SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN for PETROLEUM PRODUCTS FACILITY WIDE

WILIAMS COLLEGE
WILLIAMSTOWN, MASSACHUSETTS

REVISION 1.0

Prepared by

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RECORD OF CHANGES SUMMARY

No.	Description of Change	Sec. / Pages	Date	By
1	Changed Appendix E to E-1 to reflect a weekly inspection for the 10,000 gallon and 430,000 gallon tanks in the heating plant.	Appendix E-1	09/28/01	Williams College
2	Added Appendix E-2 which contains a weekly inspection sheet for the vapor recovery system on the gas pump.	Appendix E-2	11/08/01	Williams College
3	Updated emergency notification sheet.	Page i in Appendix G	03/04/02	Williams College
4	Updated Appendix A to reflect new oil tank installations.	Appendix A	03/04/02	Williams College
5	Removed Taconic Golf Course in Appendix A due to it being under a separate management structure.	Appendix A	03/04/02	Williams College
6	Added a new 10,000 gallon underground storage tank at Mt. Hope Mansion in Appendix A	Appendix A	03/04/02	Williams College
7	General revisions to comply with revised 40 CFR Part 112 SPCC regulations (August 2002).	Throughout	06/17/04	BEC

NOTE: This plan will be reviewed at least once every five years in accordance with the requirements of 40 CFR Part 112. This form is used to record any changes to controlled copies of this plan.

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FOREWORD

Williams College is committed to conducting operations in a safe and responsible manner. This policy is implemented by an active safety program, well-designed and maintained facilities, trained employees and planning for emergency response. Extensive precautionary measures have been taken to minimize the potential for oil spills or leaks at the College. In the unlikely event that a spill occurs, containment designs or other physical limitations are such that there is almost complete assurance that such a spill will be contained on-site.

The plan is designed for use by Buildings and Grounds (B&G) personnel, managers and emergency planners to assist them in carrying out a timely and proper response to spills.

It is the responsibility of all supervisors, managers and B&G personnel to be familiar with this Spill Prevention Control and Countermeasure Plan. Proper attention to these fundamental control and response concepts can mitigate the potential for a release to occur at the facility.

This plan includes all applicable college wide oil storage and handling operations.

MANAGEMENT APPROVAL

I certify that I have reviewed this plan and have evaluated the use of best available spill prevention technology. I have the authority to commit the necessary resources to implement this Spill Prevention Control and Countermeasure (SPCC) Plan.

Name: Helen Ouellette

Title: Vice President for Administration and Treasurer

Signature: H Ouellette

Date: August 9, 2004

P.E. CERTIFICATION

I hereby certify that I have reviewed the Williams College SPCC Plan and attest that I am familiar with the provisions of 40 CFR 112.1 through 112.15 (revised August 2002) concerning the requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans, that I have visited and examined the facility, that this SPCC Plan meets the applicable requirements of 40 CFR 112.1 through 112.15, includes consideration of applicable industry standards and has been prepared in accordance with good engineering practices, that procedures for required inspections and testing have been established, and that this plan is adequate for the facility.

Signature: William F. Stengle

Date: June 16, 2004

License Number: 38432

State Issuing License: MA

1.0 INTRODUCTION

1.1 Plan Overview

This plan is organized in accordance with United States Environmental Protection Agency (EPA) Regulations on Oil Pollution Prevention (Title 40 Code of Federal Regulations [40 CFR] Part 112). Pursuant to 40 CFR 112, a Spill Prevention Control and Countermeasure (SPCC) Plan is required for any facility engaged in drilling, producing, gathering, storing, processing, refining, transferring or consuming oil and oil products, providing that all three of the following conditions are met:

- The facility is non-transportation related.
- The aggregate aboveground storage capacity is greater than 1,320 gallons, or the total underground storage capacity is greater than 42,000 gallons.
- Due to its location, oil spilled at the facility could reasonably be expected to reach waters of the United States.

The SPCC Plan has been developed by Williams College (Williams) as part of a program of emergency preparedness to prevent or control any oil discharge at the College in Williamstown, Massachusetts. Williams' goal is to protect the health and safety of College personnel and the general public and to minimize damage to plant equipment and the environment in the unlikely event of an accident. The program has been developed in accordance with the Massachusetts Contingency Plan (310 CMR 40), the Federal Oil Pollution Prevention regulations (40 CFR 110-112), and standard industry practices. The plan will be updated at least every five years in accordance with 40 CFR Part 112 (revised August 2002).

The SPCC Plan was developed to address the site specific potential for petroleum discharges from oil storage and use areas. The SPCC Plan depends on containment/diversionary structures, monitoring/recordkeeping procedures, and response procedures to prevent or minimize the effects from the discharge of any petroleum product.

Williams College uses and stores #6 fuel oil for use in its steam generating plant. No. 2 fuel oil is used and stored for use in small boilers and emergency generators in educational and general buildings, student housing and Williams owned rental properties. Williams also owns and maintains a 10,000 gallon underground #2 oil storage tank at its Mt. Hope Farm property. Other oils stored and used on site include lubricating oil, waste oil, mineral oil in transformers and switches, hydraulic oil for vehicle lifts and elevators, and edible oils for use in the dining services. (Edible oils are all in containers less than 55 gallons and are not part of this SPCC Plan.) A 10,000 underground gasoline tank is maintained for college vehicles.

1.2 Purpose and Scope

The objectives of this plan are twofold:

1. To document the measures and procedures in place at Williams College to prevent or minimize the potential for oil discharges.

2. To provide a plan of action for any discharge of petroleum products and a disposal plan for spilled products contained on-site.

The Plan identifies the content and locations of oil storage tanks, piping, fill systems, etc. and the associated containment or diversionary structures. It also describes inventory control, monitoring, recordkeeping, reporting and response procedures. The Plan assumes that any oil discharge on Williams College property whether from leaking, spilling, pumping or other type of release is considered potentially harmful regardless of size or location.

1.3 40 CFR Part 112 Checklist

Section 112.7 of 40 CFR Part 112 dated and as amended through August 2002, requires that a Spill Prevention Control and Countermeasure (SPCC) Plan include a discussion of conformance with the guidelines presented in Part 112 where appropriate. Below is a list of the guidelines and where they have been addressed in the SPCC Plan:

40 CFR Section	Guideline	Plan Section
112.1(d)(2)	Storage Capacity	Appendix A
112.3(a)	Duty to Prepare an SPCC Plan	1.0 thru 8.0
112.3(d)	PE Certification	Page vi
112.3(e)	Copies of Plan	1.4
112.5(a) and (b)	Plan Amendments	8.0
112.7(a)	Spill History	3.0/Appendix D
112.7(a)(3)	Plant Description/Drawing	2.0/Appendix C
112.7(a)(3)(i)	Bulk Storage Tank Contents	Appendix A
112.7(a)(3)(ii)(iii)	Discharge Prevention	5.0
112.7(a)(3)(vi)	Contact List	Appendix G
112.7(a)(3)(iv)(v)	Countermeasures/Disposal	7.6, 7.7
112.7(a)(4)	Spill Report Information	7.2, Appendix D
112.7(a)(5)	Spill Response Procedures	7.0, Appendix G
112.7(b)	Failure Flow Prediction	4.0
112.7(c)/112.8(c)(2),(11)	Containment	5.1
112.7(d)	Contingency Plan	Appendix G
112.7(e)/112.8(c)(9)	Inspections, Tests, Records	5.4
112.7(f)	Training	6.0
112.7(f)(2)	Designated Accountable Person	1.5
112.7(g)	Security	5.8
112.7(h)	Tanker Unloading	5.2
112.7(i)	Brittle Fracture Evaluation	5.7
112.7(j)	Conformance with State Requirements	7.2
112.8(b)	Facility Drainage	5.5
112.8(c)(1)	Bulk Storage Containers-Construction	5.1
112.8(c)(3)	Bulk Storage Containers-Dike Drainage	5.5
112.8(4),(5)	Bulk Storage Containers-UG Tanks	5.1
112.8(6)	Bulk Storage Containers-Integrity Test	5.6
112.8(7)	Bulk Storage Containers-Internal Heating Coils	N/A
112.8(8)	Bulk Storage Containers-Overflow Protection	5.1
112.8(10)	Bulk Storage Containers-Discharge Correction	7.1
112.8(d)	Transfer Operations	5.2

1.4 Plan Distribution

Controlled copies of the SPCC Plan are kept on file at the Buildings and Grounds Office. Copies are distributed to the Physical Plant and EH&S offices.

1.5 Plan Administration

The Manager of Environmental Health and Safety (EH&S) has overall responsibility for administration of the Plan. Responsibilities include development, management and maintenance of the SPCC Plan that meets the requirements of 40 CFR Part 112. The EH&S Manager is responsible for ensuring that appropriate Williams College personnel are properly trained to implement the SPCC Plan, that personnel are familiar with and follow the procedures presented in this Plan and that the necessary clean-up equipment and supplies are maintained at the designated areas as described in the SPCC Plan. The EH&S Manager also acts as the primary Emergency Coordinator (EC) during a spill incident.

1.6 Plan Amendments and Review

Federal SPCC regulations (Part 112.5) require that the SPCC Plan be amended or reviewed whenever there is a change in facility design, operation, construction, or maintenance which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines. The addition of any containers of oil subsequent to the writing of this plan will be added to this plan accordingly with all appropriate controls and countermeasures. The amendments must be fully implemented as soon as possible, but no later than six (6) months after the facility changes have occurred.

In addition to any amendments required above, owners or operators must complete a review and evaluation of the SPCC Plan with accompanying Professional Engineer Certification at least once every five years. The SPCC Plan must then be amended within six (6) months of the review to include more effective prevention and control technology if that technology is a proven technology and will significantly reduce the likelihood of a spill event from the facility. Details of plan amendment requirements are contained in Section 8.0.

2.0 FACILITY DESCRIPTION

2.1 Facility Location

The Williams College campus is located in Williamstown, Massachusetts, a small town in northwestern Massachusetts. The College serves approximately 2,000 students. Williams College operates throughout the year, although the student population is greatly reduced from June through August. The campus encompasses approximately 450 acres (450-acre campus and 2,500 outlying acres including the Hopkins Memorial Forest (2,200 acres)). The Christmas Brook runs northward through the campus into the Hoosac River. A site plan of the campus is presented in Appendix C.

2.2 Plant Operations

Williams College operates a steam plant to supply steam for heating the college campus and running a steam turbine to generate electricity for use on campus. In the steam plant, Williams operates three industrial boilers which fire #6 oil, #2 oil or natural gas. To support the boiler operation, Williams maintains a #6 oil tank with a maximum capacity of 430,000 gallons and a 10,000 gallon #2 oil storage tank. (The #2 tank is currently empty and will not be refilled unless necessary. The tank will be tested before it is put back in use. It is currently disconnected from the heating plant).

In addition to the steam plant, there are a number of small boilers and emergency generators in educational and general buildings, student housing and Williams owned rental properties. These are fired with #2 oil stored in aboveground storage tanks at the various buildings. A 10,000 gallon underground #2 oil tank is maintained in the College's Mt. Hope Farm property for heating. Several oil-filled transformers and switches regulate power to the buildings on the campus. The Buildings and Grounds function performs maintenance and repair activities at the Buildings and Grounds Facility and throughout the campus. Drums and smaller containers of lubricating oil, waste oil, mineral oil and hydraulic oil are scattered throughout the campus to support the physical plant, auxiliary operations, housing and academic/research

operations. Williams operates a small fleet of vehicles and maintains a 10,000 gallon underground gasoline tank for fleet services.

2.3 Oil Storage Locations

Fuel oil, gasoline, mineral oil, hydraulic oil, and lubricating oil are stored throughout the facility in storage tanks, drums, equipment and other containers. Appendix A provides a complete inventory of all Williams College maintained oil storage locations. Appendix C provides a site map depicting the oil storage locations.

2.4 Materials Handling

Williams College handles fuel oil for the steam plant operation and auxiliary equipment. Other oils handled on-site include mineral oils for transformers, hydraulic oils for lifts and elevators, #2 oil for heating and emergency backup, lubricating oils, and waste oil.
No. 6, No. 2 and diesel oils are delivered by commercial tank truck to on-site storage tanks. Lubricating oil and hydraulic oil are generally delivered in 55 gallon drums.

3.0 PAST SPILL EXPERIENCE

A facility which has experienced one or more spill events within 12 months prior to the effective date of 40 CFR Part 112 shall include as part of the plan a description of the spill event, corrective action taken and plans for preventing reoccurrence. A spill event as defined by 40 CFR Part 112.2 means a discharge of oil into or upon the navigable waters or adjoining shoreline in harmful quantities as defined at 40 CFR Part 110. Discharges greater than 1,000 gallons of oil in a single spill event or two (2) discharges exceeding 42 gallons within a 12 month period must be reported to the EPA. A release of greater than 10 gallons to the environment (air, land or water) or any amount that reaches navigable waters must be reported to the Massachusetts Department of Environmental Protection (MA DEP).

There have been no known spill events at Williams College that are federally reportable. There have been some minor on-site spills which were contained and properly cleaned including a few where the MA DEP was notified. Each spill is documented and reviewed. It is Williams College policy to consider all spills as potentially hazardous. Appendix D provides a summary of historical facility spills and corrective actions taken. When a spill event occurs at the College, no matter how minor, the Emergency Coordinator initiates the Spill Response Procedures described in Section 7.0 of this Plan.

4.0 SPILL ANALYSIS

4.1 Potential Causes of Oil Discharge

Potential causes of an oil discharge associated with the petroleum products stored and used at Williams College include the following:

- Leakage from or failure of storage tanks and containers;
- Overflow, spill or mishap during material delivery, filling of storage tanks, or materials handling;
- Overflow of oil/water separators; or
- Spill or leak from vehicles or equipment.

Several spill scenarios are discussed below. The likelihood of a major release from any of these areas is minimized by structural containment, best management practices, periodic inspections and employee training. Spill prevention and containment systems are discussed in Section 5 of this plan, employee training is discussed in Section 6 and spill response is discussed in Section 7.

Scenario 1 - Main Heating Plant

The 430,000 gallon oil tank located outside the rear of the Main Heating Plant receives fuel deliveries every day to every few days in the cold season, equaling 6,000 gallons per delivery. A spill during fuel unloading to the large #6 oil above ground oil storage tank would be contained first by the containment dike around the oil delivery port in the unloading area. In the event that a spill is not contained within this area, the discharge would flow directly toward a storm catch basin. The standard operating procedure is to cover the storm catch basin during any tank unloading operation. If a spill were to occur, the rate of flow to the storm drain area would be variable depending on the size of the spill. If the storm drain were not covered, the spill would reach the storm drain system and proceed to Hemlock Brook. Immediate response to a release would include stopping fuel flow from the delivery vehicle and control of the release

using absorbent booms and pads.

Magnetic storm catch basin covers are maintained at the unloading area along with a spill kit that contains booms and absorbent. Fuel deliveries are supervised by a member of the heating plant staff via a closed circuit camera. Truck drivers must notify the heating plant staff when making a delivery and obtain a key to the check valves for oil delivery and must return the key upon completion of the transfer. The heating plant is staffed 24 hours a day, 7 days a week.

Scenario 2 - Transformers

Most of the transformers located outside do not have secondary containment because of the safety risks presented by maintaining a containment structure. Any leaks from outside transformers would be onto a concrete containment pad. Discharge off the pad may lead to discharge to the ground or, in some cases, to nearby storm drains. The rate of flow from the transformer would vary depending on the size of the leak and the volume of the transformer. The largest amount of oil stored in an outside transformer is 1,115 gallons.

Scenario 3 - Small Boilers

Rental properties, student housing and some of the educational and general buildings at Williams have 275 gallon Roth tanks that supply #2 oil for heating in small boilers. These tanks and boilers are in the basement of the buildings that they serve. These buildings receive oil from different suppliers on an as needed basis. The potential for a spill exists during a fuel oil delivery and/or from a tank failure. Any leak of the tank would be contained within the Roth tank secondary wall. It is also possible for a spill to occur during the delivery of fuel oil to these buildings either as an overfill of the tank or at the outside fill port. An outside spill would be absorbed into the ground surface.

Scenario 4 - Garage

A release is possible although not likely from the 55 gallon waste oil drum in the garage

in Buildings and Grounds and would be contained by the secondary containment on which the drum sits. A release of waste oil is possible within the garage when handling waste oils from vehicles. Such spills would be absorbed using materials – pads, booms and absorbents – contained in the spill kit at the garage. Any incidental spill from moving the tank to the HAZMAT shed would flow into the floor drains connected to the oil/water separator if the spill were to occur inside the building. A spill outside would go to the ground and have the potential to reach the storm drain.

Scenario 5 - Elevators

A spill of hydraulic oil from elevators on campus is possible. All elevators are equipped with secondary containment adequate to hold the volume of hydraulic oil from the lift in order to prevent a discharge to the ground. A failure of the containment system could result, although it is unlikely, in oil spillage to the ground. The elevators are equipped to contain a small amount of oil from the elevator shaft itself. There are 5 gallon buckets/containers, each with secondary containment, that catch any overflow from the elevator piston in the bottom of the elevator shaft. The levels of oil in the elevators are checked at each monthly servicing.

5.0 SPILL PREVENTION AND CONTAINMENT SYSTEMS

5.1 Storage Tanks and Containment

The physical and structural oil discharge prevention systems at Williams are strengthened by a commitment to conduct operations at the facility in a safe and responsible manner. This commitment is reflected in sound standard operating procedures for materials handling and delivery; routine employee training; increased awareness; and programs to identify and mitigate leaks, including proper preventive maintenance, inventory control and inspections.

A method to prevent oil from reaching navigable waters is required for all petroleum oil storage and use areas at Williams College. These methods include dikes, sumps, berms, use of adsorbents, and safe standard operating procedures. Quantities of materials stored and used are minimized on-site to reduce the probability and magnitude of releases. Storage capacities are limited to the minimum necessary to meet the operating requirements of the facility.

Storage includes bulk oil tanks, mineral oil in transformer tanks, lube oil tanks, hydraulic oil storage drums, hydraulic oil contained in elevator hydraulic systems, and waste oil in drums.. Bulk storage tanks are constructed of carbon steel, which is an appropriate material of construction for storage of these oils and fuels. Tanks are constructed in accordance with the requirements of Massachusetts regulation 527 CMR 9.00 – Tanks and Containers. Transformer tanks are not defined as bulk storage containers and are not subject to 40 CFR 112.8.

All bulk storage container installations are constructed with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. Diked areas are sufficiently impervious to contain discharged oil. Williams College will not allow drainage of uncontaminated rainwater from diked or bermed areas into a storm drain or open watercourse, lake, or pond, unless the bypass valve is normally kept sealed closed; the retained rainwater is inspected to ensure that its presence will not cause a discharge; and the bypass valve will be opened and resealed following drainage under responsible supervision. Adequate records of such events will be kept.

Each bulk storage container installation is installed in accordance with good engineering practice to avoid discharges, containing at least one of the following devices:

(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.
(ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.
(iii) Direct audible or code signal communication between the container gauger and the pumping station.
(iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If this alternative is used, a person must be present to monitor gauges and the overall filling of bulk storage containers. Liquid level sensing devices must be regularly tested to ensure proper operation.

Details of the facility tank storage and containment systems are provided in Appendix B for all storage equipment.

ABOVEGROUND STORAGE TANKS

5.1.1 Heating Plant Tank

The 430,000 gallon #6 fuel oil tank is located at the north end of Buildings and Grounds. A concrete containment dike around the tank provides complete secondary containment of the primary storage tank contents. The diked area is equipped with a drainage valve that is of a manual, open-and-closed design. Before draining rainwater from the diked area, the surface of the water is inspected to ensure there is no oil sheen. Drainage from the dike is recorded and maintained at the site. Visual inspections of the storage tank, piping, valves, and diked area are conducted in accordance with the schedule provided in Section 5.4. The tank is also equipped with a level gauge that is monitored by the heating plant operator at the DCS during an oil delivery, and a

spill/overfill container installed on the fill port. All bulk fuel deliveries at the heating plant are supervised by a member of the heating plant staff via a closed circuit camera. Truck drivers must notify the heating plant staff when making a delivery and obtain a key to the check valves for oil delivery and must return the key upon completion of the transfer. The boiler operator is responsible for ensuring that the driver follows the unloading procedures which include covering the nearby storm basin with a magnetic catch basin cover during unloading. The heating plant is staffed 24 hours a day, 7 days a week. All deliveries follow Product Delivery and Transfer procedures described in Section 5.2. Magnetic storm catch basin covers are maintained at the unloading area. Immediate response to a release would include stopping fuel flow from the delivery vehicle control of the release using absorbent booms and pads and implementing the emergency response plan.

5.1.2 Steam Plant #2 Oil Storage Tank

A 10,000 gallon #2 above ground fuel oil tank is a located at the steam plant. The tank is currently empty and Williams College does not anticipate filling it unless it becomes necessary. In the interim, Williams will continue to maintain the tank and prior to any future use, Williams will conduct a tank tightness test. The inspection and fuel unloading procedures are the same as for the #6 oil tank.

5.1.3 Heating Oil Storage Tanks

Several buildings/houses on and adjacent to the campus have #2 fuel oil tanks for heating. These tanks are typically 275 gallons. All tanks are double walled Roth tanks with a level alarm to detect overfills. The majority are located on concrete floors in the basements of the building they serve although some are not. In cases where the floor is concrete, the floors and walls of the basement would provide additional containment for the tank. Oil is delivered by commercial carrier on an as needed basis. Interstitial space leak detectors and alarms are installed on each tank. The alarm is audible within a reasonable distance of the tank including outside at the delivery port to warn the delivery

driver of a spill. The driver is required to be present at the delivery point during a delivery. The outside walls of the tank are inspected on a periodic basis by Buildings and Grounds personnel. Immediate response to a release would include stopping fuel flow from the delivery vehicle and implementing the emergency response plan by notifying Williams Security. Inspections of the heating oil storage tanks are conducted in accordance with the schedule provided in Section 5.4.

5.1.4 Emergency Generator Fuel Tanks

Williams College maintains several emergency generators with various size tanks ranging from a 125 gallon unit in the parking garage to a 556 gallon unit in the heating plant. Each of these units (has or will have) secondary containment either in the form of a double walled tank or with a containment dike adequate to contain the full volume of the tank plus sufficient freeboard to allow for precipitation. Interstitial space leak detectors are installed on each double walled tank. The tanks are filled on an as-needed basis. Williams arranges for fuel delivery when the tanks on the units are between ¾ and ½ full.

The generators are visually inspected and tested (with the exception of the MSL generator) weekly and fuel usage is monitored. Visual inspections for leaks are conducted in accordance with the schedule provided in Section 5.4.

5.1.5 Cogen Unit Lubricating Oil Storage Tank

The Cogen Unit has an integral 556 gallon lube oil storage tank with a containment dike adequate to hold the contents of the tank. The cogen unit lube oil tank is installed in the heating plant on a silled concrete floor that provides additional storage capacity in the event of a leak. Lube oil would be removed from or added to the tank only in rare circumstances. Any spill occurring from these tanks would be contained. The oil storage tanks are visually inspected every month. The lube oil storage tank is inspected in accordance with the schedule provided in Section 5.4.

OTHER OIL CONTAINERS

5.1.6 Waste Oil Storage

Waste oil is collected in a 55 gallon drum in the B&G garage in a designated satellite accumulation area. The drum sits on a storage pallet that will hold the volume of the 55 gallon drum. The floor of the garage is concrete and drains to a concrete oil/water separator. A spill kit is maintained in the garage. Visual inspections of the tank are conducted in accordance with the schedule provided in Section 5.4.

Williams also maintains a designated satellite accumulation area in the heating plant that contains waste oil. The satellite collection drum is stored on a containment pallet that will hold the volume of the 55 gallon waste oil drum. The floor of the heating plant is concrete. A spill kit including absorbent material is maintained inside the heating plant. Visual inspections of the satellite accumulation area are conducted in accordance with the schedule provided in Section 5.4.

Floor spillage and any runoff from the garage is collected in a concrete oil/water separator of approximately 100 gallons. The separator collects wastewater generated from the washdowns of the garage floor, incidental drippage from vehicles and hand washing of vehicles as part of normal servicing operations. The tank is located under the slab floor and is accessed via a manhole at the south end of the building. Oil/sludge from the separator is pumped out. Wastewater from the separator passes through a grit separator before being discharged to the sanitary sewer.

Williams maintains a HAZMAT shed for storing hazardous materials and waste. The shed can hold up to 330 gallons of waste oil and hazardous materials. The shed includes integral containment to hold the liquid storage capacity of the shed. Drum deliveries to the shed are made by hand truck. Drum pickups from the shed are made by commercial carriers and follow the standard procedure provided in Section 5.2. A spill kit is maintained in the shed. Visual inspections of the tank and shed area are conducted

in accordance with the schedule provided in Section 5.4.

5.1.7 Transformers/High Voltage Switches

There are several transformers and high voltage switches located throughout the campus. A list of transformers is provided in Appendix A. The mineral oil capacity ranges from 4.5 gallons to 1,115 gallons per unit. Transformers are enclosed units and do not typically require filling or draining. Transformers located inside buildings are contained within an area that provides a secondary containment with concrete floor, walls and door sill. Outside transformers are installed on concrete pads. No secondary containment device exists for these transformers. Transformers are not considered storage containers and are not subject to the requirements of 40 CFR 112.8. The EPA recognizes that secondary containment around outside transformers may present an unreasonable safety risk (FR 54621 – Oct. 22, 1991). If it is not practicable for a secondary containment system to be installed, the regulation allows for a strong oil spill contingency plan following the provisions for 40 CFR 109 to be in place in lieu of the containment system. Williams relies on the immediate spill response procedures provided in Appendix G.

There are six high voltage switches on campus each with a relatively small oil capacity ranging from 4.5-9 gallons. The switches are enclosed units and do not typically require filling or draining. None of these has secondary containment and all are installed on a concrete pad. High voltage switches are not considered storage containers and are not subject to the requirements of 40 CFR 112.8. The EPA recognizes that secondary containment around high voltage switches may present an unreasonable safety risk (FR 54621 – Oct. 22, 1991). In addition, these units are all less than 55 gallons capacity and not subject to the requirements of 40 CFR 112.3. Williams relies on the immediate spill response procedures provided in Appendix G.

Transformers and switches are inspected in accordance with the schedule provided in Section 5.4. In addition, a transformer or switch that is leaking would not be

working properly and would, consequently, require inspection and maintenance.

5.1.8 Garage Vehicle Lifts

Two vehicle lifts containing a total of 5.5 gallons of hydraulic oil are used in the garage for servicing fleet vehicles. These units are all less than 55 gallons capacity and not subject to the requirements of 40 CFR 112.3. Oil is not added or removed from these closed systems. In the unlikely event of a leak, adsorbent would contain the spill. If the spill reaches the floor drains it would be contained by the concrete floor and absorbed with absorbents. The floor drain in the area of the lift in the garage is sealed to prevent any slug discharges to the oil/water separator. As the lifts are used frequently, there is frequent opportunity for inspection.

5.1.9 Elevators

Elevators containing hydraulic oil are located throughout the campus as identified in Appendix A. The oil capacity ranges from 55 gallons to 352 gallons per elevator. All of the elevator shafts have pans in place to collect dripping oil. In the event of a leak, the oil would be contained by the pan and by the sides and floor of the shaft. The elevator systems are routinely inspected for proper operation and preventive maintenance. Visual inspections of the hydraulic system are conducted and documented in accordance with the schedule provided in Section 5.4.

5.1.10 Drums and Small Containers

At various times, Williams College may have between two and five 55 gallon drums containing various oils which may be stored in the heating plant or at a few other locations throughout the campus (e.g. Bronfman Hall compressor oil). These drums are always stored on containment pallets. A small spill or leak would be contained by absorbent.

5.1.11 Degreasers

Williams College operates several smaller capacity Safety Kleen degreasers. These units are all less than 55 gallons capacity and not subject to the requirements of 40 CFR 112.3. Any spill occurring from the degreasers would be cleaned with adsorbent.

UNDERGROUND STORAGE TANKS

Williams maintains two 10,000 gallon underground storage tanks that are subject to 40 CFR 280 and exempt from 40 CFR 112. The tanks are included here for informational purposes only.

5.1.12 Fleet Services Underground Gasoline Storage Tank

Fuel for the Williams College fleet vehicles is provided by a 10,000 gallon underground gasoline storage tank located outside the B&G Garage. The tank is double walled with an interstitial monitor to detect leaks. In the event of a leak from one of the inner tanks, an alarm will sound in the stockroom. Fuel unloading procedures are followed for product deliveries. The tank truck unloading area is surrounded by a boom during unloading to contain small to medium size spills. During fuel unloading, a drain cover is placed over the storm drain to which flow is directed.

Inventory of the underground gasoline tank and dispensing of gasoline are monitored by an in-tank level indicator, stick measurements and electronic recording of pump dispensing. These figures are correlated on weekly basis. The tank and dispensing station are inspected in accordance with the schedule provided in Section 5.4.

5.1.13 Mt. Hope Farm #2 Oil Storage Tank

A 10,000 gallon #2 underground fuel oil tank is a located in front of the Mount Hope Mansion and receives fuel deliveries every 4-6 weeks. The tank is of double

walled construction and monitored using an in tank monitor as well as an overflow protection device. If an over-fill situation occurs during delivery, the alarm is in plain sight of the delivery personnel. Immediate response to a release would include stopping fuel flow from the delivery vehicle, control of the release using absorbent booms and pads, and implementing the emergency response plan.

5.2 Product Delivery and Transfer

5.2.1 Heating Plant

All petroleum product deliveries are coordinated through the heating plant. Deliveries of any petroleum product to the heating plant are made under the direct supervision of the boiler operator. All connections are capped or blank flanged when not in use.

The following procedures are followed for all petroleum product deliveries:

1. Smoking is not permitted during unloading and sources of fire are kept away.
2. The transport delivery vehicle handbrake is set and the wheels are chocked while unloading.
3. The unloading operation is attended or observed via the control room closed circuit TV by a qualified individual at all times.
4. The storm drain downgradient from the oil tank is covered with a magnetic basin cover prior to connecting the truck hose to the fill port.
5. Confirmation is made by the operator by observing the level gauge readout on the DCS that the delivery can be accommodated within the storage tank.
6. Connections, valves and fittings are checked for tightness.
7. The attending personnel monitor for leaks during dispensing.
8. Hoses are drained/purged prior to disconnecting.

9. Residual fluids from hoses are collected in approved containers for immediate disposal.

5.2.2 Heating Boilers

All petroleum product deliveries are made on an as needed basis to individual buildings. Deliveries of any petroleum product will be made under the direct supervision of the truck driver. All connections are capped or blank flanged when not in use.

The following procedures are followed for petroleum product deliveries for the heating boilers:

1. Smoking is not permitted during unloading and sources of fire are kept away.
2. The unloading operation is attended at all times by the truck driver.
3. The transport delivery vehicle handbrake is set and wheels are chocked while unloading.
4. Confirmation is made by the oil supplier that the delivery can be accommodated within the storage tank.
5. The truck driver must be in a position to hear any overfill alarms that may occur. The alarm is audible near the fill port.
6. Connections, valves and fittings are checked for tightness.
7. The attending driver monitors for leaks during dispensing.
8. Hoses are drained/purged prior to disconnecting.
9. Residual fluids from hoses are collected in approved containers for immediate disposal.

5.2.3 Drum and Miscellaneous Oil Deliveries

All drum and miscellaneous oil deliveries are made on an as needed basis to individual buildings. Deliveries of any such product will be made under the direct supervision of the receiving department for that building and the truck driver.

The following procedures are followed for drum and miscellaneous oil deliveries:

1. Smoking is not permitted during unloading and sources of fire are kept away.
2. The unloading operation is attended at all times by the receiving personnel and truck driver.
3. The transport delivery vehicle handbrake is set and wheels are chocked while unloading.
4. Confirmation is made by the receiving personnel that the product to be received is the correct product and that the container is in good condition. Any container which is leaking or not in good condition should NOT be removed from the delivery vehicle and should be declined for delivery. Immediate notification must be made to the EHS Office.
5. Receiving personnel must keep a written record of the product delivery, including the date, time, the product name, location received, condition of the container, location to be stored, and the name of the receiving personnel.
6. It is incumbent upon the receiving personnel to ensure that the product is immediately moved to an appropriate storage location. All 55 gallon (or larger) drummed petroleum products must be stored on a containment pallet. Hazardous materials of any quantity must be appropriately labeled and stored.

5.3 Inventory Control

Accounting of product inventory provides an early warning means to detect leaks from tanks. All tank liquid levels are observed during visual inspections and prior to all deliveries. All product deliveries are documented. Any discrepancies are reported to management.

5.4 Inspection and Preventive Maintenance

Williams regularly inspects all aboveground tanks, valves, piping, and appurtenances. The inspection assesses the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.

Oil storage areas are visually inspected for signs that may indicate a loss of product. Visual inspections of the tanks, valves and pipelines are conducted and documented according to the following schedule in Table 5.4A.

TABLE 5.4A

INSPECTIONS AND INTEGRITY TESTING

Source (Tank ID)	Container Capacity (gal)	Routine Inspection for Leaks	Detailed Visual Inspection	Non-Destructive Testing
Aboveground Storage Tank				
#6 Oil Storage Tank	430,000	Weekly	Annual	10 Years (1)
#2 Oil Storage Tank	10,000	Weekly	Annual	10 Years (2)
Emergency Generator Tanks	<500	Weekly	Annual	(3)
Small Heating Boiler Tanks	275	Semi-Annually	Annual	(3)
Waste Oil Storage	55	Weekly	(4)	(4)
Cogen Lube Oil Storage	550	Weekly	Annual	(3)
Transformers (inside)	<280	Annually	Annual	N/A
Transformers (outside)	<280	Semi-Annually	Annual	N/A
Elevators	<350	Quarterly	Annual	N/A
Truck Loading/Unloading Operations				
Tanker truck delivery	6,000	During Delivery	N/A	N/A
Hazardous Waste	55	During Shipment	N/A	N/A
Drum Shipment	55	During Receipt	N/A	N/A

(1) The #6 oil tank was tested in 2003. It will be re-tested every 10 years.
(2) The #2 oil storage tank is not currently in use and is not anticipated to be used in the near future. Before it is filled, the tank will be tested for structural integrity.
(3) These tanks are in frequent use, have adequate secondary containment, and no significant potential for discharge to the environment. They will be tested for structural integrity only if the detailed annual inspection indicates a need for such testing.
(4) 55 gallon drums of raw materials and waste are held on-site less than one year and are not be subject to detailed visual inspection or non-destructive testing.

Preventive maintenance on all oil handling and storage equipment and systems is performed in accordance with applicable supplier recommendations, field proven practices, and standard facility operating procedures. Routine inspections result in follow-up or preventive maintenance for any anomalous findings.

Good housekeeping practices to maintain a clean and orderly workspace also assist in spill prevention. Good housekeeping includes best management practices for daily operation and material storage, as well as employee and contractor participation.

Good housekeeping includes the following:

- Maintaining clean and dry ground surfaces.
- Picking up and disposing of garbage.
- Checking for leaks on equipment.
- Following spill investigation, notification and cleanup procedures.
- Providing sufficient room to inspect material in storage areas.
- Storing containers out of the way of high traffic areas.
- Ensuring that all oil and petroleum products are stored in proper locations.
- Ensuring that unloading procedures are followed at all times.
- Informing employees and contractors of the need to follow good housekeeping practices and procedures.

5.5 Dike Drainage

Discharge from diked storage areas is restrained by valves to prevent a discharge into the drainage system or onto the floor. Diked areas may be emptied by manual valves after inspection to insure that there is no visible sheen or other evidence of contamination. Any collected waste oils must be pumped to an appropriate storage container and disposed off-site

Valves of manual, open-and-closed design are used for the drainage of diked areas (not flapper-type). Uncontaminated retained storm water may be drained after proper inspection for

contamination. The dike drainage area around the #6 oil tank at the heating plant is inspected weekly by the heating plant staff and recorded on the weekly inspection sheet.

5.6 Tank Integrity Testing

Aboveground tanks are given a regular thorough visual inspection, including the tank shell, valves, piping and supports, and secondary containment. Underground tanks are subject to initial pressure testing. Periodic pressure testing of underground tanks is conducted based on manufacturer's recommendations.

Non-destructive integrity testing of certain above ground containers is conducted on a regular schedule and whenever material repairs are made. The frequency of and type of testing takes into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). Visual inspections are combined with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another system of non-destructive shell testing. Records of inspections and tests kept under usual and customary business practices will suffice.

5.7 Brittle Fracture Evaluation

If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, Williams College will evaluate the container for risk of discharge or failure and take appropriate action.

5.8 Security

The Williams College campus is operated and staffed 24 hours/day, 7 days/week. Lighting is sufficient to inspect all oil storage areas at night for both detection of spills or vandalism. Vehicles entering the facility which could endanger aboveground piping or other oil transfer operations are warned by signs or barrier.

Areas handling, processing, or storing oil are fully fenced or secured and locked when not in production or unattended. The master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in the closed position when in non-operating or non-standby status.

5.9 Recordkeeping

All records are maintained for a minimum of five years. These records include routine inspections, maintenance, inventory, tank integrity testing, controls and monitor testing, and training records.

5.10 Contingency Plan

Williams relies on a strong Immediate Spill Response Procedures and Emergency Response Plan (ERP) to promptly and effectively respond to any oil spill. The immediate spill response procedures is contained in Appendix G and discussed in Section 7.0. ERP procedures are substance-specific and are available in the EH&S office.

6.0 TRAINING OF PERSONNEL

All facility personnel that are involved in oil storage and handling and spill response are provided initial training covering facility operations and emergency response procedures. Training is provided in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of this Plan. Any major changes in spill prevention and control requirements or standard operating procedures are brought to the attention of the affected personnel. The facility incorporates an active emergency response program including regular exercises of the Hazardous Waste/Materials Contingency Plan.

Discharge prevention briefings for oil-handling personnel are conducted at least once a year to assure adequate understanding of the SPCC Plan. Such briefings highlight and describe known discharges or failures, malfunctioning components, and any recently developed precautionary measures.

All spill response personnel have received or will receive at least an initial 40 hours of Hazmat emergency response training (in accordance with 29 CFR Part 1910.120). Additionally, 8 hours of annual refresher training is provided.

In addition to facility personnel, temporary personnel and contractors are informed of preventive measures and spill response procedures.

Retraining on this SPCC Plan occurs annually and as changes are made, but at a minimum every five years during SPCC recertification.

7.0 SPILL RESPONSE AND REPORTING

7.1 Response Procedures

7.1.1 Emergency Response Procedures

Visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts will be promptly corrected. Any accumulations of oil in diked areas will be promptly removed.

Detailed procedures for handling a leak, spill or accidental discharge are contained in the Immediate Spill Response Procedures provided in Appendix G. The information provided below supplements the facility Emergency Response Procedures for chemical spills.

7.1.2 Tank Leaks

MA DEP regulation 527 CMR 9.07(H) specifies actions that must be taken if a leak is detected from a tank. A leak is defined as a loss of 0.10 gph by tightness test method or 0.20 gph by continuous monitoring system. In the event of a leak, whether determined by testing or otherwise, the following steps shall be taken:

(a) The operator shall immediately notify the owner.
(b) The owner or operator shall immediately notify the head of the local fire department and the Office of Incident Response of the Department of Environmental Protection (DEP).
(c) If testing has confirmed that the source of the leak is the piping for a particular tank, the operator shall take that tank out of service immediately.
(d) If testing has confirmed that the source of the leak is a particular tank, the owner shall within 24 hours cause that tank to be emptied of all its product.

(e) The head of the local fire department shall take charge of all containment procedures and shall take whatever measures are necessary to prevent fire and explosion, or in the case of a fire or explosion, to protect the persons and property within the vicinity from such hazards.

(f) The head of the fire department shall verify that the requirements of 527 CMR 9.07(H)(1) are complied with.

(g) Upon the arrival of the representative of DEP, the head of the fire department shall advise him of the conditions at the site and the results of the investigations required by 527 CMR 9.07(H)(1).

(h) The owner and the operator shall cooperate with the representative of DEP in all efforts to locate the source of the leak, to contain it, etc.

(i) The head of the fire department shall have the responsibility of the containment procedures as long as, in his opinion, a fire or explosion hazard exists. During this period, the elimination of the fire/explosion hazard will have priority over all other concerns, while recognizing that the protection of the environment shall be considered at all times. Once such hazards cease, the representative of DEP shall assume all responsibility.

7.1.3 Indirect Indication of Product Loss

Tank areas are visually inspected on a regular schedule depending on the tank contents, frequency of use, and potential for a spill. Management is notified immediately if a leak or spill is suspected. Reasons for suspecting a leak include observation of oil in a diked area or drain, visual observation of leaks, or unexplained product loss based on inventory records. If there is any indication of a leak, appropriate methods are used to confirm the leak such as tank integrity testing.

In the event that a leak is found, corrective action is taken, as appropriate and defective or leaking equipment is repaired. Contaminated zones are cleaned up appropriately. Excavated material, such as contaminated earth, is analyzed for proper

disposal, documentation, and reporting in accordance with the Massachusetts Contingency Plan (310 CMR 40), if applicable.

7.1.4 Small Spills from Employee/Contractor Vehicles

Although these spills are not necessarily reportable under the Spill Prevention Control and Countermeasure Regulations (40 CFR 112) or the Massachusetts Contingency Plan, the internal response procedures will be followed to assure that potential reporting obligations are assessed and the spill is cleaned up to reduce the likelihood of downstream contamination from such spills. In the event that a small oil or gasoline spill is discovered on the Williams campus, the response procedures generally include the following:

- Person discovering the spill notifies the Environmental Health and Safety office or the Williams Security Department.
- The EH&S manager then directs appropriate personnel to cleanup the spill and determines whether the RQ is exceeded.
- The EH&S office maintains a log of spill response.

7.1.5 Oil Containment Equipment

Williams has suitable tools and materials to effectively cope with anticipated oil spills that may occur at the Williamstown campus. These tools consist of spill kits, shovels and squeegees, special adsorbing materials and other specialized equipment designed for this purpose. This material is stored in designated locations as appropriate. The names and telephone numbers of firms that specialize in spill clean-up are contained in the Emergency Contact List in Appendix G.

7.2 Reporting Procedures

Reporting requirements depend on the amount of material released during a 24-hour period and the type of area contaminated. Also, each agency has different reporting criteria. This program deals with petroleum products only. If other chemicals are involved, refer to the facility Contingency Plan.

7.2.1 Reporting Under the Clean Water Act (NRC 1-800-424-8802)

Any release of oil that reaches navigable waters, including streams, tributaries, and wetlands, which results in a sheen or discoloration upon the surface, forms an emulsion, or deposits a sludge must be immediately reported to the National Response Center (Coast Guard). A release to a functioning containment dike is not reportable.

7.2.2 Reporting Under the Massachusetts Contingency Plan (DEP 1-413-785-5327)

Any release that causes a sheen upon a water surface or involves over 10 gallons of oil discharged to the land (including asphalt pavement), water or ground water must be reported to the DEP as soon as possible, but no later than two hours. The land includes the dike area, but does not include the areas inside the buildings.

The person notifying any outside agency should provide the following information: the exact address or location and phone number of the facility; the date and time of the discharge; the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged to the environment; the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuries caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and, the names of individuals and/or organizations who have also been contacted.

Both of the above agencies may request follow-up written reports. Under the Clean Water Act, a written report must be filed within 60 days with the EPA Regional Office if two incidents requiring reporting to the NRC occur within a 12-month period, or if a release of over 1,000 gallons of oil reaches a navigable water.

Also, any release that requires reporting to the DEP or NRC will also be reported to the Williamstown Fire Department within 24 hours. However, if assistance is needed from the fire department because of a threat of fire or explosion, the fire department will be notified immediately.

7.3 Center of Authority

The EH&S manager is the central authority for administering this plan. During an emergency situation, the EH&S manager will be the Emergency Coordinator (EC) and the Incident Commander (IC) until the Fire Department arrives on the scene or will appoint an alternate. Upon notification of an emergency, the IC will establish an Emergency Operations Center in the EH&S office or other location as appropriate.

The IC will direct appropriate plant personnel and outside support (see Section 7.10 - Support Services) as necessary to respond to any spill which occurs.

7.4 Communications

Any of the Williams communication systems may be used for notification of an oil spill and for coordinating efforts to implement this plan. The communications systems include the following:

- Standard phone system;
- Two-way radio system; and
- Cellular Phone.

7.5 Special Precautions

The EC, with the assistance of Buildings and Grounds, will be responsible for any cleanup actions. To ensure safety during this operation, the EC will take the following precautions:

- Only qualified personnel that are designated by the EC will be allowed in a spill area for control and cleanup.

- The EC will direct that all sources of ignition be turned off such as electrical appliances, or sources of heat if there is a potential danger due to product flammability.

- The EC will determine if chemicals or other materials in the area are not compatible with the spilled product (e.g., particularly oxidizers). In the event of a spill, these items will be removed from the area.

- The spill area will be cordoned off and access will be limited.

- The EC will make a determination as to the toxicity of the spill material and determine appropriate personal protection equipment.

- Members of the cleanup team will wear appropriate protective clothing such as coveralls, safety glasses, gloves, and boots.

7.6 Remediation Procedures

The EC, with assistance from B&G, is responsible for the cleanup following an accidental loss of product. Knowledge, training, and judgment will determine the plan of action to be taken. Williams' personnel are trained in proper remediation procedures which vary with specific circumstances.

7.7 Contaminated Waste Disposal

Waste petroleum products and contaminated materials will be disposed of in accordance with federal, state, and local regulations. Available disposal support services are identified in Section 7.10 of this plan.

Small quantities of waste or contaminated material will be handled by operations personnel as directed by the EC in accordance with the Federal and state waste regulations as follows:

- All contaminated materials (rags, mops, pillows, etc.) will be placed in appropriate containers (typically open top drums are available).

- Each container will be sealed and labeled (contaminated will require a Hazardous Waste label) with the facility name, date, and contents.

- All waste containers will be stored in the designated area in accordance with waste storage requirements until arrangements can be made for off-site disposal.

7.8 Post Remediation Activities

Following remediation, the EC will complete the following tasks:

- The area will be inspected and a determination will be made if it is safe for use and for re-entry of employees and vehicles. The EC acting with local officials (as appropriate) can approve re-entry.

- The EC will confirm that all equipment involved in the spill is cleaned and that supplies are restocked. Material used to clean equipment will be disposed of properly.

- Within 48 hours, the EC will ensure that an incident report is completed for internal documentation.

- In the event that two NRC-reportable discharges of 42 gallons or more that have reached a surface water during the last 12 months or the spill amounts to 1,000 gallons, the EC is required to ensure that a written report is submitted within 60 days of discovery to the Environmental Protection Agency, Region I, in accordance with 40 CFR 112.4. Other agencies may require reports of the incident at their discretion.

- The EC will conduct a meeting with all personnel involved in the emergency to review the incident and discuss the response.

7.9 Safety

The EC will oversee all response activities and will direct actions to protect the safety of the public and personnel potentially affected by the spill.

The EC will conduct cleanup activities so that the safety of all employees and the public is maintained. All spill control and cleanup efforts will be conducted by qualified personnel in a manner that effectively reduces the danger of personnel risk. Trained personnel can provide immediate attention to injured personnel, and additional medical support will be obtained as necessary.

The Williams College Police and Williamstown Fire and Police Departments will also provide safety support as requested based on the severity of the incident.

7.10 Support Services

Provisions are in place for Williams to obtain support services to be used in responding to an accidental oil discharge. A list of the support services and specific companies or groups

which have been designated to provide the particular service is provided in the Immediate Response Plan in Appendix G.

7.11 Recordkeeping

Records of all facility spill events are maintained on-site. Copies of reportable spills are customarily maintained in the EH&S office.

Original records, clear photocopies of the original records, or secure computer media records, are kept accessible under the supervision of the designated personnel accountable for spill prevention for a minimum of five years.

8.0 PLAN AMENDMENTS

The SPCC Plan is amended whenever there is a change in the design or operation or maintenance of the facility which affects the potential for a discharge to occur. Any amendments are implemented within six months after the change at the facility. In addition, the SPCC Plan is reviewed at least every five years. If the review indicates that additional field-proven and effective prevention measures are necessary, the SPCC Plan is so amended within six months of review. Following any substantive amendments, the amended SPCC Plan is certified by a Professional Engineer.

The SPCC Plan may also be amended if there are two discharges (40 CFR 110) of oil to the navigable waters of the United States of more than 42 gallons within a 12 month period or if such a discharge involves over 1,000 gallons of oil. The regulations allow that the Regional Administrator may review the SPCC Plan and may require amendments to be made. Within 60 days of the event triggering the review, Williams will submit to the EPA Regional Administrator and MA DEP the following information:

- Name and location of the facility;
- The name(s) of the owner or operator;
- The maximum storage or handling capacity and normal daily throughput;
- A description of the facility including facility maps, topographical maps, flow diagrams and other drawings as necessary;
- The cause of the discharge including a failure analysis of the system or subsystem in which the failure occurred;
- The corrective actions and/or countermeasure taken, including a description of equipment repairs and replacements;
- Any additional preventive measures taken or contemplated to prevent a recurrence; and
- Any other information that may be reasonably required to review the Plan or the incidents.

After reviewing the above information and any comments received from the MA DEP, the Regional Administrator may notify the facility of any proposed amendments to the SPCC Plan necessary to prevent or contain future discharges. Williams College responds to the proposed amendment within 30 days from receipt of the proposal. The Regional Administrator will either rescind the proposal or require the amendment be made. The amendment becomes effective 30 days after issue and must be implemented within 6 months. Any required amendment may be appealed to the Administrator of the EPA.

OIL TYPE	CAPACITY GALLONS	ADDRESS
Commercial Properties		
#2 Fuel Oil	2-275	**Adams Block** - 36-42 Spring Street
Educational & General Buildings		
#2 Fuel Oil	1-275	**American Legion (old)** - Spring Street
#2 Fuel Oil	1-275	**Denison Gate House** - 7 Denison Park Drive
#2 Fuel Oil	2-275	**Hardy House** - 20 Morley Drive
#2 Fuel Oil	2-275	**Harper House** - 54 Stetson Court
#2 Fuel Oil	3-275	**Health Center** - 105 The Knolls
#2 Fuel Oil	2-275	**Jenness House** - 10 Morley Drive
#2 Fuel Oil	2-275	**Makepeace/Oakley Center** - 90 Denison Park Drive
#2 Fuel Oil	2-275	**Mears House** - 75 Park Street
#2 Fuel Oil	2-275	**Mears West** - 23 Whitman Street
#2 Fuel Oil	3-275	**Miller House** - 31 Grace Court
#2 Fuel Oil	2-275	**Mount Hope Caretakers House -** Green River Road
#2 Fuel Oil	1-10,000 Gallon Underground Tank	**Mount Hope Mansion** - 1478 Green River Road
#2 Fuel Oil	3-275	**Mount Hope Service Bldg** - Elm Tree Loop
#2 Fuel Oil	1-275	**Seeley House** - 32 Sawyer Library Drive
#2 Fuel Oil	2-275	**Siskind House** - 11 Morley Drive
Generators		
#2 Fuel Oil	250	**Hopkins Hall** - 880 Main Street
#2 Fuel Oil	400	**Jesup Hall** - 22 Lab Campus Drive
#2 Fuel Oil	500	**MSL** - 31 Morley Drive
#2 Fuel Oil	275	**Prospect House** - 59 Driscoll Hall Drive
#2 Fuel Oil	125	**Parking Garage**
#2 Fuel Oil	556	**Co-Gen Tank -** 50 Heating Plant Drive
#2 Fuel Oil	165	**President's House** - 936 Main Street
#2 Fuel Oil	260	**Portable Unit**
Heating Plant Tanks		
#2 Fuel Oil	10,000	**50 Heating Plant Drive**
#2 Fuel Oil	2-275	**50 Heating Plant Drive**
#6 Fuel Oil	430,000	**50 Heating Plant Drive**
Faculty Rentals		
#2 Fuel Oil	1-275	**Brinsmade House** - 71 Stetson Court
#2 Fuel Oil	2-275	**Brown House** - East/West - 33-35 Latham Street
#2 Fuel Oil	1-275	**Bucky Residence** - 111 Southworth Street
#2 Fuel Oil	1-275	**Burnett House -** 19 Walden Street
#2 Fuel Oil	1-275	**Carlton House** - 51 Stetson Court
#2 Fuel Oil	1-275	**Chandler House** - 26 Walden Street
#2 Fuel Oil	2-275	**Clark House- I and II** - 79 Southworth Street
#2 Fuel Oil	1-275	**Collins House** - 125 Meacham Street
Faculty Rentals		
#2 Fuel Oil	2-275	**Cora House** - 1587 Green River Road
#2 Fuel Oil	2-275	**Fisher House Apts. 1-3** - 71 & 73 School Street
#2 Fuel Oil	2-275	**Gavitt House** - 80 Stetson Court
#2 Fuel Oil	2-275	**Hewatt House Apts. 1-3** - 100 Hoxsey Street
#2 Fuel Oil	3-275	**Hopkins Forest Apt.** - 271 Nothwest Hill Road
#2 Fuel Oil	2-275	**Jerome House Apts. 1-3** - 66 Jerome Drive
#2 Fuel Oil	1-275	**Johnson House** - 73 Stetson Court
#2 Fuel Oil	2-275	**Lamphier House- East/West** - 64 Meacham Street
#2 Fuel Oil	1-275	**Leigh House** - 57 Stetson Court

#2 Fuel Oil	3-275	**Mason House** - 3 Southworth Street
#2 Fuel Oil	1-275	**Maxcy House** - 41 Hoxsey Street
#2 Fuel Oil	2-275	**McGinniss House Apts. 1 & 2** - 42 South Street
#2 Fuel Oil	1-275	**Messer House** - 23 Lynde Lane
#2 Fuel Oil	2-275	**Mini Mansion** - 1541 Green River Road
#2 Fuel Oil	1-275	**Morey House** - 121 Southworth Street
#2 Fuel Oil	4-275	**Mt. Hope Inn (A-D)** - 1439-1445 Green River Road
#2 Fuel Oil	2-275	**North House-East/West** - 14 & 16 Chapin Court
#2 Fuel Oil	2-275	**Patrie House -** 1573 Green River Road
#2 Fuel Oil	3-275	**Pilgrim House - East/West** - 7 Chapin Court
#2 Fuel Oil	2-275	**Quinn House Apts. 1 & 2** - 37 Southworth Street
#2 Fuel Oil	3-275	**Rice House** - 30 Morley Drive
#2 Fuel Oil	2-275	**Roberts House Apts. 1 & 2** - 135 Southworth Street
#2 Fuel Oil	1-275	**Rogers House** - 163 Park Street
#2 Fuel Oil	1-275	**Royal House** - 184 Southworth Street
#2 Fuel Oil	2-275	**Ruland House Apts. 1-3 -** 40 Southworth Street
#2 Fuel Oil	2-275	**Sherman House Apts. 1 - 4** - 820 Main Street
#2 Fuel Oil	2-275	**South House- East/West** - 19 Chapin Court
#2 Fuel Oil	4-275	**Southworth Apartments** - 96 Southworth Street
#2 Fuel Oil	2-275	**Stocking House** - 107 Southworth Street
#2 Fuel Oil	1-275	**Taylor House** - 159 North Street
#2 Fuel Oil	1-275	**Treadway House** - 35 Lynde Lane
#2 Fuel Oil	2-275	**Wild House Apts. 1 & 2** - 21 Southworth Street
#2 Fuel Oil	2-275	**Woodworth House Apts. 1 - 3** - 89 Southworth Street
Student Housing		
#2 Fuel Oil	4-275	**Agard House** - 90 South Street
#2 Fuel Oil	2-275	**Chadbourne House** - 42 Stetson Court
#2 Fuel Oil	1-275	**Dodd Annex** - 68 Mission Park Drive
#2 Fuel Oil	2-275	**Doughty House** - 45 Walden Street
#2 Fuel Oil	1-275	**Fayerweather Hall** - 28 Lawrence Hall Drive
#2 Fuel Oil	2-275	**Fort Hoosac** - 175 South Street
#2 Fuel Oil	4-275	**Garfield House** - 45 South Street
#2 Fuel Oil	1-275	**Goodrich House** - 12 Sawyer Library Drive
#2 Fuel Oil	1-275	**Lambert House** - 80 Hoxsey Street
#2 Fuel Oil	1-275	**Lehman Hall** - 94 Chapin Hall Drive
#2 Fuel Oil	2-275	**Milham House** - 53 Hoxsey Street
#2 Fuel Oil	1-275	**Poker Flats** - 45 Stetson Road
#2 Fuel Oil	1-275	**Sewall House** - 49 Mission Park Drive
#2 Fuel Oil	2-275	**Susie Hopkins** - 60 Denison Park Drive
Elevators		
Hydraulic Fluid	134	**Berhard Music Center** - 54 Chapin Hall Drive
Hydraulic Fluid	192	**Bronfman (passenger)** - 18 Hoxsey Street
Hydraulic Fluid	80	**Brooks House** - 983 Main Street
Hydraulic Fluid	86	**CDE (Saint Anthony Hall)** - 1065 Main Street
Hydraulic Fluid	88	**Chandler Gym (passenger)** - 34 Spring Street
Hydraulic Fluid	86	**Cole Field House** - 85 Stetson Road
Hydraulic Fluid	58	**Faculty House** - 968 Main Street
Hydraulic Fluid	89	**Goodrich Hall** - 863 Main Street
Hydraulic Fluid	59	**Greylock Dining (freight)** - 25 AMT Drive
Hydraulic Fluid	55	**Griffin Hall** - 844 Main Street
Hydraulic Fluid	290	**Hopkins Hall** - 880 Main Street

Hydraulic Fluid	67	**Jesup Hall** - 22 Lab Campus Drive
Hydraulic Fluid	82	**Lasell Gym** - 871 Main Street
Hydraulic Fluid	221	**Lawrence Hall** - 15 Lawrence Hall Drive
Hydraulic Fluid	80	**Mission Park** - Lynde Lane
Hydraulic Fluid	91	**Sage Hall** - 71 Chapin Hall Drive (E-entry)
Hydraulic Fluid	191	**Sawyer Library** - 55 Sawyer Library Drive
Hydraulic Fluid	158	**Science Center # 1** - 31 Morley Drive
Hydraulic Fluid	91	**Science Center #2** - 31 Morley Drive
Hydraulic Fluid	352	**Science Center #3** - 31 Morley Drive
Hydraulic Fluid	127	**Spencer Art (passenger)** - 33 Driscoll Hall Drive
Hydraulic Fluid	100	**Southworth Apartments -** 96 Southworth Street
Hydraulic Fluid	193	**Stetson** - 26 Hopkins Hall Drive
Hydraulic Fluid	91	**Williams Hall** - 93 Chapin Hall Drive (E-entry)
Transformers and High Voltage Switches		
Transformer oil	97	Agway (TSI # 52)
Transformer oil	155	Agway (TSI # 53)
Transformer oil	450	Brooks House (TSI #31)
Transformer oil	97	Dodd House (TSI #38)
Transformer oil	261	Driscoll Dining
Transformer oil	190	Faculty Club (TSI# 51)
Transformer oil	282	Fitch House (TSI# 46)
Transformer oil	155	Mears House (TSI#36)
Transformer oil	120	Perry House (TSI #43)
Transformer oil	50	Seeley House (TSI#42)
Transformer oil	352	Heating Plant (480V)
Transformer oil	1,115	Heating Plant (13800V)
Transformer oil	1,115	Heating Plant (13800V)
High Voltage Switches		
Transformer Oil	4.5	Stetson Hall
Transformer Oil	4.5	Stetson Hall
Transformer Oil	9	Service 4 Vault
Transformer Oil	4.5	Baxter
Transformer Oil	4.5	Baxter
Transformer Oil	4.5	Hockey Rink

Appendix B - Oil Spill Prevention and Containment Systems

Contents	Capacity Gallons	Location/Description	Level Control	Secondary Containment
Heating Plant Oil Tanks	*Heating Plant*			
	#2 Oil - 10,000	**Heating Plant** - 50 Heating Plant Drive		Concrete Containment Dike
	#6 Oil - 430,000	**Heating Plant** - 50 Heating Plant Drive	Level Alarm	Concrete Containment Dike
	#2 Oil 2 - 275	**Heating Plant** - 50 Heating Plant Drive	Level Alarm	Double-walled Roth Tank
Heating Oil Tanks #2 Fuel Oil	*Student Housing Boilers*			
	4 – 275	**Agard House** - 90 South Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Chadbourne House** - 42 Stetson Court	Level Alarm	Double-walled Roth Tank
	1 – 275	**Dodd Annex** - 68 Mission Park Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Doughty House** - 45 Walden Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Fayerweather Hall** - 28 Lawrence Hall Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Fort Hoosac** - 175 South Street	Level Alarm	Double-walled Roth Tank
	4 – 275	**Garfield House** - 45 South Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Goodrich House** - 12 Sawyer Library Drive	Level Alarm	Double-walled Roth Tank
	1 – 275	**Lambert House** - 80 Hoxsey Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Lehman Hall** - 94 Chapin Hall Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Milham House** - 53 Hoxsey Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Poker Flats** - 45 Stetson Road	Level Alarm	Double-walled Roth Tank
	1 – 275	**Sewall House** - 49 Mission Park Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Susie Hopkins** - 60 Denison Park Drive	Level Alarm	Double-walled Roth Tank
	Educational and General Buildings			
	1 – 275	**American Legion (old)** - Spring Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Denison Gate House** - 7 Denison Park Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Hardy House** - 20 Morley Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Harper House** - 54 Stetson Court	Level Alarm	Double-walled Roth Tank
	3 – 275	**Health Center** - 105 The Knolls	Level Alarm	Double-walled Roth Tank
	2 – 275	**Jenness House** - 10 Morley Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Makepeace/Oakley Center** - 90 Denison Park Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Mears House** - 75 Park Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Mears West** - 23 Whitman Street	Level Alarm	Double-walled Roth Tank
	3 – 275	**Miller House** - 31 Grace Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Mount Hope Caretakers House** - Green River Road	Level Alarm	Double-walled Roth Tank
	1 - 10,000 underground	**Mount Hope Mansion** - 1478 Green River Road	Level Alarm	Double-walled fiberglass; overfill protection device
	3 – 275	**Mount Hope Service Bldg** - Elm Tree Loop	Level Alarm	Double-walled Roth Tank
	1 - 275	**Seeley House** - 32 Sawyer Library Drive	Level Alarm	Double-walled Roth Tank
	2-275	**Siskind House –** 11 Morley Drive	Level Alarm	Double-walled Roth Tank
	Commercial Properties			
	2 – 275	**Adams Block** - 36-42 Spring Street	Level Alarm	Double-walled Roth Tank
	Rental Properties			
	1 – 275	**Brinsmade House** - 71 Stetson Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Brown House** - East/West - 33-35 Latham St.	Level Alarm	Double-walled Roth Tank
	1 – 275	**Bucky Residence** – 111 Southworth Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Burnett House** - 19 Walden Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Carlton House** - 51 Stetson Court	Level Alarm	Double-walled Roth Tank
	1 – 275	**Chandler House** - 26 Walden Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Clark House- I and II** - 79 Southworth Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Collins House** - 125 Meacham Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Cora House** - 1587 Green River Road	Level Alarm	Double-walled Roth Tank

Contents	Capacity Gallons	Location/Description	Level Control	Secondary Containment
Heating Oil Tanks #2 Fuel Oil (continued)	2 – 275	**Fisher House Apts. 1-3** - 71 & 73 School St.	Level Alarm	Double-walled Roth Tank
	2 – 275	**Gavitt House** - 80 Stetson Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Hewatt House Apts. 1-3** - 100 Hoxsey Street	Level Alarm	Double-walled Roth Tank
	3 – 275	**Hopkins Forest Apt.** - 271 Northwest Hill Road	Level Alarm	Double-walled Roth Tank
	2 – 275	**Jerome House Apts. 1-3** - 66 Jerome Drive	Level Alarm	Double-walled Roth Tank
	1 – 275	**Johnson House** - 73 Stetson Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Lamphier House- East/West** - 64 Meacham Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Leigh House** - 57 Stetson Court	Level Alarm	Double-walled Roth Tank
	3 – 275	**Mason House** - 3 Southworth Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Maxcy House** - 41 Hoxsey Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**McGinniss House Apts. 1 & 2** - 42 South Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Messer House** - 23 Lynde Lane	Level Alarm	Double-walled Roth Tank
	2 – 275	**Mini Mansion** - 1541 Green River Road	Level Alarm	Double-walled Roth Tank
	1 – 275	**Morey House** - 121 Southworth Street	Level Alarm	Double-walled Roth Tank
	4 – 275	**Mt. Hope Inn (A-D)** - 1439-1445 Green River Road	Level Alarm	Double-walled Roth Tank
	2 – 275	**North House- East/West** - 14 & 16 Chapin Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Patrie House** - 1573 Green River Road	Level Alarm	Double-walled Roth Tank
	3 – 275	**Pilgrim House - East/West** - 7 Chapin Court	Level Alarm	Double-walled Roth Tank
	2 – 275	**Quinn House Apts. 1 & 2** - 37 Southworth St.	Level Alarm	Double-walled Roth Tank
	3 – 275	**Rice House** - 30 Morley Drive	Level Alarm	Double-walled Roth Tank
	2 – 275	**Roberts House Apts. 1 & 2** - 135 Southworth Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Rogers House** - 163 Park Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Royal House** - 184 Southworth Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Ruland House Apts. 1-3** - 40 Southworth St.	Level Alarm	Double-walled Roth Tank
	2 – 275	**Sherman House Apts. 1 - 4** - 820 Main Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**South House- East/West** - 19 Chapin Court	Level Alarm	Double-walled Roth Tank
	4 – 275	**Southworth Apartments** – 96 Southworth St.	Level Alarm	Double-walled Roth Tank
	2 – 275	**Stocking House** - 107 Southworth Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Taylor House** - 159 North Street	Level Alarm	Double-walled Roth Tank
	1 – 275	**Treadway House** - 35 Lynde Lane	Level Alarm	Double-walled Roth Tank
	2 – 275	**Wild House Apts. 1 & 2** - 21 Southworth Street	Level Alarm	Double-walled Roth Tank
	2 – 275	**Woodworth House Apts. 1 - 3** - 89 Southworth St.	Level Alarm	Double-walled Roth Tank
Edible Oils (1-5 gallon containers)	*Dining Halls*			
		CDE – 1065 Main Street		None
		Dodd Dining – 64 Mission Park Drive		None
		Driscoll Dining – 49 Driscoll Hall Drive		None
		Faculty House – 968 Main Street		None
		Greylock Dining – 25 Adams Memorial Theatre Drive		None
		Mission Park Drive – Lynde Lane		None
Emergency Generator Tanks #2 Fuel Oil	*Generators with Oil*			
	250	**Hopkins Hall** - 880 Main Street		To be replaced Summer ‘04
	400	**Jesup Hall** - 22 Lab Campus Drive		Concrete Containment
	500	**MSL - 31** - Morley Drive		Concrete Containment
	275	**Prospect House** - 59 Driscoll Hall Drive		Double-walled Roth Tank
	125	**Parking Garage** - 45 Whitman Street		Double-walled Tank

Contents	Capacity Gallons	Location/Description	Level Control	Secondary Containment
	165	**President's House -** 936 Main Street		Double-walled Tank
	260	**Portable Unit**		None
Lubricating Oil	*Lube Oil*			
	556	**Co-Gen Tank -** 50 Heating Plant Drive		Containment Dike
Mineral Oil	*Transformers*			
	97	**Agway** - 30 A,B,C Denison Park Drive (TSI # 52) (Unit not in use – stored at Mt. Hope)		Concrete Pad
	155	**Agway -** 30 A,B,C Denison Park Drive (TSI # 53) (Unit not in use – stored at Mt. Hope)		Concrete Pad
	450	**Brooks House** - 983 Main Street (TSI #31)		Concrete Pad
	97	**Dodd House** - 64 Mission Park Drive (TSI # 38)		Concrete Pad
	261	**Driscoll Dining** - 49 Driscoll Hall Drive		Concrete Pad
	190	**Faculty Club** - 968 Main Street (TSI # 51)		Concrete Pad
	282	**Fitch House** - 30 Driscoll Hall Drive (TSI # 46)		Concrete Pad
	155	**Mears House** - 75 Park Street (TSI # 36)		Concrete Pad
	120	**Perry House** - 1017 Main Street (TSI # 43)		Concrete Pad
	50	**Seeley House** - 32 Sawyer Library Drive (TSI # 42)		Concrete Pad
	352	**Heating Plant (480V)** 50 Heating Plant Dr.		Concrete Pad
	1115	**Heating Plant (13800V)** 50 Heating Plant Dr.		Concrete Pad
	1115	**Heating Plant (13800V)** 50 Heating Plant Dr		Concrete Pad
	High Voltage Oil Switches			
	9	**Stetson Hall (2 units – 4.5 gallons each)** - 26 Hopkins Hall Drive		None - Unit is inside a building on a concrete floor
	9	**Baxter Hall (2 units – 4.5 gallons each)** – 39 Chapin Hall Drive		None - Unit is inside a building on a concrete floor
	4.5	**Hockey Rink** – 76 Latham Street		None - Unit is inside a building on a concrete floor
	9	**Service 4 Vault**		None - Unit is inside a building on a concrete floor
	Compressor Storage			
	55	**Bronfman Science Rm B-56 –** 18 Hoxsey Street		Containment Pallet
Hydraulic Oil	*Elevators*			
	134	**Berhard Music Center** - 54 Chapin Hall Dr.		Containment Pan
	192	**Bronfman (passenger)** - 18 Hoxsey Street		Containment Pan
	80	**Brooks House** - 983 Main Street		Containment Pan
	86	**CDE (Saint Anthony Hall)** - 1065 Main Street		Containment Pan
	88	**Chandler Gym (passenger)** -34 Spring Street		Containment Pan
	86	**Cole Field House** - 85 Stetson Road		Containment Pan
	58	**Faculty House** - 968 Main Street		Containment Pan
	89	**Goodrich Hall** - 863 Main Street		Containment Pan
	59	**Greylock Dining (freight)** - 25 AMT Drive		Containment Pan
	55	**Griffin Hall** - 844 Main Street		Containment Pan
	290	**Hopkins Hall** - 880 Main Street		Containment Pan
	67	**Jesup Hall** - 22 Lab Campus Drive		Containment Pan
	82	**Lasell Gym** - 871 Main Street		Containment Pan
	221	**Lawrence Hall** - 15 Lawrence Hall Drive		Containment Pan
	80	**Mission Park** - Lynde Lane		Containment Pan
	91	**Sage Hall** - 71 Chapin Hall Drive (E-entry)		Containment Pan
	191	**Sawyer Library** - 55 Sawyer Library Drive		Containment Pan

Contents	Capacity Gallons	Location/Description	Level Control	Secondary Containment
Hydraulic Oil (continued)	158	**Science Center # 1 -** 31 Morley Drive (SSL 16A)		Containment Pan
	91	**Science Center #2** – 31 Morley Drive (MSL library break room)		Containment Pan
	352	**Science Center #3 -** 31 Morley Drive (G21A MSL)		Containment Pan
	100	**Southworth Apartments** – 96 Southworth St.		Containment Pan
	127	**Spencer Art (passenger) -** 33 Driscoll Hall Drive		Containment Pan
	193	**Stetson** - 26 Hopkins Hall Drive		Containment Pan
	91	**Williams Hall -** 93 Chapin Hall Drive (E-entry)		Containment Pan
	Lifts			
	2.5	**B&G Garage** – 60 Latham Street		Concrete Floor; blocked floor drains
	3	**B&G Garage** – 60 Latham Street		Concrete Floor; blocked floor drains
Waste Oil	*Drum Storage*			
	330 (max.)	**HAZMAT Shed –** 60 Latham Street		Containment Pallets (Self Containing)
	Other Storage			
	55	**Satellite Accumulation Area Heating Plant** - 50 Heating Plant Drive		Containment Pallet
	55	**Satellite Accumulation Area – Garage** – 60 Latham Street		Containment Pallet: floor drains to o/w separator
		Oil/Water Separator - 60 Latham Street		
Gasoline	*Underground Tanks*			
	10,000	**Outside B&G Garage** - 60 Latham Street	Level Alarm	Double-walled Tank; interstitial monitor
Misc. Oils	*Small Container Storage*			
	$\underline{\leq}$ 55 gal.	**B&G Garage** - 60 Latham Street		None
	$\underline{\leq}$ 55 gal.	**Heating Plant** - 50 Heating Plant Drive		None
Diesel Fuel	*Diesel Fuel – used to fuel college vehicles*			
	500	**Outside B&G North –** 54 Heating Plant Drive		Double-walled Tank

APPENDIX C

SITE PLAN

Please Contact the Office of Environmental Health and Safety to view the site plan.

US EPA – SPILL NOTIFICATION FORM

Reporter's Last Name: _____First: _____ M.I. _____

Day Phone: _____ Evening: _____

Company/Owner: _____

Organization Type: _____

Address: _____

City: _____ State: _____ Zip: _____

Were Materials Released (Y/N)? _____ Confidential (Y/N)? _____

Meeting Federal Obligations to Report _____ (Y/N)? Date Called _____

Calling for Responsible Party: _____ (Y/N)? Time Called _____

Incident Description

Source and/or Cause of Incident _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

US EPA – SPILL NOTIFICATION FORM

Dare of Incident _____ Time of Incident _____am/pm

Incident Address/Location _____

_____

_____

Nearest City _____ State _____ County _____ Zip _____

Distance from City _____ Units _____ Direction from city _____

Section _____ Township _____ Range _____

Container Type _____ Tank Capacity _____ Units _____

Facility Capacity _____ Units _____

Facility Latitude _____ Degrees _____ Minutes _____ Seconds _____

Facility Longitude _____ Degrees _____ Minutes _____ Seconds _____

Chris Code	**Discharged Quantity**	**Unit of Measure**	**Material Released In Water**	**Quantity**	**Unit/Meas.**
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Response Action

Actions Taken to Correct, Control or Mitigate Incident

_____

_____

_____

_____

US EPA – SPILL NOTIFICATION FORM

Impact

Number of Injuries _____ Number of Deaths _____

Were there Evacuations _____ (Y/N)? Number Evacuated _____

Was there any Damage _____ (Y/N)? Damage in Dollars _____
(approximate)

Medium Affected _____

Description _____

More Information about Medium _____

_____

_____

Additional Information

Any information about the incident not recorded elsewhere in the report? _____

_____

_____

_____

Caller Notifications

EPA _____(Y/N)? USCG _____(Y/N)? State _____(Y/N)?

Other _____ (Y/N)? Describe _____

Williams College

Summary of Historical Facility Spills

Date	Description	Corrective Action	Plans for Preventing Reoccurrence
2/8/02	A tractor trailer making a delivery to the stockroom noticed something leaking from the truck as it came to a stop. One of two barrels had become unrestrained and spilt. When it spilt, it began to leak. Approximately 12 gallons of the fuel additive was leaked.	Immediate action involved notifying the fire department, containing the spillage in a bucket and spreading an absorbent material. Clean Harbors was then contacted by the trucking company to respond for clean up. MA DEP was notified immediately.	
9/1/02	During the replacement of the elevator shaft in Bronfman, it was found that hydraulic oil had leaked into the ground.	Cyn Environmental was contacted and completed the clean-up of the shaft area. Test wells around the building were also put in to monitor any ground contamination. MA DEP was notified.	Elevator shaft oil is being monitored on a regular basis. Levels are checked at each service call to be sure there is not a loss of oil. Any indication of a leak will be reported immediately.
9/30/02	Cyn Environmental was making a pickup of drums off of the Bronfman loading dock when the dolly broke causing the drum to fall and bulge at the top. Approximately 10 gallons of virgin hydraulic oil was leaked onto the loading dock and surrounding areas. Some oil made its way to the manhole. This was reported to MA DEP immediately.	The drum was placed in an upright position to prevent further spillage and an absorbent material was used along with booms and absorbent pads to contain the spill. Cyn cleaned up the loading dock and manhole. A vacuum truck was brought in by Cyn to clean out the manhole. In addition Cyn entered the manhole and used absorbent pads to wipe down the interior walls of the manhole. Note: The water level in the manhole never reached the discharge pipe.	
6/3/03	Cole Field House Garage - One of the lawnmowers began leaking diesel fuel overnight.	The lawnmower was moved away from the floor trap and a drip pan was placed underneath the mower. The floor trap was emptied out and cleaned. Pads and speedi-dri were used to clean up the mess. Approximately one gallon of diesel fuel was actually lost.	
12/8/03	Williams Hall – 93 Chapin Hall Drive A manlift owned by Kapiloff Glass experienced a hydraulic line break. It is estimated that 15 gallons of hydraulic oil was lost.	The unit was shut down and buckets and absorbent pads were placed under the unit. The pads, snow and dirt in the immediate area were removed and disposed of by Maxymillian Technologies. Due to the estimated amount lost, the MA DEP was notified.	

Williams College

Summary of Historical Facility Spills

Date	Description	Corrective Action	Plans for Preventing Reoccurrence
1/11/04	Morley Science – A pipe in the atrium burst spilling water into the elevator pit. There was no loss of oil in any quantity. The elevator pit was full of water and oil sheen could be seen. This was due to the water coming into contact with the elevator piston.	As a precautionary measure due to oil sheen on the water, Cyn Environmental was called to pump out the pit.	
1/19/04	Pine Cobble Road – An auto accident left a small spill of transmission fluid. It is estimated that the loss of fluid was minimal – approximately two quarts.	Absorbent material was spread on the spill and the area was cleaned up. The absorbent material was placed in a 30 gallon drum and disposed of appropriately.	
2/12/04	Weston Field Parking Lot - Latham Street - A hydraulic line on the front loader broke. It is estimated that 3-4 gallons of hydraulic oil was lost.	Absorbent material was used to clean up the oil on the ground. Snow that had been sprayed with the oil was also removed and placed into a 30 gallon barrel. All absorbent material and snow were disposed of appropriately.	
5/17/04	West side of Gladden House- 44 North Street - A hydraulic line on one of the mowers split. Approximately 1-2 gallons of hydraulic oil was lost.	The hydraulic oil was spread over a 15 foot area of grass. The grass was removed with the sod cutter and was placed in the hazmat shed and disposed of appropriately.	

Note:
1. Under SPCC regulations, a spill is defined as a release or discharge of oil in a "harmful quantity". For such spills, the College will describe the spill and identify immediate and planned preventive actions taken and to be taken. The College will complete this table by identifying when preventive actions were complete

SPILL DOCUMENTATION RECORD (INTERNAL)

Administrative Information

Facility _____

Time of Spill _____
(24 hour clock)

Date of Spill _____

Current Ebb ☐ Flow ☐

Spill Location _____

Spill Source _____

Person Detecting Spill _____

Weather Conditions _____

Technical Information

What immediate corrective action was taken to mitigate and recover from the spill?

What material was spilled? _____

How much was spilled? _____ Actual Measurement ☐ Estimate ☐

How was the spill discovered?

What was the root cause of the spill? (Check all that apply.)

- ❑ Personnel Error
- ❑ Lack of training
- ❑ Inadequate procedures
- ❑ Equipment of component failure
- ❑ Other

Comments:

What long term corrective action is planned or recommended to prevent this from happening again?

Report Prepared by:_____ _____ _____ _____
Name (print) Name (sign) Phone No. Date & Time

***** Make one copy for Facility records *****

College Use Only

Report Reviewed by: _____ _____
Signature Date

Report Satisfactory ☐
Follow up Required ☐

Williams College

Petroleum Aboveground Storage Tanks, Associated Containment and Piping

Semi-Annual Inspection Log

Date: _____ Time: _____ am/pm Inspector's Name: _____

Location of Tank: _____ Tank Capacity: _____

Item/Condition to be Checked	Yes	No	Observation/Deficiency	Corrective Action & Date
1. Are the tanks in good condition - free of leaks, excessive rusting and damage?				
2. Tank associated pipes, valves, and other connections are in good condition - free of leaks, excessive rusting and damage?				
3. Are the tanks secondary containment free of cracks, penetrations or damage?				
4. Are the tanks secondary containment free of accumulation?				
5. Is spill control equipment present in each oil storage location?				
6. Are oil containers in good condition and not leaking?				
7. Are the oil containers maintained closed?				
8. Are the oil containers stored with secondary containment?				
9. Are the containers secondary containment in good condition (free of cracks, penetrations and damage)?				
10. Any visible oil releases or staining?				
11. Is the Spill Kit Complete?				

Comments: (Include overall condition of tanks, containers and equipment inspected) _____

_____

_____

_____

_____

_____

_____

Williams College
Vapor Recovery

Weekly Inspection Log

Date: _____ Time: _____am/pm Inspector's Name: _____

Location of Equipment: _____

Refer to CARB order G-70-52-AM for more detailed Stage II information.

COMPONENT	QUESTION	YES/NO
Nozzles	1. Are the nozzle boots torn, slit, taped or loose? 2. Are the nozzles leaking gasoline? 3. Are Long Boot (6") nozzles on dispensers?	Y / N Y / N Y / N
Hoses	1. Are the hoses flattened, kinked, cracked, or taped? 2. Are the hoses lying on the island or ground?	Y / N Y / N
Pumps	Does the hose loop exceed 10 inches?	Y / N
Dispensers	Is the dispenser hose lying on the island or ground?	Y / N
Retractor Cable	Does the retractor assembly pull the hose to the top of the retractor?	Y / N
Hose Breakaways (for all self-service islands)	1. Are the breakaways between the nozzle and the retractor bar? 2. Are the breakaways installed in the proper direction? 3. Are the breakaways leaking gasoline?	Y / N Y / N Y / N
Tank Vent Lines	Are rain caps or PV valves installed on the top of each vent pipe? Either is approved.	Y / N
Stage I Vapor Recovery	Is coaxial Stage I OR two-point Stage I vapor recovery installed? Either is approved.	Y / N

Comments: _____
_____
_____
_____

Williams College

Petroleum Aboveground Storage Tanks, Associated Containment and Piping

Weekly Inspection Log

Date: _____ Time: _____ am/pm Inspector's Name: _____

Location of Tank: _____ Tank Capacity: _____

Item/Condition to be Checked	Yes	No	Observation/Deficiency	Corrective Action & Date
1. Is the tank in good condition-free of leaks, excessive rusting and damage?				
2. Tank associated pipes, valves, and other connections are in good condition - free of leaks, excessive rusting and damage?				
3. Is tank secondary containment free of cracks, penetrations or damage?				
4. Is tank secondary containment free of accumulation?				
5. Is spill control equipment present in each oil storage location?				
6. Is oil container in good condition and not leaking?				
7. Is the oil container maintained closed?				
8. Is the oil container stored with secondary containment?				
9. Is the container's secondary containment in good condition (free of cracks, penetrations and damage)?				
10. Any visible oil releases or staining?				
11. If no visible sheen, was the dike area drained of standing water?				
12. Is the spill kit complete?				

Comments: (Include overall condition of tanks, containers and equipment inspected) _____

_____

_____

_____

_____

_____

_____

Williams College

Training Log

This Training Log should be used to record formal and informal training sessions completed by Williams College personnel. This training includes, but is not limited to, introductory training for new employees, facility operations training, spill response training, good housekeeping, materials management and review of existing, new and pending regulations. Training should be conducted annually at a minimum.

Name	**Type of Training**	**Date**	**Hours**

Note:
1. Also, refer to personnel files for training records and certifications.

IMMEDIATE SPILL RESPONSE ACTIONS

The following procedures will be taken by facility personnel to mitigate or prevent any discharge or substantial threat of product release resulting from operational activities. The procedures are appropriate for any discharge at the facility including equipment failure, tank failure, piping rupture, leak, explosion or fire.

1. DON'T PANIC - TAKE CONTROL - THINK SAFETY

2. EVALUATE NEED FOR

- Emergency Medical Assistance - If any personnel are injured, call 911 for medical assistance.
- Fire - Eliminate sources of ignition.
- Police
- Evacuation - If required, refer to the Evacuation Plan presented in Section 4.4.

3. STOP THE SOURCE - If you can <u>SAFELY</u>

- Take measures to stop the release (e.g., shut valves, stop relevant transfer operations) and secure area.
- Request all unnecessary personnel to stand clear of the release area.

4. GET BUDDY / BACK-UP HELP

5. CALL IN HELP

- Contact an Emergency Coordinator, as identified on the Emergency Contact and Notification List found Appendix G.
- Contact other Internal Contacts, as necessary.

6. INITIATE RESPONSE ACTIONS / CONTAIN SPILL

- SAFETY IS THE FIRST PRIORITY. If you are not sure that you can safely respond to the spill, wait for help.
- If the spill is on fire or other health hazards are present, DO NOT attempt to stop or contain the spill.
- DO NOT enter confined spaces (i.e., sewers, trenches or buildings/rooms with limited access), unless properly trained and equipped.
- When in doubt, the event is an emergency requiring response by trained individuals with self-contained breathing apparatus (SCBA) respiratory protection.
- Immediately confine leaked material with sorbents, sand or by other means, if such actions can be accomplished safely.
- Identify the product/material/waste, which is involved in the spill. Get MSDSs from on-site file.
- Note any special conditions that may hamper or render the clean-up operation more difficult for outside contractors and be prepared to communicate such information immediately.

IMMEDIATE SPILL RESPONSE ACTIONS (continued)

7. BEGIN EXTERNAL NOTIFICATIONS

- Emergency response contractor:

  Maxymillian Technologies (800) 695-7771

- For a release to the environment (air, water, land) of 10 gallons or more, prepare as much of the MA DEP Release Notification and Notification Retraction Form (Appendix D) as possible, and **immediately** notify the MA DEP by calling the Spill Hotline at (888) 304-1133.

- If the release:

  - ✓ *may* violate applicable water quality standards;
  - ✓ causes a film or sheen on or discoloration of surface water; or
  - ✓ causes a sludge or emulsion to be deposited beneath the surface of the water,

  Then, immediately notify the National Response Center at (800) 424-8802 or the EPA Regional Administer at (617) 223-7265 and provide your name, organization and phone number; the date, time and location of the release; the type and quantity of material released; and the source and cause of the release.

- For spills that may affect adjacent residences (e.g., drinking water well contamination, hazardous vapors, etc.), notify the property owners through police and fire officials.

- For spills that may affect any of the public utilities (water, sewer, electric, telephone or gas), notify the proper utilities.

8. RECORD ACTIONS

- Using the Spill Documentation Record (Appendix D), record the sequence of events. For each action taken, identify the time of day and elapsed time. Continue to use the Spill Documentation Record until the spill response is terminated.

Appendix H - Federal SPCC Regulations

(40CFR Parts 109, 110, 112) of the Spill Plan are the following links.

40 CFR 109:
http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&sid=19629959d4989a2b3d4009960907495b&tpl=/ecfrbrowse/Title40/40cfr109_main_02.tpl

40 CFR 110:
http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&sid=19629959d4989a2b3d4009960907495b&tpl=/ecfrbrowse/Title40/40cfr110_main_02.tpl

40 CFR 112:
http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&sid=19629959d4989a2b3d4009960907495b&tpl=/ecfrbrowse/Title40/40cfr112_main_02.tpl

527 CMR 9.00: TANKS AND CONTAINERS

Section

9.01: Purpose and Scope

(1) 527 CMR 9.00 shall apply to the design, construction, installation, testing, and maintenance of tanks and containers. The intent is to protect the public safety and welfare from the dangers of fire and/or explosion due to tank or container leakage of flammable and combustible liquids.

(2) Aboveground tanks of more than 10,000 gallons capacity for the storage of any fluid other than water shall be regulated by 527 CMR 9.00 and by 520 CMR 12.00 (Requirements for the Installation of Tanks Containing Fluids Other Than Water in Excess of 10,000 Gallons) for the purpose of protecting the public safety and welfare from the dangers of tank failure, rupture, or leakage. The more stringent of the aforementioned regulations shall apply.

(3) 527 CMR 9.00 shall apply to the design, construction, installation, testing and maintenance of tanks storing hazardous substances.

9.02: Definitions

For the purposes of 527 CMR 9.00, the following terms shall have the meanings assigned to them:

Abandoned, in the case of underground storage tanks, shall mean out of service for a continuous period in excess of six months, and for a period in excess of 24 months in the case of any aboveground tank of 10,000 gallons capacity or less; and in the case of aboveground storage of any fluid other than water, where a permit is required from the Marshal under provisions of M.G.L. c. 148, § 37, it shall mean out of service for a continuous period in excess of 60 months and has been deemed to be unsafe and a threat to the public safety by the head of the fire department and by the Department of Fire Services.

Aboveground Storage Tank. A horizontal or vertical tank, that is listed and intended for fixed installation, without back fill above or below grade, and is used within the scope of its approval or listing.

EXCEPTION 1: Aboveground Storage Tanks regulated by 527 CMR 9.04, Vaults, and 520 CMR 12.00, Requirements for the Installation of Tanks Containing Fluids Other Than Water in Excess of 10,000 Gallons, need not meet double-walled tank requirements.

EXCEPTION 2: Aboveground pressure vessels constructed in accordance with the requirements of the ASME, *Unfired Pressure Vessels Code* and regulated by M.G.L. c. 146 and 527 CMR 9.07(G) shall be exempt from the requirements for vaults or double-walled tanks.

Approved, approved by the State Fire Marshal.

9.02: continued

Automatic Line Leak Detector, a device designed to detect product or pressure losses in a pressurized product line of a remote pumping system.

Board, the Board of Fire Prevention Regulations.

Cathodic Protection System, a technique which inhibits the corrosion of a tank or its components either through sacrificial or galvanic anode or the impressed current.

Combustible Liquid, Any liquid having a flash point at or above 100°F shall be known as a Class II or Class III Liquid. Combustible liquids shall be divided into the following classifications:
Class II: Liquids having flash points at or above 100°F. and below 140°F.
Class IIIA: Liquids having a flash point at or above 140°F. and below 200°F.
Class IIIB: Liquids having a flash point at or above 200°F.

Commissioner, the Commissioner of Public Safety.

Components, piping, pumps, and other related storing, conveyancing, and dispensing elements which, together with one or more tanks and any cathodic protection or monitoring system, constitute a storage facility.

Consumptive Use, fuel oil used exclusively for area heating and/or the heating of domestic water on the premises where stored.

Corrosion Expert, a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such person shall be accredited or certified as being qualified by the National Association of Corrosion Engineers (NACE) as a Cathodic Protection Specialist or Corrosion Specialist or be a Massachusetts registered professional corrosion engineer. The corrosion expert shall follow applicable NACE criteria.

Department, the Department of Public Safety.

Double-walled Tank, a container with two complete shells which provide both primary and secondary containment. The container shall have a continuous 360° interstitial space between the primary and secondary shell. The interstitial space shall be designed with an approved interstitial space monitor to continuously monitor this space. All double-walled tanks shall be UL-listed.

Engineer, a Massachusetts registered professional engineer.

European Suction System, an underground suction piping system which is sloped back to the tank so that the contents of the piping will drain back into the tank if the suction is released, and only one check valve is used which is located directly under the dispenser.

Existing Facility, a facility whose construction, installation, or operation began prior to the effective date of the revised edition of 527 CMR 9.00 printed and effective December 31, 1986.

Fire Resistant Tank. A tank assembly that consists of a listed aboveground storage tank and construction that provides fire resistive protection from exposure to a high intensity liquid pool fire. (*See* 527 CMR 9.04.)

9.02: continued

Flammable Liquid, Any liquid having a flash point below 100°F and having a vapor pressure not exceeding 40 psia at 100°F Flammable liquids shall be known as Class I liquids and shall be divided into the following classifications:

Class IA: Liquids having flash points below 73°F and having a boiling point below 100°F.
Class IB: Liquids having flash points below 73°F and having a boiling point at or above 100°F.
Class IC: Liquids having flash points at or above 73°F and below 100°F.

Fuel Oil, any hydrocarbon oil as specified by ASTM Standard D396-90, Specification for Fuel Oil.

Hazardous Substances, are regulated substances as defined in section 101(14) of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980 and 40 CFR Part 302. (This term does not include any substance regulated as a hazardous waste under Subtitle C of the Federal Resource Conservation and Recovery Act and 40 CFR Part 261).

Head of the Fire Department, the fire chief or other top ranking official of the local fire department.

Interim Wellhead Protection Area (IWPA) for public water systems using wells or wellfields that lack a Department of Environmental Protection (DEP) approved Zone II, the DEP will apply an interim wellhead protection area. This IWPA shall be ½-mile radius measured from the well or wellfield for sources whose approved pumping rate is 100,000 gallons per day or greater. For wells or wellfields that yield less than 100,000 gallons per day, the IWPA radius is proportional to the approved pumping rate which may be calculated according to the following equation: IWPA radius in feet = [32 x pumping rate in gallons per minute] + 400.

A default IWPA radius shall be applied to transient non-community (TNC) and non-transient non-community (NTNC) wells for which radii could not be calculated using the above equation because there is no metered rate of withdrawal or no approved pumping rate or to wells for which there are no DWS-determined radii using other appropriate methods. The default IWPA radius shall be 500 feet for TNC wells and 750 feet for NTNC wells.

Leakage or Leak, any uncontrolled movement, when using a tightness test method, measurable by a final or precision test which can accurately detect a leak of 0.10 gallons per hour with the probability of detection of 0.95, and the probability of false alarm of 0.05; or when using a continuous monitoring system which can accurately detect a leak of 0.20 gallons per hour with the probability of detection of 0.95 and the probability of false alarm of 0.05.

Listed, equipment or materials included in a list published by an organization acceptable to the Marshal, and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that equipment or materials meet appropriate standards or have been tested and found suitable for use in a specific manner.

Marshal, the State Fire Marshal.

Monitoring System. A full-time system installed for the purpose of early detection of leaks, such as observation wells, visual or audible alarms, statistical inventory reconciliation (SIR) process conducted in connection with an in-tank monitoring system, or their equivalent. Minimum standards of monitoring systems shall detect a leak at a minimum rate of 0.20 gallons per hour or more with the probability of detection of 0.95, and the probability of false alarm of 0.05.

Nationally Recognized Testing Laboratory (NRTL). An organization which tests for safety and lists, labels or accepts equipment or materials and which meets the criteria in 527 CMR 49.00 (Appendix C).

Observation Well, a dug or drilled cased well which can be used for detecting the presence of flammable or combustible liquids, which is drilled to a depth intercepting the water table, and which is installed and maintained in an approved manner.

9.02: continued

Operator, the lessee of a storage facility, or the person or persons responsible for the daily operation of a storage facility.

Out of Service, not in use in that no filling or withdrawal is occurring.

Owner, the person or persons or government entity having legal ownership of a storage facility.

Person, any agency or political subdivision of the Federal Government or the Commonwealth of Massachusetts; any state, public or private corporation or authority, individual, trust, firm, joint stock company, partnership, association, consortium, joint venture, or other commercial entity; and any officer, employee or agent of said person, and any group of said persons.

Pipeline, any trunk pipeline within the Commonwealth for the transportation of flammable or combustible liquids.

p.s.i., pounds per square inch gauge.

Qualified Person, a representative certified by the manufacturer of the product being installed or tested.

Remote Pumping System, a pressurized product line system in which flammable and combustible liquids are supplied to a point away from the tank by means of a pumping unit.

Replacement and Substantial Modification, the construction of any additions to an existing storage facility, or any restoration, refurbishment, or renovation which significantly impairs or affects the physical integrity of the storage facility or its monitoring system.

Secondary Containment or Equivalent Protection, techniques that may include impervious liners, double-walled tanks, or equivalent methods approved by the Marshal.

Sole Source Aquifer, an aquifer designated by the U.S. Environmental Protection Agency as the sole or principal source of drinking water for an area as defined in 310 CMR 40.0006.

Statistical Inventory Reconciliation (SIR), a process of evaluating the various sources of errors present in daily inventory records and capable of detecting a leak or discharge from the tank system, including associated piping of 0.20 gallons per hour with the probability of detection of 0.95 and probability of false alarm of 0.05 as determined by an independent testing laboratory using the U.S. Environmental Protection Agency's standardized test procedures or equivalent.

Storage Facility, one or more tanks at a particular site, together with all components thereof, used or designed to be used for the storage of any product within the scope of 527 CMR 9.01.

Tank, any structure either underground or aboveground used or designed to be used for the storage of any product within the scope of 527 CMR 9.00; as well as any aboveground structure in excess of 10,000 gallons capacity used or designed to be used for the storage of any fluid except water.

UL-listed, included in a current list or report of approved equipment, materials, or methods published by Underwriters Laboratories, Inc.

Underground Storage, Underground Storage Tank, UST, where 10% or more of the tank volume and piping is buried below the ground surface but which shall not include storage in a freestanding container within a building or underground storage tanks described in 527 CMR 9.07(N)(2), (3), (8), (11), (12), (13), (14), (16) and (17).

Waste Oil, used and/or reprocessed, but not subsequently re-refined, oil which has served its original intended purpose. Waste oil includes, but is not limited to, used and/or reprocessed fuel oil, engine oil, gear oil, cutting oil, and transmission fluid and dielectric fluid.

9.02: continued

Water Supply, any raw or finished source that is presently used, reserved for future use, or under investigation for future use by a public water supply as defined in 310 CMR 22.02, or used as a source of private drinking water by one or more persons. This shall include all land and/or waters used as a tributary to a public water system except those under 310 CMR 22.22.

Zone A,

(a) the land area between the surface water source and the upper boundary of a bank;

(b) the land area within a 400 foot lateral distance from the upper boundary of a bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a) and;

(c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

Zone B, the land area within ½-mile of the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a), or the edge of watershed, whichever is less. However, Zone B shall always include the land area within 400 foot lateral distance from the upper boundary of the bank of the Class A surface water source.

Zone I, the protective radius required around a public water well or wellfield. For public water system wells with approved yields of 100,000 gallons per day or greater, the protective radius is 400 feet. Tubular wellfields require a 250 foot protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = (150 x log of pumping rate in gallons per day) - 350. This equation is equivalent to the chart in the Division's Water Supply Guidelines.

A default Zone I radius shall be applied to transient non-community (TNC) and non-transient non-community (NTNC) wells for which radii could not be calculated using the above equation because there is no metered rate of withdrawal or no approved pumping rate or to wells for which there are no DWS-determined radii using other appropriate methods. The default Zone I radius shall be 100 feet for TNC wells and 250 feet for NTNC wells.

Zone II, that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at approved yield, with no recharge from precipitation). It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone II shall extend upgradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock, or a recharge boundary).

9.03: Aboveground Storage Tanks Greater Than 10,000 Gallons Capacity and Tanks Storing Combustible Liquids

(A) Application and Plans for Aboveground Tanks Greater Than 10,000 Gallons Capacity.

(1) An applicant for a permit to construct a tank or container of more than 10,000 gallons capacity for the storage of any fluid other than water, to be located aboveground, shall make application in duplicate to the Commissioner on forms furnished by the Department, giving such information in full as called for on said forms. Plans and specifications for tanks and containers shall be submitted in duplicate with the application and certified by an engineer if so requested by the Commissioner. One set of plans shall be retained by the Department and one set returned to the applicant. Plans must be drawn to scale with figured dimensions given, and shall clearly indicate the following:

(a) kind of material to be used throughout;

(b) thickness of material, and tensile strength of same;

(c) size of rivets after driving;

(d) type of riveted seams and pitch of rivets;

(e) types of welds;

(f) construction of heads, bottoms, and roofs;

(g) the construction in detail of any manhole reinforcement, or of any inlet or outlet in the shell or head;

(h) the location of each tank or container in relation to the nearest buildings, roads, sewers, trenches, rivers or any other waters;

9.02: continued

(2) No tank for which a permit or license has been granted by other than the Commissioner shall be substantially modified unless such method of alteration has been approved by the Marshal.

(3) When a tank in excess of 10,000 gallons capacity or a dike to surround same is to be located on land, the bearing value of which is questionable, borings shall be made or test piles driven and, where necessary, suitable piles shall be provided. A plan of the proposed foundation and boring data must be submitted and approved prior to construction.

(4) Any tank in excess of 10,000 gallons capacity for aboveground storage of any fluid other than water, of a size or type or material not herein provided for, shall conform to 527 CMR 9.00 insofar as it may be applicable, and to such other terms and conditions as the Commissioner may deem necessary for the safe construction of such tank or container. Where a tank is to be of welded construction, the Commissioner may require evidence of the integrity or responsibility of the firm or individual doing the work.

(B) Dikes and Fire Protection for Aboveground Tanks.

(1) The Commissioner may require any tank to be enclosed by a substantial dike constructed of metal, earth, clay, or reinforced concrete, to be no higher than half the height of the highest tank enclosed, forming a retaining basin not less than the capacity of the largest tank plus 10% of the aggregate capacity of all other tanks within the enclosure.

(2) A dike surrounding a tank containing fluid susceptible to boilover shall form a retaining basin having a capacity of not less than 125% of the capacity of the tank or group of tanks surrounded. Unless means are available for extinguishing a fire in a tank, dikes and walls enclosing tanks containing fluid susceptible to boilover shall be provided at the top with a flareback section designed to turn back a boilover wave.

(3) The total gallonage of a group of tanks to be enclosed in any one diked area shall not exceed 6,300,000 gallons, and any single tank in excess of this amount shall be separately diked.

(4) Such an embankment or dike shall be made of clay-core gravel fill masonry, reinforced concrete, or other approved material. An earthwork embankment or dike shall be firmly and compactly built of clean earth from which stones, vegetable matter, etc.. have been removed and shall have a flat top not less than three feet in width and slope and least 1½' to 1' on both sides. Small tanks with capacities not over 25,000 gallons each may be grouped and an embankment or dike built around the group of tanks. Embankments or dikes shall be continuous with no openings for piping or roadways. Piping shall be laid over or under the embankments or dikes.

(5) No building shall be located within the diked area.

(6) The Commissioner may require any tank to be provided in such quantity and so located as the head of the fire department may prescribe.

(C) Design and Construction of Aboveground Tanks.

(1) A flat head on a horizontal cylindrical tank shall be properly braced to prevent undue deflection. The roof of a vertical tank shall be constructed to be capable of supporting a superimposed live load of not less than 25 lbs. per square foot.

(2) A tank having a capacity of over 10,000 gallons shall be provided with a manhole. An opening in the shell plate of a vertical tank for a manhole or other similar opening in the shell plate of a horizontal tank shall likewise be reinforced when the tank is subject to any pressure in addition to head pressure.

(3) Horizontal steel tanks located aboveground shall not exceed the capacities or diameters for the corresponding gauges of metal outlined in the following table:

TABLE 1 - ABOVEGROUND HORIZONTAL TANKS

Capacity Over	Not Over	Maximum Diameter	Thickness of Shell	Thickness of Heads
10 gals.	60 gals.	24"	16 USS gauge	16 USS gauge
60 gals.	270 gals.	36"	14 USS gauge	14 USS gauge
270 gals.	1,100 gals.	48"	12 USS gauge	12 USS gauge
1,100 gals.	4,000 gals.	72"	3/16"	3/16"
4,000 gals.	35,000 gals.	96"	¼"	¼"

4,000 gals.	35,000 gals.	132"	¼"	5/16"

9.03: continued

Over 35,000 gallons see NOTE under 527 CMR 9.07(G)(1).

(a) Heads from 96 inches to 132 inches may be ¼ inch thick if suitably stiffened by structural members.
(b) Standard open-hearth steel tank plate shall be used for steel tank construction.

NOTE: A permit from the Commissioner will be required for the installation of aboveground tanks of over 10,000 gallons capacity.

(4) Vertical steel tanks located aboveground shall not exceed the maximum capacities, diameters, or heights for the corresponding gauges of metal outlined in the following table:

TABLE 2 - ABOVEGROUND VERTICAL TANKS

Capacity Over	Not Over	Maximum Diameter	Maximum Height	Thickness of Shell	Thickness Bottom	Thickness Top
10 gals.	60 gals.	24"	4'	16 USS gauge	16 USS gauge	16 USS gauge
60 gals.	270 gals.	36"	6'	10 USS gauge	14 USS gauge	14 USS gauge
270 gals.	560 gals	54"	10'	10 USS gauge	12 USS gauge	12 USS gauge
560 gals.	2,500 gals.	72"	12'	10 USS gauge	10 USS gauge	10 USS gauge

(a) For tanks from 2,500 gallons to 25,000 gallons capacity, the maximum diameter shall not exceed 11 feet and the maximum height shall not exceed 35 feet. The shell thickness shall be not less than 3/16 inch for tanks up to 25 feet in height. For tanks from 25 feet to 30 feet in height, the first ring shall be ¼ inch thick and not less than five feet wide. The remaining rings shall be not less than 3/16 inch thick. For tanks from 30 feet to 35 feet in height, the first two rings shall each be ¼ inch thick and not less than five feet wide. The remaining rings shall be not less than 3/16 inch thick. Bottoms shall be at least 3/16 inch thick. Tops may be either dish shaped or cone shaped and at least #10 USS gauge thickness.
(b) Standard open-hearth steel tank plate shall be used for steel tanks construction.
(c) For capacities in excess of 25,000 gallons, see NOTE under 527 CMR 9.07(G).

NOTE: A permit from the Commissioner will be required for the installation of aboveground storage tanks of over 10,000 gallons capacity.

(D) Aboveground Piping. (Reference: 527 CMR 4.00 and 527 CMR 15.00 where applicable) All piping on aboveground tanks shall be standard cast iron, steel, or brass with standard fittings, or seamless copper, brass, or other nonferrous tubing with standard fittings, provided that approved flexible grounded hose may be used for reducing the effects of jarring or vibration where rigid connections are impracticable.

(E) Location of Aboveground Tanks.
(1) An aboveground tank for the storage of a flammable or combustible liquid other than one susceptible to boilover shall be so located that the distance between any part of the tank and the nearest adjoining property line shall not be less than ten feet for a horizontal tank, or for a vertical tank, not less than ½ the diameter or height of the tank, whichever is greater.
(2) An aboveground tank for the storage of a liquid susceptible to boilover shall be so located that the distance between any part of the tank and the nearest adjoining property line shall be not less than either the diameter or the height of the tank, whichever is greater.
(3) For an aboveground tank storing flammable or combustible liquid susceptible to boilover, the distance between it and any other tank shall be not less than the diameter of the smaller tank.

9.03: continued

(4) For an aboveground tank storing flammable or combustible liquid other than one susceptible to boilover, the distance between it and any other tank shall be not less than ½ the diameter of the smaller tank, except that such distance shall be not less than three feet; and for tanks of 20,000 gallons capacity or less the distance need not exceed three feet.
(5) The distance requirements shall not apply to replacements of existing tanks unless the head of the fire department determines that their continued use shall constitute a fire hazard.

(F) Outside fuel oil storage tanks.
(1) Storage tanks larger than 660 gallons capacity used in connection with oil burning appliances (reference 527 CMR 4.00) and emergency power generators shall meet the construction provisions of Standard UL-142 and shall be located in accordance with Table 3:

TABLE 3

Capacity of tank, gallons	Minimum distance in feet from property line that is or can be built upon	Minimum distance in feet from nearest side of any public way or from nearest important building on the same property
660 or less	10	0
661 to 12,000	15	5
12,001 to 30,000	20	5
30, 001 to 50,000	30	10

(2) Tanks shall be mounted on a continuous concrete slab capable of withstanding the expected load and extending eight inches beyond the perimeter of the tank or tanks. Tanks shall be securely supported by rigid non-combustible supports to prevent settling, sliding or lifting.
(3) When tanks are installed in areas subject to vehicular impact, physical barriers shall be provided. Physical barriers shall consist of lally columns, substantial pipes, bollards or similar barriers.
(4) The head of the fire department may require secondary containment or dikes around storage tanks if in his opinion failure of the tank could cause irreparable harm to public health, safety and/or welfare, and/or to the environment.
(5) In areas subject to flooding or high water each tank shall be suitably anchored to withstand uplifting, including when the tank is empty.
(6) If during transportation or installation the original protective coating of the tank has been damaged, these areas shall be recovered.

(G) Transportation by Pipeline.
(1) No pipeline constructed after the effective date of 527 CMR 9.00 shall be used for the transportation of any flammable or combustible liquid unless prior to such construction the plans and specifications hereinafter required in 527 CMR 9.03(G) shall have been approved. Application for approval to construct a pipeline shall be made to the Marshal and shall be accompanied by suitable drawings, in duplicate, of the entire proposed pipeline clearly showing details of the origin and the terminals. The location of the proposed pipeline shall be shown on a map, which shall also indicate adjacent highways throughout the entire route of the proposed pipeline. Highway and river crossings must be clearly detailed on suitable drawings. The application must also be accompanied by a duplicate set of specifications showing the type of construction and the materials used. Emergency repairs may be made to an existing pipeline without complying with the provisions of 527 CMR 9.03(G).

The approval of the Marshal shall be indicated by his signature on each set of plans and specifications, one to be retained by him and one to be returned to the applicant which shall serve as a permit to transport flammable or combustible liquids, by such pipeline.

9.03: continued

(2) Pipe valves and fittings shall be made of material suitable for use with the products conveyed and constructed of adequate strength to safely withstand the stresses to which they will be subjected in service.

Pipelines shall be designed and constructed in accordance with recognized engineering practice.

NOTE: The current code for Pressure Piping (ASA B31.1) of the American Standards Association is considered as recognized engineering practice.

(3) Pipelines shall be suitably protected against mechanical injury either by burying at least 30 inches underground, by covering with at least 30 inches of fill, or by other approved method.

(a) Pipelines in streets and highways shall, as far as practicable, be installed below all other existing pipelines or other conduits.

(b) Pipelines shall not be installed less than ten feet from any building, other than a building which is part of the pipeline system.

(c) Emergency shutoff valves shall be located in pipeline at points where, because of physical or topographic conditions, valves are necessary to prevent drainage of oil from lines while being repaired.

9.04: Aboveground Storage Tanks Equal to or Less than 10,000 Gallons Capacity For Storing Class I Liquids

(A) Flammable Liquid Storage.

(1) Except as modified by provisions of 527 CMR 9.04, aboveground storage tanks shall comply with the applicable provisions in 527 CMR 9.00. (Reference: PEI RP200-92, Recommended Practices for Installation for Aboveground Storage Systems for Motor Vehicle Refueling provides information on this subject.) Tanks storing Class I liquids shall be double-walled.

(2) Only aboveground storage tanks shall be used. Tanks designed and built for underground use shall not be installed for aboveground use. Aboveground storage tanks shall meet the requirements of UL-142, Standards for Safety, Steel Aboveground Tanks for Flammable and Combustible Liquids.

(3) For the aboveground storage of Class I liquids at other than motor fuel dispensing facilities, local fire departments may accept the installation practices outlined in NFPA 30: Flammable and Combustible Liquids Code.

(4) The head of the fire department may further limit the quantity of flammable liquids, that may be stored aboveground, where, conditions are such to warrant restricting the amount of such liquids. The head of the fire department may further prescribe the manner in which flammable liquids may be stored aboveground in accordance with 527 CMR 9.04.

(B) Tank Location and Capacity.

(1) Tanks storing Class I liquids at an individual site shall be limited to a maximum individual capacity of 10,000 gallons and an aggregate capacity of 40,000 gallons.

(2) Tanks shall be located at least:

(a) 50 feet (15 m) from the nearest important building on the same property;

(b) 50 feet (15 m) from any fuel dispenser;

(c) 50 feet (15 m) from the nearest side of a public way;

(d) 100 feet (30 m) from any property line that is or may be built upon, including the opposite side of a public way.

EXCEPTION: #1 All distances shall be permitted to be reduced by 50% if the tanks are fire resistant tanks, as defined in 527 CMR 9.04(D), or are installed in vaults that meet the requirements of 527 CMR 9.04(C).

EXCEPTION: #2 Where tanks are intended for refueling vehicles used in connection with their operation, not open to the public, no minimum distances shall be required by 527 CMR 9.04(B)(2)(b), if the tanks are fire resistive tanks, as described in 527 CMR 9.04(D) or are installed in vaults that meet the requirements of 527 CMR 9.04(C).

(C) Vaults. Vaults shall comply with the following:

(1) The vault shall completely enclose each tank. There shall be no openings in the vault enclosure except those necessary for access to, inspection of, and filling, emptying, and

venting of the tank. The walls, and floor of the vault shall be constructed of reinforced concrete at least six inches (15 cm) thick. The top of an at grade or below grade vault shall be designed to safely relieve or contain the force of any explosion occurring inside the vault. The top and floor of the vault and tank foundation shall be designed to withstand the anticipated loading from vehicular traffic, where applicable. The top shall be constructed of non combustible material that is constructed to be weaker than the walls, to ensure that, in the event of an explosion inside the vault, the thrust of the explosion will be directed upward before a significantly high pressure can develop inside the vault. The walls and floor of any vault installed below grade shall be designed to withstand anticipated soil and hydrostatic loading. The vault shall be substantially liquid tight and there shall be no back fill around the tank. There shall be sufficient space between the tank and the vault to allow for inspection of the tank and its appurtenances.

(2) Each vault and its tank shall be suitably anchored to withstand uplifting by ground water or flooding, including when the tank is empty.

(3) A vault shall be designed to be wind and earthquake resistant, in accordance with good engineering practice. The vault shall be resistant to damage from the impact of a motor vehicle, or suitable collision barriers shall be provided.

(4) Each tank shall be in its own vault. Adjacent vaults may share a common wall.

(5) Connections shall be provided to permit ventilation of each vault to dilute, disperse, and remove vapors prior to entering the vault.

(6) Vaults that contain tanks of Class I liquids shall be provided with continuous ventilation at a rate of not less than 1 cfm per sq. ft. of floor are ($0.3m^3$ per minute per m^2), but in no case less than 150 cfm ($4m^3$ per min.). Failure of the exhaust air flow shall automatically shut down the dispensing system. The exhaust system shall be designed to provide air movement across all parts of the vault floor. Supply and exhaust ducts shall extend to within three inches (7.6 cm), but not more than 12 inches (31 cm), of the floor. The exhaust system shall be installed in accordance with requirements of NFPA 91. Means shall be provided to automatically detect any flammable vapors and to automatically shut down the dispensing system upon detection of such vapors in the exhaust duct at a concentration of 25% of the lower flammable limit (l.f.l.).

(7) Each vault shall be equipped with a detection system capable of detecting liquids, including water, and will activate an alarm.

(8) Means shall be provided to recover liquid from the vault. If a pump is used to meet this requirement, the pump shall not be permanently installed in the vault. Electrically-powered portable pumps shall be suitable for use in Class I, Division 1 locations, as defined in 527 CMR 12.00: *the Massachusetts Electrical Code*.

(9) Vent pipes that are provided for normal tank venting shall terminate at least 12 ft. (3.6m) above ground level.

(10) Emergency vents shall be vapor tight and shall be permitted to discharge inside the vault. Long-bolt manhole covers shall not be permitted for this purpose.

(11) Each vault shall be provided with a means for personnel entry. At each entry point, a warning sign indicating the need for procedures for safe entry into confined spaces shall be posted. Each entry point shall be secure against unauthorized entry and vandalism.

(12) Each vault shall be provided with a suitable means to admit a fire suppression agent.

(13) The interior of any vault containing a tank that stores a Class I liquid shall be designated a Class I, Division 1 location, as defined by 527 CMR 12.00: *the Massachusetts Electrical Code*.

(D) Fire Resistant Tanks. Fire resistant tanks shall be listed for the use intended and comply with the following:

(1) The construction that provides the required fire resistive protection shall prevent release of liquid, failure of the primary tank, failure of the supporting structure, and impairment of venting, for a period of not less than two hours when tested using a fire exposure that simulates a high intensity pool fire, such as described in UL-2085 (“Standard for Insulated Aboveground Tanks for Flammable or Combustible Liquids”) or equivalent test procedure, and shall be labeled with evidence of such test.

(2) There shall be no openings except those necessary for access to, inspection of, filling, emptying, and venting the tank. All openings shall be located at the top of the tank.

(3) In areas subject to flooding or high water, each tank shall be suitably anchored to withstand uplifting, including when the tank is empty.

(4) Each fire resistant tank shall be resistant to danger from impact of a motor vehicle or

shall be protected by suitable collision barriers.

(5) Vent pipes that are provided for normal tank venting shall terminate at least 12 ft (3.6 m) above ground level.

(6) 527 CMR 9.07(B), Fill and Vent pipes for All Tanks and Containers, shall not be used to reduce the size of the emergency vent.

(E) Piping and Ancillary Equipment.

(1) Means shall be provided for determining the liquid level in each tank, and this means shall be accessible to the delivery operator. Means shall be provided to sound an audible alarm when the liquid level in the tank reaches 90% of capacity. Means shall also be provided either to automatically stop the flow of fuel into the tank when the tank reaches 95% capacity or to restrict the flow of fuel into the tank to a maximum flow rate of 2.5 gpm when the liquid level in the tank reaches 95% of capacity. These provisions shall not restrict or interfere with the proper operation of either the normal vent or the emergency vent.

(2) Fuel shall not be dispensed from the tank by either gravity flow or pressurization of the tank. Means shall be provided to prevent the release of liquid by siphon flow. Each connection to an aboveground tank through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank.

(3) Where a tank is at an elevation that produces a gravity head on the dispensing device, the tank outlet shall be equipped with a device, (such as a normally closed solenoid valve) that will prevent gravity flow from the tank to the dispenser. This device shall be located adjacent to and downstream of the outlet valve specified by 527 CMR 9.04(E)(2). The device shall be installed and adjusted so that liquid cannot flow by gravity from the tank to the dispenser in the event of failure of the piping or hose when the dispenser is not in use.

(4) If a submersible pump system is used, a listed rigidly anchored emergency shutoff valve, incorporating a fusible link or other thermally actuated device, designed to close automatically in event of severe impact or fire exposure shall be installed in accordance with the manufacturer's instructions in the supply line at the base of each individual island-type dispenser or at the inlet of each overhead dispensing device. An emergency shutoff valve incorporating a slip-joint feature shall not be used. The automatic closing feature of this valve shall be checked at the time of initial installation and at least once a year thereafter by manually tripping the hold-open linkage.

(5) If a suction pump-type dispensing device is used, a listed, vacuum-actuated shut-off valve, with a shear section, or equivalent-type valve shall be installed directly under each dispensing device.

EXCEPTION: Tanks installed in below-grade vaults need not comply with this requirement.

(6) Shutoff and check valves shall be equipped with a pressure-relieving device that will relieve the pressure generated by thermal expansion back to the tank.

(7) Piping shall be routed so that exposure to physical damage is minimized.

(8) Aboveground Storage Tanks and piping systems must comply with the applicable provisions of 527 CMR 9.05(G).

(9) Every new or replacement tank and its piping shall be tested by the Manufacturer or his representative, at the owner's expense, prior to filling with product. The tank shall be tested by air pressure not less than three lbs. and not more than five lbs. per square inch. Air pressure shall be maintained for one hour. The piping shall be tested hydrostatically (or by air pressure) to 150% of the maximum anticipated pressure of the system but not less than 50 lbs. per square inch gauge at the highest point of the system. The owner shall furnish the head of the fire department with a certified copy of all testing required by 527 CMR 9.05(F) which the fire department shall keep with the records of the storage facility.

(F) Physical Protection.

(1) Tanks that are not enclosed in vaults shall be enclosed with a chain link fence at least six ft. (2m) high. The fence shall be separated from the tanks by at least ten ft (3m) and shall have a gate that is properly secured against unauthorized entry. Separation distance of chain link protective fencing located at commercial, industrial, governmental, manufacturing establishments, construction sites or other business sites, not open to the general public, used in connection with their business, may be reduced to less than ten feet (3m) with the approval of the head of the fire department. Aboveground tanks shall be protected against

vehicular collision by suitable barriers.

EXCEPTION: Tanks are not required to be enclosed within a fence if the property on which the tanks are located already has a perimeter security fence.

(2) The area within the fence shall be kept free of vegetation, debris, and any other material that is not necessary to the proper operation of the tank and piping system.

(3) Corrosion Protection. Any portion of a tank or its piping system that is in contact with the soil shall be protected from corrosion by cathodic protection.

(G) Tank Filling Operations.

(1) Delivery operations shall comply with applicable requirements of 527 CMR 8.00 and 527 CMR 9.04(G)(2) through (4).

(2) The delivery vehicle shall be separated from any aboveground tank by at least 25 ft (7.6m).

EXCEPTION: No minimum separation distance shall be required for tanks that are filled by gravity.

(3) Tank filling shall not begin until the delivery operator has determined tank ullage (available capacity).

(4) All tanks shall be filled through a liquid-tight connection with a quick-connect coupling or a dry-break coupling. Where the tank is filled by means of fixed piping, either a check valve and shutoff valve with a quick-connect coupling or a dry-break coupling, shall be installed in the piping at a point where connection and disconnection is made between the tank and the delivery vehicle. This device shall be protected from tampering and physical damage.

9.05: Underground Storage Tanks

(A) Design and Construction of New or Replacement Underground Tanks.

(1) All new and replacement tanks must be equipped with a metallic or nonmetallic striker plate attached to the bottom of the tank at each opening. Such striker plate shall be at least 12" x 12" in area and at least ¼" thick.

(2) Underground tanks shall be designed and built in accordance with approved engineering standards for the materials of construction being used, and in accordance with 527 CMR 9.07(A).

(3) All tanks shall be designed and constructed to minimize the risk of corrosion and leakage. Fuel oil tanks of 1,100 gallons or less capacity utilized exclusively for consumptive use on the premises shall be constructed in accordance with 527 CMR 9.05(A)(4). The following construction shall be utilized for all other tanks installed after January 1, 1989. (In the period from May 1, 1988, to January 1, 1989, all underground tanks shall conform to 527 CMR 9.05(A)(4).

(a) Listed double-walled steel tanks with cathodic protection, having electrical isolation and equipped with a test box to allow measurement of electrical potential and current flow, listed double-walled fiberglass tanks, listed double-walled composite tanks having electrical isolation, a double-walled composite tank manufactured in accordance with ACT-100/89 having electrical isolation, or a listed double-walled jacketed steel tank having electrical isolation. These tanks shall be equipped with an approved standpipe, vacuum, or electronic monitoring system or an approved equivalent for the purpose of constantly monitoring the interstitial space. The material used in the construction of the UST vessel and associated piping shall be compatible with the product being stored in the UST.

(b) Any other "state-of-the-art" type of tank construction with an approved continuous interstitial space monitor and providing equal or better protection against leakage than the above-mentioned tanks and approved by the Marshal.

(4) All tanks shall be designed and constructed to minimize the risk of corrosion and leakage. The following construction shall be utilized exclusively for consumptive use on the premises:

(a) Listed fiberglass reinforced plastic (FRP) tanks, using materials compatible with the product to be stored therein.

(b) Listed steel tanks provided with cathodic protection, a coal-tar epoxy or urethane coating and electrical isolation, and equipped with a test box to allow measurement of electrical potential and current flow.

(c) Listed tanks with bonded fiberglass coating, electrical isolation, and equipped with a

sacrificial anode, the integrity of the outer coating to be verified by the manufacturer by electrostatic testing and guaranteed by the manufacturer.

(d) Listed double-walled steel tanks with cathodic protection or bonded fiberglass coating, having electrical isolation, or listed double-walled fiberglass tanks. These tanks shall be equipped with a standpipe, vacuum, or electronic monitoring system, or an approved equivalent provided for the purpose of constantly monitoring the interstitial space.

(e) Any other "state-of-the-art" type of tank construction providing equal or better protection against leakage than the above-mentioned tanks and approved by the Marshal.

(5) Horizontal steel tanks located underground shall not exceed the maximum capacities, diameters, or lengths for the corresponding gauges of metal outlined in the following table and shall be equipped with cathodic protection:

TABLE 4 - UNDERGROUND HORIZONTAL TANKS

Capacity Over	Not Over	Maximum Diameter	Maximum Length	Thickness of Shell	Thickness of Heads
10 gals.	270 gals.	42"	6'	10 USS gauge	14 USS gauge
270 gals.	560 gals.	48"	11'	10 USS gauge	12 USS gauge
560 gals.	1,100 gals.	64"	14'	10 USS gauge	10 USS gauge
1,100 gals.	4,000 gals.	84"	24'	3/16"	3/16"
4,000 gals.	12,000 gals.	126"	32'	¼"	¼"
12,000 gals.	20,000 gals.	132"	42'	5/16"	5/16"
20,000 gals.	35,000 gals.	132"	50'	_"	_"

(6) Vertical steel tanks located underground shall not exceed the maximum capacities, diameters, or heights for the corresponding gauges of metal outlined in the following table and shall be equipped with cathodic protection:

TABLE 5 - UNDERGROUND VERTICAL TANKS

Capacity Over	Not Over	Maximum Diameter	Maximum Height	Unbraced Flat Tops	Thickness
10 gals.	60 gals.	24"	4'	24"	10 USS gauge
60 gals.	270 gals.	36"	6'	36"	10 USS gauge
270 gals.	560 gals.	54"	10'	43"	10 USS gauge
560 gals.	1,100 gals.	68"	12'	54"	10 USS gauge
1,100 gals.	4,000 gals.	105"	18'	72"	3/16"
4,000 gals.	12,000 gals.	132"	24'	96"	1/4"
12,000 gals.	20,000 gals.	132"	30'	120"	5/16"
20,000 gals.	25,000 gals.	132"	35'	132"	3/8"

(7) All new and replacement tank installations shall be equipped with a spill containment manhole with a minimum capacity of three gallons, capable of returning product to the tank.

(8) All new and replacement tank installations shall be equipped with an overfill prevention device. The device shall be designed so as not to preclude the ability to perform a tightness test on the tank and piping. The following options are acceptable:

(a) A device which shall automatically shut flow into the tank when the tank is no more than 95% full.

(b) A device which shall alert the individual delivering product when the tank is no more than 90% full by restricting the flow into the tank or triggering a high-level alarm.

(c) A device which shall alert the individual delivering product to the tank by restricting the flow into the tank 30 minutes prior to overfilling.

(B) Underground Piping.

(1) All new and replacement piping shall be installed with secondary containment which may include impervious liners, double-walled piping, or equivalent methods approved by the Marshal. All new or replacement piping shall be continuously monitored for product loss. If a suction system is used with a check valve under the dispensing pump and the piping is

pitched to the tank, secondary containment of new or replacement piping shall not be required except as provided in 527 CMR 9.05(D)(6).

(2) All new or replacement piping shall be constructed of noncorrodible materials such as fiberglass reinforced plastic (FRP) or its equivalent, or shall be protected against corrosion by the use of a steel system cathodically protected by impressed current or sacrificial anodes or by some other type of equivalent protection.

(3) Product lines shall be installed in a trench between the tank area and the pump island. Similarly, underground vent lines shall be installed in a trench.

(4) Before underground piping is installed, the trench shall receive a minimum six-inch-deep bed of well-compacted noncorrosive material such as clean washed sand or gravel. All trenches shall be wide enough to permit at least six inches of noncorrosive backfill material around all lines.

(5) All pipes connected to such tanks shall lead from the tops of tanks, and the tops of all tanks shall be below the level of the lowest horizontal pipe used in the connection therein except where the design specifically prevents a possible syphoning condition and has been approved by the head of the fire department.

(6) All pipes used for the conveyance of flammable liquid shall decline to tanks without traps or pockets, and shall be protected against injury. Intermediate sumps to allow piping decline to tanks shall not be considered a trap or pocket provided the sump is monitored for leak detection. Piping drops from submerged pumps to allow piping decline to the tank shall not be considered a trap.

(7) Underground copper piping or tubing shall not be used on new or replacement piping installations unless the copper piping or tubing is adequately protected against physical damage and protected from corrosion. Copper piping or tubing shall only be allowed for use as a product line when installed in an installation covered by 527 CMR 4.00.

(8) At marine fueling facilities where tanks are at an elevation which produces a gravity head on the dispensing unit, the tank outlet shall be equipped with a device, such as a solenoid valve, positioned adjacent to, and downstream from, the outlet, so installed and adjusted that liquid cannot flow by gravity from the tank in case of piping or hose failure when the dispenser is not in use.

(9) A double elbow swing joint or flexible connector shall be installed at all locations where piping changes direction from horizontal to vertical or from vertical to horizontal.

(10) Flexible connectors constructed and listed for underground applications shall be permitted to be used without backfill in below grade tank sumps.

(C) Underground Tank Installation.

(1) No new or replacement tank or piping shall be installed, whether as part of a new or existing storage facility, unless the owner has given notice of its installation to the head off the fire department; and no new or replacement tank or piping shall be buried or concealed until it has been inspected for damage and external defects, and has been approved by the head of the fire department or his designee. A tightness test on all new or replacement tanks and piping shall be done after the installing, backfilling, and surfacing to grade have been completed, this test shall be of both the tank and the piping.

(2) No new or replacement tank shall be installed except by a contractor who has been certified in writing by the manufacturer or a petroleum equipment association as qualified for the purpose. The contractor shall, prior to any installation, submit to the head of the fire department a copy of such certificate.

(3) The installation of a new or replacement tank, including anchoring of the tank, shall be carried out in accordance with the manufacturer's recommendation, accepted engineering practices, and the provisions of 527 CMR 9.05(C), provided that the backfill material for FRP (fiberglass reinforced plastic) tanks shall be pea gravel or crushed stone and the backfill material for all other tanks shall be either pea gravel or clean noncorrosive sand free of cinders, stones, and any other foreign material with the material under the tank to be compacted and the balance to be placed in uniform lifts and to be thoroughly compacted.

(4) Any damage to the exterior of a tank or its coating shall be repaired before the tank is covered.

(5) Every new or replacement tank and its piping shall be tested separately, at the owner's expense, prior to its being buried. The tank shall be tested by air pressure not less than three lbs. and not more than five lbs. per square inch. The piping shall be tested hydrostatically (or by air pressure) to 150% of the maximum anticipated pressure of the system but not less than 50 lbs. per square inch gauge at the highest point of the system. After the tank and

piping have been fully buried, all subsequent testing of the underground tanks shall be done in accordance with the provisions of NFPA 329 or other test of equivalent or superior accuracy. The owner shall furnish the head of the fire department with a certified copy of all testing required by 527 CMR 9.05(F) which the fire department shall keep with the records of the storage facility.

(6) Steel tanks completely underground shall be covered with a minimum of two feet of earth or shall be covered with not less than one foot of earth, on top of which shall be placed a slab of reinforced concrete not less than four inches thick. When tanks are or are likely to be subjected to traffic, they shall be protected against damage from vehicles passing over them by at least three feet of earth cover, or 18 inches of well-tamped earth plus six inches of reinforced concrete or eight inches of asphaltic concrete. When asphaltic or reinforced concrete paving is used as part of the protection, it shall extend at least one foot horizontally beyond the outline of the tank in all directions.

(7) An underground storage tank used for the storage of a Class I flammable liquid, if within ten feet of a building having a cellar or basement shall be placed below the level of the floor of such cellar or basement.

(D) Leak Detection Equipment, Testing and/or Inventory Requirements for Underground Tanks.

(1) Consumptive use fuel oil tanks and hazardous waste tanks shall be exempt from 527 CMR 9.05(D)(2), 9.05(E)(1), and 9.05(F). Tanks used solely for emergency power generators and tanks used for a combination of consumptive use fuel oil and emergency power generators shall be exempt from 527 CMR 9.05(D)(2) and 9.05(E)(1). (Reference: 527 CMR 5.00, and 310 CMR 30.00 "Hazardous Waste Regulations"). Waste oil tanks shall be exempt from 527 CMR 9.05(D)(1) and (2); 9.05(E)(1).

(2) All other tanks shall satisfy one of the five following options:

(a) Mandatory inventory record keeping as defined in 527 CMR 9.05(E) in addition to periodic tightness testing as defined in 527 CMR 9.05(F). This option is not available after December 22, 1998.

(b) The installation and maintenance of an approved in-tank monitoring system installed and maintained by a qualified person.

1. The operator shall prepare, reconcile, and maintain daily inventory control records for each tank and for every combination of interconnected tanks. This inventory shall be taken by the use of the in-tank monitor for the purpose of prevention and early detection of leaks. (Reference: 527 CMR 9.05(E)

2. At the close of each calendar month, the operator shall use the in-tank monitor over a continuous period of six hours, during which no product is delivered to or taken from the tank, to determine any loss of product. A loss of 0.20 gallons per hour or more over a six-hour period with the probability of detection of 0.95 and a probability of false alarm of 0.05 shall constitute a leak.

3. Upon a failed result the owner/operator shall immediately notify the head of the fire department. The owner/operator shall have the tank and piping tested in accordance with 527 CMR 9.05(F)(8), (9) and (12), or conduct an investigation which shall determine to the head of the fire department's satisfaction that factors other than a leak caused the fail report.

4. If the above-mentioned procedure is followed and the tank is considered tight, then the requirements for tank tightness testing in 527 CMR 9.05(F) shall be considered as being complete.

(c) The installation of an approved double-walled tank, an interstitial space monitoring system, and liquid removal port.

1. This installation shall be exempt from the requirements of tank tightness testing in 527 CMR 9.05(F) provided that the continuous monitor is installed and maintained by a qualified person.

2. If the monitor activates, whether a trouble or an alarm mode, the owner/operator shall immediately notify the local fire department.

(d) The installation and maintenance of an approved in-tank monitoring system installed and maintained by a qualified person with inventory data analysis conducted by an independently managed third party certified statistical inventory reconciliation (SIR) process.

1. If the SIR analysis is conclusive and identifies a statistically significant loss of any product, the result is fail. Upon a failed result the owner/operator and the SIR

vendor shall immediately notify the head of the fire department. The owner/operator shall have the tank and piping tested in accordance with 527 CMR 9.05(F)(8), (9) and (12), or conduct an investigation which shall determine to the head of the fire department's satisfaction that factors other than a leak caused the fail report.

2. If the SIR analysis is inconclusive, the owner/operator and the SIR vendor shall immediately notify the head of the fire department and conduct an investigation following the SIR vendor's loss investigation procedures. If the result is inconclusive for two consecutive months, the owner/operator shall have the tank and piping tested in accordance with 527 CMR 9.05(F)(8), (9) and (12).

3. If the result is conclusive and not a fail, the result is pass and the tank system, including associated piping, is considered tight, and the requirements for tank tightness testing in 527 CMR 9.05(F) shall be considered as being complete.

4. For the purpose of 527 CMR 9.05(D)(2)(d), the tank gauge, installed in the tank, used to generate data for SIR analysis shall have a resolution of one tenth of an inch or better.

(e) The installation and maintenance of a Continuous In-Tank Leak Detection System installed and operated in accordance with the manufacturers instructions and capable of detecting a leak or discharge of 0.20 gallons per hour with the probability of detection of 0.95 and a probability of false alarm of 0.05 as determined by an independent testing laboratory using the U.S. Environmental Protection Agency Standard Test Procedures for Evaluating Leak Detection Methods (EPA/530/UST-90/004 through 010) or other equivalent test procedures.

1. The operator shall maintain an "Equipment Check Guidelines for Inspectors" prepared by the manufacturer. This summary should guide inspectors on proper field procedures to follow when inspecting equipment for proper operation, for attempting to access the stored history (for alarms or failed tests) and to determine compliance with 527 CMR 9.05(D)(e). The guidelines shall be maintained on the site and be made readily available upon inspection.

2. If the Continuous In-Tank Leak Detection System analysis is conclusive and identifies a statistically significant loss of any product, the result is fail. Upon a failed result the owner/operator shall immediately notify the head of the fire department. The owner/operator shall have the tank and piping tested in accordance with 527 CMR 9.05(F)(8), (9) and (12), or conduct an investigation which shall determine to the head of the fire department's satisfaction that factors other than a leak caused the fail report.

3. If the Continuous In-Tank Leak Detection System analysis is inconclusive, the owner/operator shall immediately conduct an investigation following the system vendor's loss investigation procedures. If the system analysis is inconclusive due to high tank activity the tank(s) affected shall be taken out of service to allow the Continuous In-Tank Leak Detection System the minimum sufficient quality test time in accordance with the manufacturers recommendations. If the analysis result is then still inconclusive, the owner/operator shall have the tank and piping tested in accordance with 527 CMR 9.05(F)(8), (9) and (12), or conduct an investigation which shall determine to the head of the fire department's satisfaction that factors other than a leak caused the inconclusive report.

4. If the result is conclusive and not a fail, the result is pass and the tank is considered tight, and the requirements for tank tightness testing in 527 CMR 9.05(F) shall be considered as being complete.

(3) All leak detection equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability and running condition.

(4) At least once each calendar month, the operator shall take a measurement to determine if any water has entered the underground storage tank. This measurement shall be recorded and any excess of water shall be removed. (Reference: 527 CMR 9.05(E))

(5) The operator shall maintain monthly product inventory records in accordance with 527 CMR 9.05(E)(1).

(6) Double-walled tanks with an approved interstitial space monitoring system as well as piping with secondary containment shall be required for new or replacement tanks and piping when a sole source aquifer area designated by the U.S. Environmental Protection Agency is underlying the location. Effective October 1, 1997 double-walled tanks with an approved interstitial space monitoring system as well as piping with secondary containment

shall be required for new or replacement tanks and piping when located within a Zone II or Interim Wellhead Protection Area or Zone A & B of a surface water supply watershed as defined by the Massachusetts Department of Environmental Protection. All new or replacement piping shall be continuously monitored for product loss.

9.05: continued

(7) The owner and/or operator of every storage facility shall keep all records of cathodic protection monitoring, leak detection monitoring, inventory records, calibration maintenance and repair of leak detection equipment permanently located on-site, schedules of required calibration and maintenance provided by the leak detection equipment manufacturer and any other records required by 527 CMR 9.00 for the remaining operating life of the facility. These records shall be made readily available upon request of the Office of the State Fire Marshal and/or the head of the fire department or his designee.

(E) Inventory Methods for Underground Tanks

(1) The operator of every new and existing storage facility shall prepare, reconcile and maintain daily inventory records for each tank and for each combination of interconnected tanks with a common level of product (hereinafter, a combination), for the purpose of prevention and early detection of leaks. The preparation, reconciliation, and maintenance of such records shall be done in accordance with the provisions of 527 CMR 5.06(3) as amended, with the following additions and modification:

(a) At the close of each calendar month, the operator shall determine, for that month and for each tank or combination, the number of days in which any amount of product was dispensed and the number of days in which a loss of product was recorded. These records shall include the inspection details on monitoring wells and leak detection systems.

(b) An abnormal loss of product for any tank or combination shall mean a loss not explainable by spillage, temperature variations or other causes, in excess of 0.5% of the volume of product dispensed over a period of a calendar month.

(c) In the event of any abnormal loss of product, the following steps shall be taken, with the investigation not to stop until the discrepancy has been found, the tank has been tested, repaired or replaced, or the entire procedure has been completed:

1. Inventory input and output records shall be checked by the owner of the tank for arithmetical error.
2. Inventory shall be checked by the owner of the tank for error in measurement.
3. If the abnormal loss is not reconcilable by steps 1. and 2., or cannot be affirmatively demonstrated to be the result of theft, the accessible parts of the storage system shall be checked for damage or leaks.
4. Monitoring wells and leak detection systems shall be checked for signs of a discharge.
5. Calibration of the inventory measuring system and any dispensers shall be checked.
6. The entire storage system, excluding the vent but including joints and remote fill lines, shall be tested in accordance with the applicable sections of 527 CMR 9.00.
7. If a discharge, leak, or threat of release is discovered, the requirements of the applicable sections of 527 CMR 9.07(H) shall be met by the owner of the tank.

(d) An abnormal gain of water shall be a gain in the water level inside any tank of more than one inch in a 24-hour period.

(e) In the event of any abnormal gain of water, the owner shall, at the owner's expense, have the water removed from the tank and disposed of in a manner as directed by the Department of Environmental Protection (DEP) and shall have the tank checked for water 24 hours later, during which time no product shall be added to the tank.

(f) Apart from abnormal gains of water, the owner of any tank in which water has accumulated to a depth of three inches or more shall at the owner's expense, have the water removed and disposed of in a manner as directed by DEP.

(g) For every storage facility covered by the inventory control requirements of 527 CMR 9.05(E), the operator shall maintain record on the premises or readily available for inspection by any member of the Department of Public Safety or the head of the fire department or his designee. These inventory records shall be kept on the premises or readily available for a minimum of the prior 12 months.

(Reference: Massachusetts Contingency Plan 310 CMR 40.300 *et seq*)

(2) For failure to comply with 527 CMR 9.05(E), see 527 CMR 9.05(F)(6).

9.05: continued

(F) Testing for Tightness of Underground Storage Facilities.

(1) The owner of every new or existing storage facility shall have all new or replacement piping tested, at the owner's expense, in accordance with 527 CMR 9.05 during a period of 12-24 months after the date of installation.

(2) If any testing discloses a leak or a loss which is not reconcilable, the operator and the owner shall comply immediately with the requirements of 527 CMR 9.07(H), and the head of the fire department may direct the owner, at the owner's expense, to have all other tanks on the premises and their components tested in the same manner.

(3) The owner of every existing storage tank which does not have an acceptable form of leak detection (Ref: 527 CMR 9.05(G)(4)), but which does have cathodic protection shall have the tank tested at the owner's expense during the 5th, 10th, and 15th year after installation and at five year intervals thereafter until 1998.

(4) The owner of every existing storage tank which does not have an acceptable form of leak detection (Ref: 527 CMR 9.05(G)(4)), or cathodic protection shall have the tank tightness tested at the owner's expense on an annual basis until 1998.

EXCEPTION: Mandatory inventory record keeping in accordance with 527 CMR 9.05(E) when used in conjunction with Statistical Inventory Reconciliation (SIR), by an independently managed third party certified person, shall have the tank tested every two years. If a leak is suspected using statistical inventory reconciliation, the SIR manager shall immediately notify the owner or operator and the head of the fire department.

(5) Every existing suction piping system not of European design shall either have secondary containment with an approved interstitial space monitoring system or shall be tested during the 3rd, 6th, and 9th year after installation and at three year intervals thereafter.

(6) With respect to any tank to which the inventory control requirements of 527 CMR 9.05(E) are applicable, the head of the fire department shall require the operator to have it and its piping promptly tested, at the owner's expense, whenever the operator fails to prepare, reconcile, and maintain the daily inventory records or fails to perform the required monthly calculations.

(7) The head of the fire department may require the owner of any existing tank to have it and its piping tested, at the owner's expense, in any case in which the owner has failed to make timely application for a permit as required under 527 CMR 9.07(M).

(8) Except for testing performed on a tank and its piping prior to their being covered, a tank shall be tested by any final or precision test not involving air pressure which can accurately detect a leak of 0.10 gallon per hour with a probability of detection of 0.95, and a probability of false alarm of 0.05.

(9) All tests shall be approved and administered by qualified persons, and shall be performed in accordance with the most recent test protocols established by the testing equipment manufacturer. Such persons shall notify the head of the fire department and provide the test protocol which will be used prior to administering a test.

(10) The owner of every existing pressurized piping system shall comply with the provisions of 527 CMR 9.05(G)(8).

(11) Every existing pressurized piping system which has secondary containment and an approved interstitial space monitor shall be exempt from tightness testing of the piping.

(12) The person performing any test under 527 CMR 9.05(F) shall promptly supply the owner and the head of the fire department with certified copies of all test results for a tank and its piping. The head of the fire department shall keep his copy with the records of that storage facility.

(G) Upgrading of Existing Underground Storage Tank Systems.

(1) Consumptive use fuel oil tanks shall be exempt from the requirements of 527 CMR 9.05(G)(4) through (13). Tanks used solely for emergency power generators and tanks used for a combination of consumptive use fuel oil and emergency power generators shall be exempt from 527 CMR 9.05(G)(4) through (10). Waste oil tanks shall comply with the upgrade schedule in 527 CMR 9.06(C). Hazardous waste tanks shall be exempt from the requirements of 527 CMR 9.05(G)(1) through (13) and 527 CMR 9.06(C).

9.05: continued

(2) All existing underground storage tanks shall be retrofitted with a spill containment manhole with a minimum capacity of three gallons, capable of returning product to the tank and an overfill prevention device on or before September 30, 1994 unless the storage tank is required to be upgraded with Stage II Vapor recovery in accordance with 310 CMR 7.00 before that date. On all tanks which are required to implement Stage II Vapor recovery before September 30, 1994 a spill containment manhole and an overfill prevention device shall be installed and operational on the date Stage II Vapor recovery is to be in effect in accordance with 310 CMR 7.00. Fuel oil tanks of 1,100 gallons or less capacity utilized exclusively for consumptive use on the premises shall be exempt from the retrofit of a spill containment manhole, provided the tank was installed before January 1, 1989. On a pressure filled system, any fuel oil tank that has an audible alarm and a tight connection shall be exempt from the spill containment manhole retrofit requirements. All fuel oil tanks filled by gravity shall be upgraded with a spill containment manhole and an overfill prevention device. Any underground storage tank not meeting the upgrade requirements of 527 CMR 9.05(G)(2) shall be removed from the ground or closed in accordance with 527 CMR 9.07(J)(1).

(3) An overfill prevention device shall be designed so as not to preclude the ability to perform any required tightness test on the tank and piping. The following options are acceptable:

(a) A device which shall automatically shut off flow into the tank when the tank is no more than 95% full.

(b) A device which shall alert the individual delivering product when the tank is no more than 90% full by restricting the flow into the tank or triggering a high-level alarm.

(4) All tanks shall be equipped with leak detection. The following methods are acceptable:

(a) A double-walled tank with an approved interstitial space monitor.

(b) An approved in-tank monitor which shall be utilized in accordance with 527 CMR 9.05(D)(2)(b), (d) or (e).

(c) Monitoring for vapors in the soil through the use of a continuous monitor.

(d) Monitoring for vapors in the soil through the use of a monthly monitoring device. All monthly monitoring records shall be kept for the remaining operating life of the facility and shall be made readily available upon request of the Marshal or the head of the fire department or his designee.

NOTE 1: 527 CMR 9.05(G)(4)(c) or (4)(d) is used, the provisions for observation and vapor monitoring wells provided in 40 CFR parts 280 and 281 Environmental Protection Agency Underground Storage Tanks Technical Requirements - shall be deemed acceptable unless the head of the fire department determines that more stringent measures are required.

NOTE 2: Not all the above-mentioned leak detection methods will be adequate to detect the presence of all products covered within the scope of 527 CMR 9.00. The owner/operator shall use a leak detection method and associated equipment which is capable of detecting the product being stored.

(5) If the tank does not have leak detection but has cathodic protection, the tank shall be tightness tested during the 5th, 10th, and 15th year after installation, and at five-year intervals until 1998.

(6) If the tank does not have leak detection and does not have a cathodic protection, the tank shall be tightness tested on an annual basis until 1998.

(7) If the tank does not have leak detection installed by December 22, 1998, the owner/operator shall have the tank removed from the ground on or before December 22, 1998.

(8) All pressurized piping shall meet one of the following requirements by December 22, 1990:

(a) If the piping has secondary containment, an approved interstitial space monitor may be used.

(b) An automatic flow restrictor, an automatic shutoff device, or a continuous alarm system shall be installed. These devices shall accurately detect a leak of three gallons per hour at ten psi in line pressure within one hour with the probability of detection of 0.95 and a probability of false alarm of 0.05. If this option is utilized, an annual test of the operation of the leak detector must be conducted in accordance with the manufacturer's requirements. In addition, if this option is utilized, one of the following

must be performed and documented.

1. an annual tightness test on the piping; or
2. monthly monitoring for vapors in the soil; or
3. monthly SIR analysis conducted in accordance with 527 CMR 9.05(D)(2)(b).

(9) If a European Suction System is used, leak detection is not required on the piping.

(10) If a suction system is used which is not a European Suction System, one of the following leak detection options shall be required for the piping:

(a) If the piping has secondary containment, an approved interstitial space monitor shall be used.

(b) A line tightness test shall be conducted every three years.

(11) If the facility has unprotected steel tanks and/or piping, they shall be retrofitted with cathodic protection by December 22, 1998. Prior to the addition of cathodic protection, the tanks shall be assessed to determine their suitability for cathodic protection upgrade. This assessment shall be performed in accordance with ASTM Standard ES 40-94 "Alternative Procedures for the Assessment of Buried Tanks Prior to the Addition of Cathodic Protection" or alternative methods as outlined in "EPA OUST Interim Guidance Memo on Integrity Assessment of Bare Steel Tanks" dated July 25, 1997. The person providing any assessment shall furnish the head of the fire department with the protocol to be used prior to performing such assessment. Until cathodic protection has been added, an annual tightness test shall be required. If the tank and/or piping do not have cathodic protection by December 22, 1998 the owner/operator shall have the tank and piping removed from the ground on or before December 22, 1998.

NOTE: If a tank and/or piping is equipped with an acceptable form of leak detection as described in 527 CMR 9.05(G)(4) and (9), the annual tightness test of the tank and/or piping shall not be required.

(12) A tightness test shall be done on both the tank and piping within one month before adding cathodic protection as well as six to 12 months after cathodic protection has been added.

(13) The provisions of 527 CMR 9.07(M)(4) shall be complied with when adding any of the above-mentioned devices.

(14) Written notification shall be given to the head of the fire department before upgrading begins clearly describing what devices will be installed.

(H) Corrosion Protection

(1) Underground storage tanks subject to corrosion shall be provided with a properly engineered and installed cathodic protection system capable of providing continuous protection to the metal components of that portion of the tank and piping that are in contact with the ground.

(2) Cathodic protection systems shall be designed by a corrosion expert. A corrosion expert shall supervise the installation and testing of any cathodic protection system. Cathodic protection systems shall be designed, installed and tested in accordance with a code of practice developed by a nationally recognized association or testing laboratory.

(3) Prior to the installation or replacement and substantial modification of a cathodic protection system a permit shall be obtained from the head of the fire department in accordance with 527 CMR 9.07(M). Any permit application shall be accompanied by a design plan prepared by a corrosion expert which shall include:

(a) “Native” structure to soil potential baseline data

(b) Soil/water resistivity

(c) Electrical continuity verification

(d) Stray current characteristics

(e) Interference effects

(f) A site diagram identifying structures to be protected and all cathodic protection system components, including the reference cell locations and structure contacts used to make the measurements required by 527 CMR 9.05(H)(3)(a), (c), (d) and (e).

(g) Suitable drawings shall be prepared to designate the overall layout of the tanks and piping to be protected and the location of significant items of structure hardware, corrosion control test stations, electrical bonds, electrical isolation devices, and neighboring buried or submerged metallic structures. The location of anode installations shall be recorded on drawings showing anode type, weight, spacing, depth and backfill.

(4) Sacrificial or galvanic anode cathodic protection systems shall be tested to determine whether the storage system is protected against corrosion at installation and at least every 3 years thereafter. If test results indicated a negative voltage of at least –0.90 volts the system

shall be tested at three year intervals thereafter. If test results indicate a negative voltage of between –0.85 to –0.90 the system shall be tested annually thereafter. If test results indicate a negative voltage of less than –0.85 the system shall be deemed inadequate and the owner/operator shall immediately cause an investigation to determine if the system is providing adequate cathodic protection.

(5) Impressed current cathodic protection systems shall be tested to determine whether the storage system is protected against corrosion at installation and at least annually thereafter. In addition to the annual testing, impressed current systems shall be inspected every 60 days to insure the equipment is operating as designed. Acceptable system operating voltage and amperage ranges as determined by the corrosion expert shall be affixed to each rectifier. System voltage and amperage reading shall be recorded every 60 days. If the system voltage and amperage readings are outside the range determined to be acceptable by the corrosion expert, the owner/operator shall immediate cause an investigation to determine if the system is operating as designed. Systems installed without voltage and/or amperage meters shall be retrofitted with meters upon the first annual test of the system.

(6) Cathodic protection systems shall be tested for proper operation within 60 days following the completion of any replacement and substantial modification or following excavation on the property that may have affected the cathodically protected system.

(7) Cathodic protection system design plans, applications, surveys, drawings, test data and results, must be reviewed, approved and bear the full name, signature, address, certification number and seal of a corrosion expert.

(8) If test data indicated to the corrosion expert that the system is not operating a designed the corrosion expert shall immediately notify the system owner/operator who shall notify the head of the fire department. The owner/operator shall restore the system to operation as designed, or conduct an investigation which shall determine to the head of the fire department's satisfaction that factors other than a system failure caused the failed test results.

(9) Records of cathodic protection system design plans, applications, surveys, drawings, test data and results, shall be maintained for the life of the cathodic protection system. All records shall be maintained on site or made readily available at the request of the Office of the State Fire Marshal and/or the head of the fire department or his designee.

9.06: Waste Oil Storage Tanks

(A) Installation of Aboveground Waste Oil Storage Tanks.

(1) Permanent Storage Outside a Building.

(a) Tanks and containers that contain only crankcase drainings shall be considered as containing Class IIIB liquids. Class IIIB liquids shall be permitted to be stored in tanks and containers that meet the requirements of Sections 2.2 and 4.2 of NFPA 30, Flammable and Combustible Liquids Code-2000, as applicable.

(b) A permit shall be required to install, maintain, and store from the head of the fire department in accordance with 527 CMR 14.03(1) through (5).

(c) Tanks shall be located in accordance with Table 2.3.2.1.5 of NFPA 30-2000, and shall be located at least five feet from any building openings.

(d) Tanks shall be doublewalled or shall have a containment dike capable of containing 110% of the capacity of all product within the dike.

(e) The tanks, based upon the building's occupancy, shall be protected against damage from vehicular traffic. The type of protection shall be steel posts, I-beams, or similar protection at the discretion of the head of the fire department.

(f) For security purposes, a fence or an enclosure capable of being locked shall be erected to prevent unauthorized filling of the tank. If the tank does not have a fence or enclosure, the fill shall be capable of being locked.

(g) The tanks shall be vented and the vents shall be a minimum of 1¼ inches in diameter. Vents shall terminate not less than 12' above the adjacent ground level and shall be so located that vapors will not be trapped by eaves or other obstructions and shall be at least five feet from any building opening.

(h) The tank fill shall be located on the top of the tank and be a minimum of 1½ inches in diameter.

(i) The fill shall be a funnel-type hopper fill large enough to prevent dripping and spillage when filling. The funnel-type hopper shall have a tight-fitting hinged or chained cap which shall be closed when not in use.

(j) The port used for pumping out the tank shall be located on the top of the tank. The fill and the port used for pumping out shall not be the same port.
(k) The support for waste oil tanks shall be of noncombustible material and capable of supporting the superimposed load; and the tank shall be secured against settling, sliding, or lifting.
(l) Each tank in which hazardous waste is being accumulated shall be clearly marked and labeled throughout the period of accumulation with the following:

1. The words "HAZARDOUS WASTE."
2. The hazardous waste identified in words (*e.g.*, WASTE OIL).
3. The type hazard associated with the waste indicated in words (*e.g.*, TOXIC).
4. The date on which each period of accumulation begins in that tank.

NOTE: Marks and labels shall be placed on the sides of each tank in such a manner than they are clearly visible for inspection.
(m) All tanks and associated piping shall be installed by a qualified person. This shall include certified burner technicians as well as licensed petroleum system installers.
(n) The head of the fire department may allow for alternative means of compliance provided the design is satisfactory and complies with the intent of this and other applicable regulations.

(2) Permanent Storage Inside a Building.
(a) Tanks and containers that contain only crankcase drainings shall be considered as containing Class IIIB liquids. Class IIIB liquids shall be permitted to be stored in tanks and containers that meet the requirements of Sections 2.2 and 4.2 of NFPA 30, Flammable and combustible Liquids Code-2000, as applicable. Tanks storing Class IIIB liquids inside buildings shall be permitted to be located at, below or above grade.
(b) A permit shall be required to install, maintain, store from the head of the fire department in accordance with 527 CMR 14.03 (1) through (5).
(c) Shall be located at least five feet from exits. Overhead garage doors shall not be considered exits.
(d) Shall have a drip pan or accidental spill containment at the discretion of the head of the fire department. The drip pan or spill containment is for minor spills and shall not be considered a dike. No containment diking is required.
(e) The tank, based upon the occupancy of the building, shall be protected against damage from vehicular traffic. The type of protection shall be steel posts, I-beams, or similar protection at the discretion of the head of the fire department.
(f) The tank shall be vented to the outside of the building.
(g) Vents shall be a minimum of 1¼ inches in diameter. Vents shall terminate not less than 12' above the adjacent ground level and shall be so located that vapors will not be trapped by eaves or other obstructions and shall be at least five feet from any building opening.
(h) The tank fill shall be located on the top of the tank and be a minimum of 1½ inches in diameter.
(i) The tank fill shall be a funnel-type hopper fill large enough to prevent dripping and spillage when filling. The funnel-type hopper shall have a tight-fitting hinged or chained cap which shall be closed when not in use.
(j) The port used for pumping out the tank shall be located on the top of the tank. The fill and the port used for pumping out shall not be the same port.
(k) The support for waste oil tanks shall be of noncombustible material and capable of supporting the superimposed load; and the tank shall be secured against settling, sliding or lifting.
(l) Each tank in which hazardous waste is being accumulated shall be clearly marked and labeled throughout the period of accumulation with the following:

1. The words "HAZARDOUS WASTE"
2. The hazardous waste identified in words (*e.g.*, WASTE OIL)
3. The type hazard associated with the waste indicated in words (*e.g.* TOXIC)
4. The date on which each period of accumulation begins, marked on each tank at the time the accumulation begins in the tank.

NOTE: Marks and labels shall be placed on the sides of each tank in such a manner that they are clearly visible for inspection.
(m) Underlying all aboveground tanks in which hazardous waste is accumulated shall be a surface that is designed and at all times operated so that it is free of cracks and gaps and is sufficiently impervious to contain leaks and spills until the collection material is

detected and removed. All aboveground hazardous waste tanks shall be placed so that all the surface beneath each such tank can be inspected for spills and structural integrity.

(n) All tanks and associated piping shall be installed by a qualified person. This shall include certified burner technicians as well as licensed petroleum system installers.

(o) The head of the fire department may allow for alternative means of compliance provided the design is satisfactory and complies with the intent of this and other applicable regulations.

(3) Removable Storage Inside a Building.

(a) Tanks and containers that contain only crankcase drainings shall be considered as containing Class IIIB liquids. Class IIIB liquids shall be permitted to be stored in tanks and containers that meet the requirements of Sections 2.2 and 4.2 of NFPA 30, Flammable and Combustible Liquids Code-2000, as applicable. Tanks and containers storing Class IIIB liquids inside buildings shall be permitted to be located at, below or above grade.

(b) A permit shall be required to install, maintain, and store from the head of the fire department in accordance with 527 CMR 14.03 sections 1 through 5.

(c) Shall be located as far as possible from exits. Overhead garage doors shall not be considered exits.

(d) Shall have a drip pan or accidental spill containment at the discretion of the head of the fire department. The drip pan or spill containment shall not be considered a dike. No containment diking is required.

(e) The container(s), based upon the occupancy of the building, shall be protected against damage from vehicular traffic. The type protection shall be steel posts, I-beams, or similar protection at the discretion of the head of the fire department.

(f) A funnel-type hopper fill large enough to prevent dripping and spillage when filling shall be on site and used during filling procedures.

(g) At the discretion of the head of the fire department, emergency relief venting shall be installed on all containers.

(h) When not in use, the container(s) shall be capped vapor tight.

(i) Each tank in which hazardous waste is being accumulated shall be clearly marked and labeled throughout the period of accumulation with the following:

1. The words "HAZARDOUS WASTE"
2. The hazardous waste identified in words (*e.g.*, WASTE OIL)
3. The type hazard associated with the waste indicated in words (*e.g.*, TOXIC)
4. The date on which each period of accumulation begins in that tank.

NOTE: Marks and labels shall be placed on the sides of each tank in such a manner that they are clearly visible for inspection.

(j) Underlying all aboveground tanks in which hazardous waste is accumulated shall be a surface that is designed and at all times operated so that it is free of cracks and gaps and is sufficiently impervious to contain leaks and spills until the collection material is detected and removed. All aboveground hazardous waste tanks shall be placed so that the surface beneath each such tank can be inspected for spills and structural integrity.

(k) The location of the removable container(s) shall be specified by the head of the fire department.

(l) The head of the fire department may allow for alternative means of compliance provided the design is satisfactory and complies with the intent of this and other applicable regulations.

(B) Automotive Lubrication Service Centers.

(1) The following applies to the storage of flammable or combustible liquids within an automotive lubrication service center when the storage is to be in tanks installed aboveground. Tanks and containers that contain only crankcase drainings shall be considered Class IIIB liquids. Class IIIB liquids shall be permitted to be stored and dispensed from tanks and containers that meet the requirements of Sections 2.2 and 4.2 of NFPA 30, Flammable and Combustible Liquids Code-2000, as applicable.

(a) A permit shall be required to install, maintain, and store from the head of the fire department in accordance with527 CMR 14.03(1) through (5).

(b) The tanks shall be located in a separate room (known as the storage room) from the main work area by a two-hour fire-rated concrete block wall or other acceptable separation.

(c) The storage room shall be equipped with a fixed fire suppression system designed

and installed in accordance with NFPA 17.

(d) The entrance to the storage room shall have a threshold a minimum of 12" high with a two-hour fire-rated door closed when not in use.

(e) The storage room shall be large enough to act as a containment dike capable of containing 110% of the largest tank capacity plus 10% of the aggregate amount of all other tanks.

(f) All tanks shall be vented to the out side of the building. Waste oil tank vents shall be a minimum of 1¼ inches in diameter and shall terminate not less than 12' above the adjacent ground level and shall be so located that vapors will not be trapped by eaves or other obstructions and shall be at least five feet from any building opening.

(g) The support for the tank(s) shall be of noncombustible material and capable of supporting the superimposed load; and the tank shall be secured against settling, sliding, or lifting.

(h) All tanks and associated piping shall be installed by a qualified person.

(i) Each tank in which hazardous waste is being accumulated shall be clearly marked and labeled throughout the period of accumulation with the following:

1. The words "HAZARDOUS WASTE"
2. The hazardous waste identified in words (*e.g.*, WASTE OIL)
3. The type hazard associated with the waste indicated in words (*e.g.* TOXIC)
4. The date on which each period of accumulation begins, marked on each tank at the time accumulation begins in that tank.

NOTE: Marks and labels shall be placed on the sides of each tank in such a manner that they are clearly visible for inspection.

(j) Underlying all aboveground tanks in which hazardous waste is accumulated shall be a surface that is designed and at all times operated so that it is free of cracks and gaps and is sufficiently impervious contain leaks and spills until the collection material is detected and removed. All aboveground hazardous waste tanks shall be placed so that all the surface beneath each such tank can be inspected for spills and structural integrity.

(k) The waste oil tank(s) shall be equipped with a valve which will close when the tank has been filled to within 95% of its capacity to prevent further filling of the tank or shall be equipped with an audible high level alarm which shall sound when the tanks(s) has been filled to within 95% of its capacity.

(l) The basement shall be constructed entirely of noncombustible materials, including storage racks and platforms.

(m) The basement shall be provided with a mechanical ventilation system capable of providing a minimum of six air changes per hour with duct openings located not less than six inches nor more than 12 inches above the floor.

(n) The basement area shall have proper means of egress in accordance with 780 CMR: *the Massachusetts State Building Code*.

(o) The oil and lube oil pumps and product delivery lines shall not be left under pressure when the lubrication center is not open for business unless a protective device is installed that will prevent continuous pumping of product in the event of a line or pipe rupture.

(p) The head of the fire department may allow for alternative means of compliance provided the design is satisfactory and complies with the intent of this and other applicable regulations.

(C) Upgrade of Existing Underground Waste Oil Storage Tank Systems.

(1) All existing underground waste oil storage systems shall comply with 527 CMR 9.05(G)(5) through (14) and 527 CMR 9.06(C) or be removed from the ground on or before December 22, 1998.

(2) Existing underground waste oil storage tanks shall have weekly tank gauging conducted according to the following:

(a) Tank liquid level measurements are taken at the beginning and ending of a period of at least 24 hours during which no liquid is added to or removed from the tank.

(b) Tank liquid level measurements are based on an average of three consecutive stick readings at both the beginning and ending of that period. The stick used for measuring the level of the waste oil shall be divided in _ of an inch increments

(c) Tank liquid level measurements shall not be required if a double-walled tank with continuous monitoring is utilized.

(d) A leak is suspected and subject to the requirements 527 CMR 9.07(M) and 310

CMR 40.0300 if the variation between beginning and ending measurements exceeds the weekly standards derived from averaging four consecutive weekly tests. The standards are in the following table:

NOMINAL TANK CAPACITY	WEEKLY STD. (One Test)	MONTHLY STD. (Avg. of 4 Tests)
550 gallons or less	10 gallons	5 gallons
551 - 1000 gallons	13 gallons	7 gallons
1001 - 2000 gallons	25 gallons	13 gallons

(e) The beginning and ending measurements, variation and average figures shall be recorded and maintained in a log book until the tank is removed from the ground.

Note: The averaging shall be done as follows: Average weeks 1-4, average weeks 5-8 etc.)

(f) Waste oil tanks connected to oil burning equipment shall be exempt from 527 CMR 9.06(C)(2)(a) through (e) during periods when oil burning equipment is in use.

(3) All existing tanks shall be equipped with one of the leak detection methods specified in 527 CMR 9.05(G)(4) except that 527 CMR 9.05(G)(4)(d) shall not be utilized for a waste oil tank. Leak detection shall be retrofitted in accordance with the schedule outlined in 527 CMR 9.05(G).

(4) A removable funnel at least 12 inches in diameter shall be used to prevent a spillage when filling the waste oil tank. This funnel shall be in use on or before December 30, 1990. The tank shall have a tight fitting cap which shall be closed when not in use.

(5) Owners or operators shall ensure that releases due to overfilling do not occur. The owner and/or operator shall ensure that the volume available in the tank is greater than the volume of waste oil to be transferred to the tank before the transfer is made and that the operation is monitored constantly to prevent overspilling.

9.07 General Provisions

(A) Material and Construction for All Tanks and Containers.

(1) All materials used in the construction of any tank shall be suitable for the purpose, and such tank shall be designed and constructed to withstand any normal stress to which it may be subject

(2) Every tank shall be supported by a foundation capable of supporting the tank.

(3) Any vertical metal tank of over 10,000 gallons capacity shall be of such material and construction as to give a factor of safety of not less than 2.62. The thickness material of any shell or bottom plate shall not be less than 3/16 inch and the thickness of any roof plate not less than _ inch. The thickness of shell plates shall be figured in accordance with the following formula:

$$t - 2.604 \times (H-1) \times D \times F \times S \text{ in which}$$
$$T \times E$$

t = thickness of plate in inches.
H = height of tank in feet above the center line of the lower horizontal joint of the ring under consideration.
D = diameter of tank in feet.
F = factor of safety.
S = one or the specific gravity of the fluid, whichever is the greater.
T = tensile strength of plate p.s.i.
E = efficiency of vertical joint. (For double welded butt joint, E shall not exceed .85; and for double full fillet lap joint, E shall not exceed .75)

(4) Tanks may be constructed of other than standard open-hearth steel tank plate when approved by the Marshal. Such approval will specify minimum gauges, lengths, diameters, and materials of the tanks. The requirements of the manufacturer shall be closely followed

when said tanks are installed. All piping connected thereto shall otherwise comply with all pertinent sections of 527 CMR 9.00 as they would apply to steel tanks.

(B) Fill and Vent Pipes for All Tanks and Containers. (Reference: 527 CMR 4.00 where applicable)

(1) Each storage tank shall be provided with a filler pipe and a vent pipe, and may have a gauge pipe. If gauge pipe terminates within a building, the opening to same shall be protected.

(2) Filler pipes of tanks shall be not less than 1¼ inches in diameter, and shall extend down to within four inches of the bottom of the tanks.

(a) All fill covers, including at least six inches onto the adjoining fixed metal, cement or pavement surface shall be painted in accordance with the following color codes:

Unleaded - White	Unleaded Plus - Blue
Premium Unleaded - Red	Diesel - Yellow
Kerosene - Brown	Fuel Oil - Green

(b) The tank owner shall insure that all tanks and appurtenances including adapters, gaskets and caps are secure, operable and without excessive wear.

(3) The receiving end of the filler pipe of a storage tank shall be designed to provide for a tight connection between a discharge hose and inlet. A filler pipe shall be located outside the building and shall be provided with a nonferrous plug or cap capable of preventing vapors from escaping or water from entering.

(4) Where a filler pipe runs to a sidewalk, alley, private way, or public highway, it shall terminate in a metal box with a metal cover set flush with the surface of the sidewalk at the curb, alley, private way, or highway; and it shall be provided with a nonferrous plug cap.

(5) Vent pipes of tanks shall be not less than 1¼ inches in diameter, shall be carried up to a point not less than 12 feet above the ground level at the filling point of the tank, shall terminate not less than five feet from any door or window opening, and shall be fitted with an approved weather hood screen with noncorrosive wire not coarser than 30-mesh. (Reference: 527 CMR 9.07(B)(6)).

(6) The provisions of 527 CMR 9.07(B)(5), 9.05(B)(2), and 9.03(D)(1) not withstanding, the vent pipes of underground storage tanks may be manifolded for the purpose of effecting a vapor recovery system provided that the pipe size shall be such as to discharge, within the maximum pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are filled simultaneously. The use of pressure vacuum valves on vent pipes shall be permitted provided the vapor collection and control system is certified by the Department of Environmental Protection, is listed, allows the underground storage tank system to vent to the atmosphere in the event of emergency conditions and is maintained in accordance with the manufacturer's instructions. The person supplying the vapor recovery system shall specify the minimum vent pipe size to conform to these requirements, and such specifications shall be followed by the installer.

(7) All tanks shall have one or more vents large enough to relieve any undue pressure to which they may be subjected. The vent pipe shall be arranged to discharge to the open air and to pitch toward the storage tank.

(C) Product Transfer. The owner and/or operator shall ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling. It is the responsibility of the owner and/or operator to make available to the person delivering product the proper tank chart.

(D) Piping for All Tanks. (Reference: 527 CMR 4.00 where applicable)

(1) All metallic piping, fittings, valves, and tanks used in connection with approved nonmetallic piping, fittings, valves, and tanks shall be grounded in the following manner:

(a) By means of an approved driven ground rod in accordance with the provisions of the current Massachusetts Electrical Code, 527 CMR 12.00.

(b) The ground rod and all metallic piping shall be bonded together by means of approved ground fittings and a copper conductor not smaller than #4 A.W.G. (American Wire Gauge).

(c) A properly engineered and installed cathodic protection or impressed current system on tank and piping systems shall be considered adequate grounding.

(2) All piping, fittings, and valves shall be constructed of materials that are compatible with the product to be stored in the tank to which the piping is connected.

(E) Pumping System.

(1) No flammable or combustible liquid shall be delivered to any storage facility tank by means of a pump under pressure unless such storage tank is designed to withstand the additional stress to which it may be subjected to or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undue pressure.

(2) No suction pumping system shall be equipped with more than one check valve, and shall be so installed that it may be tested or replaced without disturbing other elements of the storage facility. In no case shall there be a return waste pipe from the pump to the tank which has any opening to the atmosphere. When a pump is located within a building, it shall be in a well-ventilated portion thereof.

(3) Remote pumping systems shall be designed or equipped so that no part of the system will be subjected to pressures above its allowable working pressure.

(4) All remote pumping systems shall be equipped with an automatic line leak detector.

(5) On a remote pumping system, a listed rigidly-anchored emergency shutoff valve incorporating a fusible link or other thermally actuated device designed to close automatically in event of severe impact or fire exposure shall be properly installed in the supply line at the base of each individual island-type dispenser. The automatic closing feature of this valve shall be tested by a qualified person at the time of initial installation and at least once a year thereafter by manually tripping the hold-open linkage.

(6) The operator shall immediately advise the owner should a leak detector signal a suspected product loss or a suction product system indicate a potential symptom of a leak (*i.e.*, meter display jumping or skipping, liquid not being pumped when pump is on, initial pump overspeed followed by slow pumping, erratic liquid flow indicating air and liquid mixture, continued loss of prime in the pumping unit, *etc*.).

(7) The owner and/or operator shall take immediate action to verify the operation of the pumping system when a leak is suspected. Should a loss be determined, the owner and/or operator shall take immediate corrective action. The affected pumping system shall be taken out of service until the necessary corrective action has been taken.

(F) Non-Flammable Hazardous Substances

(1) Hazardous substances with a flash point are considered flammable liquids and shall follow all the provisions of 527 CMR 9.00.

(2) All new or replacement non-flammable hazardous substance underground storage tanks and piping shall comply with all provisions of 527 CMR 9.00.

(3) All existing non-flammable hazardous substances underground storage tank systems shall be upgraded in accordance with the provisions of 527 CMR 9.05(G).

(G) Pressure Vessels. The construction of any tank subject to pressure in addition to the static head pressure shall conform to good engineering practice.

NOTE: A tank built in accordance with the requirements of the current American Society of Mechanical Engineers Unfired Pressure Vessels Code will be approved by the Commissioner. A tank to be used for storage of petroleum products built in accordance with the requirements of the American Society of Mechanical Engineers Unfired Pressure Vessels Code or the American Petroleum Institute Unfired Pressure Vessels Code will be approved by the Commissioner.

(H) Response to Leaks.

(1) In the event of a leak, whether determined by testing or otherwise, the following steps shall be taken:

(a) The operator shall immediately notify the owner

(b) The owner or operator shall immediately notify the head of the local fire department and the Office of Incident Response of the Department of Environmental Protection (DEP).

(c) If testing has confirmed that the source of the leak is the piping for a particular tank, the operator shall take that tank out of service immediately.

(d) If testing has confirmed that the source of the leak is a particular tank, the owner shall within 24 hours cause that tank to be emptied of all its product.

(2) The head of the local fire department shall take charge of all containment procedures

and shall take whatever measures are necessary to prevent fire and explosion, or in the case of a fire or explosion, to protect the persons and property within the vicinity from such hazards.

(3) The head of the fire department shall verify that the requirements of 527 CMR 9.07(H)(1) are complied with.

(4) Upon the arrival of the representative of DEP, the head of the fire department shall advise him of the conditions at the site and the results of the investigations required by 527 CMR 9.07(H)(1).

(5) The owner and the operator shall cooperate with the representative of DEP in all efforts to locate the source of the leak, to contain it, etc.

(6) The head of the fire department shall have the responsibility of the containment procedures as long as, in his opinion, a fire or explosion hazard exists. During this period, the elimination of the fire/explosion hazard will have priority over all other concerns, while recognizing that the protection of the environment should be considered at all times. Once such hazards cease, the representative of DEP shall assume all responsibility. (*Reference*: Massachusetts Contingency Plan 310 CMR 40.300 *et seq*.)

(I) Tank Repair and Relining.

(1) No underground tank which has leaked shall be relined.

(2) The head of the fire department shall determine whether any other tank shall be removed and replaced or whether it may be repaired, and he shall notify the owner of his decision. In making his decision, the head of the fire department shall consider all the following conditions on the repair, by relining, of any steel tank:

(a) It must have a minimum shell thickness of 0.18 inch (7 gauge).

(b) It must have no open seam or split.

(c) It must have less than ten holes after reaming, with none larger than ½ inch in diameter and no more than two holes within a one-foot radius.

(d) It must meet all standards of the lining manufacturer for structural soundness.

(3) If the head of the fire department permits the relining of any tank, he shall require that the tank and its piping be tested at the owner's expense and in accordance with the provisions of 527 CMR 9.05(F)(8) and (9) at two-year intervals for ten years and annually thereafter.

(4) Any repair of a tank or replacement or repair of its components shall be by an approved tank relining company, performed by qualified technicians, following the manufacturer's directions, and in the case of relining of a steel tank, following the recommendations of American Petroleum Institute Publication No. 1631 First Edition 1983 or any subsequent editions as they may appear.

(5) If the head of the fire department determines that a tank and its components shall be removed, the owner shall first obtain a permit from him pursuant to M.G.L. c. 148, § 38A. Any removal shall be completed within 90 days after the head of the fire department has notified the owner of his decision.

(6) The owner and/or operator shall maintain records of each repair or relining for the remaining operating life of the underground storage tank system.

(J) Tanks Abandoned or Temporarily Out of Service.

(1) If the owner decides to abandon a tank which is either located under a building and cannot be removed from the ground without first removing the building or which is so located that it cannot be removed from the ground without endangering the structural integrity of another tank, the owner shall notify the head of the fire department of this condition. After verification that such condition so exists, the owner shall have all product removed from the tank, by hand pump if necessary, under the direction of the head of the fire department, and shall have the tank filled with a concrete slurry mix or any other inert material approved by the Marshal for this purpose. Before permanent closure in place of an underground tank and/or underground piping is completed, the owner/operator shall measure for the presence of a release of oil or hazardous material, where contamination is most likely to be present on the site. If contamination is found, the owner/operator shall immediately notify the head of the fire department and also notify the Department of Environmental Protection, Bureau of Waste Site Cleanup per requirements as set forth in 310 CMR 40.0000: *The Massachusetts Contingency Plan*.

(2) Except as provided in 527 CMR 9.07(J)(1), no tank may be abandoned in place. Any owner of a tank who has decided to abandon it and any owner of a tank which has been out

of service for a period of time constituting abandonment as defined in 527 CMR 9.02, shall immediately obtain a permit from the head of the fire department pursuant to M.G.L. c. 148, § 38A, and, subject to the directions of the head of the fire department, shall have any product removed from the tank, all openings properly secured, and the tank removed from the ground. The product and tank shall be disposed of in accordance with 310 CMR 30.00: *Hazardous Waste*, at the owner's expense, as directed by the head of the fire department.

(3) The owner of every underground storage tank licensed under M.G.L. c. 148, which the owner has decided to take out of service for a period of less than six months, shall promptly notify the head of the fire department of the decision, shall have all product removed from the tank and disposed of in accordance with 310 CMR 30.00: *Hazardous Waste*, as directed by the head of the fire department, and shall have all openings properly secured and the tank rendered inert. During any period a tank is temporarily out of service the owner must continue operation and maintenance of corrosion protection in accordance with 527 CMR 9.05(E)(2). Before any such tank may be restored to service, the owner of the tank shall notify the head of the fire department, who may require that the owner have the tank and its piping tested, at the owner's expense, in accordance with the provisions of 527 CMR 9.05(F)(8), (9), and (10).

EXCEPTION: Double walled tanks may be taken out of service for a period not to exceed 24 months provided the provisions of 527 CMR 9.07(J)(3) are met.

(4) The owner of every aboveground tank of more than 10,000 gallons capacity for the storage of any fluid other than water, required to have a permit from the commissioner under the provisions of M.G.L. c. 148, § 37 which has been out of service for more than 12 consecutive months shall promptly notify the head of the fire department and shall have all product removed from the tank and the tank cleaned properly.

(5) The owner of every aboveground tank referred to in 527 CMR 9.07(J)(4) which has been out of service for more than 24 consecutive months and who intends to restore the tank to service must first notify the head of the fire department and must have, at the owners expense, an examination of the tank conducted by a qualified registered professional engineer not permanently employed by the owner or operator of the tank. The examination of the tank will include a visual inspection of the tank welds, walls, foundation and an ultrasonic test of the floor plate thickness. A copy of the engineers report must be filed with the head of the fire department. The tank must also be inspected by the Department of Public Safety's Division of Inspectional Services before the tank can be restored to service.

(6) The owner of every aboveground tank, referred to in 527 CMR 9.07(J)(4), who intends to restore to service any such tank that has been out of service for more than 60 consecutive months must first notify the head of the fire department and must have at the owner's expense a physical inspection and hydrostatic test of the tank conducted by a qualified registered professional engineer not permanently employed by the owner or operator of the tank. The physical examination shall include the same requirements as 527 CMR 9.07(J)(5). The person conducting such tests and examinations shall notify the head of the fire department prior to the tests and examinations. This person shall promptly supply the tank owner (or operator) and the head of the fire department with certified copies of all tank tests and examinations. Prior to the tank being restored to service it must also be examined by the Department of Public Safety's Division of Inspectional Services.

(7) If an aboveground tank subject to the requirements of 527 CMR 9.07(J)(7) which has been used for the keeping or storage of gasoline of other petroleum products, has been abandoned, in accordance with the requirements of 527 CMR 9.00, the head of the fire department shall order the owner or operator of the tank to dismantle and dispose of the tank except where the Division of Inspectional Services of the Department of Public Safety determines that the integrity of said tank complies with the construction intent of 527 CMR 9.00, and the head of the fire department concurs.

(K) Tank Removal.

(1) Any person granted a permit by the Marshal or the head of the fire department to remove a tank under the provisions of M.G.L. c. 148, or 527 CMR 9.00, shall within 72 hours provide the permit-granting authority with a receipt for delivery of said tank to the site designated on the permit.

(2) Before any person is granted a permit by the Marshal or the head of the fire department to remove a tank under the provisions of M.G.L. c. 148, or 527 CMR 9.00, and said tank is not being transported to an approved tank yard, the person requesting the permit shall provide the permit-granting authority with written approval for the designated site of

disposition. (Reference: 502 CMR 3.00 for tank removal and disposal procedure)

(3) Underground piping shall not be abandoned in place unless the head of the fire department believes that the removal would constitute a danger to public safety. If the head of the fire department believes that removal of the underground piping constitutes a danger to public safety the piping shall be cleaned and rendered safe as specified by the head of the fire department.

(4) Within 24 hours after the removal of underground tanks and/or underground piping the owner/operator shall measure for the presence of a release of oil or hazardous materials to the environment where contamination is most likely to be present on the site. If contamination is found the owner/operator shall immediately notify the head of the fire department as well as the Department of Environmental Protection Bureau of Waste Site Cleanup.

(L) Enforcement and Appeals.

(1) Any owner or operator who violates any provision of 527 CMR 9.00 shall be subject to the penalties provided under M.G.L. c. 148, § 38H, as amended. Each day during which such violation continues shall constitute a separate offense. Upon request of the head of the fire department, the licensing authority and the town/city counsel shall take any legal action necessary to enforce the provisions of 527 CMR 9.00.

(2) In the event of a violation of 527 CMR 9.00 by the owner or operator of a storage facility, the head of the fire department or the Marshal, instead of or in addition to requesting enforcement under 527 CMR 9.07(L)(1), may revoke or suspend the owner's permit or may require more frequent testing than would otherwise be required under 527 CMR 9.05(F); and if a permit is revoked or if a storage facility has been installed or maintained without a permit, the head of the fire department or the Marshal may order that the storage facility be removed from the ground. Before revoking or suspending an owner's license or requiring removal of the storage facility from the ground, the licensing authority shall hold a public hearing on the proposed action, and shall by certified mail give the owner at least ten days' advance notice of the hearing, and shall render its decision in writing with a brief statement of the reasons therefor.

(3) After a public hearing, the head of the fire department may, with the concurrence of the Marshal, vary the application of any provision of 527 CMR 9.00 unless otherwise required by law when in his opinion the applicant has demonstrated that an equivalent degree of protection will still be provided to public and private water supplies. Notice of the public hearing shall be given at least ten days prior thereto, by certified mail at the applicant's expense to all abutters to the applicant's property, and by publication in a newspaper or general publication in a town or city. The notice shall include a statement of the variance sought and the reasons therefor. Any grant or denial shall be in writing and shall contain a brief statement of the reasons for the grant or denial.

(4) All tanks used for the storage of flammable and combustible liquids shall be subject to 527 CMR.

(5) All tanks and their appurtenances shall be maintained in a safe condition at all times.

(6) No tank for which a permit has been issued for the storage of any liquid with a specific gravity of one or less shall be used for the storage of any liquid with a specific gravity of more than one.

(7) No wooden tank shall be used for the storage of any flammable or combustible liquid.

(8) No open tank shall be used for the storage of any flammable or combustible liquid.

(M) Permits.

(1) Permits issued under 527 CMR 9.07(M) should expire contingent on the tightness testing requirements for each facility, or for a maximum of five years. Either the original or photographic copy of all permits granted under the provisions of 527 CMR 9.00 shall be conspicuously posted or kept on the premises.

(2) New Storage Facilities:

(a) No storage facility shall be installed unless the owner shall first have obtained a permit from the head of the fire department. This permit shall be in addition to any license or any other permit required by M.G.L. c. 148, or by any regulations issued thereunder.

(b) The application for a permit shall be on a form obtained from the head of the fire department and shall include the following information and any other information he or

the Department may require:

1. Name, address, and telephone numbers (day and night) of the owner.
2. Name, address, and telephone numbers (day and night) of the operator.
3. The number of tanks in the proposed facility and the capacity of each proposed tank.
4. The proposed type of construction of each tank and its piping, together with the tank's approval number if any, and a description of any provisions made for cathodic protection, electrical isolation, and early detection of leaks through a monitoring system.
5. The depth below ground level of the lowest and highest points of each proposed tank.

EXCEPTION: Aboveground Storage tanks regulated under 527 CMR 9.04, shall be exempt from providing information on any provisions made for 527 CMR 9.07(M)(2)(b)5. the depth below ground level of the lowest and highest points of each proposed tank.

(c) In a storage facility with more than one proposed tank, the applicant shall furnish the head of the fire department with a certificate signed by a qualified person stating that the proposed facility meets all the design requirements of 527 CMR 9.00.

(d) The applicant shall also furnish a plot plan of the site and the area surrounding it, showing the location of each proposed tank and its components and of any building on the site, and the approximate location of any public or private well and of any body of surface water within 500 feet of the proposed storage facility.

(e) The head of the fire department may require secondary containment or equivalent protection for new installations where groundwater below the facility is within Zone II (Zone of Contribution) of municipal water wells, or where private potable water wells or a water supply reservoir is within 300 feet of the tank installation.

(3) Existing Storage Facilities:

(a) The owner of every underground storage facility installed prior to May 9, 1986, shall apply to the head of the fire department for a permit to maintain the storage facility. Application shall be made on forms obtained from the head of the fire department.

(b) The applicant shall furnish a plot plan to scale of the facility site and the area surrounding it, showing the location of each tank and its components and of any building on the site, and the approximate location of any public or private well and of any body of surface water within 500 feet of the storage facility. Legend notes shall include, to the extent available to the owner, the following information and any other information required by the head of the fire department.

1. Name, address, and telephone numbers (day and night) of the owner.
2. Name, address, and telephone numbers (day and night) of the operator.
3. The number of tanks in the facility and the capacity and contents of each tank.
4. The type of construction for each tank and its piping, together with a description of any provisions made for cathodic protection, electrical isolation, and early detection of leaks through a monitoring system.
5. The date of installation of each tank.

(c) The owner shall furnish evidence of the date of installation. Such evidence may include, but is not limited to, a copy of any license or permit issued by the local licensing authority and the head of the fire department. If no substantial evidence of the date of installation is supplied, the tank shall be presumed to have been installed 20 years prior to May 8, 1986.

(d) The following storage facilities shall be exempt:

(i) Farm or residential tanks of 1100 gallons capacity or less used for storing motor fuel for noncommercial purposes.

(ii) Residential or commercial tanks storing or having stored heating oil (fuel oil) for consumptive use on the premises.

(e) The filing deadline for a permit to maintain an existing storage facility is May 8, 1986.

(4) Replacement or Substantial Modification:

(a) There shall be no replacement of a tank or its components or substantial modification of any storage facility unless the owner has first applied for and obtained a permit from the head of the fire department, who shall keep a copy of the permit with the records for that storage facility.

(b) Any application for approval under 527 CMR 9.07(K)(4) shall be in writing and

shall clearly describe the type of construction of any replacement tank or component of the modification that is proposed.

(c) If the head of the fire department determines that the proposed replacement or modification constitutes a danger to a public or private well, aquifer, recharge area or body of surface water, or for any other reason, the head of the fire department may deny the application or approve it subject to conditions that he may deem necessary to protect such public or private water supply.

(d) No replacement or substantial modification shall be made except by a contractor who has been certified by the manufacturer as qualified for that purpose.

(e) The head of the fire department may require that existing tanks other than those used for heating purposes shall be equipped with observation wells or other detection systems if in his opinion the location of the tanks could jeopardize safety of the public.

(5) Renewal of Permits and Changes of Ownership:

(a) The owner of any new or existing facility for which a permit has been issued under 527 CMR 9.07(M) must apply to the head of the fire department for renewal of the permit upon expiration. The application for renewal must include any changes required under 527 CMR 9.07(M). No application for renewal may be denied except for violations of 527 CMR 9.00 and in accordance with the procedural requirements of 527 CMR 9.07(L)(2).

(b) The owner of any storage facility shall within seven working days notify the head of the fire department of any change in the name, address, or telephone numbers of the owner or of the operator. In the case of any transfer of ownership, the new owner shall be responsible for the notification of this transfer.

(c) The owner of any storage facility shall within seven working days notify the Department of Public Safety of any tank replacement, repair, modification, or upgrading, and of any change in the name, address, or telephone numbers of the owner or the operator. In the case of any transfer of ownership, the new owner shall be responsible for the notification of this transfer.

(N) Financial Responsibility Requirements. In accordance with the provisions of Federal regulations 40 CFR parts 280 and 281 owners and operators of petroleum underground storage tanks shall demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental release arising from the operation of petroleum underground storage tanks. The amount of financial coverage and the dates for coverage implementation are specified in 40 CFR parts 280 and 281. The following tanks are exempt from the financial responsibility requirements;

(1) UST's containing hazardous wastes already regulated under the Federal Resource Conservation and Recovery Act.

(2) UST systems containing electrical equipment and hydraulic lifts.

(3) Wastewater treatment UST's that are regulated by the Clean Water Act.

(4) UST's with a capacity of less than 110 gallons, and tanks holding a minimal concentration of regulated substances.

(5) UST's that serve as emergency backup, hold regulated substances for only a short time, and are expeditiously emptied after use.

(6) Field constructed tanks.

(7) UST's containing radioactive materials and UST's used as backup diesel tanks at nuclear facilities.

(8) Airport hydrant fueling systems.

(9) Farm or residential tanks with a capacity of 1,100 gallons or less storing motor fuel which is not for resale.

(10) Tanks for storing heating oil which is consumed on site.

(11) Septic tanks.

(12) Certain pipeline systems, such as those regulated under the Natural gas Pipeline Safety Act of 1968.

(13) Surface impoundment's, pits, ponds or lagoons.

(14) Storm or waste water collection systems.

(15) Flow-through process tanks.

(16) Liquid trap and other lines used in oil or gas production.

(17) Storage tanks on or above the floor of an underground area, such as a basement or tunnel.

(O) Deferred Enforcement of Certain Tank Removal Requirements Based Upon a Showing of a Good-Faith Effort to Comply.

(1) If a tank has not been removed as required by 527 CMR 9.05(G)(7), (11) or 9.06(C)(1) or permanently closed in accordance with 527 CMR 9.07(J) on or before December 22, 1998, for failure to upgrade with leak detection and/or cathodic protection, the head of the fire department or the Marshal shall defer, on a temporary basis, the further enforcement of applicable provisions and penalties of M.G.L. c. 148 and 527 CMR, if the following conditions have been met:

(a) The tank has been taken permanently out of service or permanently closed and displays an out of service tag, and

(b) The contents of the tank and piping have been safely, properly and completely removed, and

(c) The owner or operator presents to the head of the fire department or the Marshal, no later than March 31, 1999, the following:

1. A copy of a written agreement or contract between the owner or operator of the tank and a contractor, for the removal or permanent closure of the subject tank and piping in accordance with the provisions of 527 CMR 9.07(K) on or before September 30, 1999, or

2. in the case of the Commonwealth or a political subdivision thereof, presents an affidavit indicating the intent to remove the subject tank and piping in accordance with 527 CMR 9.07(K) on or before September 30, 1999.

(d) Notwithstanding the approval for deferred enforcement by the head of the fire department or the Marshal under 527 CMR 9.07, an owner or operator may be subject to fines and penalties by the Marshal for applicable violations of M.G.L. c. 148 and 527 CMR after December 22, 1998 and until the date of approval was granted.

(2) No deferral of enforcement action shall be granted, or if granted shall be revoked, if:

(a) It is determined by the head of the fire department or the Marshal that a tank or associated piping presents an immediate threat to public safety or is likely to cause irreparable harm to the environment, or

(b) Tank removal or permanent closure has not been completed as of the date established under the terms of the removal contract.

(3) The owner or operator of any tank who has been granted enforcement deferral shall be subject to the full fines and penalties if the removal work has not been completed by the date established under the terms of the contract. Said fines and penalties shall be applied retroactively to December 22, 1998.

(4) No deferral shall be granted beyond September 30, 1999, except those granted in writing by the Marshal. The Marshal may grant enforcement deferral only upon a good faith showing of extreme hardship for circumstances beyond the control of the owner or operator which were not foreseeable. The Marshal may set conditions to said deferral. Under no circumstances shall said deferral be granted beyond December 22, 1999.

(P) Deferred Enforcement of Certain Tank Upgrade Requirements.

(1) If a tank has not been upgraded with the cathodic protection and leak detection requirements of 527 CMR 9.05(G)(4) and (11) by December 22, 1998, the head of the fire department may defer, by permit, the tank removal requirements of 527 CMR 9.05(G)(7), (11) or 9.06(C) (1) and the penalties of M.G.L. c. 148 and 527 CMR associated with such failure to so upgrade, if the following conditions have been met:

(a) The tank has been taken out of service and the contents of the tank and piping have been safely, properly and completely removed, and

(b) The owner or operator presents to the head of the fire department a copy of a written contract between the owner or operator of the tank and a contractor, executed prior to December 23, 1998, providing for the subject upgrades to be completed on or before June 30, 1999, and

(c) Said contract is delivered by certified mail or by hand to the head of the fire department prior to December 23, 1998.

(2) No deferral shall be granted, or if granted shall be revoked, if:

(a) It is determined by the head of the fire department or the Marshal that a tank or associated piping presents an immediate threat to public safety or is likely to cause irreparable harm to the environment, or

(b) Tank upgrade has not been completed as of the date established under the terms of the contract.

(3) The owner or operator of any tank who has been granted enforcement deferral shall be subject to the full fines and penalties if the upgrade work has not been completed by the date established under the terms of the contract. Said fines and penalties shall be applied retroactively to December 23, 1998.

9.08: Referenced Publications

Documents or portions thereof that are referenced within 527 CMR 9.00 shall be considered a part of the requirements of 527 CMR 9.00. Refer to 527 CMR 49.00 for a complete listing of all documents referenced in 527 CMR.

REGULATORY AUTHORITY

527 CMR 9.00: M.G.L. c. 22, § 14; c. 148, §§ 9, 10, 28, 37, 38 and 38E.