abandoned in accordance with section 11, except for broken wiring;

(ii) Repairs to a galvanic cathodic protection system must be conducted by a Certified Underground Oil Storage Tank Installer; and

(iii) Repairs to an impressed current, cathodic protection system must be supervised by a corrosion expert and a Maine Certified Underground Oil Storage Tank Installer.

(j) Within 6 to 12 weeks of a repair to a cathodic protection system, the owner or operator shall have the system tested by a Certified Underground Oil Storage Tank Installer, or Certified Inspector also certified as a cathodic protection tester in accordance with Appendix A.

(k) Owners must maintain records of each repair of the type listed in section 5(D)(14) for the remaining life of the facility.

(15) Financial responsibility requirements

(a) The owner or operator of a new, replacement or existing tank or facility shall demonstrate to the Commissioner that the owner or operator has the ability to assure the costs of corrective action and for compensating third parties for bodily injury, property damage and loss of income caused by sudden and non-sudden releases, leaks or discharges from an underground oil storage facility. For the purposes of (b) and (c) below, an underground oil storage tank means a single containment unit and does not mean combinations of single containment units.

(b) Owners or operators shall maintain an ability to assume financial responsibility in accordance with this Chapter in at least the following per-occurrence amounts.

(i) Owners or operators of all marketing or distribution facilities and motor fuel facilities that handle an average of more than 10,000 gallons of oil per month based on the previous year's throughput shall maintain $1 million.

(ii) All other owners or operators of marketing, distribution and motor fuel underground oil storage facilities shall maintain $500,000.

(c) Owners or operators shall maintain an ability to assume financial responsibility in accordance with this Chapter in at least the following annual aggregate amounts.

(i) For owners or operators of one (1) to 100 tanks, $1 million; and

(ii) For owners or operators of 101 or more tanks, $2 million.

(d) The amounts of assurance required under this section exclude legal costs.

(e) All references below to the EPA’s financial responsibility regulations are from the July 1, 2018 version of *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)*, 40 C.F.R. pt. 280. The definitions contained in 40 C.F.R. §280.92 as well as the drawing on financial assurance mechanisms of 280.112 are also incorporated. The definition for “occurrence” in section 3(NN) of this chapter is adopted in lieu of the definition of “occurrence” in 40 C.F.R. §280.92.

(f) A facility owner or operator may use any one or combination of the financial responsibility mechanisms listed below in meeting the requirements of paragraphs a through d above and EPA's financial responsibility requirements for underground storage tanks containing petroleum:

(i) Self insurance meeting the financial test of self insurance under 40 C.F.R. §280.95;

(ii) Guarantee meeting the requirements of 40 C.F.R. §280.96;

(iii) Liability insurance or risk retention group coverage meeting the requirements of 40 C.F.R. §280.97;

(iv) Surety bond meeting the requirements of 40 C.F.R. §280.98;

(v) Letters of credit meeting the requirements of 40 C.F.R. §280.99;

(vi) Trust fund meeting the requirements of 40 C.F.R. §280.102; or

(vii) The Maine Ground and Surface Waters Cleanup and Response Fund in accordance with the eligibility requirements and financial assurance limits of the *Oil Discharge Prevention and Pollution Control Law,* 38 M.R.S. §551 and the *Oil Storage Facilities Groundwater Protection Law,* 568-A, in combination with one or more of the other above mechanisms to assure full coverage of third party damage liability in accordance with the minimum financial assurance requirements of sections 5(D)(15)(a) and 5(D)(15)(b) above.

(viii) Standby trust fund meeting the requirements of 40 C.F.R. §280.103 when an owner or operator uses any one of the mechanisms authorized by 40 C.F.R. §§ 280.96 (guarantee), 280.98 (surety bond), or 280.99 (letter of credit). This standby trust fund must be established when the financial assurance mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(g) Municipalities, counties, school administrative districts and Indian tribes may use, in addition to the mechanisms listed in paragraph (f) above, any one or combination of the following financial assurance mechanisms:

(i) Local government bond rating test in accordance with 40 C.F.R. §280.104;

(ii) Self insurance when meeting the local government financial test and the provisions of 40 C.F.R. §280.105;

(iii) Local government guarantee meeting the requirements of 40 C.F.R. §280.106; and

(iv) A local government dedicated trust fund meeting the requirements of 40 C.F.R. §280.107.

(h) An owner or operator may replace one financial assurance mechanism for another, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfy the requirements of this section 5(D)(15).

(i) Financial assurance mechanisms may be canceled or not renewed in accordance with 40 C.F.R. §280.109.

(j) The facility owner or operator shall maintain financial responsibility records at the facility or at the owner's place of business in accordance with 40 C.F.R. §280. 111.

(k) In the event of bankruptcy or other financial responsibility incapacity of the facility owner or operator, or a provider of financial assurance; the notification and financial responsibility replacement requirements of 40 C.F.R. §280.114 must be met.

(l) An owner or operator is no longer required to maintain financial responsibility under this Chapter after a tank or facility has been properly and permanently closed in accordance with section 11 of this Chapter, and if corrective action is required by the Commissioner, after the corrective action has been completed to the Commissioner's satisfaction and in accordance with section 12 and other rules or orders of the Commissioner and Board.

(m) If at any time a standby trust is funded upon the instruction of the Department with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall replenish the value of financial assurance to equal the full amount of coverage required or acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(n) An owner or operator may use self insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this Chapter, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

(o) The Commissioner may require an owner or operator to submit evidence of financial assurance as described in 40 C.F.R. §280.110 and 280.111(b) or other information related to compliance with the financial responsibility requirements at any time.

(16) Maintenance of records. All logs, monitoring results and other records required by this section must be maintained for a minimum of three (3) years. Except where specifically stated otherwise, facility records must be kept at the facility or the owner’s primary place of business, and made readily available to the Commissioner, the Commissioner’s representatives and agents, and municipal officials within 48 hours.

(17) Annual compliance inspection requirements. The owner of a facility is responsible for ensuring that the entire facility is inspected annually for compliance with the applicable requirements of this Chapter, 38 M.R.S. §§ 561-570-M, and Department rules regarding stage I gasoline balance systems contained in *Gasoline Dispensing Facilities Vapor Control,* 06-096 C.M.R. ch. 118, where applicable. The owner shall have any deficiencies detected during an inspection corrected as necessary to bring the facility into compliance with the requirement cited above.

The first annual inspection for a new facility must be conducted no later than 12 months after the date the installation is certified as complete.

For all existing facilities, the facility owner shall submit annual inspection results to the Commissioner on each July 1st, unless the Department agrees to an alternate schedule for submittal that is no less frequent than once every 12 months.

The inspection results must be recorded on a form provided by the Commissioner and must include a certification statement, signed by an underground oil storage tank installer or inspector certified by BUSTI. The statement must certify that the entire facility was inspected and any deficiencies discovered have been corrected. Inspection and correction records must also be maintained in accordance with section 5(D)(16). The owner shall submit the completed form to the Department no more than 30 days after the date on which the inspection was completed.

At least once every 3 years thereafter, the annual inspection of each tank must be performed by a Certified Underground Oil Storage Tank Installer or Inspector who is not the tank owner or operator, an employee of the tank owner or operator or a person having daily on-site responsibility for the operation and maintenance of the tank.

(18) Containment sump testing requirements. The owner of a facility is responsible for ensuring that all sumps are tested every 3 years. In addition, a sump must be tested upon installation and completion of any repairs to ensure the containment sump is liquid tight. Containment sumps must be tested in accordance with *Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities,* PEI RP 1200, the manufacturer’s instructions, or an alternative procedure approved by the Commissioner. The compliance schedule as specified below shall be based upon the date of the oldest tank at the facility. The owner shall have any failures detected during testing corrected as necessary within 30 days to ensure the containment sump is liquid tight except as provided in 5(D)(18)(e) below.

The facility owner shall submit all containment sump test results to the Commissioner within 30 days after the date on which the testing was completed. If an individual passing containment sump test was completed within 6 months of the 3-year testing schedule, this early test may satisfy the 3-year containment sump testing requirement. The sump test results for all containment sumps (including any completed 6 months previous to the 3-year testing timeframe) must be reported on a single 3-year containment sump test results form. The 3-year testing timeframe will remain unchanged irrespective of any early testing of an individual containment sump.

1. Test results for containment sumps that were installed before October 13, 2018 must be submitted on the following schedule and every 3 years thereafter:
2. For tanks installed in sensitive geologic areas prior to January 1, 1995, submit results for containment sump testing by December 1, 2019;
3. For tanks installed in non-sensitive areas prior to January 1, 1995, submit results for containment sump testing by December 1, 2020;
4. For tanks installed in sensitive geologic areas between January 1, 1995 and October 13, 2018, submit results for containment sump testing by August 1, 2021; and
5. For tanks installed in non-sensitive areas between January 1, 1995 and October 13, 2018, submit results for containment sump testing by December 1, 2021.
6. Containment sumps for tanks installed after October 13, 2018 must be tested upon installation and at least every three years after the installation is complete. The sensor, must be programmed to sound an alarm, and a sensor may be installed that will shut off the relevant dispenser.

NOTE: When all tanks are removed at a site and new tanks are installed, a new 3 year containment sump testing schedule would begin in accordance with section 5(D)(18)(b) above.

1. The test results must be recorded on a form provided by the Commissioner and must include a certification statement, signed by an underground oil storage tank installer or inspector certified by BUSTI. Such certification must certify that all containment sumps were tested and any deficiencies discovered have been corrected. Inspection and repair records must be maintained in accordance with section 5(D)(16). All repairs must be completed prior to the reporting deadline.
2. The Department may on a case by case basis require low level tightness testing (sump floor to 4 inches above the sensor) or high level tightness testing (sump floor to 1 ½ inches below the top of spill bucket or 4 inches above the highest penetration or seam in the sidewall for other sumps) of containment sumps, and/or may require single-wall containment sumps to be equipped with leak detection sensors that will shut off electrical power to the dispenser of any containment sump that is not being properly monitored, or is not liquid tight.
3. If a tank top, dispenser, or piping containment sump cannot pass the high level tightness test and repairs or replacement cannot occur within 30 days, a low level tightness test must be conducted. The low level test is conducted in accordance with PEI RP 1200, except that the sump test fluid is added to 4 inches above the sensor. An electronic sensor must be installed that is tied to a pump interface to shut down the relevant submersible pumps (pressure systems) or the suction pumps (suction systems) in the event that a leak is detected. This sensor must shut down all submersible/suction product pumps entering the affected containment sump. If the containment sump does not pass a low level tightness test, the sump must be repaired or replaced within 30 days or an alternative schedule approved by the Department.

A containment sump operating under a passing low level tightness test must be:

(i) repaired within 120 days of the failing high level tightness test, or

(ii) replaced within 180 days or an alternate schedule approved by the Department, of the failing high level tightness test.

NOTE: Under 38 M.R.S. §565-A, the Commissioner may issue an administrative order to enforce the annual inspection requirements above. Such orders may include ceasing receipt of product deliveries to, and the overall operation of, the portion of the facility in violation of this requirement.

(19) Safe excavation requirements

(a) This section applies to excavation activities on the facility premises and associated with its operation and maintenance.

(b) To ensure adequate protection of public safety and the maintenance of the structural integrity of the facility in accordance with the requirements of this Chapter, the owner of a facility shall have a Certified Underground Oil Storage Tank Installer present to supervise the excavation and replacement of a concrete pad, back fill, or soil within 10 feet of an underground oil storage tank or facility product piping. The Certified Underground Oil Storage Tank Installer shall be present at all times when such work is being performed. No person other than a Certified Underground Oil Storage Tank Installer may supervise the above activities.

(c) The underground oil storage tank installer shall have the appropriate class of certification in accordance with 32 M.R.S. §§ 10001-10016.

(d) In accordance with NFPA 30 and 30-A, no excavation, or other activities that may act as a source of ignition of flammable vapors at a Class 1 liquid dispensing facility shall occur within 20 feet of the fueling dispenser hose and nozzle when fully extended, unless the electrical power supply to the dispenser has first been turned off and all fueling operations from that dispenser have ceased.

(e) A written record must be maintained by the facility owner of the excavation date(s) and location, and the name and certification number of the supervising underground oil storage tank installer.

NOTE: Any discharge caused by or discovered in the course of an excavation must be reported in accordance with section 5(D)(11).

**E. Facility closure and abandonment.** The closure, abandonment or temporary discontinuance of service of a facility or any part thereof must be conducted in accordance with section 11.

1. **Mandatory facility closure upon expiration of warranty.** In accordance with 38 M.R.S. §564(5), a tank and its associated piping must be taken out of operation and properly abandoned in accordance with section 11 upon the expiration date of the tank warranty unless the tank, its associated piping and other facility components meet the requirements of this section. For the purpose of this subsection, when the length of the tank warranty is either unknown or the tank was installed after January 1, 2008, the tank will be deemed to have a tank warranty of 30 years from the date of installation.

NOTE: Many steel USTs sold and installed after January 1, 2008 only have a 10 year tank warranty unless the owner purchased an additional 20 years of warranty from manufacturer.

(1) Double-walled tanks. A double-walled tank may remain in service up to 10 years beyond the expiration date of its original tank warranty if the facility meets the following requirements:

(a) The tank interstitial space and its associated piping, spill bucket and sumps pass a precision test in the 6 months immediately prior to the expiration of the warranty. Testing must be conducted in accordance with the requirements of Appendices B and T;

(b) Single-walled pressurized piping connected to the tank is replaced with single-walled safe suction piping or with double walled piping and leak detection meeting the requirements of sections 5(B) and (D);

(c) The tank and its associated piping and other facility components are equipped and operated in accordance with the requirements for leak detection monitoring, overfill protection and spill protection in accordance with sections 5(B) and 5(D);

(d) A passing annual inspection report has been submitted to the Commissioner in accordance with section 5(D)(17) in the 12 months immediately preceding the expiration date of the tank’s original manufacturer warranty, and there is no continuing unexplained evidence of a possible leak;

(e)The facility registration is amended in accordance with section 4(M**);** and

(f) The tank interstitial space and associated piping, spill bucket and sumps pass an annual precision test in the 6th, 7th, 8th and 9th year following the expiration of the tank warranty.

(2) Corrosion-resistant single-walled tanks. A single-walled tank constructed of fiberglass, cathodically protected steel or another equally noncorrosive material approved by the Commissioner and has not been out of service for more than 12 consecutive months may remain in service up to 10 years beyond the expiration date of the original tank warranty when the tank is retrofitted with secondary containment and meeting the following requirements:

(a) The original tank and its associated piping, spill bucket and sumps pass a precision test in the 6 months immediately prior to the expiration of the tank warranty;

(b) A passing annual inspection report has been submitted to the Commissioner in accordance with section 5(D)(17) in the 12 months immediately preceding the expiration date of the tank’s original manufacturer warranty, and there is no continuing unexplained evidence of a possible leak;

(c) The facility registration is amended in accordance with section 4(M);

(d) Prior to submitting the registration amendment and initiating the required tank retrofit, a site assessment is conducted in accordance with the below items to determine whether oil contamination from historical discharges underlies the tank:

(i) A soil boring is installed into the ground water table or to first refusal, whichever is shallower, and as close as feasible to, but no further than 10 feet from the tank, on all four sides;

(ii) A Maine Certified Underground Oil Storage Tank Installer must be present to supervise the installation of the borings in accordance with section 5(D)(19);

(iii) As the borings are advanced, soil samples must be collected and screened continuously using a field analytical method for oil in soils approved by the Commissioner;

(iv) One soil sample from above the ground water table with the highest screening result must be collected for laboratory analysis using the Massachusetts Department of Environmental Protection Petroleum Hydrocarbon Fractions Analytical Method, Version 1.1, 2004, for volatile and extractable petroleum hydrocarbons, as applicable, based on which types of oil were historically stored in the tank;

(v) A ground water sample must be collected from each boring in which ground water is encountered for field evaluation for the presence of free product;

1. Evidence of a possible leak or discharge of oil is reported by the facility owner or operator within 24 hours of discovery in accordance with Appendix P; and
2. Submission of the testing results and their interpretation by a Maine certified geologist or licensed professional engineer with the facility registration amendment.

(e) The secondary containment retrofit system is constructed and installed in accordance with UL Standard 1316 or UL 1856;

(f) The tank secondary containment retrofit system is installed in accordance with the manufacturer’s specifications and by a manufacturer certified installer or representative in collaboration with a Maine Certified Underground Oil Storage Tank Installer;

(g) The tank and its associated piping and other facility components are equipped and operated in accordance with the requirements for leak detection monitoring, overfill prevention and spill prevention under sections 5(B) and 5(D);

(h) The cathodic protection system of steel tanks continues to be maintained and monitored in accordance with section 5(D) except for self-structural retrofit systems;

(i) Prior to the expiration of the original tank warranty, single-walled pressurized piping connected to the tank is replaced with piping and leak detection monitoring meeting the requirements of section 5(B) and 5(D); and

(j) The tank interstitial space and associated piping, spill bucket and sumps pass an annual precision test in the 6th, 7th, 8th and 9th year following the expiration of the original tank warranty.

1. Precision testing required to allow a tank to remain in service after the expiration of the original manufacturer warranty must be conducted and the results reported to the Commissioner in accordance with section 5(D) and Appendix B. Passing precision test results must be submitted as part of the facility registration amendment. Precision testing as specified in paragraphs 1 or 2 above is not required of a double-walled tank monitored by a continuous hydrostatic or vacuum leak detection system meeting the requirements. The piping, however, must be tested as required above.
2. Delayed facility closure and abandonment. Upon expiration of the extended tank operating life provided under this subsection, the tank and the associated piping installed 10 or more years prior are to be abandoned in accordance with section 11 of this Chapter.

**6. Regulation of heating oil facilities used for consumption on the premises or by the owner or operator**

**A. Applicability**

(1) This section applies to all underground heating oil or process oil storage facilities used for consumption on the premises or by the owner or operator of the facility.

(2) This section does not apply to motor fuel, marketing, distribution facilities, waste oil facilities, field constructed tanks or heavy oil facilities except where specifically stated otherwise.

**B. Design and installation requirements for new and replacement facilities**

(1) General design requirements

(a) The installation of new or replacement tanks and piping constructed of bare steel or asphalt coated steel is prohibited.

(b) All new and replacement tanks must be constructed of fiberglass reinforced plastic (hereafter referred to as fiberglass), cathodically protected steel, or other noncorrosive material approved by the Commissioner. Piping and other below ground ancillary equipment in contact with soil or water must be constructed of fiberglass, cathodically protected steel or other equally noncorrosive materials approved by the Commissioner.

(i) It is the responsibility of the facility owner to demonstrate to the satisfaction of the Commissioner that the materials are noncorrosive and meet or exceed the required performance standards listed below in this paragraph.

(ii) All new or replacement facilities must be listed and constructed in accordance with the standards contained in the following:

* Fiberglass Tanks –
	+ UL Standard 1316, Glass-Fiber- Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols and Alcohol-Gasoline Mixtures; or
	+ ULC S615, Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids;
* Cathodically Protected Steel Tanks–
	+ STI sti-P3® Specification and Manual for External Corrosion Protection of Underground Storage Tanks;
	+ UL Standard 1746, Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks;
	+ ULC S603, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, and S631, Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protections Systems;
	+ (STI Standard F841, Standard for Dual Wall Underground Steel Storage Tanks;
	+ NACE International, SP0285, Corrosion Control of Underground Storage Systems by Cathodic Protection, and UL Standard 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids; or
	+ PEI RP-100.
* Steel Clad or Jacketed Tanks –
	+ UL 1746;
	+ STI Composite Tank Standard (F894‑02); or
	+ STI Specification F922, STI Specification for Permatank;
* Non-Metallic and Fiberglass Piping – UL Standard 971, Standard for Non-metallic Underground Piping for Flammable Liquids, or ULC Standard S660, Standard for Non-metallic Underground Piping for Flammable Liquids. Pipe Connectors ‑ UL Standard 567.
* Flexible Connectors ‑ ULC Standard ULC/CAN -S633.
* Steel Piping –
	+ NFPA 30 or 31;
	+ API Publications 1632, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems;
	+ NACE International Standard SP 0169, Control of External Corrosion on Underground or Submerged Metallic Piping Systems or NACE SP0285, External Corrosion Control of Underground Storage Tank systems by Cathodic Protection;
	+ STI R982, Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Petroleum Storage and Dispensing Systems; or
	+ API Publications 1632, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems.

NOTE: Fiberglass clad steel and other steel composite tanks need not be provided with galvanic or impressed current cathodic protection if designed and constructed with secondary containment and interstitial space monitoring in accordance with standards of this subsection.

(iii) Impressed current cathodic protection systems shall be designed by a corrosion expert and according to standards described in the NACE Standard Practices SP0285 and SP0169, and installed under the supervision of a corrosion expert. Other portions of the facility may be installed by a Maine Certified Underground Oil Storage Tank Installer without such supervision.

(c) Used or previously installed fiberglass or cathodically protected tanks may not be re-installed unless the owner has supplied the Commissioner with satisfactory documentation that the manufacturer will warranty the tanks against internal and external corrosion and structural failure, for a period of at least 10 years, after which the tanks must be properly abandoned in accordance with section 11. Reinstallation of a tank requires an amendment of the facility registration in accordance with section 4(M). The warranty documentation shall accompany the submission of the registration amendment. Used piping may not be reinstalled.

(d) All facility construction materials must be chemically and physically compatible with the product to be stored.

(2) Leak detection. All new and replacement facilities must be provided with secondary containment for all facility components routinely containing product, including tanks, product piping (including supply and return lines) and below ground ancillary equipment. New and replacement tanks and product piping must have continuous interstitial space monitoring. Interstitial space monitoring for heating oil facilities must be able to detect a loss or gain in the interstitial space from a leak in primary or secondary containment structure. Leak detection probes are to be installed at the lowest point of each leak monitoring location.

(3) Overfill and spill prevention equipment. New and replacement tanks with a capacity in excess of 1,100 gallons must have the following spill and overfill prevention equipment:

(a) A liquid tight spill catchment basin, sealed around each tank fill pipe and having a minimum capacity of 15 gallons to collect spillage during product delivery; and

(b) Overfill prevention equipment that will automatically shut off flow into the tank when the tank is no more than 95 percent full, or alert the transfer operator when the tank is no more than 90 percent full by restricting flow into the tank or triggering a high-level audible alarm. The use of ball float valves for overfill prevention is prohibited on a tank that will receive pressurized oil deliveries because of the danger of rupturing the tank or overfilling the fill pipe. The installation of ball float valves is prohibited after October 13, 2018.

(c) All tanks may only be filled by way of liquid tight connection from the delivery vehicle.

(d) The use of fuel delivery equipment or methods that bypass or prevent overfill equipment from functioning properly is prohibited.

(4) General installation requirements for new and replacement facilities

(a) No underground oil storage facility or tank may be installed unless the facility has been registered in accordance with section 4.

(b) No person may install an underground oil storage facility or a portion thereof unless that person is a properly Certified Underground Oil Storage Tank Installer with the appropriate class of certification in accordance with 32 M.R.S. §§10001 - 10016 and has paid the required certification fee.

(c) A Certified Underground Oil Storage Tank Installer may not install an underground storage tank if the installer has been placed on inactive status or if the installer's certification has been suspended or revoked under 32 M.R.S. §10015, and has not been reinstated.

NOTE: No person may connect an underground storage tank used to store heating oil to a boiler or furnace unless that person is a master oil burner technician or a journeyman oil burner technician working under the supervision of a master oil burner technician licensed by the *Maine Fuel Board,* 32 M.R.S. §§ 18131-18144, and rules administered by the Maine Fuel Board.

(d) If a tank is replaced, all associated underground piping not meeting the design requirements of this Chapter must be replaced. Any replacement piping must be designed and installed in accordance with this Chapter. If product piping is replaced and structural damage to the associated tank has occurred, impairing its physical integrity, the associated tank must also be replaced if not constructed of fiberglass, cathodically protected steel, or other noncorrosive materials approved by the Commissioner. Repairs of damaged fiberglass, cathodically protected steel, and other Commissioner approved noncorrosive material tanks may only be made if conducted in accordance with sections 5(D)(13) or (14). Tanks that cannot be repaired must be abandoned in accordance with section 11.

(e) An accurate structure to soil potential measurement must be performed by a Certified Underground Oil Storage Tank Installer or a certified cathodic protection tester in accordance with Appendix A upon installation of all galvanic cathodic protection systems.

(f) All phases of the installation of an impressed current cathodic protection system must be supervised on-site by a corrosion expert. The tank, piping and other portions of the facility other than the impressed current system may be installed by a Maine Certified Underground Oil Storage Tank Installer without such supervision.

(g) No underground oil storage tank or piping may be installed within 1 foot of the bedrock surface.

(h) Leak detection and overfill/spill prevention alarms and shutoff equipment must be installed and operational prior to the start of the facility's operation and in accordance with manufacturer specifications, including proper calibration of electronic equipment.

(i) Certification of installation. Owners of new and replacement facilities shall ensure that the installers certify to the Commissioner, within 30 days of completion of installation, that the facility materials, design and installation comply with the requirements of this Chapter. This certification must be provided in writing on a form provided by the Commissioner.

(j) The facility owner shall ensure that no permanent structures, underground utilities or other objects are installed or constructed in proximity to the tank if such structures, utilities or other objects will impede safe removal of the tank as determined by a Maine Certified Underground Oil Storage Tank Installer or a Maine registered engineer.

(k) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

(5) Installation requirements for new and replacement tanks.

(a) All tanks must be installed in conformance with the requirements of Appendix D.

(b) All tanks must be installed in accordance with the manufacturer's instructions.

(6) Installation requirements for new and replacement piping.

(a) All underground piping in contact with soil or water must be installed in conformance with Appendix E.

(b) All underground piping in contact with soil or water must be constructed of fiberglass, cathodically protected steel or other noncorrosive materials approved by the Commissioner.

(i) For #1 and #2 heating oil facilities, copper piping meeting, the requirements of National Fire Protection Association Code 31, Installation of Oil Burning Equipment, may be used for supply and return lines. All connections between a cathodically protected steel tank and the copper piping must incorporate dielectric fittings that electrically isolate the tanks from the piping.

(ii) Schedule 40 polyvinyl chloride (PVC) piping may be used for secondary containment for #2 heating oil facilities if it is at least twice the diameter of the internal piping.

(iii) When installing copper piping inside fiberglass, PVC or other piping to provide secondary containment, supply and return lines must be provided with spacers to separate the lines and prevent wear due to vibration and friction.

NOTE: Primary pipe spacers can be provided by using 6-inch lengths of 1/4 inch thick polyethylene foam tubing insulation placed every 10 feet of pipe.

(iv) It is the responsibility of the facility owner to demonstrate to the satisfaction of the Commissioner the materials are noncorrosive.

(v) All new or replacement non-metallic piping must be listed by UL and installed in accordance with manufacturer instructions. Cathodically protected piping must be constructed and installed in conformance with the National Association of Corrosion Engineers, Standard Practice, Publication No. SP0285, or STI Standard RP 892.

(vi) Secondary containment and cathodic protection of vertical, direct drop fill pipes is not required if the fill pipe is constructed of Schedule 40 steel and is uniformly coated with a minimum of 1/8 inch of fiberglass resin, bitumastic coating or epoxy coating. The pipe surface must be properly prepared and the coating allowed to cure. Offset fill pipes require secondary containment and interstitial space monitoring. Where secondary containment with interstitial space monitoring is not technically feasible, another leak detection system may be used upon prior approval of the Commissioner.

**C. Operation, maintenance, testing and inspection requirements for new, replacement and existing facilities**

(1) The owner or operator shall report any evidence of a possible leak or discharge, as defined in section 5(D)(10) to the Commissioner within 24 hours of discovery. A Certified Underground Oil Storage Tank Installer or Inspector finding evidence of a possible leak or oil discharge must report it to the facility owner or operator, and the Commissioner, as soon as possible, but no later than within 24 hours of discovery. Actual oil leaks and discharges as defined in section 5(D)(11) shall be reported to the Commissioner by the facility owner or operator, and the Certified Underground Oil Storage Tank Installer or Inspector within two (2) hours of discovery.

 Notwithstanding the above, discharges of 10 or less gallons of oil that occur on the premises and above the surface of the ground onto a concrete or asphalt paved surface, and that do not reach ground water or surface waters of the State need not be reported to the Commissioner if the owner or operator complies with all of the following requirements:

(a) The discharge is cleaned up within 24 hours of discovery.

(b) A written log is maintained at the facility or the owner's place of business recording for each discharge the date of discovery, its source, the general location of the discharge on the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.

(c) The log is readily available for inspection upon request by personnel and authorized agents of the Commissioner within 24 hours.

NOTE: To report a leak or discharge at any time 24 hours a day, 7 days a week, call 1-800-482-0777.

(2) If a facility has a cathodic protection system, it must be operated, monitored and maintained in accordance with section 5(D)(3) or (D)(4).

(3)(a) For existing facilities with ground water monitoring wells for leak detection, the monitoring wells must be checked weekly by withdrawing a sample from each monitoring well on site and examining the sample visually for a sheen or other evidence of oil, and by smelling the sample for the odor of "oil." Weekly sampling shall be performed in accordance with the procedures required in Appendix H, and the results recorded in a logbook.

NOTE: A sample log sheet is provided in Appendix H.

(b) Upon discovery of any evidence of a possible leak or discharge as defined in section 5(D)(10) of this Chapter, the owner of the tank shall notify the Commissioner as soon as possible but not later than 24 hours from the time of discovery. The tank owner shall then obtain samples from all ground water monitoring wells for laboratory analysis in accordance with the procedures required in Appendix H. Investigation and corrective action requirements of section 12 of this Chapter must be followed.

(c) Where laboratory analysis is required, all monitoring wells must be sampled and the samples analyzed in accordance with the requirements of Appendix S of this Chapter. The results of all hydrocarbon analysis must be maintained in accordance with section 5(D)(16). The detection of hydrocarbons in concentrations exceeding the laboratory reporting limits must be reported to the Commissioner by the facility owner or operator as soon as possible, but not later than 2 hours from the time of discovery.

(4) The owner or operator of a facility with electronic leak detection equipment for tanks or piping shall check for alarms at least monthly, and maintain a log at the facility, including the date, the presence or absence of evidence of a leak or discharge and the name of the individual conducting the test.

(5) Continuous interstitial space or other continuous leak detection monitoring equipment must be maintained in accordance with section 5(D).

(6) The owner or operator shall operate and maintain the spill prevention and overfill prevention equipment to ensure it is operating properly at all times in accordance with the requirements of section 5(D).

(7) The owner or operator shall operate and maintain the cathodic protection systems in accordance with the requirements of section 5(D).

(8) Tanks only may be relined in accordance with section 5(D)(13). Other facility repairs must be conducted in accordance with section 5(D)(14).

(9) Oil product may not be stored in a facility of a design or construction with which it is not chemically or physically compatible.

(10) The owner shall conduct an annual compliance inspection of the facility, correcting any deficiencies found, in accordance with section 5(D)(17).

(11) Underground oil storage tanks connected to a heating system that also uses an alternative fuel must be designed and operated in accordance with this Chapter including the annual inspection requirement, and must be ready to operate. The underground oil storage tank system must be connected to the burner and the burner must be operated at least once per year to remain in service.

(12) Maintenance of records. All facility records and logs required by this Chapter must be maintained and available in accordance with section 5(D)(16).

**D. Facility closure and abandonment.** Closure, abandonment, or temporary discontinuance of service of a facility or any part thereof must be in accordance with section 11.

**7. Regulation of facilities for the underground storage of waste oil**

**A. Applicability**

This section applies to any person, except a waste oil dealer, who stores or proposes to store waste oil in underground tanks. Waste oil dealers are subject to the Maine *Waste Oil Management Rules,* 06-096 C.M.R. ch. 860.

**B. Design and installation standards for new and replacement facilities**

(1) All tanks and associated piping used for the underground storage of waste oil must be registered in accordance with section 4.

(2) The installation of new and replacement tanks constructed of bare steel or asphalt coated steel is prohibited.

(3) All new and replacement tanks must be installed by an underground oil storage tank installer who has been properly certified pursuant to 32 M.R.S. §§ 10001-10016.

(4) New and replacement waste oil tanks, associated piping and other facility components routinely containing oil must be equipped with secondary containment with continuous interstitial space monitoring, designed and installed in accordance with section 5(B) except as provided below.

(5) Piping for a new or replacement waste oil facility supplying a waste oil furnace or boiler may not use PVC piping for secondary containment but instead must be constructed of fiberglass, cathodically protected steel or other noncorrosive materials approved by the Commissioner.

(6) Fill and removal pipes at new and replacement facilities must be installed with a spill bucket with a capacity of at least 15 gallons with a liquid tight seal around the fill pipe that will collect spillage during product delivery or withdrawal.

(7) In addition to the siting restrictions of the Department’s *Rules for Siting Oil Storage Facilities*, 06-096 C.M.R. ch. 692, and the *Wellhead Protection Law,* 38 M.R.S. §§ 1391 -1400, new and replacement underground waste oil facilities may not be located in the following areas:

(a) Beneath a building or other permanent structure; or

(b) Within 25 feet of a classified body of surface water.

(8) No used or previously installed fiberglass, cathodically protected steel, or other tank meeting section 5(B) of this Chapter may be re-installed unless the owner has provided the Commissioner with satisfactory documentation that the manufacturer will warrant the tank or piping against internal and external corrosion and structural failure for a period of 10 years, after which the tank or piping must be properly abandoned in accordance with the requirements of section 11. Reinstallation of a tank or piping requires an amendment of the facility registration in accordance with section 4(M). The warranty documentation shall accompany the submission of the registration amendment. Used piping may not be reinstalled.

(9) Certification of proper installation. Owners of new and replacement facilities shall ensure that the installer(s) provides certification to the Commissioner within 30 days of completion of installation that the facility's materials, design and installation are in compliance with the requirements of this Chapter. This certification must be provided in writing on a form provided by the Commissioner.

(10) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

**C. Operation, maintenance, testing and inspection requirements for existing, new and replacement facilities**

(1) All cathodically protected steel tanks, piping and other ancillary equipment must be operated, and maintained in accordance with section 5(D)(3) or (D)(4), and Appendix A.

(2) Leak detection and overfill and spill prevention systems must be operated and maintained in accordance with the requirements of section 5(D).

(3) The owner or operator shall report to the Commissioner any evidence of a possible leak or discharge, as defined in section 5(D)(10) within 24 hours from the time of discovery. A Certified Underground Oil Storage Tank Installer or Inspector finding evidence of a possible leak or oil discharge must report it to the facility owner or operator, and the Commissioner, as soon as possible, but no later than within 24 hours of discovery. Actual oil leaks and discharges as defined in section 5(D)(11) shall be reported to the Commissioner by the facility owner or operator, and the Certified Underground Oil Storage Tank Installer or Inspector within two (2) hours of discovery. All leaks and discharges must be cleaned up to the Commissioner’s satisfaction and in accordance with the requirements of section 12.

Notwithstanding the above, discharges of 10 or less gallons of oil, occurring above the surface of the ground onto a concrete or asphalt paved surface and not reaching ground water or surface waters of the State, do not need to be reported to the Commissioner if the owner or operator complies with all of the following requirements:

(a) The discharge is cleaned up within 24 hours of discovery.

(b) A written log is maintained recording for each discharge the date of discovery, its source, the general location of the discharge on the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.

(c) The log is readily available for inspection upon request by personnel and authorized agents of the Commissioner within 24 hours.

NOTE: To report a leak or discharge at any time, 24 hours a day, 7 days a week, call 1-800-482-0777.

(4) The owner or operator shall maintain a log at the facility, recording the date, results, and the individual conducting the annual tests of cathodic protection and leak detection systems.

(5) Only waste oil tanks constructed of cathodically protected steel, fiberglass or another noncorrosive material approved by the Commissioner may be relined. Such tanks must be relined in accordance with section 5(D)(13). Repairs other than relining must be conducted in accordance with section 5(D)(14).

(6) Waste oil may not be stored in a facility of a design and construction with which it is not chemically or physically compatible. Documentation demonstrating compatibility must be submitted to the Department and maintained in accordance with section 5(D)(12).

(7) Hazardous substances as defined in the *Uncontrolled Hazardous Substance Sites Law, 38* M.R.S. §1362(1), may not be added to or stored at a waste oil facility.

NOTE: The addition of degreasers, solvents and other hazardous substances to a waste oil tank may make the waste oil a hazardous waste. Hazardous wastes must be stored, manifested, transported and disposed in accordance with the Department’s Hazardous Waste Management Regulations, 06-096 C.M. R. ch. 850 - 858.

(8) All owners or operators of waste oil facilities shall provide financial responsibility coverage in accordance with the requirements of section 5(D)(15).

(9) Maintenance of records. Required facility records and logs must be maintained and available in accordance with section 5(D)(16).

(10) The owner must conduct an annual facility compliance inspection, correcting any deficiencies found in accordance with section 5(D)(17).

**D. Closure of waste oil storage facilities.** Underground waste oil storage tanks and associated piping must be abandoned in accordance with section 11. All single-walled waste oil tanks and their associated piping must be taken out of operation and properly abandoned in accordance with section 11 by October 13, 2019.

**8. Regulation of field constructed underground oil storage tanks**

**A. Applicability**

This section applies to all field constructed underground oil storage tanks constructed of steel, concrete, fiberglass and other materials.

NOTE: Owners and operators of field constructed underground oil storage tanks should also review section 13 for additional requirements for any associated aboveground oil storage tanks.

**B. Design and installation requirements for new and replacement tanks**

(1) General design requirements

(a) Bare steel and asphalt coated steel tanks are prohibited.

(b) Concrete, fiberglass and riveted steel tanks are prohibited.

(c) All new and replacement steel tanks must be cathodically protected and coated with a suitable dielectric material. The cathodic protection system must be designed by a corrosion expert to adequately protect all parts of a tank from corrosion by maintaining a negative structure to soil potential of at least 0.85 volts. Cathodic protection systems must be designed in accordance with NACE SP0285 "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(d) New and replacement steel tanks must be designed by a professional engineer in compliance with Maine's professional regulation statute, and constructed in accordance with UL Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks", and API Standard 650 "Welded Steel Tanks for Oil Storage".

(e) Piping connected to field constructed tanks must be designed and constructed in accordance with the requirements of sections 5, 6, 7, 9 or 10 depending on type of facility and piping system proposed.

(f) Tank systems must be constructed of materials that are chemically and physically compatible with the products stored in accordance with section 5(B)(1)(b).

(g) In addition to the requirements and codes of practices listed in this section, owners and operators may use the military construction criteria, Unified Facilities Criteria (UFC) 3-460-01, Design: Petroleum Fuel Facilities when designing, constructing, and installing underground oil storage tank systems with field-constructed tanks.

(2) Leak detection. All new and replacement field constructed tanks must be provided with secondary containment and continuous interstitial space monitoring.

(3) Overfill and spill prevention equipment. New and replacement tanks must be installed with overfill and spill prevention equipment in accordance with section 5(B)(3) or section 6(B)(3) depending on facility type.

(4) General installation requirements

(a) No new or replacement field constructed underground oil storage tank may be installed unless the facility has been registered in accordance with section 4.

(b) New and replacement field constructed tanks shall be assembled and installed according to good engineering practices under the surveillance of a professional engineer licensed in Maine or otherwise working in compliance with the rules for Professional Engineers adopted pursuant to*,* 32 M.R.S. §§ 1351-1362. The engineer shall be responsible for supervising all phases of assembly and installation. At least 60 days prior to tank registration, design and installation plans must be submitted to the Commissioner for review and approval. The plan must include, at a minimum:

(i) Secondary containment and leak detection installation details;

(ii) Overfill and spill prevention equipment installation;

(iii) Anchoring;

(iv) Excavation and backfill specifications; and

(v) Cathodic protection system installation.

(c) Installation of the cathodic protection system must be supervised by a corrosion expert.

(d) If a tank is replaced, all associated piping not meeting the design and installation requirements of this section must be replaced except if the piping is part of an airport hydrant piping system. If product piping attached to a field constructed tank is replaced and structural damage to the associated tank has occurred impairing its physical integrity, the tank also must be replaced if not designed and installed in accordance with this section.

(e) Certification of proper installation. Owners of new and replacement facilities shall ensure that the project engineer certifies to the Commissioner, within 30 days of completion of installation; that the facility materials, design and installation are in compliance with the requirements of this Chapter. This certification must be provided in writing on a form provided by the Commissioner.

(f) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

**C. Operation, maintenance, testing, and inspection requirements for new, replacement and existing tanks**

(1) Tanks that are part of a motor fuel, marketing or distribution facility must be operated in accordance with section 5(D), except that the requirements of sections 5(D)(1) and (2) do not apply.

(2) Tanks that are part of a heating oil facility for consumptive use by the owner or operator must be operated in accordance with section 6(C).

(3) Tanks that are a part of a waste oil facility must be operated in accordance with section 7(C).

(4) Notwithstanding the above, repairs must be conducted in accordance with sections 5(D)(13) and (14), except that a repair may be designed by and conducted under the surveillance of a professional engineer in accordance with Maine's professional regulation statutes.

(5) The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(17).

(6) The owner shall have designated, trained and certified operators as set forth in *Operator Training for Underground Oil and Hazardous Substance Storage Facilities*, 06-096 C.M.R. ch. 693.

(7) The owner or operator must ensure that a certified A/B operator inspects the facility for compliance at least weekly, and in addition conducts monthly and annual inspections in accordance with the schedule below. The owner or operator must maintain a log of these inspections in accordance with section 5(D)(16) and in accordance with 06-096 C.M.R. ch. 693, §5. The log must include a list of each area checked, whether each area checked was acceptable or needed action taken, and a description of any corrective actions taken. The inspections must at a minimum check the following equipment on the applicable schedule:

(a) Weekly check of spill prevention equipment including spill buckets-- visually check for damage; remove liquid or debris; check for and remove obstructions in the fill pipe; check the fill cap to make sure it is securely on the fill pipe; and

(b) Weekly check of leak detection equipment -- check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and ensure records of leak detection testing are reviewed and current; and

(c) Monthly check of double walled spill buckets with interstitial monitoring-- check for a leak in the interstitial area;

(d) Annual check of containment sumps by a Maine Certified Underground Oil Storage Tank Installer or Inspector -- visually check for damage, leaks to the containment area, or releases to the environment; remove liquid in contained sumps or debris; and for double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(e) Annual check of hand held leak detection equipment by a Maine Certified Underground Oil Storage Tank Installer or Inspector -- check devices such as tank gauge sticks or ground water bailers for operability and serviceability.

**D. Closure and abandonment of underground field constructed oil storage tanks**

(1) Tanks must be abandoned in accordance with section 11, except that owners of concrete tanks larger than 20,000 gallon capacity may be granted a variance by the Commissioner from the requirement under the following conditions:

(a) An alternate method of closure or long term maintenance is proposed that is equally protective of the environment, public health, safety and welfare;

(b) Discharges of oil will be remediated to the satisfaction of the Commissioner;

(c) Public access is controlled;

(d) A notice of the presence of underground oil storage tanks is permanently attached to the deed of the parcel upon which the tanks are located, including at a minimum, a description of the tanks, their size, types of product stored, and their surveyed location; and

(e) Written notice has been provided to the local fire department having jurisdiction indicating that a variance is being sought from the requirements of section 11.

The Commissioner may approve, deny, or approve with conditions a variance under this paragraph.

(2) The owner or operator of a field constructed tank shall conduct a site assessment in accordance with section 11(A) and Appendix P prior to the completion of facility closure.

(3) The owner or operator of a previously closed underground oil storage facility that was not required to conduct a site assessment must assess the excavation zone of the tanks, piping and dispensers and must conduct an after-the-fact site assessment in accordance with Appendix P(11), if the Department determines releases from the underground oil storage tank pose a current or potential threat to human health or the environment.

**9. Regulation of facilities for the underground storage of heavy oils**

**A. Applicability**

(1) This section applies to all underground oil storage facilities intended for storing or containing heavy oil, oil that must be heated during storage, including but not limited to #5 and #6 oil.

(2) This section applies to # 4 oil storage facilities only when the oil must be heated during storage.

**B. Design and installation requirements for new and replacement facilities**

(1) General design requirements

(a) Facilities must be designed in accordance with section 6(B)(1) except where a field constructed tank is proposed at a heavy oil facility, then the general design requirements for heating oil facilities under sections 6(B)(1) or 8(B) must be followed.

(b) All facility construction materials must be physically and chemically compatible with the product to be stored, including the temperature at which the product is to be stored. Fiberglass or plastic jacketed components may not be installed in facilities where the oil temperature will exceed 150oF.

(2) Leak detection. New and replacement heavy oil facilities must provide leak detection in conformance with the leak detection requirements for other heating oils in section 6(B)(2) or field constructed tanks in section 8(B)(2), including secondary containment with continuous interstitial space monitoring.

(3) Overfill and spill prevention equipment requirements are the same as those for other heating oils under section 6(B)(3).

(4) Installation requirements for new and replacement heavy oil facilities.

(a) An underground oil storage facility or tank may not be installed unless the facility has been registered in accordance with section 4.

(b) No person may install an underground heavy oil storage facility unless that person is a properly certified Class 2 underground oil storage tank installer in accordance with 32 M.R.S. §§ 10001-10016 and has paid the certification fee.

(c) If a tank is replaced, all associated underground piping not meeting the design requirements of this Chapter must be replaced. Any replacement piping must be designed and installed in accordance with this Chapter. If product piping is replaced and structural damage to the tank has occurred, the associated tank also must be replaced if not constructed of fiberglass, cathodically protected steel, or other noncorrosive materials approved by the Commissioner. Repairs of damaged fiberglass, cathodically protected steel, and other Commissioner approved tanks may only be made if conducted in accordance with sections 5(D)(13) or (14). Tanks that cannot be repaired must be abandoned in accordance with section 11.

(d) New and replacement heavy oil facilities must be installed in accordance with National Fire Protection Association Code 31 and the requirements of section 6(B)(4), (5) and (6), except that the installation of copper and PVC piping is prohibited and the heating system must be electrically isolated from the cathodic protection system if the tank is steel.

(e) New and replacement fiberglass and plastic jacketed steel tanks must be provided with continuous product temperature monitoring equipment, installed in accordance with the manufacturer's specifications.

(f) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

**C. Operation, maintenance, testing and inspection of new, replacement and existing facilities**

(1) Heavy oil facilities must be operated in accordance with the requirements for other heating oil facilities in section 6(C).

(2) The owner or operator of heavy oil facilities with fiberglass or plastic jacketed steel tanks or piping shall monitor representative product temperature within the tank daily to ensure it does not exceed tank and piping manufacturers’ specifications or limits. Product temperature readings must be recorded, including date, temperature, and the initials of the person taking the measurements or readings. Temperature records must be maintained at the facility for 3 years and be available to Department personnel and representatives or municipal officials.

(3) Product temperature measurement equipment must be maintained in good operating condition. Such equipment must be tested and if necessary, calibrated, at least annually by a properly trained representative of the owner or operator, a Certified Underground Oil Storage Tank Installer or an authorized representative of the manufacturer.

(4) Fiberglass and jacketed steel facilities may not be operated above 150°F.

(5) The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(17).

**D. Closure requirement.** Heavy oil tanks must comply with the requirements of section 11.

**10. Regulation of airport hydrant systems**

**A. Applicability**

(1) This section applies to all airport hydrant systems that are part of an underground oil storage facility which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants.

(2) Underground tanks storing aviation fuel must comply with section 5 or 8, as applicable.

NOTE: Owners and operators of airport hydrant systems should also review section 13 for additional requirements for any associated aboveground oil storage tanks.

**B. Design, construction and installation requirements for new and replacement systems**

(1) General design and construction requirements

(a) Bare steel and asphalt coated steel piping are prohibited.

(b) All new and replacement steel piping in contact with soil or water must be cathodically protected and coated with a suitable dielectric material. The cathodic protection system must be designed by a corrosion expert to adequately protect all parts of the piping system from corrosion by maintaining a negative structure to soil potential of at least 0.85 volts. Cathodic protection systems shall be designed in accordance with NACE SP0285.

(c) Piping must be designed by a professional engineer in compliance with Maine professional regulation statutes, and constructed in accordance with American National Standards Institute (ANSI) standard for "Chemical Plant and Petroleum Refinery Piping", ANSI/ASME B 31.1.

(d) In addition to the requirements and codes of practices listed in this section, owners and operators may use the military construction criteria, Unified Facilities Criteria (UFC) 3-460-01, Design: Petroleum Fuel Facilities when designing, constructing, and installing airport hydrant systems.

(2) Leak detection. All new and replacement airport hydrant piping routinely containing oil must be provided with secondary containment and continuous interstitial space monitoring.

(3) General installation requirements

(a) No new or replacement airport hydrant piping may be installed unless the facility and piping have been registered in accordance with section 4.

(b) New and replacement airport hydrant piping must be installed according to good engineering practices using welded joints and under the supervision of a professional engineer licensed in Maine or otherwise working in compliance with 32 M.R.S. §§ 1351-1362. The engineer shall be responsible for surveillance of all phases of installation. Installation plans must be submitted for Department review and approval at least 60 days prior to new or replacement piping registration and must include at a minimum:

(i) Secondary containment and leak detection installation details;

(ii) Excavation and backfill specifications;

(iii) Pipe material specifications;

(iv) Welding specifications; and

(v) Cathodic protection system installation.

(c) Installation of the cathodic protection system must be supervised by a corrosion expert.

(d) If airport hydrant piping is replaced, any underground oil storage tank not constructed of fiberglass, cathodically protected steel, or other Commissioner approved noncorrosive materials in conformance with sections 5 or 8 must be replaced at the same time.

(e) New and replacement piping must be installed in accordance with NACE International SP0285, NACE International SP0169 or ANSI/ASME B31.3.

(f) Welded joints must be radiograph inspected.

(g) Hydrant pits must be liquid tight and must drain to an oil water separator, or other Commissioner approved collection and treatment system.

(h) Certification of installation. Owners of new and replacement facilities shall ensure that the project engineer certifies to the Commissioner, within 30 days of completion of installation, that the facility materials, design and installation meet the requirements of this Chapter. This certification must be provided in writing on a form provided by the Commissioner.

(i) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

**C. Retrofitting requirements for existing airport hydrant systems**

(1) Existing airport hydrant systems without secondary containment and interstitial space monitoring or another form of leak detection in compliance with section 5(B)(2), shall retrofit or implement one of the following leak detection methods by December 1, 1991:

(a) An annual hydrostatic test of the entire piping line conducted at 150 percent of maximum design operating pressure, or maximum transient surge pressure, whichever is greater. Test shall be conducted for a minimum of four (4) hours and otherwise in accordance with API Recommended Practice 1110, "Pressure Testing of Liquid Petroleum Pipelines".

 (b) Other leak detection systems approved by the Commissioner that can reliably detect a loss of at least 40 gallons per day.

(2) Existing airport hydrant systems constructed of steel may retrofit corrosion protection in accordance with 38 M.R.S. §563-A(l-A) as an alternative to abandonment or replacement, provided a corrosion induced leak has not occurred and the system is not located in a sensitive geological area. To be eligible for this exemption, the facility owner or operator must demonstrate to the Commissioner's satisfaction that the airport hydrant piping system does not leak. The test utilized to determine system integrity must be able to determine a leak rate of at least 40 gallons per day and that any leaks are not directly or indirectly due to corrosion. Cathodic protection must be designed by a corrosion expert and installed in accordance with the standards of section 10(B) above. Leak detection must be retrofitted at the same time cathodic protection is retrofitted.

**D. Operation, maintenance, testing and inspection requirements for new, replacement and existing systems**

(1) Airport hydrant systems must be operated in accordance with section 5(D), except that the requirements of 5(D)(1) and (2) do not apply.

(2) Repairs of new, replacement and existing piping must be in accordance with good engineering practice and under the surveillance of a Maine professional engineer. Upon completion, the repaired section must be tested for leaks and for proper operation of the cathodic protection system. A report describing the repairs made and test results must be submitted by the owner or operator to the Commissioner for approval.

(3) Annual inspection requirements. The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(17).

(4) The owner shall have designated, trained and certified operators as set forth in *Operator Training for Underground Oil and Hazardous Substance Storage Facilities*, 06-096 C.M.R. ch. 693.

 (5) The owner or operator must ensure that a certified A/B operator inspects the facility for compliance in accordance with the schedule below. The owner or operator must maintain a log of these inspections in accordance with section 5(D)(16) and in accordance with 06-096 C.M.R. ch. 693, §5. The log must include a list of each area checked, whether each area checked was acceptable or needed action taken, and a description of actions taken to correct an issue. The inspections must at a minimum check the following equipment on a weekly, monthly and annual basis as applicable:

(a) Weekly check of spill prevention equipment including spill buckets -- visually check for damage; remove liquid or debris; check for and remove obstructions in the fill pipe; check the fill cap to make sure it is securely on the fill pipe;

(b) Weekly check of leak detection equipment -- check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and ensure records of leak detection testing are reviewed and current;

(c) Monthly check of double walled spill buckets with interstitial monitoring -- check for a leak in the interstitial area;

(d) Monthly check of hydrant pits and hydrant pit vaults that do not require a confined space entry permit per the Occupational Safety and Health Administration (OSHA) -- to visually check for any damage or leaks, and remove any liquid or debris;

(e) Annual check of hydrant pits and hydrant pit vaults if a confined space entry permit is required per the Occupational Safety and Health Administration (OSHA) -- to visually check for any damage or leaks, and remove any liquid or debris; and

(f) Annual check of containment sumps by a Maine Certified Underground Oil Storage Tank Installer or Inspector -- visually check for damage, leaks to the containment area, or releases to the environment; remove liquid in contained sumps or debris; and for double walled sumps with interstitial monitoring, check for a leak in the interstitial area.

**E. Closure and abandonment.** Closure and abandonment of airport hydrant piping systems must be in accordance with section 11.

**11. Regulations for closure of underground oil storage facilities**

**A. Facility closure requirements**

(1) The owner or operator of an underground oil storage facility or tank that has been or is intended to be out of service for a period of more than 12 months must close the facility or tank in accordance with this section unless the tank owner has received written permission from the Commissioner to remain temporarily out of service in accordance with the requirements of subsection B below. Closure must include:

(a) Proper abandonment of tanks, piping and other facility components;

(b) Emptying and cleaning tanks of all liquids and accumulated sludge;

(c) Storage or disposal of removed tanks in accordance with this section;

(d) Completion of a site assessment in accordance with the requirements of Appendix P for all types of facilities or a portion thereof, except on-site consumptive use heating oil facilities (other than heavy oil facilities), and farm and residential motor fuel tanks of 1,100 gallons or less capacity and where the product is used only by the tank owner or operator; and

(e) Clean up of discharges and leaks to the satisfaction of the Commissioner in accordance with section 12.

NOTE: A site assessment and site assessment report are required as part of facility or tank closure for heavy oil tanks but not for #2, kerosene and other heating oils when stored and consumed on the same premises. Only heating oils heated during storage meet the definition of heavy oil in this Chapter.

(2) When ownership of the facility or tank is unknown, the current landowner is responsible for facility closure.

NOTE: Maine law (see 38 M.R.S. §563-A) requires closure of nonconforming tanks in accordance with this Chapter no later than October 1, 1998.

**B. Temporarily out of service facilities and tanks**

(1) When a facility has been, or is intended to be temporarily out of service for a period exceeding 3 months and not exceeding 12 consecutive months, the owner or operator shall:

(a) Continue operation and maintenance of the corrosion protection system in accordance with the applicable requirements of this Chapter;

(b) Continue leak detection in accordance with the applicable requirements of this Chapter, unless all liquids including product and water are emptied from the tank with no more than one (1) inch of residual left;

(c) Leave vent lines open and functioning;

(d) Cap and secure all other lines, pumps, man-ways and ancillary equipment;

(e) Submit an annual compliance inspection report in accordance with section 5(D)(17) of this Chapter and 38 M.R.S. §563(9);

(f) Report and investigate evidence of a possible leak or discharge in accordance with section 12; and

(g) Perform a site assessment in accordance with section 12(B)(1)(c) prior to the tank owner requesting an extension to remain temporarily out of service for more than 12 months in accordance with section 12(B)(2).

(h) If after 12 months, the facility is brought back into service, it must meet the provisions of section 11(B)(3)(a)-(h).

(2) A tank owner may apply in writing for approval of the Commissioner to allow a facility to remain temporarily out of service for more than 12 consecutive months, if done so before the 12 months out of service expires, and when:

(a) The requirements of section 11(B)(1) above are met; and

(b) The facility is constructed in compliance with the applicable requirements of this Chapter.

Commissioner approval for a facility to remain temporarily out of service for more than 12 months must be in writing and is conditional upon continued compliance by the facility with the requirements of paragraph (1) above.

(3) If an underground oil storage facility has been out of service for a period of more than 12 consecutive months without written approval in accordance with subsection 11(B)(2) above, or remains out of service beyond an approved extension period under subsection 11(B)(2) of a facility’s temporarily out-of-service status, the facility may not be brought back into service without the written approval of the Commissioner. The Commissioner may approve the return to service if the owner demonstrates to the Commissioner’s satisfaction that:

(a) The tanks and piping are constructed of fiberglass, cathodically protected steel, or another equally non-corrosive material approved by the Commissioner;

(b) The tanks are of double walled construction and provided with continuous interstitial space monitoring for leak detection;

(c) The facility has safe suction or double walled pressurized product piping with continuous leak detection;

(d) The facility was installed or has been retrofitted with dispenser sumps that have continuous electronic leak detection;

(e) Facility tanks, piping, sumps and spill buckets have passed precision testing conducted in accordance with the requirements of this Chapter;

(f) The facility is in compliance with all other applicable requirements of this Chapter;

(g) The owner or operator performed a site assessment in accordance with section 12(B)(1)(c); and

(h) The return of the facility to service does not pose an unacceptable risk to ground water resources. In determining if the facility poses an unacceptable risk to ground water resources, the Commissioner may consider the age and maintenance history of the facility, the number and consequences of past oil discharges, and the proximity of the facility to sensitive geological areas, including, but not limited to, drinking water supplies, and significant sand and gravel aquifers mapped by the Maine Geological Survey and the results of the site assessment.

(i) The facility’s registration must also be amended in accordance with section 4.

**C. Permanently out of service facilities or tanks**

1. A tank that has failed a precision test or that has otherwise been determined to have compromised structural integrity may be allowed to remain out of service in accordance with the requirements of section 11(B) if removal would endanger other tanks that are being operated at the facility.

(2) A tank owner must apply in writing for approval of the Commissioner to allow a tank to remain permanently out of service. Approval may be given if the Commissioner deems that delaying removal will not put public health or the environment at risk. The owner or operator must:

(a) Ensure that all liquids including product and water are emptied from the tank with no more than one (1) inch of residual left;

(b) Leave vent lines open and functioning;

(c) Cap and secure all other lines, pumps, man-ways and ancillary equipment;

(d) Submit an annual compliance inspection report in accordance with section 5(D)(17) and 38 M.R.S. §563(9); and

(e) Amend the facility registration in accordance with section 4 of this Chapter.

**(**3) The permanently out of service tank(s) shall be removed when other tanks at the facility are removed.

**D. Abandonment by removal**

(1) Tanks, piping or facilities that have been out of service for 12 months must be removed within 60 days, unless a written request to remain out of service for more than 12 months under section 11(B)(2) above has been approved or has been made and is subsequently approved by the Commissioner.

(2) Removal of tanks and facilities must be conducted in accordance with API Recommended Practice 1604 and Appendix J to the satisfaction of the Commissioner. For facilities listed in section 11(A)(1)(d), a site assessment must be conducted at the time of removal in accordance with section 12(B)(1)(c) and Appendix P.

(3) As required under 38 M.R.S. §566-A(5), removal of tanks or facilities that have contained a Class 1 liquid at any time must be conducted under the direct, on-site supervision of an underground oil storage tank installer certified pursuant to 32 M.R.S. §§ 10001-10016.

NOTE: The above requirement applies to gasoline facilities and possibly other liquid petroleum products such as aviation fuel. Fire prevention requirements of this Chapter may also be enforced by State and local fire officials.

(4) After July 1, 2019, a Certified Underground Oil Storage Tank Installer overseeing a tank removal must be trained in best management practices for erosion and sedimentation control by the Department or through an equivalent program approved by the Department.

(5) If underground oil storage tanks that have been removed are stored, the following provisions apply:

(a) Areas chosen for storage may not be accessible to the general public.

(b) Inverted tanks may be stored with unplugged openings. While being transported, openings are to be tightly plugged, screwed plugs must be used and one plug must have a 1/8 inch vent hole to prevent the tank from being subjected to an excessive pressure differential caused by extreme temperature changes.

(c) All stored underground oil storage tanks must be labeled with the warning noted in section (6)(c) below.

(d) Any scale or sludge released by the tank prior to and during storage must be characterized and disposed of in accordance with the Maine Hazardous Waste Management Rules, *Standards for Generators of Hazardous Waste,* 06-096 C.M.R. ch. 851.

(6) If underground oil storage tanks that have been removed are sold or reused, the following provisions apply:

(a) Bare steel and asphalt coated steel tanks may not be re-installed for use as an underground oil storage facility;

(b) Fiberglass and cathodically protected double-walled tanks meeting the requirements of section 5(B) may be re installed, if the tank owner has supplied the Commissioner with satisfactory documentation that the manufacturer will warrant the tank for a period of at least 10 years for internal and external corrosion and structural failure, after which the tanks must be properly abandoned pursuant to this section. A written statement attesting to the validity of the warranty, signed by the tank manufacturer, and provided to the Commissioner constitutes the only proof of warranty coverage. A tank that has been reinstalled cannot operate beyond 30 years from the original date of installation unless the tank owner receives written permission from the Department pursuant to section 5(F).

(c) All transactions must be accompanied by a bill of sale indicating the former use of the tank. The bill of sale must contain the following warning:

Tank Has Contained Leaded Gasoline or Flammable Liquid

(use applicable designation)

Not Gas-Free

Not Suitable for Food or Drinking Water

(d) The tank must be clearly marked with the notice stated in paragraph (c) above, in legible letters not less than one (1) inch high, regardless of the condition of the tank.

(e) Abandoned underground oil storage tanks are prohibited from use for above ground storage of oil, except where approved by the Maine State Fire Marshal or where a Maine professional licensed engineer, or other person meeting the requirements of Maine professional regulation statutes and rules governing professional engineers practicing in Maine, certifies that the tank meets all applicable specifications and requirements in UL 142 and NFPA 30.

(7) The owner or operator of a previously closed underground oil storage facility that was not required to conduct a site assessment must assess the excavation zone of the tanks, piping and dispensers and must conduct an after-the-fact site assessment and closure in accordance with Appendix P(11), if the Department determines releases from the underground oil storage tank pose a current or potential threat to human health or the environment.

**E. Abandonment by filling in place**

(1) Abandoned facilities and tanks must be removed, except where the owner can demonstrate to the Commissioner that removal is not physically possible or practicable because the tank or other component of the facility to be removed is:

(a) Located beneath a building or other permanent structure that cannot be practically replaced;

(b) Of a size and type of construction that it cannot be removed;

(c) Inaccessible to heavy equipment necessary for removal; or

(d) Positioned in such a manner that removal would endanger the structural integrity of nearby tanks.

(2) A facility or tank owner may apply to the Commissioner for a variance to abandon a facility or tank in place rather than abandon the tank or facility by removal. The variance may be granted if the Commissioner finds that:

(a) Abandonment by removal is not possible or practicable due to circumstances other than those listed in paragraph 1 above; and

(b) The granting of a variance shall not pose a threat to a private or public drinking water supply or the quality of ground water, and is consistent with the intent of this Chapter.

(3) All facilities to be abandoned in place that receive written acknowledgment from the Department that the tank or piping meets one or more of the criteria listed in section 11(E)(1) or (2) must follow the notification requirements in section F below and follow the procedures outlined in API 1604 and Appendix K. For facilities listed in section 11(A)(1)(d), a site assessment must be conducted at the time of abandonment in accordance with section 12(B)(1)(c) and Appendix P.

(4) The owner or operator of a previously closed underground oil storage facility that was not required to conduct a site assessment must assess the excavation zone of the tanks, piping and dispensers and must conduct an after-the-fact site assessment in accordance with Appendix P(11), if the Department determines releases from the underground oil storage tank pose a current or potential threat to human health or the environment.

**F. Notification requirements**

(1) The owner or operator of a facility or tank, which is to be closed or abandoned in place, shall notify the Commissioner, the local fire department having jurisdiction, and where required by this Chapter, the underground oil storage tank installer overseeing the closure and the person conducting the site assessment. This notice must be in writing and received by the Commissioner at least 10 business days prior to abandonment, except that when ownership of the facility or tank is unknown, the current property owner is responsible for compliance with the requirements of this section. This notice must include:

(a) The name, mailing address, and telephone number of the owner;

(b) The mailing address and location of the facility;

(c) The size(s) of tank(s) to be abandoned or taken out of service;

(d) The type(s) of product(s) most recently stored in each tank;

(e) The registration number of the facility and tank(s) if registered under this Chapter;

(f) If the tank has contained a Class I liquid, the inerting procedure and, if applicable, the cleaning location;

(g) If the tank last contained a Class I liquid, or contained a Class I liquid in the 12 months prior to closure, the name and signature of the Maine Certified Underground Oil Storage Tank Installer supervising the facility closure and the person conducting the site assessment;

(h) If abandonment in place is planned, the criteria used for justifying abandonment in place, as listed in section 11(E)(1) above;

(i) The approximate age of the tank, if known;

(j) The date upon which the facility or tank is to be removed or when a variance has been granted pursuant to section 11(D) , the date on which the tank or facility will be properly abandoned on site; and

(k) The estimated date the tank was last used.

(2) The tank owner shall keep a permanent record of the tank location, the date of abandonment, and the method of conditioning the tank for abandonment.

(3) The tank owner is responsible for attaching, to the deed of the property on which the tank was located, a notice that an underground oil storage tank or underground piping has been abandoned in place pursuant to section 11(E). The deed notation must be executed within 30 days of completion of the abandonment and a copy of the executed notice from the county registry of deeds provided to the Commissioner.

NOTE: Siting of new underground oil storage facilities in wellhead protection zones is regulated under 38 M.R.S., §§ 1391 -1400. and the Department’s *Rules for Siting Oil Storage Facilities,* 06-096 C.M.R. ch. 692. Pursuant to 38 M.R.S. §1393(2)(B) and 06-096 C.M.R. ch. 692, §3(A)(2) and 4(A)(2), i f intending to replace a tank or facility being abandoned in a wellhead protection zone, the facility owner must within 30 days of removal of the existing facility, notify the commissioner and the municipal code enforcement officer in writing of their intent to replace the facility. Construction of the replacement of the facility must commence within 2 years after the date of removal. A wellhead protection zone includes areas within 300 feet of a private well. In the case of public wells, the wellhead protection zone is the area within 1,000 feet of a public well, or on the source water protection area mapped by the Maine Drinking Water Program in the Department of Health and Human Services, whichever is greater. Without taking the above steps, siting restrictions on the installation of oil storage facilities in wellhead protection areas will apply.

**12. Discharge and leak investigation, response and corrective action requirements**

**A. General requirements**

(1) In accordance with 38 M.R.S. §568, any facility owner or operator or other responsible party, as defined in 38 M.R.S. §562-A(17), when a leak, spill or other prohibited discharge of oil occurs, shall immediately contain and undertake to remove that discharge to the satisfaction of the Commissioner, and in accordance with the requirements of this section. In determining the extent of a corrective action, the Commissioner and the Commissioner’s staff shall consider the potential for human exposure and for adverse effects on public safety, health and welfare and the environment. The Commissioner will consider at a minimum the following factors in determining whether the corrective action plan is appropriate:

(a) The physical and chemical characteristics of the oil discharge, including its toxicity, persistence, and potential for migration;

 (b) The hydrogeologic characteristics of the site and the surrounding areas;

(c) The proximity, quality, and current and future uses of nearby surface water and ground water, including the Maine water quality classification standards and objectives to restore and maintain the chemical, physical and biological integrity of the State’s waters;

 (d) The potential effects of residual contamination on nearby surface water and ground water;

 (e) An exposure assessment; and

 (f) Any information assembled in compliance with this section.

(2) Any evidence of a possible leak or discharge of oil as defined in section 5(D)(10) must be reported to the Commissioner by the facility owner or operator within 24 hours of discovery. Actual oil leaks and discharges as defined in section 5(D)(11) shall be reported to the Commissioner by the facility owner or operator, and the Certified Underground Oil Storage Tank Installer or Inspector within two (2) hours of discovery.

Notwithstanding the above, discharges of 10 or less gallons of oil that occur on the facility premises and above the surface of the ground onto a concrete or asphalt paved surface, and that do not reach ground water or surface waters of the State, need not be reported to the Commissioner if the owner or operator complies with all of the following requirements:

(a) The discharge is cleaned up within 24 hours of discovery.

(b) A written log is maintained at the facility or the owner's place of business in Maine recording for each discharge, the date of discovery, its source, the general location of the discharge at the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.

(c) The log must be made available upon request within 24 hours for inspection by Department personnel, authorized agents of the Commissioner, and municipal officials.

NOTE: Discharges of oil may be reported by calling the Department's toll free telephone number, 1-800-482-0777.

(3) Under 38 M.R.S. §568(4)( A), any person who causes, or is responsible for, a discharge from an underground oil storage facility in violation of 38 M.R.S. §543, is not subject to any fines or penalties for violation of 38 M.R.S. §543 for the discharge if that person promptly reports and removes that discharge in accordance with this Chapter as well as other rules or orders of the Commissioner and the B oard, except that a person who violates any laws or rules administered by the Department under 38 M.R.S. §§ 561-570-M is subject to fines and penalties.

(4) All hydrogeological or other investigation and corrective action plans required under this section must be certified and stamped by a Maine certified geologist, a licensed Maine professional engineer, or a geologist or engineer otherwise in compliance with the Maine professional regulation statutes for geologists or engineers. Implementation of corrective actions must be supervised by a Maine certified professional working in compliance with Maine's professional regulation statutes. Individuals providing the above professional services should be knowledgeable in underground oil storage facility investigation and remediation.

(5) Any investigation of evidence of a possible leak or a discharge, and any removal or remediation of a discharge, that involves excavation, removal or replacement of soil material or a concrete pad, or the use of in situ techniques, above, under, or within 10 feet of a tank or piping, must be attended by an underground oil storage tank installer certified under 32 M.R.S. §§ 10001 *-*10016. In order to protect the structural integrity of the facility, to prevent further discharges, and to protect public safety and the environment, the certified installer shall supervise and be present at all times when work described above is being performed.

(6) Leaks and discharges of oil shall be investigated and corrected using techniques that are cost-effective, reliable and technically feasible.

(7) Upon determination that an oil discharge has occurred at a facility, that facility may resume partial or full operation while corrective action is taken unless the Commissioner determines that a return to operation would interfere with investigation and remediation efforts, and would therefore result in a threat to public health and safety and the environment. No excavation, drilling or soil removal may be undertaken on the facility premises within 5 feet of any pressurized Class 1 liquid (e.g. all gasolines) product lines until such lines have been drained of product. In accordance with NFPA 30 and 30 A, excavation, drilling, or other activities that may act as a source of ignition of flammable vapors at a Class 1 liquid dispensing facility may not be undertaken within 20 feet of a fueling dispenser and nozzle when fully extended, unless the electrical power supply to the dispenser has first been turned off and all fueling operations from that dispenser have ceased.

NOTE: Before undertaking excavation at a facility that will remain in operation, the owner or operator should notify the municipal fire chief in the event a local ordinance applies and a permit is required under NFPA 30 (7.9).

(8) The owners or operators of the following tanks must comply with the requirements of this section, except that they may meet the initial site characterization of 40 C.F.R. §280.63, as amended up to July 1, 2018, in lieu of conducting a site assessment in accordance with Appendix P:

(a) Aboveground oil storage tanks that are associated with field constructed underground oil storage tanks and airport hydrant systems; and

(b) Wastewater treatment tank systems that are not regulated by the *Clean Water Act* §§ 402 or 307(b) (1972) (33 U.S.C., §1317(b) or §1342 (2016)).

**B. Discharge and leak investigation and confirmation requirements**

(1) The facility owner or operator, or other responsible party shall immediately investigate and confirm all possible leaks, spills or other discharges of oil to the Commissioner's satisfaction within 7 business days of discovery, or another reasonable time period approved by the Commissioner, using the following steps or another procedure approved by the Commissioner:

(a) Leak detection check. If the facility has leak detection in accordance with this Chapter and it indicates a possible leak, a check for failures of the leak detection system may be conducted prior to precision testing if the check is concluded within 3 business days of the initial discovery of evidence of a possible leak or discharge. All components of the leak detection system for tanks and piping must be checked for proper operation, recalibrated if an automated or electronic system, and monitored in accordance with the requirements of this Chapter and if applicable, the manufacturer's instructions. Monitoring must be conducted for 5 consecutive days. For manual leak detection systems, monitoring must be conducted daily. Records of the findings of the leak detection check and monitoring must be provided to the Commissioner. If leak detection monitoring results are conclusive and do not indicate a leak, further investigation is not needed, unless there is other environmental contamination or physical evidence indicating a leak or discharge of oil. If the leak detection results indicate a leak, are inconclusive or the facility does not have leak detection meeting the requirements of this Chapter, the owner, operator or other responsible party shall conduct a precision test of the facility in accordance with paragraph (b) below. If leak detection indicates a leak, the owner, operator or other responsible party shall abandon, repair or replace facility components in accordance with appropriate sections of this Chapter. In addition the owner or operator of a motor fuel facility shall also comply with the testing and replacement procedures outlined in paragraph (d) below.

NOTE: Performing an additional statistical inventory reconciliation is not an acceptable option under the leak detection check requirements because of the delay to collect the 30 to 60 days of daily product inventory data required by this method.

(b) Precision test. When a possible leak is not attributed to a failure of the leak detection system under paragraph (a) above the owner, operator or other responsible party shall have a precision test conducted of the facility to determine whether and where a leak exists. This test shall be conducted by an independent third party. If an initial precision test is either inconclusive or indicates a failure, the owner or operator may recheck the results by re-testing within two weeks of receipt of the initial test results. A copy of all precision test results must be submitted to the Commissioner by the facility owner and the tester.

(i) If precision testing indicates a leak (2 test failures or a single uncontested test failure), the owner, operator or other responsible party shall abandon, repair or replace facility components in accordance with appropriate sections of this Chapter and initiate a site assessment in accordance with paragraph 1(c) below and undertake corrective actions as specified in subsection C below. In addition, the owner or operator of a motor fuel facility shall also comply with the replacement procedures outlined below in paragraph (d) of this section.

(ii) If results from a Commissioner-approved and properly conducted precision test of the facility conclusively indicates that a leak does not exist, and if no environmental contamination or other physical evidence is the basis for suspecting a leak or discharge, further investigation is not required. The Commissioner may, however, require additional precision testing or a site assessment in accordance with paragraph (c) below for environmental contamination by oil if initial precision tests are inconclusive or improperly conducted.

(iii) The facility owner, operator or other responsible party shall conduct a site assessment as described below in sub-paragraph (c) of this section if precision test results do not indicate a leak exists but evidence of environmental contamination or other physical evidence is the basis for suspecting a leak.

(c) Site assessment

(i) The objectives of the site assessment are as follows:

a. Determine the presence or absence of a leak, spill or oil discharge where contamination is most likely to be present on the facility site;

b. Identify the presence of free product, oil saturated soils and soils contaminated above the applicable notification levels in Appendix Q. At sites where leaded petroleum fuels were stored in underground oil storage facilities, the assessment must include an evaluation for total lead. If total lead is present in concentrations equal to or above 100 mg/kg, contaminated soils must be sampled for laboratory analysis and tested using EPA’s Toxicity Characteristic Leaching Procedure, SW-846 Test Method 1311/6010C;

NOTE: Lead was prohibited in gasoline as of January 1, 1996, Lead continues to be used in high octane fuel and certain aviation fuel.

c. Evaluate the potential for vapor intrusion at the facility and nearby receptors if a leak, spill, or discharge is confirmed and/or free product and/or saturated soil is present;

d. Determine the degree of threat to ground water quality;

e. Consider the nature of the oils stored at a facility, the cause for suspecting a leak or discharge, the type of backfill and soils, the depth to ground water, the depth to bedrock, and other factors appropriate for identifying the presence and source of a leak or other discharge; and

f. Consider the potential effects of residual contamination on nearby surface water and ground water.

(ii) The site assessment must be conducted in accordance with procedures outlined in Appendix P. To verify the presence or absence of a leak or oil discharge at an operating facility in follow-up to the requirements of paragraphs (b) (ii) or (iii) above, the site assessment procedures outlined in paragraph 10 of Appendix P must be followed.

(iii) If site assessment results for the excavation and other areas of the facility site indicate that a leak, spill or other discharge of oil has occurred, the owner or operator shall properly abandon, repair or replace facility components and begin corrective actions in accordance with subsection C below.

(iv) If the site assessment results for the excavation and other areas of the facility site do not indicate a leak, spill or other discharge of oil has occurred, further investigation is not required.

(d) Within 30 business days, or another time period approved by the Commissioner, of discovery of evidence of a possible leak or discharge, the owner, operator or other responsible party shall submit a report on the steps taken and the findings of discharge and leak investigation and confirmation efforts. The report must include the name, address, and telephone number of the person to contact for more information, and a site assessment report meeting the requirements of Appendix P except that the reporting deadline is as specified above in this paragraph.

NOTE: 38 M.R.S. §568(6) allows for reimbursement by the Department of documented removal costs incurred by a tank owner or operator where a tank or facility was required by the Commissioner to be removed or closed upon evidence of a leak or discharge, but later determined by a site assessment or hydrogeological investigation not to be a source of a leak or oil discharge. The facility owner or operator under these circumstances also may apply for economic damages such as loss of income through the 3rd party damage claim process outlined in 38 M.R.S. §551.

**C. Minimum corrective action requirements**

(1) First response measures

(a) Identify and mitigate fire, explosion and acute vapor hazards to the satisfaction of the Commissioner and the local public safety agency having jurisdiction within 24 hours of discovery of a leak or discharge or another time period approved by the Commissioner.

(b) Take immediate action to prevent any further discharge of oil from the facility to the environment within 24 hours of discovery of leak or discharge, or another time period approved by the Commissioner. This includes ceasing use and removing from those tanks and associated piping suspected or tested to be leaking as much oil as necessary to entirely stop the discharge. All tanks and piping shall be abandoned in accordance with section 11.

(c) Remove the tanks and associated piping as soon as possible in accordance with section 11 of this Chapter except that compliance with the waiting period between notification and abandonment is hereby waived.

(d) Prevent further migration of oil into surrounding soils and ground water and surface water, including the removal of any free product in the vicinity of the tanks and piping or other source of leak or discharge. Recovery of free product shall be initiated immediately upon discovery and followed by submission of a free product abatement plan meeting the requirements of paragraph 3 below.

(e) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that has migrated from the excavation zone and entered into structures, sewers and utility conduits.

(2) Initial public exposure assessment and abatement. The facility owner, operator or other responsible party shall complete initial public exposure assessment and abatement measures listed below and required by the Commissioner within 30 business days of confirmation of a leak, discharge or contamination, or within another time period approved by the Commissioner.

(a) Identification of impacted and potential human receptors. Existing and potential public health risks are to be identified for the purpose of establishing initial remediation objectives. Priority shall be given to the identification of human exposure to oil contaminated drinking water supplies and indoor air in occupied buildings, followed by an assessment of the potential for human exposure by way of ground water and drinking water contamination, vapor intrusion pathways, soil off-gassing and direct soil contact.

(b) Initial soil remediation. Remediate all oil saturated soils; contaminated soils that are deemed by the Commissioner to present a threat to public or private drinking water supply wells, or public health, safety or welfare and contaminated soils that are deemed by the Commissioner to present a contact risk to residents, recreation facility users, construction or commercial workers. Soil remediation decisions will be based on soil contamination concentrations measured in accordance with Appendix Q(1)(A) or (C) and the results of field or laboratory analysis for lead identified in §12(B)(c)(i)(b) above. Measurement of residual soil contamination concentrations following source removal are to be conducted by the same methods. Acceptable laboratory methods and performance standards to be used to analyze soil samples are found in Appendix S. Oil contaminated soils and uncontaminated soils are to be physically separated to the maximum extent possible to avoid unnecessary remediation costs.

(c) Soil treatment. The method and location of contaminated soil treatment or processing (in-situ or above ground) must be approved by the Commissioner and, if to be treated off the facility site, must comply with applicable regulations administered by the Commissioner.

(d) Soil disposal. Non-hazardous oil contaminated soils may be disposed at a Maine landfill that is specifically licensed by or otherwise has been approved by the Commissioner or Department for such disposal. This paragraph does not preclude disposal at a properly licensed out of state disposal or treatment facility.

(e) Identification and sampling of nearby drinking water supply wells. Identify, and using a Global Position System (GPS) receiver or other similar technology approved by the Commissioner, locate any water supply wells on the facility parcel, and the closest private and public water supply wells to the facility on abutting properties or within 500 feet of the facility. These wells are to be sampled and analyzed for petroleum hydrocarbons and other oil constituents in accordance with Appendix S and as required by the Commissioner. When wells are found contaminated, the Commissioner may require the sampling of additional wells to ensure all water supplies contaminated by a leak or discharge are identified. The Commissioner may require water supplies suspected to be at risk of contamination to be sampled, as site conditions warrant, including any public well whose mapped source water protection area includes a portion of the facility. Wells experiencing possible petroleum odor and taste problems and located in reasonable proximity to the facility shall also be sampled. The owners of all wells sampled shall be provided with a copy and explanation of the results within 10 business days of receipt. If a public drinking water supply is found to be contaminated, the Drinking Water Program in the Maine Department of Health and Human Services must be notified within 24 hours of discovery. Water samples must be analyzed in accordance with the requirements of Appendix S.

(f) Interim treatment of contaminated private water supply wells. Owners of private water supplies found to be contaminated with oil from a confirmed leak or discharge from a facility shall be offered and provided with point-of-entry water treatment within 10 business days of the discovery of contamination. Water supply wells contaminated with arsenic or other metals released from soil or bedrock by an oil discharge and exceeding a primary federal drinking water standard or State maximum exposure guideline shall be provided with treatment meeting with the satisfaction of the Commissioner. Such treatment shall reliably reduce the level of contamination below primary drinking water standards and Maine Department of Health and Human Services maximum exposure guidelines. For water supplies contaminated with total volatile or extractable petroleum hydrocarbons below 1 ppm and MTBE below 100 ppb, two granulated activated charcoal filters of adequate volume, installed in series may be used. Contamination above these levels requires treatment by aeration. Other point-of-entry treatment systems may be used when demonstrated to be effective and reliable in reducing oil contamination and approved by the Commissioner. If treatment does not reduce contamination levels below required health standards, the Commissioner may require different or additional interim remedial measures to avoid human exposure to oil contaminants or other contaminants present due to the oil contamination.

(g) Treatment of contaminated public water supplies. The Commissioner may require contaminated public water supply wells to be provided by the owner, operator or other responsible party with treatment adequate to reduce oil concentrations and other contaminant concentrations below primary drinking water standards and Maine Department of Health and Human Services maximum exposure guidelines. The treatment system must be designed by a professional engineer licensed in Maine or working in conformance with Maine professional regulation statutes and rules, and be approved by the Commissioner, the Maine Drinking Water Program and the public water supply owner.

(h) Water supply monitoring requirements. The following minimum water supply monitoring requirements must be met unless an alternate monitoring plan is agreed upon by the Commissioner.

(i) Contaminated water supplies must be monitored by sampling once every 3 months before, between and after treatment devices for as long as the system is operating. Water shall be analyzed for petroleum hydrocarbons, oil constituents and other applicable parameters as required by the Commissioner. Water supply sampling and analyses must be conducted in accordance with Appendix S.

(ii) Water supplies found to be contaminated with oil below established health standards and guidelines must be monitored every 3 months for petroleum hydrocarbons, oil constituents and other parameters required by the Commissioner. Water supplies located in close proximity to and adjoining to contaminated ones must, along with other wells deemed by the Commissioner to be at significant risk of contamination, also be monitored in accordance with the above requirements.

(iii) Monitoring of contaminated water supplies and supplies deemed at significant risk of contamination must continue until either use of the supply is discontinued, four (4) consecutive quarterly monitoring results do not detect contamination by oil or its components above a Commissioner established action level, or monitoring is suspended by the Commissioner because it is no longer needed for other reasons.

(iv) Monitoring results must be provided to the Commissioner and the water supply owner within 7 days of receipt.

(i) Water supply treatment systems must be maintained in proper operating condition until completion to Commissioner satisfaction of a potable replacement drinking water supply or the completion of long-term correction actions and settlement of third party damage claims under 38 M.R.S. §551.

(j) Within 30 days after confirmation of a leak or other discharge of oil or another time period approved by the Commissioner, the owner, operator or other responsible party shall submit a written report to the Commissioner for approval. This report shall summarize the initial public exposure assessment and abatement measures taken, their effectiveness, an assessment of impacted and threatened human receptors, supporting analytical data or laboratory analyses, documentation that affected parties and the Maine Drinking Water Program have been properly notified, and the need for investigation of the extent and severity of contamination or for additional human exposure abatement and remediation measures.

Upon consideration of the results and findings presented above, proximity to and potential effects of contaminated soil or ground water on important ground water or surface water resources or other relevant information developed by the Commissioner, the Commissioner may require an initial contamination investigation in accordance with paragraph 4 below as well as additional initial abatement measures.

(3) Free product recovery. Free oil product must be recovered or removed to the satisfaction of the Commissioner at all sites where found. A free product abatement plan shall be submitted for the review and prior approval of the Commissioner. The free product abatement plan must be submitted within 30 days of discovering free product or another time period approved by the Commissioner. Such a plan must include, at a minimum:

(a) Methods for product control. Control of free product migration and the removal or recovery of all free product that is technically feasible shall be the minimum objectives of any abatement plan. Free product removal or recovery must be conducted in a manner that minimizes the spread of contamination into previously uncontaminated zones using recovery and disposal techniques appropriate to the hydrogeological conditions of the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(b) Methods to handle any flammable products in a safe and competent manner to prevent fires or explosions;

(c) The name of the person(s) responsible for implementing free product removal or recovery procedures;

(d) The estimated quantity, type and thickness of free product observed or measured in wells, bore holes and excavations;

(e) The location of any discharge of dissolved phase oil contaminated water. Any discharge of free oil product or a free product and water emulsion is prohibited;

(f) The type of treatment to be applied to and the effluent quality expected from any discharge;

(g) The recovery and treatment system design, including sizing of pumps and recovery wells, influence on ground water and capacity calculations;

(h) A plan to monitor the performance of the proposed recovery and treatment system, including monitoring scope, locations, parameters and frequency;

(i) A contingency and response plan for the loss of product control and recovery and treatment system failure;

(j) The disposition and handling of recovered free product; and

(k) If removal is to include soil gas venting, the quality and quantity of expected air emissions.

(4) Initial contamination investigation

(a) The objectives of the initial contamination investigation are to characterize the hydrogeology of the facility and the surrounding area; to determine the concentration and extent of soil and ground water contamination; to determine the direction of contamination movement; to identify what environmental resources, including nearby surface water resources, and receptors are at significant risk of contamination; to evaluate the potential of a vapor intrusion threat to nearby buildings; to develop a conceptual model of the contamination’s fate, transport, and threat to receptors; and to determine the need for and the objectives of further investigation and long-term corrective actions. The initial contamination investigation study must cover the facility site and those areas known or suspected to be contaminated by oil from the facility discharge.

(b) The following existing data, where available, must be compiled and reviewed:

(i) Soils maps;

(ii) Aerial and satellite photographs;

(iii) Well logs for all contaminated wells and wells on properties abutting a parcel with a contaminated well and all other wells within 500 feet of the facility;

(iv) A suitable base map at a scale of 1"=500' or less showing the location of existing structures, private and public drinking water supply wells within 1000 feet of the facility, source water protection areas for public water supplies mapped by the Maine Drinking Water Program, significant sand and gravel aquifers mapped by the Maine Geological Survey, ground water monitoring wells (if any), current and past locations of oil storage facilities, location of subsurface waste disposal systems and dry wells, other potential contamination sources, property ownership, surrounding land uses, rights-of-way, roads, and existing underground utilities;

(v) Surface water bodies, including intermittent streams, wetlands and flood plains;

(vi) Regional bedrock geology; and

(vii) Surficial geology.

(c) Subsurface oil contaminated soils investigation. A subsurface investigation of oil contaminated soils on and off the facility property shall be conducted based on a sampling plan submitted for Commissioner approval and relying on geo-probing, soil test pits, or other in-situ methods approved by the Commissioner to determine the depth and areal extent of oil contaminated soil, contamination concentrations, physical soil properties, depth to ground water and bedrock if feasible, presence and depth of a confining strata, and ground water contamination concentrations. Products of the oil contaminated soil investigation are to include estimates of the volume of soil posing a threat to receptors, and the mass of the oil contained in those soils.

(d) When drinking water supplies or significant ground water sources are contaminated or at risk, a potential vapor intrusion risk to an occupied structure exists, the potential for contamination of a surface water body is present, or other site specific conditions require ground water quality and flow data for remediation decisions, the Commissioner may require the installation of ground water monitoring wells and submission of a ground water sampling plan. The following minimum data must be collected and logged during the boring and sampling of ground water monitoring wells:

(i) Soil and subsoil conditions and types (described using the unified soil classification system);

(ii) Presence and depth of confining strata;

(iii) Presence and depth of free oil products;

(iv) Depth of water table;

(v) Presence and depth of bedrock; and

(vi) Continuous split spoon logging screening for oil contaminated soils above the water table using the field methodology outlined in Appendix Q or another technique of comparable precision and reliability approved by the Commissioner.

(e) Water quality sampling and analyses requirements include:

(i) Each well must be properly developed and allowed to stabilize prior to sampling;

(ii) Water samples shall be collected and analyzed for petroleum hydrocarbon fractions and target chemicals using the Massachusetts Department of Environmental Protection’s volatile and extractable petroleum hydrocarbon laboratory methods. Other chemical analyses may be required by the Commissioner where needed to assess the extent of and the public health risk of contamination;

(iii) Laboratory analysis of water samples must be conducted in accordance with the requirements of Appendix S; and

(iv) At least 2 complete rounds of sampling are required from all monitoring points, including surrounding water supply wells, at least one month apart.

(f) Nearby surface water bodies likely to be affected must be sampled and analyzed for oil.

(5) Within 90 days of a Commissioner request to perform an initial contamination investigation, or another time period approved by the Commissioner, the owner, operator or other responsible parties shall submit a report of the findings and conclusions of the initial contamination investigation to the Commissioner for review and approval. The following data, results and conclusions must be included in the report:

(a) Data and sample collection and analysis methods used;

(b) Hydrogeological site description addressing the general geological setting of the site; potential and present contamination hazards; bedrock and overburden interconnection; extent and location of ground water and soil contamination; the direction and rate of contamination migration estimate of impacted aquifer properties including hydraulic conductivity, transmissivity and storativity; ground water and surface water resources at risk of contamination; identification of water supply wells contaminated or at imminent risk of contamination; and identification of receptors at risk of hydrocarbon vapor problems;

(c) Soil, soil gas and indoor air, ground water and surface water quality data, including all field and laboratory data, and the relationship of measured contaminant levels to State of Maine and federal allowable contaminant standards or guidelines;

(d) Minimum data and findings to be presented in tables, figures or appendices:

(i) Detailed site/locus map;

(ii) Geologic maps or cross sections to illustrate the site's geological setting;

(iii) Ground water contour map;

(iv) Geophysical survey map, if any;

(v) Table or map showing water quality sampling results;

(vi) Soil sampling results;

(vii) Boring logs and well installation details; and

(viii) All testing laboratory reports and results;

(e) A conceptual site model integrating the findings of investigation work to date, evaluating exposure pathways and the risks to public health and environmental receptors including nearby surface waters, and identifying critical information gaps needed for remediation decision-making; and

(f) Recommendations addressing the need and objectives for additional contamination investigation or monitoring, and the need for additional immediate abatement measures and/or corrective actions for long-term remediation of oil discharges.

(6) Upon review of the initial investigation report, the Commissioner may require the owner, operator or other responsible party to undertake further investigations to determine the need, objectives and feasibility of long-term corrective actions, or the Commissioner may require responsible parties to undertake long-term corrective action in accordance with paragraph D below.

**D.** **Long-term corrective actions.** The facility owner, operator or other responsible party may be required by the Commissioner to provide replacement potable drinking water, to mitigate the risk of contamination to private and public drinking water supplies or important ground water or surface water resources, to prevent human exposure to unhealthy petroleum vapors or soil contact, to control fire and explosion hazards, to protect or restore important biological resources, and to otherwise protect the public health, safety and the environment. Because of the site specific needs and objectives of long-term corrective actions, the owner, operator or other responsible party may be required by the Commissioner to submit for approval a long-term corrective action plan. In reviewing the corrective action plan the Commissioner will consider at a minimum the factors in section 12(A)(1). The schedule for submitting, the format, additional information needs, the overall contents and the objectives of the long-term corrective action plan will be determined by the Commissioner on a site by site basis. All required long-term remediation plans will identify feasible remediation alternatives and evaluate their long-term cost effectiveness in meeting the remediation objectives established by the Commissioner for an oil contamination site. Regardless of whether a facility owner or operator applies for and is eligible for coverage of their remediation costs from the Maine Ground and Surface Waters Clean-up and Response Fund under 38 M.R.S. §568-A, a capital and annual operating budget and implementation schedule for the recommended remediation alternative shall be submitted for the Commissioner’s review and approval as part of the long-term remediation plan.

Upon approval of the corrective action plan or as directed by the Commissioner, the facility owner, operator or other responsible party must implement the plan, including modifications to the plan made by the Commissioner. They must monitor, evaluate, and report the results of implementing the plan in accordance with the schedule and format established by the Commissioner.

**E. Public information and participation requirements**

(1) At the time of submission to the Commissioner, copies of the discharge and leak investigation and confirmation report, the initial response and abatement report, the free product abatement plan, the initial contamination investigation report and the long-term corrective action plan must be sent by certified mail by the owner, operator or other responsible party to the chief municipal officer with jurisdiction or the county commissioners if in an unorganized township, who are responsible for ensuring these documents are available to the public for inspection at the municipal or county offices. The discharge and leak investigation and confirmation report and free product abatement plan also must be provided to the local fire chief with jurisdiction.

(2) The owner, operator or other responsible party shall provide a copy of the discharge and leak investigation and confirmation report, and corrective action plan by certified mail to owners of land parcels abutting the facility, those members of the public directly affected by the release and those affected by the planned corrective action, and to holders of an easement or a right-of-way for an underground utility conduit on the facility or along a public or private road abutting the facility.

(3) Prior to approving a long-term corrective action plan, the Commissioner may hold a public meeting to inform and to solicit comments from impacted residents, abutting landowners and local officials. The Commissioner shall provide written notice 7 days in advance of such a meeting to affected parties, including at a minimum impacted residents and the chief municipal officer, and the responsible parties, if known. When a long-term corrective action effort is to be terminated prior to meeting the objectives of the long-term corrective action plan, the Commissioner shall provide written notice by certified mail to the chief municipal officer with jurisdiction or the county commissioners if an unorganized township, and to residents who have suffered oil contamination.

**F. Environmental data analysis methods and quality assurance requirements**

(1) Water, soil, soil gas and air samples are to be analyzed in accordance with Appendix S; and

(2) Samples are to be collected in accordance with laboratory method instructions, established environmental media sampling protocols, and a quality assurance plan approved by the Commissioner.

**G.** The Commissioner may require ground water, soil and other environmental sample locations and quality data to be submitted in an electronic form compatible with the Maine Environmental Geographic and Analysis Database (EGAD). The format shall be provided by the Commissioner.

**H.** Nothing in this section limits Department authority or discretion under 38 M.R.S. §568 to order or undertake immediate remedial or corrective action at sites where evidence of contamination by oil is present.

**13. Regulation of wastewater treatment tank systems and aboveground oil storage tanks**

1. **Applicability**

This section applies to the following types of tanks:

1. A wastewater treatment tank system that meets the definition of an underground oil storage tank and that is not regulated by the *Clean Water Act* §§ 402 or 307(b) (1972) (33 U.S.C., §1317(b) or §1342 (2016)); and
2. Aboveground oil storage tanks that are associated with field constructed underground oil storage tanks and airport hydrant systems.

**B. Registration.** The tanks regulated by section 13(A) must be registered in accordance with section 4.

**C. Installation requirements**

1. All new and replacement tanks must be constructed and installed in accordance with 40 C.F.R. §280.11, as amended up to July 1, 2018.
2. The underground oil storage facility or any portion thereof must be installed by a properly Certified Underground Oil Storage Tank Installer with the appropriate class of certification.

**D. Financial assurance.** The owner or operator of tanks regulated in section 13(A) of this Chapter must comply with the requirements of section 5(D)(15).

**E. Discharge and leak investigation, response and corrective action requirements.** The owners or operators must comply with the requirements of section 12 of this Chapter, except that the owners and operators may meet the initial site characterization requirements of 40 C.F.R. §280.63, as amended up to July 1, 2018, in lieu of conducting a site assessment in accordance with Appendix P.

**14 Severability.** If any provision of this Chapter is declared invalid or ineffective by a court decision, the decision does not invalidate any other provision of this Chapter.

**Appendix A: Requirements for Cathodic Protection Monitoring**

**1. For Galvanic Cathodic Protection Systems**

A. All measurements must be made by placing a saturated copper/copper sulfate reference electrode in direct contact with the soil electrolyte.

B. The copper/copper sulfate electrode must be placed over the center line of each tank and within 1 foot of each piping run. For single-walled tanks a minimum of three (3) measurements are to be made over the center line of each tank, one at each end and one at the tank’s midpoint. For double-walled tanks, a minimum of one voltage measurement over each tank’s midpoint is required.

C. All measurements must be recorded using a direct current voltage measuring device with a minimum of 10 megohms input impedance, accurate to at least + 1 percent at 1 volt.

D. A measurement of at least negative 0.85 volts must be recorded for each test location and each metallic facility component, including tanks, piping, and connectors that are cathodically protected.

E. When a negative voltage of at least 0.85 volts is not achieved upon installation of the tank or piping, the measurement must be repeated within 6 months. Upon failing to achieve a negative voltage of at least negative 0.85 volts after the 6-month period, the tank owner shall comply with paragraph F, below.

F. The tank owner shall repair or replace the system in accordance with the recommendations of the National Association of Corrosion Engineers, Standard Practice 0285- or STI Recommended Practice for the Addition of Supplemental Anodes to STI-P3® USTs, R972 and section 5(D)( 14) of this Chapter whenever the system does not register a negative voltage reading of at least 0.85 volts for each tank or piping run within six (6) months of the first failed measurement, or properly abandon in accordance with section 11, except as provided for in paragraph E for a new installation.

G. The frequency of cathodic protection monitoring must be consistent with the requirements outlined in section 5(D)(3) and (4).

H. A cathodically protected steel tank or piping that continues to fail to achieve the minimum level of adequate corrosion protection of at least 0.85 volts within six (6) months of repair or replacement in accordance with paragraph F shall be properly abandoned in accordance with section 11.

**2. For Impressed Current or Galvanic Cathodic Protection Systems**

Test methods and criteria as described in the NACE TM 0101, Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Tank Systems, or TM 0497, Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems, are to be used to monitor impressed current systems. These methods for testing galvanic systems may be used with prior written approval of the Commissioner.

NOTE: Structure to soil potentials measured when the soil is frozen may be inaccurate because of the increased resistance of the soil electrolyte. Cathodic protection monitoring schedules should be planned to avoid frozen soil conditions.

**Appendix B: Requirements for Tank, Piping and Containment Sump Tightness Tests**

**1. Volumetric tank tightness testing for single- walled tanks**

A. For all tanks without overfill and spill prevention equipment installed in accordance with section 5(B)(3) or 6(B)(3) and properly operating, all tests must be conducted by overfilling the tank at least to grade level. For tanks with operating overfill and spill prevention equipment meeting the requirements of this Chapter, tests may be conducted if the tank is at least 60 percent full, provided the test is in accordance with manufacturer protocols and with any limitations determined by independent testing in accordance with EPA approved protocols, or other protocols approved by a nationally recognized independent testing organization, including but not limited to the ASTM and the National Work Group on Leak Detection Evaluations.

B. All tests must take into consideration all variables which may affect the determination of a leak rate, including, but not limited to, temperature, pressure, external water table elevation, vapor pockets and tank end deformation.

C. External water table elevation must be verified via a tank backfill ground water observation well at the time of testing for each tank location. The observation well is to be installed in accordance with paragraph 6(C) of this appendix.

D. All tests must be performed in strict conformity to all of the testing equipment manufacturer's operating procedures, and the following standard protocols:

(1) Tests must not be conducted during a fluctuating ground water table;

(2) Height-to-volume conversion factors must be measured rather than calculated;

(3) The test must be conducted under nearly constant hydrostatic pressure; and

(4) If the tank is less than 95 percent full during the volumetric test then the ullage space must also be tested using an appropriate tank tightness test method.

**2. Non-volumetric tightness testing for single walled tanks**

A. Non-volumetric and all other tank tightness tests must be performed in strict conformity to the manufacturer's protocols as used in the method's independent performance testing.

B. The ground water elevation must be measured at the time of testing via a ground water observation well installed in accordance with paragraph 6(C) of this appendix. If ground water is encountered in the observation well, a sample is to be taken and visually inspected for the presence of free product.

**3. Tightness testing for single- walled piping**

A. All pressurized product piping tests must be performed at 150 percent operating pressure, or if performed at a lower pressure, it must be able to obtain a leak rate equivalent or smaller than that determined by the piping test method's independent performance testing in accordance with EPA approved protocols.

B. All tests must be performed in strict conformity to all of the testing equipment manufacturer's standard operating procedures. In addition, the test must be run a minimum of one hour.

C. Tightness testing requirements for single-walled safe suction piping are considered to be met when a Maine Certified Underground Oil Storage Tank Installer or Inspector confirms in writing that each suction line is properly sloped back to the tank, and there is only one check valve in each line installed as close as practical to the pump.

**4.** **Tightness testing of tanks and piping with secondary containment.** For double walled tanks and piping, the integrity of both the inner and outer walls will be tested by testing the interstitial space rather than the primary containment. Tanks and piping with secondary containment shall be tested in accordance with sections 4 and 5 of the PEI Recommended Practice for Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, PEI 1200 or in accordance with protocols reviewed and approved by the Commissioner prior to use.

**5. Tightness testing of containment sumps.** Containment sumps will be tested by an alternative procedure approved by the Commissioner, or in accordance with testing procedures outlined in section 6 of the Petroleum Equipment Institute, Recommended Practices for Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, PEI 1200, or the manufacturer’s instructions.

**6. Other requirements**

A. Testing technicians shall be certified by the manufacturer of the testing equipment.

B. The additional requirements of this paragraph apply to the testing of single-walled tanks used to store ethanol blended gasoline.

(1) Tightness tests must be conducted with 10 or less inches of product in the tank using a test method approved for use with such product levels; and

(2) The tank must be tested manually for water and phase-separated gasoline.

C. Ground water elevation observation well installation. The observation well to determine the elevation of ground water is to be installed in the sand, gravel or pea stone backfill of the tank excavation to a depth of one (1) to two (2) feet below the tank bottom in accordance with EPI Recommended Practice 100. The observation well is to be a minimum of 1 inch in diameter and may be installed using direct push technology. The well is to be constructed of factory screened PVC pipe. Well screening is to start 5 feet above the ground water table and extend to the bottom of the well. Wells are to be installed flush with the ground surface and in a raised, limited access road box. The annulus around the well must be sealed with bentonite or a similar sealing material from 2 feet above the screen upward to the bottom of the road box. Permeable sand must be placed around the road box so that water can drain from the road box. A Maine Certified Underground Tank Installer must be present during the installation of the well to minimize the risk to the structural integrity of the facility.

D. Tank and piping tightness tests involving the removal and reinstallation of existing facility components, including but not limited to, leak detection or overfill prevention equipment, drop tubes, or vent valves, must have an Underground Oil Storage Tank Installer or Inspector present to supervise such facility equipment removals and repairs. The installer or inspector must be certified by BUSTI and by the manufacturer of the equipment being repaired, when such manufacturer certification is available. Tank testing involving excavation above, around or within 10 feet to tanks or piping also requires a Maine Certified Tank Installer to be present to supervise such excavation in accordance with section 5(D)(19) of this Chapter.

E. All test results must include the following information in order to be accepted by the Commissioner:

(1) Facility name, address, registration and tank number, and the product stored;

(2) Depth to ground water and whether free product was found in the ground water observation well;

(3) Whether the facility components tested passed or failed, and the measured leak rate;

(4) The method's threshold for declaring a leak; and

(5) Certification that the test method has been performed according to the manufacturer's protocols used in the third party evaluation, or a protocol for double-walled tanks approved by the Commissioner, and that ground water elevation was measured and taken into account in determining if a leak was present.

F. Written test results must be submitted to the Commissioner by the facility owner and the tester when conducted to verify evidence of a possible leak. Routine annual precision tests conducted to meet the requirements of section 5(C)(2)(a) or 5(F) of this Chapter need only to be submitted by the facility owner.

**Appendix C: Requirements for Pneumatic (Air) and Other Pre-installation Tightness Testing**

**For Piping and Tanks**

1. Air pressure testing of tanks and piping shall only be performed on new, empty tanks and piping, which have never contained product, and the manufacturer has not specified an alternate means of tightness testing.

2. When conducting an air pressure test on metallic tanks or piping, all external joints, seams and connections shall be soaped.

3. The test shall be maintained for a minimum of 1 hour, and all soaped areas shall be visually inspected for bubbles or any other indication of a leak.

4. Any loss of pressure or appearance of bubbles shall constitute failure of the test.

**Piping**

5. Underground piping shall be physically isolated from the tank prior to the test.

6. Underground primary piping shall be air tested to 150 percent of the maximum anticipated pressure of the system, but not less than fifty (50) pounds per square inch (psi) gauge at the highest point of the system.

7. Underground secondary piping must be tightness tested before being backfilled in accordance with manufacturers’ instructions.

**Tanks**

8. Tanks shall be tested before being covered, enclosed or placed in service.

9. Primary tanks must be air tested at not less than three (3) pounds per square inch (psi) and not more than five (5) pounds per square inch (psi) gauge. Gauges used during air testing of tanks must have a maximum limit of 10-15 pounds per square inch (psi).

10. The interstitial space of double-walled tanks must be tightness tested following the manufacturer’s instructions.

**Appendix D: Installation Requirements Applicable to New and Replacement Tanks**

1. All new and replacement tanks and associated leak detection and overfill and spill prevention equipment must be installed in accordance with manufacturer's instructions and the following nationally accepted codes of practice: API Publication 1615, "Installation of Underground Petroleum Storage Systems"; PEI Publication RP 100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; and National Fire Protection Association Code 30, 30A or 31.

NOTE: Tank installation instructions may require specific sized pea stone or gravel. Instructions also may specify mechanical compaction or layered placement of bedding and backfill. Always consult the installation instructions provided by the manufacturer, prior to installation.

2. Cathodically protected steel tanks must be set on a firm base and surrounded on all sides with at least 24 inches of noncorrosive inert material, such as clean sand, pea stone, or gravel, well tamped in place. The tanks must be placed in the hole with care, making sure not to scrape the protective coating off coated tanks, or damage attached cathodic protection components. Cathodic protection systems require electrical wiring connected to the tank at each end and at its centerline, and accessible for voltage readings at the ground surface as well as three (3) locations along the centerline of the tank to place a reference electrode in contact with the soil.

3. Cathodically protected steel underground tanks must be covered with a minimum of 2 feet of sand, pea stone or gravel, or with not less than 1 foot of sand on top of which is placed a slab of reinforced concrete not less than 4 inches thick. This fill must be free of debris, boulders, large rocks or other materials that may cause abrasions to the protective coating of the tank. When tanks are, or are likely to be, subjected to traffic, they must be protected from damage from vehicles passing over them by at least 3 feet of backfill or, 18 inches of well-tamped backfill plus 6 inches of reinforced concrete or 8 inches of asphalt paving. When asphalt or reinforced concrete paving is used as part of the protection, it must extend at least 1 foot horizontally beyond the perimeter of the tank in all directions.

4. All cathodically protected steel and nonmetallic fiberglass tanks must be installed in accordance with manufacturer instructions. The minimum depth of cover is as specified in section 3 above.

5. New underground tanks must be tested for tightness before being covered or placed in use by a test method approved by the manufacturer. If a pneumatic test is conducted, it should be done in conformance with the requirements of Appendix C.

NOTE: Air pressure testing when petroleum vapors are present in the tank may result in explosion, and shall not be conducted after petroleum product has been placed in the tank.

6. All temporary supports must be removed prior to final backfilling.

7. All electrical wiring must be performed in accordance with the current State of Maine electrical code.

8. Anchoring is required when a tank is installed in an area where ground water will be in contact with the tank or in a 100 year flood plain as mapped by the FEMA, or if such mapping is unavailable, as determined by the flood of record or by the presence of flood plain soils. When anchoring tanks equipped with cathodic protection, the holddowns must be electrically isolated from the tank. Anchoring of all tanks must be performed in accordance with the tank manufacturer's specification or PEI Publication RP 100.

NOTE: FEMA flood plain maps are available for inspection at most municipal offices.

**Appendix E: Installation Requirements for New and Replacement Piping**

1. All new and replacement piping, sumps and associated leak detection must be installed in accordance with the manufacturer's instructions and the following nationally accepted codes of practice: API Publication 1615, "Installation of Underground Petroleum Storage Systems", PEI Publication RP 100, "Recommended Practices for Installation of Underground Liquid Storage Systems", STI Standard R 892, and NFPA 30, 30A and 31.

2. Before underground piping is installed, the trench must receive as a minimum a 6-inch deep bed of well compacted noncorrosive material such as clean sand, pea stone or gravel. All trenches must be wide enough to permit at least 6 inches of noncorrosive backfill material around all lines.

3. Prior to being covered or placed in service, all new and replacement piping must be tested for tightness by a method approved by the manufacturer. Air pressure tests are to be conducted in accordance with the requirements of Appendix C, and hydrostatic tests must be conducted in accordance with the requirements of Appendix B.

4. All temporary supports must be removed prior to final backfilling.

5. All vent piping for storage of Class I liquids must extend at least 12 feet above the ground surface and be positioned such that vapors will not pose a hazardous condition. Vent piping must slope back to the tank with a slope of at least 1/8inch per foot.

6. Fill piping for storage of Class I liquids must be set back from any building opening in accordance with National Fire Protection Association Codes 30, 30A or 31.

7. Product supply lines used in conjunction with pressurized pumping systems must be installed with a product line leak detection device. All leak detection devices must be tested for proper operation before the remote pumping system is used after initial installation and once annually thereafter. All leak detectors must be capable of detecting a leak at a rate of at least 3 gallons per hour at a line pressure of 10 psi within one hour of occurrence with a 95 percent probability of detection and a 5 percent probability of false alarm.

8. A double-poppet crash valve must be installed under dispensers of pressurized pumping systems in accordance with the National Fire Protection Code 30A.

9. Safe suction systems must have no more than one check valve per pump. The check valve must be located as close to the pump as possible, such that any leaks in the line will result in a return of product to the tank. Safe suction piping must slope back to the tank with at least a 1/8inch per foot slope. Supply and return piping for a facility storing oil for an emergency standby generator are exempt from this requirement if secondary containment with continuous interstitial space monitoring is provided in accordance with section 5(B)(2) of this Chapter.

10. When the product dispenser of a motor fuel facility is at a lower elevation than all or a portion of the tank height, an anti-siphon ("normally closed") valve must be installed as close as physically possible to the start of the down-gradient run of the product piping in order to prevent the loss of the tank contents in the event of a piping leak.

**Appendix F: Specifications and Requirements for Vertical Ground Water Monitoring Wells at Existing Facilities**

These requirements only apply to existing facilities, fully installed as of April 19, 1990.

1. Sufficient number of vertical ground water monitoring wells must be installed to detect a leak from every tank by including a minimum of four monitoring wells for each tank or where more than one tank is installed in the same continuous excavation, the minimum number of monitoring wells shall be installed as diagrammed below:

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When more than one tank is installed in a continuous excavation hole, alternate numbers and positioning of ground water monitoring wells may be used when determined by a Maine licensed professional engineer or Maine certified geologist as capable of detecting a leak or discharge from every tank and meeting the performance and installation requirements of section 5(C) of this Chapter. Such an alternate ground water monitoring plan must be certified by a Maine licensed professional engineer or Maine certified geologist, and submitted to the Commissioner as part of the facility's registration materials.

2. Monitoring wells must be a minimum of 2 inches in diameter.

3. The slotted zone must extend at least 5 feet into the water table and at least 5 feet above the ground water surface, as determined at the time of installation; or when installed within a secondary containment liner, the slotted zone must extend to within 6 inches of the low point of the liner.

4. The screened portion of the well must be a minimum of 10 feet in length and must be factory slotted with a slot size of .010 inch.

5. Monitoring wells must be installed with a cap at the bottom of the slotted section of the well.

6. Monitoring wells must not be constructed of schedule 20 PVC "sewer" or leach field piping.

7. Monitoring wells must be constructed of flush joint, threaded schedule 40 PVC or other materials and designs approved by the Commissioner.

8. Monitoring wells must be numbered such that all monitoring and testing results are easily correlated to a specific monitoring well location.

9. All monitoring wells must be equipped with liquid-proof lockable caps.

10. Monitoring wells must be properly distinguished from fill pipes.

11. The area around the screened portion of the well shall be surrounded by a porous medium (e.g. sand, gravel or pea stone).

12. The outside of the monitoring wells risers must be sealed using bentonite or a similar product to a depth of 1 1/2 feet below ground surface.

13. Monitoring wells located in traffic areas must be cut off at ground level, clearly marked, and fitted with a limited access cover in accordance with PEI Publication RP 100 or properly protected from vehicles.

14. Any damaged monitoring well must be repaired or replaced as soon as possible after discovery of the damage, but at least within 45 days.



**Appendix G: *Repealed***



**Appendix H: Procedures for Weekly Monitoring, Handling, and Obtaining Samples for Laboratory Analysis**

These procedures are specifically for manual sampling of ground water monitoring wells used as leak detection to meet the requirements of section 6(C)(3) of this Chapter.

NOTE: Due to the extreme sensitivity of laboratory analytical equipment, it is very important that all bailers, pumps and sample vials be kept clean. A contaminated pump or bailer may cross-contaminate monitoring wells or falsely indicate the presence of hydrocarbons in the ground water. It is also important that the person taking the sample have clean hands free of any grease, oil or gas.

**For Weekly Monitoring, Perform Steps 1 through 7.**

1. All equipment used shall be washed with a detergent soap and triple rinsed with water which is known to be uncontaminated to ensure the device is clean. The individual(s) performing the sampling shall wash their hands thoroughly prior to sampling.

2. Measure and record the distance from the top of the casing to the water surface.

3. Measure and record the distance from the top of the casing to the bottom of the well.

4. After checking for free product using a clear bailer and when the volume of water in the well is sufficient remove several bailer volumes of water.

5. Lower the bailer into the well and remove a sample. Pour the contents of the bailer into a clear container.

6. Inspect the sample for free product or an oily sheen. Smell the sample for olfactory evidence of oil.

7. Record the results in a logbook which, shall be kept at the facility. A sample log sheet is attached in Figure 3.

NOTE: Commercially available pastes, which change color upon contact with hydrocarbons can be spread on a weighted, plastic tape measure or measuring stick and lowered the depth of the well. Pastes are also available which will change color upon contact with water. The use of these pastes is an acceptable method of determining water levels and detecting product in monitoring wells for the purpose of complying with weekly monitoring requirements. The use of an oil/water interface probe is also acceptable.

8. Prior to obtaining samples for laboratory analysis, remove 3 well volumes of water from each well. The water may be removed by bailing or pumping the well. For 2-inch wells, remove about 2.5 gallons of water for every 5 feet of well water.

9. After a sufficient volume of water has entered the well, take a sample for analysis.

10. Samples shall be poured into vials designed for sampling volatile organics. Standard sampling vials are glass, 30-50 milliliters in volume with a Teflon cap. Obtain the sample vials from the lab where the analysis will be performed. Care shall be taken, such that no air bubbles are in the sample vial. Record the sample vial number and the monitoring well number, such that the laboratory analysis may be correlated to a specific well location.

11. Samples shall be securely packed and shipped the same day or in accordance with the protocols for the analysis being conducted. Samples shall be kept cool and not exposed to heat. A record shall be kept of all dates and shipping arrangements. Samples must be analyzed in accordance with the requirements of Appendix S of this Chapter.

12. For monitoring wells, which are installed with the impervious barrier, which contains less than two (2) feet of water, do not attempt to remove three well volumes of water. It may be necessary to sample the well during or after periods of rain whenever possible.

13. For monitoring wells, which do not have enough water to obtain a sample, measure the depth of the well to insure the well is not filled in or has not collapsed. Using a gauge stick or hard plastic tape, apply paste which will turn color upon contact with hydrocarbons. Record the results of both measurements for each well in the logbook.

FIGURE 3

SAMPLE WEEKLY MONITORING WELL LOG SHEET

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Monitoring Well No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. Date of Sampling |  |  |  |  |  |  |  |  |
| 2. Time of Sampling |  |  |  |  |  |  |  |  |
| 3. Distance from Casing to Ground Water |  |  |  |  |  |  |  |  |
| 4. Distance from Casing to Bottom of Well |  |  |  |  |  |  |  |  |
| 5. Method for Determining Water Levels |  |  |  |  |  |  |  |  |
| 6. Instrument Cleaned (Washed and Triple Rinsed) |  |  |  |  |  |  |  |  |
| 7. Instrument Used (Bailer, Pump, etc.) |  |  |  |  |  |  |  |  |
| 8. Results of Sight and Smell Test |  |  |  |  |  |  |  |  |
| 9. Initials of Person Performing the Sampling |  |  |  |  |  |  |  |  |

10. Comments

**Appendix I: Sample Daily Inventory Reporting Log**

KEEP THIS COMPLETED FORM FOR 3 YEARS

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| --- |
| **MONTHLY FUEL REPORT/DAILY INVENTORY**Month/Year Facility & Location: Registration Number: Tank Size and Fuel Type: Certified By:  |
| Date | Opening Inventory (Book Inventory of Previous Day) | Gallons Pumped | Gallons Delivered | Book Inventory Balance | Closing Stick Inventory | Cumulative Over or <Short> | Inches Water | Initials |
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| Math Check |  | - | + | = |  |  |  |  |
| **Leak Check:** Sum of Gallons Pumped ( ) x .01 = IF THE ABSOLUTE VALUE OF THE "CUMULATIVE OVER OR SHORT" ON THE LAST DAY OF THE MONTH IS GREATER THAN LEAK CHECK RESULT, IT IS CONSIDERED EVIDENCE OF A POSSIBLE LEAK AND YOU MUST NOTIFY DEP AT (207) 287-7688.Log Sheet #1 |

**Appendix J: Requirements for Abandonment of Underground Oil Storage Tanks by Removal**

1. The top of the tank must be exposed.

2. All piping must be drained and flushed into the tank or other suitable container such that no waste water or product is released to the environment (1 or 2 gallons of water should be sufficient to flush piping).

3. All liquid that can be pumped out must be removed, and any liquids that cannot be used for their originally intended purpose must be disposed of in accordance with the Department’s *Waste Oil Management Rules*, 06-096 C.M.R. ch. 860. UL listed explosion proof equipment must be used to remove Class I liquids. Hoses to remove product must be inserted to the low end of the tank, which may still contain product. Flammable vapors from vacuum trucks removing oil from a tank or facility must be vented at least 12 feet above the ground surface.

4. The fill (drop) tube must be removed. Fill, gauge, and product lines must be disconnected. The open ends of all lines must be capped or plugged. All tank openings that will not be used in the inerting procedure also must be plugged. Only the vent line will remain connected and open until the inerting procedure is complete. The vent line must be at least 12 feet above the ground surface.

NOTE: Due to the potential of waste oil tank explosions, the Department strongly recommends treating all waste oil tanks as a Class I liquid tank except where testing shows the internal atmosphere not to be explosive.

5. All tanks that contained Class I liquids must be made safe prior to removing the tank from the ground using one of the following methods:

A. The tank can be inerted with dry ice in the amount of 1.5 pounds per 100 gallons of tank capacity. Dry ice shall be crushed and distributed evenly over the greatest possible area. During the inerting process, all necessary precautions to prevent ignition in the entire area shall be taken.

B. The tank can be inerted using nitrogen or another inert gas approved by the Commissioner, introduced at low pressure at the bottom of the tank. Inerting is considered complete when oxygen levels in the tank are measured at less than 6 percent.

C. The tank can be removed if the tank atmosphere is found to be oxygen deficient as defined by an oxygen reading of less than 6 percent.

D. The tank can be rendered vapor free by air purging in accordance with API 1604. Air purging is considered complete when an explosimeter indicates an atmosphere inside the tank of less than 10 percent of the LEL while an oxygen meter indicates greater than 14 percent oxygen. Air purging using air-moving equipment found on a vacuum truck is not allowed.

During any of the above inerting, purging or removal procedures, all necessary precautions to prevent ignition in the area must be taken, including but not limited to: grounding and bonding of equipment; use of explosion proof or intrinsically safe equipment; ambient air monitoring of the surrounding area; and pedestrian and traffic control. All weather and ambient atmospheric conditions must be evaluated prior to inerting or purging, including but not limited to air exchange, wind direction and humidity. All air monitoring instruments must be calibrated according to the manufacturer's specifications. Measurements with air monitoring instruments must be taken at the following points: one foot from the bottom of the tank; at its lowest end; the middle of the tank's diameter; and at the tank opening.

NOTE: All contaminated soil must be removed or otherwise cleaned up to the satisfaction of the Commissioner.

6. All holes, including corrosion holes, must be plugged or capped before the tank is moved from the site, except that one 1/8 inch vent hole must be left to prevent the tank from being subjected to an excessive pressure differential caused by extreme temperature changes.

7. If transported, the tanks must be scraped to remove all loose backfill material adhering to the tank.

8. All tanks removed from the ground, regardless of condition, must be labeled with the following information: Tank Has Contained Leaded Gasoline (or Flammable Liquid) NOT GAS FREE.

NOTE: U. S. Department of Transportation regulations, *Hazardous Materials Regulations*, 49 C.F.R. §172.500-172.560 also require tanks which have not been purged but are being transported to be labeled on the ends and sides with a "Flammable" placard with the appropriate UN Number (1203 or 1993) attached.

9. If transported, the tank must be secured on a truck such that the 1/8 inch vent hole is located on the uppermost point on the tank.

10. All piping must be removed from the ground whenever practicable. Piping that cannot be removed must be blown clear of residual product with an inert gas and securely plugged at all ends. All necessary precautions to prevent spillage or ignition in the entire area must be taken.

11. Some tank disposal facilities require that tanks be cleaned of sludge and residues prior to accepting the tank. Any cleaning and temporary storage operations must be performed at a site acceptable to local public safety officials and not on a sensitive geologic area, as defined in section 3 of this Chapter. Any cleaning operation involving flammable materials or generating flammable vapors must be performed at a remote site where public access can be restricted by fencing or other suitable means 24 hours/day. Tank cleaning may be performed at the site where the tank is removed only with the permission of the local public safety official.

NOTE: If cleaning a tank at the site of its removal, it is recommended that the tank be cleaned while still in its excavation hole, the safest location in the event of an explosion or fire.

12. The only acceptable means of disposal of underground oil storage tanks are:

A. Sale to a properly approved junk or scrap dealer;

B. Disposal at a tank processing facility meeting the criteria of Appendix L of these rules and approved by the Department; or

C. Other techniques for disposal of tanks, provided the expressed written approval of the Department and the State Fire Marshal's office has been obtained.

13. Tanks must be stored with all bung holes open and positioned at a 45 degree angle down from horizontal to prevent rain from entering the tank and to allow vapors to escape.

**Appendix K: Requirements for Abandonment of Underground Oil Storage Facilities by Filling in Place**

1. Piping must be drained and flushed into the tank.

2. All liquid that can be pumped out, including that liquid requiring a hand pump to remove, must be removed and any liquids that cannot be used for their originally intended purpose must be disposed of in accordance with the Department’s *Waste Oil Management Rules*, 06-096 C.M.R. ch. 860. UL approved explosion proof equipment must be used to remove Class I tanks that may still contain product. Flammable vapors from a vacuum truck removing oil from a tank or facility must be vented at least 12 feet above the ground surface, effective September 28, 1991. All sludge will also be removed, handled, stored and disposed of in accordance with 06-096 C.M.R. ch. 851 of the Department’s hazardous waste rules. Where it can be demonstrated to Department satisfaction that a sludge is not a hazardous waste, it may be disposed at a solid waste disposal facility licensed for such wastes.

3. The top of the tank must be exposed.

4. The fill (drop) tube must be removed. Fill, gauge, and product lines must be disconnected. Open ends of all lines, except the vent line, must be capped or plugged.

NOTE: Due to the potential of waste oil tank explosions, the Department strongly recommends treating all waste oil tanks as a Class I liquid tank except where testing shows the internal atmosphere not to be explosive.

5. All tanks that contained Class I liquids must be made safe prior to removing the tank from the ground by using one of the following methods:

A. The tank can be inerted with dry ice in the amount of 1.5 pounds per 100 gallons of tank capacity. Dry ice shall be crushed and distributed evenly over the greatest possible area. During the inerting process, all necessary precautions to prevent ignition in the entire area must be taken.

B. The tank can be inerted using nitrogen or another inert gas approved by the Commissioner, introduced at low pressure at the bottom of the tank. Inerting is considered complete when oxygen levels in the tank are measured at less than 6 percent.

C. The tank can be considered inert if the tank atmosphere is found to be oxygen deficient as defined by an oxygen reading of less than 6 percent.

D. The tank can be rendered vapor free by air purging in accordance with API 1604. Air purging is considered complete when an explosimeter indicates an atmosphere inside the tank of less than 10 percent of the LEL while an oxygen meter indicates greater than 14 percent oxygen. Air purging using air-moving equipment found on a vacuum truck is not allowed.

During any of the above inerting, purging or removal procedures, all necessary precautions to prevent ignition in the entire area shall be taken, including but not limited to: grounding and bonding of equipment; the use of explosion proof or intrinsically safe equipment; ambient air monitoring of the surrounding area; and pedestrian and traffic control. All weather and ambient atmospheric conditions must be evaluated prior to inerting or purging, including, but not limited to, air exchange, wind direction, and high humidity. All air monitoring instruments must be calibrated according to the manufacturer's specifications. Measurements with air monitoring instruments must be taken at the following points: one foot from the bottom of the tank; at its lowest end; the middle of the tank's diameter; and at the tank opening.

6. Vapors from the tank must be vented at least 12 feet above the ground surface.

7. A suitable, solid, inert material must be introduced through the hole in the top of the tank. The following materials are suitable for this purpose:

A. Sand. Sand that is free of rocks is suitable for filling. It may be poured dry as long as it flows freely. When the tank is nearly full, sand should be washed into the tank with a nominal amount of water and puddled to cause the sand to flow to the tank ends. The use of large amounts of water must be avoided.

B. Sand and Earth Fill. The tank can be (1) filled with sand to about 80 percent of the calculated capacity, and (2) filled to overflowing for the remaining capacity using a mixture of soil and water in a free-flowing mud.

C. Cement or mortar.

**Appendix L: Requirements for Underground Oil Storage Tank Processing Facilities**

1. Applicability

A. The requirements of this appendix apply to underground oil storage tank processing facilities where tanks used for the storage of oil and abandoned by removal are cleaned, temporarily stored and processed prior to recycling or re-use of their materials.

B. For the purpose of this appendix, the cleaning operation of a tank processing facility includes those areas and activities where vapors, liquids, solids, sludge, rust, scale and other residues are removed and cleaned from an abandoned underground oil storage tank, including buffers, structures, roads and equipment.

C. For the purpose of this appendix, the processing operation of a tank processing facility includes those areas and activities where cleaned tanks are cut, crushed, reduced in volume or otherwise modified prior to sale or re-use of their materials.

2. Siting. Underground oil storage tank processing facilities may not be located:

A. On a coastal sand dune system, as defined in the *Natural Resources Protection Act,* 38 M.R.S. §480-B(1);

B. On coastal wetlands as defined in 38 M.R.S. §480-B(2);

C. On freshwater wetlands, as defined in 38 M.R.S. §480-B(4);

D. On a one hundred year flood plain, as defined in the Solid Waste Management Rules*: General Provisions,* 06-096 C.M.R. ch. 400 of the Department’s rules;

NOTE: In most areas of Maine, the flood plains have been mapped by the Federal Emergency Management Agency (FEMA). Maps are available at most municipal offices.

E. Within a public water system’s source water protection area as mapped by the Maine Bureau of Health, or a sensitive geological area as defined in section 3(EEE) of this Chapter;

F. Within 300 feet of bodies of surface water classified as Class GPA waters in the *Water Classification Program*, 38 M.R.S. §465-A or classified as Class AA waters, Class A waters, Class B waters, or Class C waters in 38 M.R.S. §465; or

G. Within 100 feet of an adjacent property boundary.

NOTE: If the area of a facility, including all operations, temporary storage areas, structures, roads and buffers, exceeds 3 acres, the owner also must obtain approval under the *Site Location of Development Law*, 38 M.R.S. §§ 481-489-E, and the Maine *Hazardous Waste Septage and Solid Waste Management Act*, 38 M.R.S. §§ 1301 -1319-Y.

3. Design

A. The entire facility must be surrounded by a fence or otherwise secured to the Commissioner's satisfaction to prevent unauthorized access to the tanks. Signs stating "Caution ‑ Flammable Materials", "No Smoking" and "No Entry of Unauthorized Personnel" must be placed along the fence at intervals no greater than 50 feet.

B. A 25-foot fire protection buffer must be cleared of combustible materials on all sides of the facility. This buffer must be maintained at all times free of all structures, equipment, cleaned tanks and other facility activities. Overhanging branches and vegetation must be cut back to distances safe from fire and explosion. The fire buffer may lie outside the fenced portion of the facility.

NOTE: Graveling the area and removing the vegetation are examples of means that would normally achieve this purpose.

C. The facility must be equipped with fire protection equipment of the size, quantity, type and location directed by local fire officials or by the Commissioner. Equipment must be kept operable at all times.

D. The facility must be equipped with a means of communication (such as a telephone or two-way radio) with fire and medical emergency personnel.

E. A contingency plan meeting the requirements of *Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities,* 40 C.F.R.§264.52 as amended up to July 1, 2017 must be developed to provide for prompt response to fire and explosion hazards, and for containment and removal of any spilled material. A copy of the contingency plan must be sent to the Commissioner and to local public safety officials. A copy must be kept at the facility at all times.

F. Cleaning Operations Design

(1) Any area underlying a cleaning operation must be surrounded by a berm of sufficient height to contain all residues, cleaners and precipitation that may be contaminated by these substances. This area and berm must be underlain by a clay or synthetic liner, which in turn must be completely covered by a firm, continuous working surface (such as concrete) that is compatible with hydrocarbons. The area must be equipped with a collection system which contains for removal of all solid and liquid tank residues, cleaners, and all precipitation that may be contaminated by these substances.

(2) A clay liner must be at least two feet thick and must have a permeability no greater than 10-7 cm/sec. A synthetic liner must be at least 40 mils thick and must be of a material compatible with all residual tank contents and cleaners. It must be installed in accordance with the manufacturer's specifications. An independent professional engineer or authorized liner manufacturer's representative shall observe the entire installation and testing, and shall certify to the Department that the installation, testing and repairs occurred in accordance with the manufacturer's specifications. Either a clay or synthetic liner must extend at least 10 feet in all directions beyond all tanks requiring containment, and must be anchored to the berm in a secure fashion.

(3) The collection sump, tanks, and all equipment must be of adequate size to contain the volumes of tank residues, cleaners, and any contaminated precipitation that will be generated. They must be constructed of materials compatible with the wastes generated.

(4) A tank is deemed clean when:

(a) all loose scale has been removed from the inside of tank walls;

(b) all solid and liquid residues have been removed from tanks walls; and

(c) the tank has been ventilated by air, steam, or some other means so that its atmosphere does not exceed 10 percent of the Lower Explosive Limit (LEL).

G. Processing Operations Design

(1) Processing operations areas must be physically isolated from the cleaning operations area such that no flammable or explosive hazards exist in the processing areas due to cleaning operations.

(2) Processing operations areas need not be lined, but must be maintained in a manner so that processing debris (e.g. cuttings, etc.) can be collected and removed.

H. Temporary Storage Area Design

(1) Tanks at a processing facility may be temporarily stored on site for less than 12 months, provided the following conditions are met:

(a) All tanks must be stored in a "chocked" condition to prevent rolling, and must have the top openings (manufactured openings or bungs) open and located at a 45 degree angle from the ground to prevent rainfall from entering and to facilitate venting. Any corrosion or non-manufactured holes must be plugged.

(b) A 3-foot separation must be maintained between all tanks to allow weekly inspection for leakage and cleanup of spills. Any tanks found to be leaking must be immediately cleaned in accordance with this Chapter.

(c) Any discharge of oil to soil or ground water in any unlined portion of the facility must be immediately reported and removed to Department satisfaction.

(2) Under no circumstances must a tank be stored or remain at a facility for a period exceeding 1 year from the date of the tanks arrival at the facility.

4. Operation

A. All tanks arriving at a processing facility must be brought immediately into a secured area and inspected. The inspector shall note tank condition (severe corrosion, splits, number and size of holes) and evidence of leaks such as product on outside tank surfaces, or adhering contaminated soil. This information must be recorded in a facility log book.

B. Following inspection, all tanks must be marked conspicuously and permanently with a serial number assigned by the facility, date of receipt and product last stored, if known.

C. Any tanks containing liquids must be pumped dry immediately following inspection. Any pumping or removal of liquids must be conducted in a lined portion of the facility. Any liquid-free tanks may then be brought to a temporary storage area provided they are stored in accordance with Appendix L (11)(H).

D. Solid and liquid residues from tank cleaning or processing will be disposed of in compliance with appropriate federal, state and local laws, regulations and ordinances. All residues are presumed to be hazardous waste, requiring disposal under the provisions of the Department’s *Hazardous Waste Management Rules*, 06-096 C.M.R. ch. 850-857, unless testing or other information establishes, in accordance with 06-096 C.M.R. ch. 850, that they are not.

NOTE: Sludge and solid wastes found to be non-hazardous are special wastes subject to the requirements of the Department’s rules, *Water Quality Monitoring, Leachate Monitoring and Waste Characteristics* 06-096 C.M.R. ch. 405. Liquid petroleum wastes found to be nonhazardous are waste oils subject to the requirements of 06-096 C.M.R. ch. 860 of Department’s rules.

E. After tank identification, cleaned tanks must be brought to the processing operation area unless stored in accordance with paragraph 3(H) of this appendix. Tanks not cleaned upon arrival must be taken to a cleaning operations area, unless stored in accordance with paragraph 3(H) of this appendix.

F. The facility must maintain a log book at the facility at all times. It must be kept current and made available to Department inspectors upon request. The log book must contain the following information for each tank:

(1) facility-assigned serial number;

(2) location from which tank was removed;

(3) tank size;

(4) contents when last in use;

(5) tank condition upon arrival (e.g. sound, badly corroded, number of holes);

(6) date cleaned;

(7) date processed; and

(8) final disposition (sold whole, cut up, crushed).

In addition the log book must include information on types and volumes of all residues generated, how they were disposed of, and when. All records must be kept for at least three years.

G. Ground water monitoring must be conducted at the facility. A ground water monitoring plan, developed and certified by a Maine certified geologist, must be submitted to the Commissioner with the facility application. The plan must provide for a minimum of one upgradient and three down-gradient wells, located and screened to detect releases of hydrocarbons as early as practicable.

**Appendix M: Cathodic Protection Tester Certification Requirements**

1. The requirements of this appendix apply only to individuals not certified by the Maine Board of Underground Tank Installers for underground oil storage facility installation. Maine Certified Underground Oil Storage Tank Installers are considered to meet the definition of a cathodic protection tester as long as their installer certification remains valid.

2. An underground oil storage tank inspector is approved by the Commissioner as a cathodic protection tester when certified by the Maine Board of Underground Storage Tank Installers in accordance with 32 M.R.S. §10010(6)(C).

**Appendix N: Corrosion Expert Certification Requirements**

1. The Commissioner may certify a person as a corrosion expert on finding that the person has a thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by professional education and related practical experience and is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Only individuals may be certified.

2. Criteria for certification by the Commissioner

A. Documentation of valid certification by the NACE as a qualified corrosion expert; or

B. Registration as a professional engineer in Maine, and certification or licensing, by a professional organization or educational institution other than NACE, based on adequate education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

3. Application procedures

A. On an application form provided by the Commissioner, applicants must provide the following information and certify its accuracy.

(1) Applicant's name, business mailing address, and telephone number;

(2) Documentation of NACE or other professional or educational institution's certification;

(3) Documentation of Maine registration as a professional engineer, if needed;

(4) Description of relevant work experience, college courses (including transcript) and other technical training courses; and

(5) Three written professional references.

B. Upon the review and approval of an application as meeting all the certification criteria of this Chapter and 38 M.R.S. §567-A(2), the Commissioner shall issue a certificate valid for 12 months.

C. Requests for recertification must be made to the Commissioner in writing 30 days prior to expiration of the existing certificate. The Commissioner may deny a request for recertification request on any one of the following grounds: a documented improper installation of corrosion protection not in accordance with the requirements of this Chapter; the expiration or loss of NACE or other professional certification; or loss of a valid professional license as a registered Maine professional engineer. An individual who has lost his or her certification may reapply after 12 months for recertification consistent with requirements of paragraph 2 above.

D. The Commissioner may undertake enforcement actions corrosion experts for violations of this Chapter, in accordance with the provisions of 38 M.R.S. §347-A.

**Appendix O: *Repealed***

**Appendix P: Requirements for a Site Assessment at Facility Closure or Tank Abandonment**

1. The purpose of a site assessment for facility closure or abandonment is to determine if discharges of oil have occurred requiring notification of the Commissioner and corrective action by the owner, operator or another responsible party.

2. General requirements

A. A site assessment meeting all the requirements of this appendix must be completed prior to the completion of facility closure or the abandonment of any portion of a facility in accordance with section 11. This includes abandonment of only piping.

B. Site assessor qualifications. If a tank or facility is located within a sensitive geologic area, as defined by this Chapter, the site assessment must be supervised by, and the site assessment report must be certified by, a Maine certified geologist, licensed professional engineer, or other persons meeting the requirements of Maine's professional regulation statutes and regulations for geologists or professional engineers practicing in Maine. As provided under 38 M.R.S. §563‑B(1), the closure site assessment for facilities not located in a sensitive geologic area are exempt from the above qualification standards for the person conducting the assessment.

C. The findings of all site assessments conducted pursuant to this Chapter must be presented in a written report with supporting data, addressing the requirements of this appendix.

D. One paper copy and one digital PDF version of all site assessment reports conducted pursuant to this Chapter must be submitted to the Commissioner by the facility owner within 45 days of tank and piping removal or abandonment in place. The paper copy must be in an envelope endorsed "UST Site Assessment" and sent to the following address: UST Program Administrator, MDEP-BRWM, 17 SHS, Augusta ME 04333-0017. Electronic submittals must be submitted to UST.Site.Assessment@maine.gov with the tank registration #, address and municipality in the subject line.

If a site assessment finds evidence of a discharge or contamination above a notification level in Appendix Q, an additional paper copy of the site assessment report must be submitted at the same time, to the chief municipal official of the municipality within which the facility is located or to the county commissioners if located in an unorganized township.
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NOTE: Upon receipt of a site assessment report, the Commissioner will review and determine if further investigation or remediation is needed in addition to any completed at the time of the facility abandonment in accordance with section 12.

E. Site assessment reports must follow the general format and include the following information:

(1) A completed summary cover sheet using the, form attached to this appendix;

(2) A description of the purpose of the site assessment per Appendix P(1), a description of the tanks and piping to be removed or abandoned in place, and a description of the areas to be assessed in the site assessment;

(3) Identification of the facility name and site location;

(4) A description of the facility and site history under Appendix P(5) when evidence of a discharge or contamination above notification levels in Appendix Q is found;

(5) Identification of all potential receptors under Appendix P(4) when evidence of a discharge or contamination above notification levels in Appendix Q is found;

(6) Description of the site assessment methods utilized, including field instrument methods, laboratory methods and quality assurance/quality control (QA/QC) procedures followed;

(7) Findings of the site assessment, including field and laboratory analytical results for all soil and water samples collected, a site plan showing the location and sample number of all soil and water samples; and

(8) Recommendations and conclusions.

F. The Commissioner may require sample location and quality data to be submitted in an electronic format compatible with the Maine Environmental and Geographic Analysis Database (EGAD). The format for such data will be provided by the Commissioner.

G. Exception for the removal of flexible primary piping when piping is being replaced. The site assessment requirements in paragraphs 2(B) through 2(E) do not apply to the removal of the flexible primary piping of double-walled piping when conducted in accordance with section 5(B)(6-A) of this Chapter and the following requirements.

(1) Prior notification by the facility owner or operator of the piping abandonment to the Commissioner and the municipality is provided in accordance with section 11(F) of this Chapter.

(2) Upon removal, the entire length of primary piping is visually inspected by a Maine Certified Underground Oil Storage Tank Installer and the physical condition and the integrity of the piping is documented, including any evidence of a discharge or leak.

(3) The Certified Underground Oil Storage Tank Installer submits to the Commissioner and the facility owner or operator the findings of the visual inspection on a reporting form provided by the Commissioner within 30 days of the piping abandonment and removal.

(4) Any oil discharge is reported to the Commissioner within 2 hours of discovery.

3. The following facility and site location information must be included in all site assessments:

A. Mailing and street address of facility;

B. Tax map and lot number;

C. Whether it is located in a sensitive geologic area as defined by this Chapter; and

D. UTM, longitude/latitude decimal coordinates, or Google Earth satellite photograph or comparable map showing the precise location of the facility dispensers, tanks, and piping runs.

4. The following information regarding potential receptors must be provided where contamination or evidence of a discharge of oil has been found:

A. A description of surrounding land uses and the extent of public drinking water service to all abutters and the surrounding area. A facility layout plan showing locations of property boundaries, tanks, product and vent lines, dispensers, subsurface waste water disposal systems, dry wells, floor drains, sewer lines and underground utilities;

B. Type of oil products discharged; and

C. Recommendations regarding the need for further investigation of the extent of contamination and the objectives of the remediation of the oil discharge, including the following:

(1) Free product and oil saturated soils;

(2) Protection and remediation of ground water, private public drinking water supplies, public drinking water supplies and their source water protection areas mapped by the Maine Drinking Water Program, and significant sand and gravel aquifers mapped by the Maine Geological Survey;

(3) Petroleum vapor intrusion or indoor air quality;

(4) Direct human contact to contaminated soils; and

(5) Surface water bodies.

5. If evidence of a discharge of oil is found, the site assessment must also include the following facility and site history information:

A. Product storage and distribution system history, including:

 (1) Location of tanks or piping previously abandoned in place;

 (2) Type of oil products most recently stored;

B. A list of all known prior oil and hazardous substance discharges and their Commissioner assigned spill number; and

C. Summary of the findings of previous available site assessments and contamination investigations.

6. Site assessment requirements for the removal of heavy oil storage facilities.

A. Tanks, piping and other underground facility components must be inspected visually upon removal for presence of holes, loose fittings and joints, cracks, fractures and evidence of oil stains. If any of the conditions above are found the facility owner or operator shall notify the Commissioner of the occurrence of a discharge within 2 hours of discovery.

B. The tank and piping excavation must be inspected visually for any evidence of a discharge of oil; including oil stained or saturated soil, strong petroleum vapors emitted from soil or free product or an oil sheen on ground water in the excavation. The presence of any of the above conditions is considered an indication of a discharge of oil and must be reported to the Commissioner within 2 hours of discovery by the facility owner or operator and before the excavation hole is filled. The owner shall immediately proceed with an investigation and corrective action measures in accordance with section 12.

C. The entire facility must be inspected visually for surface spills and discharges. Such spills and discharges must be reported to the Commissioner in accordance with section 12(A).

D. Upon visual discovery of evidence of a leak or discharge of oil at a heavy oil facility and reporting such to the Commissioner, the site assessment investigation at the time of closure may be terminated, except where a tank or piping was located on or in bedrock in which case the presence of contaminated ground water must be investigated in accordance with paragraph 9 below.

7. Site assessment requirements for motor fuel and marketing and distribution facilities when tanks or piping are removed and immediately replaced, or when an operating facility will remain.

A. Applicability. The requirements of this section apply when an underground oil storage facility or a portion thereof, is removed and then replaced with a new underground oil storage facility on the same land parcel, utilizing all or part of the same tank excavation hole. The requirements below also apply to situations when only a portion of a facility is removed and other parts of the facility remain in operation.

B. Tanks, piping and other underground facility components must be inspected visually upon removal for presence of holes, loose fittings and joints, cracks, fractures and evidence of oil stains. If any of the conditions above are found the facility owner or operator shall notify the Commissioner of the occurrence of a discharge within 2 hours of discovery.

C. The tank and piping excavation must be inspected visually for any evidence of a discharge of oil; including oil stained or saturated soil, strong petroleum vapors emitted from soil or free product or an oil sheen on ground water in the excavation. The presence of any of the above conditions is considered an indication of a discharge of oil and must be reported to the Commissioner within 2 hours of discovery by the facility owner or operator and before the excavation hole is filled. The owner shall immediately proceed with an investigation and corrective action measures in accordance with section 12.

NOTE: OSHA regulations governing entering excavations and confined spaces should be strictly followed. Excavations should not be entered if above 20 percent of the Lower Explosive Limit (LEL), or less than 19.2 percent or greater than 25 percent oxygen.

D. The entire facility must be inspected visually for surface spills and discharges. Such spills and discharges must be reported to the Commissioner in accordance with section 12(A) of this Chapter.

E. Oil contaminated soil assessment. Soil in the tank and piping excavation holes and under removed dispensers, as well as areas of identifiable surface spills, must be evaluated for oil contamination by one of the methods specified in Appendix Q.

8. Site assessment requirements for waste oil facilities, and motor fuel and marketing and distribution facilities when a facility is removed but not immediately replaced.

A. Applicability. The following requirements apply to all waste oil facilities. They also apply to motor fuel and marketing and distribution facilities when an underground oil storage facility is fully closed and removed without a replacement facility being immediately installed.

B. Tanks, piping and other underground facility components must be inspected visually upon removal for presence of holes, loose fittings and joints, cracks, fractures and evidence of oil stains. If any of the conditions above are found the facility owner or operator shall notify the Commissioner of the occurrence of a discharge within 2 hours of discovery.

C. The tank and piping excavation must be inspected visually for any evidence of a discharge of oil; including oil stained or saturated soil, strong petroleum vapors emitted from soil or free product or an oil sheen on ground water in the excavation. The presence of any of the above conditions is considered an indication of a discharge of oil and must be reported to the Commissioner within 2 hours of discovery by the facility owner or operator and before the excavation hole is filled. The owner shall immediately proceed with an investigation and corrective action measures in accordance with section 12.

D. The entire facility must be inspected visually for surface spills and discharges. Such spills and discharges must be reported to the Commissioner in accordance with section 12(A).

E. The facility and the surrounding area are to be evaluated prior to the facility removal to identify potential receptors and exposure pathways to facilitate remediation decisions in the event a discharge is discovered. At a minimum, these should include public drinking water supplies and their source water protection areas mapped by the Maine Drinking Water Program, private drinking water supplies, significant sand and gravel aquifers mapped by the Maine Geological Survey, surface water bodies, and occupied buildings potentially at risk in the event of vapor intrusion pathways. If known, the next land use of the facility parcel is to be identified and the potential for residents, recreation users, outdoor commercial workers and construction workers to be exposed to oil contaminated soils evaluated.

F. Oil contamination assessment. Soil in the tank and piping excavation holes and under dispensers, as well as areas of identifiable surface spills, are to be evaluated for oil contamination by one of the methods specified in Appendix Q.

9. Requirements for facilities installed on or in bedrock. In addition to other applicable site assessment requirements in this appendix, when a tank or piping run has been installed onto or in bedrock without adequate soil backfill or bedding to test for soil contamination, a minimum of two (2) down gradient ground water monitoring wells must be installed under the supervision of a Maine certified geologist or Maine licens ed professional engineer in addition to above requirements of this appendix. Additional wells may be required by the Commissioner for tanks with more than 20,000 gallons capacity. Monitoring wells must be sampled for visual and olfactory evidence of oil as well as for dissolved phase product using a hydrocarbons laboratory analysis method meeting the requirements of Appendix S and appropriate for the oil products stored at the facility in the past. The detection of oil contamination must be reported to the Commissioner within 2 hours by the facility owner or operator. This paragraph applies to all removed facilities required to do a site assessment, including heavy oil facilities.

10. Site assessment requirements when tanks and piping are abandoned in place.

A. The requirements of this section apply whenever a facility or any portion of a facility are abandoned in place and are not removed. If a tank, piping section or other underground component is not removed, these requirements only apply to that particular portion of the entire facility.

B. Prior approval is required for abandonment in place in accordance with section 11(E).

C. All visible portions of the facility must be inspected for evidence of a leak, spill, overfill or other discharge, including areas around the fill and vent pipes.

D. Evidence of contaminated soils from a tank leak must be determined by either of the methods below:

(1) A minimum of two soil borings must be made per tank, located as close as technically feasible to intersect any oil contamination from the surface to below the estimated depth of the tank bottom or to bedrock or below the ground water table, whichever is shallower. An additional number of borings may be required by the Commissioner for tanks with more than 20,000 gallons capacity. The borings must be logged and screened continuously for visual evidence of oil stained and saturated soils, and oil vapors using a photo or flame ionization field instrument as removed from the ground. A sample must be taken from soil showing the highest reading for field analysis using a method outlined in paragraph 1 of Appendix Q or another Commissioner approved method of comparable accuracy and sensitivity.

(2) Other subsurface investigation methods approved by the Commissioner.

E. If piping cannot be removed such that entire excavation can be inspected, evidence of an oil discharge from the piping is to be evaluated using a methodology appropriate for the site conditions and approved in advance by the Commissioner.

F. When a facility was installed on or into bedrock, when borings encounter bedrock before reaching an elevation below that of the bottom of the tank or piping, or when ground water is encountered prior to reaching the depth below that of the tank or piping; a minimum of two ground water monitoring wells must be installed down gradient, as close as feasible. For tanks greater than 20,000 gallons capacity, the Commissioner may require additional monitoring wells. Monitoring wells samples must be inspected for visual and olfactory evidence of oil as well as analyzed for dissolved phase gasoline, diesel fuel or heating oil, depending on the oil products stored at the facility in the past. Only results from a laboratory method meeting the requirements of Appendix S will be accepted by the Commissioner. The detection of oil contamination must be reported to the Commissioner within 2 hours by the facility owner or operator.

G. When the above site assessment procedures for a facility to be abandoned in place are not technically feasible, another procedure may be used when approved by the Commissioner prior to the initiation of facility closure.

11. After-the-fact site assessments. For circumstances when an underground oil storage facility was previously removed without a site assessment to determine if oil contamination is present, a site specific investigation and sampling plan is required. Such a sampling plan should at a minimum include soil borings, test pits or other similar invasive means to collect soil samples to the depth of a typical tank installation, and describe the field and/or laboratory analytical methods proposed for use. The sampling plan must be submitted in advance of conducting the work for Commissioner approval. The Commissioner may require sampling of ground water, drinking water supplies, or surface water where warranted.

Chapter 691 Summary Cover Sheet Form for Underground Oil Storage Facility Site Assessment

The purpose of a site assessment for facility closure or abandonment is to determine if discharges of oil have occurred requiring notification of the Commissioner and corrective action by the owner, operator or another responsible party.

|  |  |
| --- | --- |
| Facility Registration Number: |       |
| Municipality Where Facility Located: |       |
| Tax Map and Lot Numbers: |       |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Facility | Owner | Operator |
| Name |       |       |       |
| Company |       |       |       |
| Address |       |       |       |
| City, State and Zip |       |       |       |
| Phone |       |       |       |

**Facility hydrogeological information to be verified by site assessor: Enter No or Yes below.**

|  |  |
| --- | --- |
| Facility in Sensitive Geological Area?  | Sand & Gravel Aquifer?  |
| ≤ 1000’ From Public Water Well/Intake?  | ≤ 300’ Private Water Well/Intake?  |

|  |
| --- |
| "Evidence" of a Discharge or Contamination Above a Notification Level? Yes [ ]  No [ ]  |
| If Yes, Enter Spill #      | DEP Responder Name:       |

**For facilities assessed: Enter tank & piping (chamber #) information below. For tank and piping status enter closed (C), not closed (NC), removed (R) or abandoned in place (AIP). *Provide reference to report narrative for clarifications or inconsistencies with Notice of Intent to Remove.***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank # | Status? | Assessed? | Piping?(Chamber #) | Status? | Assessed?  | Product Type? |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |
|       |  | Yes [ ]  No [ ]  |       |  | Yes [ ]  No [ ]  |       |

Submittal Requirements: Each page of the site assessment report must be consecutively numbered. For email submissions, put DEP registration number, address and municipality name in email subject line and send to UST.Site.Assessment@maine.gov. Please note that the DEP may request additional paper copies.

If **no** "evidence" of a discharge or contamination above a notification level, please send one paper copy to UST Program Administrator, DEP-BRWM, 17 SHS, Augusta ME 04333-0017 and a digital PDF version to the above noted email address.

If **yes** "evidence" of a discharge or contamination above a notification level, please send one paper copy to the above noted postal address and a digital PDF version to the above noted email address and one copy to the chief municipal officer or county Commissioner if unorganized township (List name and address of municipal officer or county Commissioner here:      ).

|  |  |
| --- | --- |
| Date Site Assessment Field Work Completed:       | Date of Site Assessment Report:       |
| Assessor Name and Company:       |

**Appendix Q: Facility Closure Site Assessment Characterization and Notification Requirements**

For the purpose of site assessment soil testing requirements, soil shall mean sand, silt, clay and mixtures thereof to which oil or oil components may adsorb. Soil does not include pea stone, crushed stone, or similar materials used for backfill around tanks, piping and other facility components.

1. One of the following soil sampling methods must be utilized when conducting a closure assessment in accordance with 06-096 C.M.R. ch. 691, §11.Any deviations must be documented and explained in the closure assessment report.

A. The Department’s standard operating soil sampling method.

NOTE: The Department’s standard operating soil sampling method may be found on the website at: <http://www.maine.gov/dep/spills/petroleum/documents/sop/ts004.pdf>. This method is entitled Compendium of Field Testing of Soil Samples for Gasoline and Fuel Oil, TS004.

B. The Site Assessment Soil Sampling Method for laboratory analysis and associated notification levels.

(1) Applicability. This soil sampling procedure is only applicable to facilities that stored gasoline, aviation gasoline, diesel fuel, and #1 and #2 heating oils. Because of the degree of professional judgment required by this procedure, site assessments conducted by this method must be certified by a Maine certified geologist, a Maine licensed professional engineer or geologist or engineer otherwise in compliance with Maine’s professional regulation statutes.

(2) Field screen soil from the walls and bottom of the tank excavation hole and piping run and under dispensers using a photo-ionization device (PID) with a lamp energy of 10.2 to 10.6 eV, calibrated to isobutylene in accordance with the instrument’s manufacturer instructions and bump tested to check the calibration at the start of each day and after every 2 hours of use.

(3) PID field screening to identify suspected oil contaminated soils must be conducted in accordance with the following minimum requirements:

(a) Collection of 200 gram (6 oz.) soil samples, each placed in a double layered metalized polyester and polyethylene bag, closed, kneaded to break clumps, shaken for 30 seconds, and the headspace concentration immediately measured with the PID while the bag is closed around the instrument probe;

(b) Collection of at least 5 samples for field analysis from the tank excavation, 1 from each side wall and 1 from the excavation bottom;

(c) Collection of at least 1 sample from beneath each dispenser or loading rack;

(d) Collection of samples along each piping run trench beneath the location of joints, elbows, sump penetrations and other likely locations of possible leaks; and

(e) Recording of headspace readings.

(4) Soil samples must be collected for laboratory analysis from the following locations and where in the professional judgment of the site assessor the highest concentrations of oil contamination will be found:

1. Gasoline, diesel and fuel oil facilities. A minimum of 2 soil samples must be collected. One sample must be collected and analyzed from the bottom of the tank excavation and 1 sample must be collected and analyzed from beneath the piping.
2. Gasoline and aviation fuel facilities. At facilities storing gasoline or aviation gasoline, a minimum of 1 sample must be collected and analyzed at each of the following locations:

(i) Tank excavation bottom where PID Bag Headspace ≥ 40 ppm;

(ii) Beneath piping where PID Bag Headspace ≥ 40 ppm; and

(iii) Beneath dispensers where PID Bag Headspace ≥ 40 ppm.

1. Diesel, kerosene and fuel oil facilities. At facilities storing diesel fuels, or #1 or #2 fuel oils, a minimum of 1 sample must be collected and analyzed at each of the following locations:

(i) Tank excavation bottom where PID Bag Headspace ≥ 10 ppm;

(ii) Beneath piping where PID Bag Headspace ≥ 10 ppm; and

(iii) Beneath dispensers where PID Bag Headspace ≥ 10 ppm.

1. Laboratory soil and water samples shall be analyzed for volatile (VPH) and extractable petroleum hydrocarbons (EPH) and other parameters including those in Appendix S, as appropriate for the oil products stored at the facility, in accordance with the Massachusetts Department of Environmental Protection Hydrocarbon Fractions Laboratory Method and Appendix S.
2. Other Investigation Methods. Other methods may be proposed for approval by the Commissioner prior to the start of field work. These methods must be able to achieve comparable accuracy and precision and be capable of detecting the corresponding notification levels specified in this appendix. Other investigative methods may include, but are not limited to, soil, ground water, pore water and if applicable surface water contamination investigations using geoprobing, or obtaining samples for analysis from soil test pits, or other similar intrusive methods to assess the presence and areal extent of oil contaminated soils, and the presence of ground water and surface water contamination.
3. Notification levels
4. Any exceedance of the VPH, EPH, 1,2 dichloroethane, ethylene dibromide, or lead laboratory notification levels for soil in Table 1 below, or any exceedance of a PID baghead space for gasoline or aviation fuel of 40 ppm or for diesel, kerosene and fuel oil 10 ppm, is considered evidence of a reportable oil discharge, and shall be reported by the facility owner or operator within two (2) hours of discovery. The owner and operator must plan for additional investigation or removal of impacted soils if laboratory results show evidence of contamination above site-specific cleanup goals.
5. Any VPH, EPH, 1,2 dichloroethane, ethylene dibromide, or lead analytical result from ground water indicative of contamination as defined in this Chapter is considered evidence of a reportable discharge and shall be reported by the facility owner or operator within two (2) hours of discovery. Table 2 presents ground water notification levels based on maximum exposure guidelines published by the Maine Center for Disease Control and Prevention (December 31, 2016).
6. Any of the conditions in Appendix P(7)(B) through (D) must be reported to the Department in accordance with Appendix P.

Table 1
**Laboratory Soil Notification Levels**

|  |  |
| --- | --- |
| **Chemical/Fraction** | **Concentration**(mg/kg) |
| 1,2 Dichloroethane | 0.036 |
| 2-Methylnaphthalene | 3.6 |
| Acenaphthene | 170 |
| Acenaphthylene | 68 |
| Anthracene | 760 |
| Benzene | 0.51 |
| Benzo(a)anthracene | 2.3 |
| Benzo(a)pyrene | 2.3 |
| Benzo(b)fluoranthene | 3.5 |
| Benzo(g,h,i)perylene | 750 |
| Benzo(k)fluoranthene | 2.6 |
| Chrysene | 26 |
| Dibenz(a,h)anthracene | 0.48 |
| Ethylbenzene | 0.81 |
| Ethylene dibromide | 7.1 |
| Fluoranthene | 1,000 |
| Fluorene | 120 |
| Indeno(1,2,3-cd) pyrene | 1.6 |
| Lead |  100 |
| Methyl tertiary butyl ether | 0.19 |
| Naphthalene | 1.7 |
| Phenanthrene | 97 |
| Pyrene | 750 |
| Toluene | 8.1 |
| Xylene  | 26 |
|  |  |
| C5-C8 Aliphatics | 1,400 |
| C9-C12 Aliphatics | 2,700 |
| C9-C18 Aliphatics | 2,700 |
| C19-C36 Aliphatics | 10,000 |
| C9-C10 Aromatics | 75 |
| C11-C22 Aromatics | 460 |

Table 2

**Laboratory Notification Levels in Ground Water**

|  |  |
| --- | --- |
| **Chemical/Fraction** | **Concentration (μg/l )** |
|  |  |
| 1,2 Dichloroethane | 4 |
| 2-Methylnaphthalene | 30 |
| Acenaphthene | 400 |
| Acenaphthylene | 400 |
| Anthracene | 2,000 |
| Benzene | 4.0 |
| Benzo(a)anthracene | 0.5 |
| Benzo(a)pyrene | 0.05 |
| Benzo(b)fluoranthene | 0.5 |
| Benzo(g,h,i)perylene | 200 |
| Benzo(k)fluoranthene | 5.0 |
| Chrysene | 50 |
| Dibenz(a,h)anthracene | 0.05 |
| Ethylbenzene | 30 |
| Ethylene dibromide | 0.2 |
| Fluoranthene | 300 |
| Fluorene | 300 |
| Indeno(1,2,3-cd) pyrene | 0.5 |
| Lead | 10 |
| Methyl tertiary butyl ether | 35 |
| Naphthalene | 10 |
| Phenanthrene | 200 |
| Pyrene | 200 |
| Toluene | 600 |
| Xylene | 1,000 |
| C5-C8 Aliphatics | 300 |
| C9-C12 Aliphatics | 700 |
| C9-C18 Aliphatics | 700 |
| C19-C36 Aliphatics | 10,000 |
| C9-C10 Aromatics | 200 |
| C11-C22 Aromatics | 200 |

**Appendix R: List of National Standards and Codes Cited**

1. American National Standards Institute (ANSI/ASME), 1430 Broadway, NY 10018.

 Process Piping, ANSI/ASME B31.3, 2014.

2. American Petroleum Institute (API), 1220 L Street, Northwest, Washington, DC 20005-40.

 Welded Tanks for Oil Storage, API Standard 650, 12th Edition, 2013.

 Closure of Underground Petroleum Storage Tanks, API Recommended Practice 1604, 3rd Edition, 2010.

 Installation of Underground Petroleum Storage Systems, API Publication 1615, 6th Edition, 2011.

 Bulk Liquid Stock Control at Retail Outlets, API Recommended Practices 1621, 5th Edition, May 1993.

 Interior Lining and Periodic Inspection of Underground Storage Tanks, API Recommended Practice 1631, 5th Edition, June, 2001.

* Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems, API Recommended Practice 1632, 3rd Edition, 2002.

 Pressure Testing of Steel Pipelines for the Transportation of Gas, Petroleum Gas, Hazardous Liquids, Highly Volatile Liquids, or Carbon Dioxide, Recommended Practice 1110, 6th Edition, 2013.

 Design, Construction, Operation, Maintenance, and Inspection of Terminal & Tank Facilities, API Standard 2610, 2nd Edition, July 2005.

3. National Association of Corrosion Engineers (NACE) International, 1440 South Creek Drive, Houston, Texas 77084-4906.

 Standard Practice, External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, NACE SP0285-2011 Edition.

 Standard Practice, Control of External Corrosion on Underground or Submerged Metallic Piping Systems, NACE SP 0169-2013.

 Standard Test Method, Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems, NACE Standard TM0101-2012.

 Standard Test Method, Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems, NACE Standard TM 0497-2012.

4. National Fire Protection Association (NFPA), 11 Tracy Drive, Avon, MA 02322.

 Flammable and Combustible Liquids Code, NFPA 30‑2015.

 Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA 30A‑2018.

 Standard of the Installation of Oil Burning Equipment, NFPA 31, 2016.

5. Petroleum Equipment Institute (PEI), P. O. Box 2380, Tulsa, Oklahoma 74101.

 Recommended Practices for Installation of Underground Liquid Storage Systems, PEI Publication RP 100-2017.

* Recommended Practices for Inspection and Maintenance of Motor Fuel Dispensing Equipment, PEI RP500, 2011.
* Recommended Practices for Inspection and Maintenance of UST Systems, PEI RP900, 2017.
* Recommended Practices for the Installation of Marina Fueling Systems, PEI RP1000, 2014.
* Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, PEI RP 1200-2017.

6. Steel Tank Institute (STI), 5700 Oakwood Rd, Lake Zurich, IL 60047.

 Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems, R892- January 2006.

* STI-P3 Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, November 2015.
* Standard for Dual Wall Underground Steel Storage Tanks, STI F841, January 2006.
* STI Specification for Permatank, STI – F922, October 2014.

 ACT-100 ® Specification of External Corrosion Protection of FRP Composite, Steel USTS, F894- November 2015.

 Recommended Practice for the Addition of Supplemental Anodes to STI-P3® USTs, R972, Revised January 2006.

7. Underwriters Laboratories Inc. (UL), 333 Pfingsten Road, Northbrook, Illinois 60062-2096.

 Standard for Steel Underground Tanks for Flammable and Combustible Liquids UL Standard 58, December 13, 1996.

 Nonmetallic Underground Piping for Flammable Liquids, UL Standard 971, October 30, 1995, revised 2006.

 Glass‑Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures. UL Standard 1316. January 7, 1994.

* External Corrosion Protection Systems for Steel Underground Storage Tanks, UL Standard 1746, January 1, 2007.

 Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe Connectors for Petroleum Products and LP-Gas, UL Standard 567, May 7, 2014.

 Outline of Investigation for Underground Fuel Tank Internal Retrofit Systems, UL Standard 1856, June 14, 2013.

8. Underwriters Laboratories of Canada, 7 Underwriters’ Road, Toronto, ON, M1R3B4.

 Standard for External Corrosion Protection for Steel Underground Tanks for Flammable and Combustible Liquids, 4th Edition, CAN/ULC-S603-14- 2014.

* Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems, ULC – S 631-05.
* Standard for Fibre Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids, ULC – S615-14, 3rd Edition, October 2014.
* Standard for Non-metallic Underground Piping for Flammable and Combustible Liquids, ULC – S660-08, 1st Edition, May 1, 2008.

 Flexible Underground Hose Connectors for Flammable and Combustible Liquids, UL Canada Standard CAN/ULC-S633, August 1, 1999.

* Outline of Investigation for Underground Fuel Tank Internal Retrofit Systems, UL1856, 1st Edition, June 14, 2013.

9. Unified Facilities Criteria, Department of Defense, National Institute of Building Sciences, 1090 Vermont Avenue NW, Suite 700, Washington, DC 20005

* Unified Facilities Criteria (UFC) 3-460-01, Design: Petroleum Fuel Facilities, Change 2, June 17, 2015.

**Appendix S: Department Approved Laboratory Analytical Methods and Performance Standards for Analyses of Oil and Oil Constituents in Water, Soil, Soil Gas and Indoor Air**

1*.* All chemical laboratory analyses of soil, water and indoor air or soil gas samples required by these rules must meet the requirements of this appendix. Sampling and analyses will be conducted in accordance with quality assurance procedures approved by the Commissioner. The Commissioner may require test methods and parameters other than those listed in this appendix to address site specific circumstances.

2. Soil and water analyses. Acceptable laboratory methods for the analysis of soil and water for oil contamination include those listed below.

A. For soil and water samples of weathered diesel, weathered #1 and #2 fuel oils, weathered jet fuel, and heavy oils – Extractable Petroleum Hydrocarbons (EPH) Analysis by Massachusetts Department of Environmental Protection, Division of Environmental Analysis; Method for Determination of Extractable Petroleum Hydrocarbons (EPH), Version 1.1, 2004.

B. For soil and water samples of fresh diesel fuel, #2 heating oil, jet fuels, kerosene/#1 heating oil –Volatile Petroleum Hydrocarbons (VPH) Analysis by Massachusetts Department of Environmental Protection , Division of Environmental Analysis Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Version 1.1, 2004 or after April 30, 2019 the Massachusetts Department of Environmental Protection, Method for the Determination of Volatile Petroleum Hydrocarbons (VPH) by Gas Chromatography/Photoionization Detector/Flame Ionization Detector, Revision 2.1, February 2018, in conjunction with EPH analysis.

C. Waste oil in soil or water that is not suspected of being a hazardous waste is to be analyzed using the Massachusetts Department of Environmental Protection EPH and VPH laboratory methods above, and the waste oil parameters in *Waste Oil Management Rules*, 06-096 C.M.R. ch. 860, §4.

D. Water samples of unleaded gasoline and gasoline constituents - Volatile Petroleum Hydrocarbons (VPH) Analysis by Massachusetts Department of Environmental Protection, Division of Environmental Analysis Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Version 1.1, 2004 or after April 30, 2019 the Massachusetts Department of Environmental Protection, Method for the Determination of Volatile Petroleum Hydrocarbons (VPH) by Gas Chromatography/Photoionization Detector/Flame Ionization Detector, Revision 2.1, February 2018.

E. Water and soil samples of leaded gasoline. Leaded gasoline must be sampled for VPH, 1,2 dichloroethane (1,2 DCA), Ethylene dibromide (EDB), and lead. Racing fuels must be sampled for VPH, lead and EPH. Aviation fuels must be sampled for VPH, 1,2 DCA, EDB, lead and EPH. The following laboratory methods must be used:

1. In water:

(a) VPH method in Appendix S(2)(B);

(b) 1,2 DCA in ground water or drinking water – EPA Method 524.2 (1995) or 8260C (2006);

(c) EDB in ground water or drinking water - EPA Method 504.1 (1995) or 8011 (1992);

(d) Lead in ground water or drinking water - EPA Methods 200.7 (1994), 200.8 (1994), 200.9 (1994), 6020B (2014), or 7010 (2007); and

(e) EPH method in Appendix S(2)(A).

(2) In soils:

 (a) VPH method in Appendix S(2)(B);

 (b) 1, 2 DCA and EDB – EPA Method 8260;

(c) Lead – EPA Method 6010C:

(d) Lead – EPA Method1311/6010C; and

(e) EPH method in Appendix S(2)(A),

F. Soil samples of gasoline and gasoline constituents - Volatile Petroleum Hydrocarbon (VPH) Analysis by the Massachusetts Department of Environmental Protection, Division of Environmental Analysis, Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Version 1.1, 2004 or after April 30, 2019 the Massachusetts Department of Environmental Protection, Method for the Determination of Volatile Petroleum Hydrocarbons (VPH) by Gas Chromatography/Photoionization Detector/Flame Ionization Detector, Revision 2.1, February 2018.

G. Other laboratory methods for testing for the presence and concentrations of oil and its constituents in soil or water, approved by or required by the Commissioner, such as indicator parameters for specific site conditions or circumstances.

3. Indoor air and soil gas analyses.

A. Massachusetts Department of Environmental Protection Method for the Determination of Air Phase Petroleum Hydrocarbons (APH), 2008 in conjunction with U.S. EPA Method TO-15 SIM, Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography Mass Spectrometry (GC/MS), 1999.

B. Other laboratory methods for testing for the presence and concentrations of petroleum hydrocarbons in the air phase approved by or required by the Commissioner for a specific site or circumstance.

4. Other analytes. When testing for analytes other than those listed in Appendix S(2) and (3) above, the laboratory methods must be approved by the Commissioner prior to the collection of samples.

5. Performance standards.

A. For water analyses by the Massachusetts Department of Environmental Protection Methods for EPH or VPH, laboratories must be certified to perform the method by the Maine Department of Health and Human Services at the time an analysis is performed and meet quality control standards set forth in section 10 of the analytical method.

B. For soil analyses by the Massachusetts Department of Environmental Protection Methods for EPH or VPH, laboratories must be certified to perform the method by the Maine Department of Health and Human Services at the time an analysis is performed and meet quality control standards set forth in section 10 of the analytical method.

C. For water analyses, other than EPH and VPH methods, the Estimated Quantitation Limit (EQL), as determined by EPA guidelines, SW-846, is to be equal to or lower than the Maximum Contaminant Level (MCL) or primary drinking water standard, and in the absence of a MCL, is to be less than the Maine Department of Health and Human Services published Maximum Exposure Guideline (MEG) or site remediation target approved by the Commissioner for that test parameter.

1. For soil analyses by methods other than EPH and VPH methods, the Estimated Quantitation Limit (EQL), as determined by EPA guidelines SW-846, is to be equal to or less than EPA MCL and applicable remediation target.

E. All laboratory analytical data submitted to the Commissioner pursuant to this Chapter must come from a laboratory certified under the applicable requirements of the Maine Department of Health and Human Services rules.

**Appendix T: Containment Sumps and Spill Bucket Integrity Testing Protocol and Management of Waste Fluids**

These requirements apply to all sumps and spill buckets at underground storage tank facilities. Waste fluids are encountered during routine inspections of sumps and spill buckets, after spills, and during integrity testing. Containment sumps must be tested for integrity in accordance with the provisions of section 5(D)(18) and the *Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities*, PEI RP 1200, or the manufacturer’s instructions, or an alternate procedure approved by the Department. The following steps must be followed to minimize the quantity and hazard of the wastes generated:

1. Routinely and before any integrity testing, wipe out the sumps and spill buckets. Remove petroleum residue so that any water that enters the sump or spill bucket will remain uncontaminated. Dispose of wipes and absorbent material as oily debris or hazardous waste depending on test results or generator knowledge;
2. Remove and properly manage in accordance with all applicable local, state and federal requirements liquids that have accumulated in the sumps and spill buckets. Determine by visual and olfactory means if the liquids are petroleum contaminated. Clean liquids and clean test fluids with no petroleum odors or sheen may be transported to a wastewater treatment facility with the facility’s permission, or the liquid can be collected and sent to a facility authorized to accept the liquids. When new sumps are tested with clean water, the test waters may be discharged onsite with the owner’s permission. If the liquid exhibits petroleum odors or a sheen, then the liquid must be containerized, and using appropriate representative sample collection procedures and sealable sample containers, sample the surface layer for laboratory analysis. The analysis must be conducted by a laboratory certified by the Maine Department of Health and Human Services, Laboratory Certification Program using certified laboratory procedures. The analysis must include flash point, TCLP, EPH, and VPH analytical method to determine proper treatment and/or disposal. Alternately, the owner of the facility or generator of the waste may elect to manage the waste as a hazardous waste using generator knowledge of the waste. Waste that is determined to be a hazardous waste must be managed in accordance with the *Hazardous Waste Management Rules*, 06-096 C.M.R. ch. 850-857;
3. Examine the sumps and spill buckets for signs of damage, cracks or holes. If cracks or holes exist, repair or replace the damaged item in accordance with this Chapter. Do not conduct integrity testing on a sump or spill bucket with a crack or hole;
4. When conducting integrity testing of sumps and spill buckets, the testing company must either:

A. Utilize uncontaminated water for each test to minimize the amount of petroleum contaminated liquids that will require disposal and prevent introduction of potentially contaminated liquids to the containment, or

B. If water is to be reused for additional tests, the water remains a product of the testing company and may be reused until it no longer is acceptable for reuse, usually due to contamination. Contamination will be determined through physical evidence such as sheen and olfactory means. Once evidence of contamination is present, the water must be managed as a waste by the testing company. The waste must be managed for disposal in accordance with the provisions of section 2 of this appendix. The testing company may not place the waste in an oil water separator or remove evidence of contamination through the use of sorbent pads or other means.

C. In either case for A or B above, the testing company will be responsible for the proper management and disposal of any test waters;

1. Petroleum and petroleum contaminated water found in sumps and spill buckets and water used for integrity testing may not be disposed on the ground, in storm drains, septic systems or in surface waters.

STATUTORY AUTHORITY: 38 M.R.S., sections 341-H and 561-570-M.

EFFECTIVE DATE:

 April 5, 1986 – filing 86-99

AMENDED:

 July 21, 1987

 March 28, 1990

REPEALED AND REPLACED:

 September 16, 1991

EFFECTIVE DATE (ELECTRONIC CONVERSION):

 May 4, 1996

AMENDED:

 December 24, 1996

 June 13, 2002 – section 3-A, Appendix T -- also, graphics inserted into file

 March 14, 2004 – filing 2004-88

 April 3, 2007 – filing 2007-115

 September 12, 2010 – filing 2010-392

 March 13, 2012 – filing 2012-71

 January 7, 2014 – filing 2014-003

 April 3, 2016 – changed “Maine Ground Water Oil Clean-up Fund” to “Maine Ground and Surface Waters Clean-up and Response Fund”; changed M.R.S.A. to M.R.S. - filing 2016-056

 September 26, 2018 – filing 2018-205