Technical Guidelines for the Environmentally Sound Construction, Operation and Decommissioning of Petroleum Storage Tanks

ENVIRONMENTAL PROTECTION DEPARTMENT

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Contents

1 INTRODUCTION

The storage and handling of petroleum products is a necessary activity for economic development, however, inappropriate practices can lead to detrimental effects on the environment and human health and safety.

The Technical Guidelines for the Environmentally Sound Construction, Operation and Decommissioning of Petroleum Storage Tanks are intended for use of owners and operators of fuel storage tanks to ensure that environmental best practices are maintained and both the environment and public health are protected.

The guidelines are provided for all petroleum storage facilities and encompasses environmental aspects associated with the construction, operation and decommissioning of tanks and service stations.

Owners and operators of fuel dispensing or petroleum storage facilities are encouraged to practice environmental responsibility and use these guidelines as a tool to prevent, reduce or control; contamination of soil, groundwater and the marine environment and emissions to the atmosphere. The document also provides guidance on hazardous materials management, waste management, remediation and rehabilitation of contaminated sites.

These guidelines should be used in conjunction with the procedures set out in the National Oil Spill Contingency Plan and its Appendices.

1.1 Methodology for the Development of the Technical Guidelines

The guidelines were developed by reviewing existing legislation and or guidelines used in Germany and the USA. The information gathered was used to develop draft guidelines for Barbados using aspects practical to our local situation. The draft guidelines were circulated to members of the Barbados National Oil Spill Response Committee (BNOSRC) which is a multi-sectoral committee comprised of government and private sector agencies that are the main stakeholders in the petroleum industry. Through an interactive process members of the BNOSRC reviewed and commented on the draft document. Once finalized and approved by Cabinet the guidelines will be placed as conditions for all licenses issued for establishment of petroleum storage facilities under the Petroleum Act. They will also be used to guide the development of Regulations under the Environmental Management Act.

2 STRUCTURE OF THE GUIDELINES

The guidelines are comprised of six sections, patterned after components of the United States Environmental Protection Agency (USEPA) Federal Regulations for Underground Storage Tanks (40 CFR Part 280). The sections are as follows:

- ➢ 2.1 Definitions of terms used within the document;
- ➢ 2.2 Design, Construction and Installation of facilities and tanks used to store petroleum products;
- ➢ 2.3 Guidance on General Operating Requirements for the facilities;
- ➢ 2.4, Steps to be taken by owners and operators of facilities with regard to Release Detection;
- ➢ 2.5, Reporting, Investigation, Response and Corrective measures and
- ➢ 2.6 Closure and Decommissioning procedures
- ➢ 3.0 Summary Sheet of Requirements

In each section there are subheadings outlining the requirements for underground storage tanks, above ground storage tanks and where applicable, service stations.

2.1 Definitions

1. Above Ground Storage Tanks (AST) - any tank or combination of tanks (including pipes connected thereto) used to contain petroleum products where less than 10 percent of the volume of which (including pipes connected thereto) is beneath the surface of the ground.

2. Airport hydrant distribution system - the underground tanks, associated piping, hydrants and manholes at an airport that are used to transfer fuel to various locations on the runway apron for fueling of airplanes.

3. Authorities - public officers authorized to enter premises to conduct inspections and enforce the Laws of Barbados, and clearly identified as such by identification cards.

4. Flow through process tank - a tank which forms a part of a production process through which there is a flow of materials during the operation of the process.

5. Fuel dispensing facilities - any facility where diesel and or gasoline products are stored and dispensed to motor vehicles and or marine vessels, or where they are transferred from one transport container to another.

6. Empty - a tank is considered to be empty when all liquid and residue, is

removed and the tank is purged to remove potentially flammable vapours. The American Petroleum Institute (API) Recommended Practice 1604 (or the most recent version) for Closure of Underground Petroleum Storage Tanks should be used to meet the requirements.

7. Operator - any person in control of, or having responsibility for, the daily operation of the tank or service station.

8. Owner - any person who owns a tank or facility used for storage and or dispensing of petroleum products.

9. Natural gas pipelines - Pipelines used by the Barbados National Petroleum Corporation (NPC) to transmit or distribute natural gas to its customers.

10. Person - an individual, association, partnership, society, body or other group formed for the purpose of carrying on trade or business for gain incorporated under the Companies Act Cap 308, 2002 or formed under some other enactment and the Government of Barbados.

11. Petroleum - any flammable liquid derived from petroleum or from coal, schist, shale, peat or other bituminous substance or any of their products (draft Petroleum Act 2002)

12. Petroleum products - any products derived from petroleum by any refining process (draft Petroleum Act 2002)

13. Release - any spilling, leaking, emitting, discharging, escaping or leaching from tank or facility into ground water, surface water or subsurface soils.

14. Septic tank - An underground sedimentation tank in which a flow of sewage is decomposed anaerobically.

15. Service station - any approved establishment where petroleum products are sold for purposes other than resale (draft Petroleum Act 2002) and are stored and dispensed to motor vehicles and or marine vessels. These facilities may also be combined with convenience stores.

16. Storage - keeping petroleum products for further use, for transfer to other users or for disposal

17. Storage facilities - service stations, above and underground storage tanks as well as plots of land regularly used for keeping petroleum and its products in transport containers or package units.

18. Storm water and wastewater collection systems - underground pipelines and tanks used to channel/ temporarily store storm water or sewage for treatment or disposal.

19. Underground Storage Tank (UST) - any tank or combination of tanks (including pipes connected thereto) used to contain petroleum products where 10 percent or more of the volume of which (including pipes connected thereto) is beneath the surface of the ground. This term does not include the following or the pipes connected to them:
    a. Septic tanks;

    b. Natural gas pipelines covered under the NPC;

    c. Storm water and wastewater collection systems;

    d. Flow through process tanks;

    e. Airport hydrant distribution systems; and

    f. Tanks of 110 gallons or less.

2.2 Design, Construction, Installation

2.2.1 Tanks

To ensure that tanks meet regulatory requirements owners and operators must ensure that:

1. Only tanks designed and constructed for the storage of petroleum products are used for that purpose;

2. Necessary permissions/licenses are obtained from the Town and Country Development Planning Office, Environment Protection Department (EPD), Barbados Fire Service and the Energy Division prior to construction, installation and operation;

3. The EPD is notified at least 30 days prior to commencing installation of new tanks or making any changes to existing tanks so that an inspection can be conducted;

4. Notification to the EPD is submitted within 30 days of acquiring and or commencing use of the tanks, the notification should include (for each tank):

    a. Age of tank and previous use (if not new tank);

    b. Tank material;

    c. Corrosion protection measures used where applicable;

    d. Tank capacity (m^3);

    e. Secondary containment capacity and its construction material;

f. Plan drawing showing the location of tank(s) in relation to other structures, vertical profiles and schematics of leak detection and corrosion protection;

g. Description of the release detection and spill and overfill prevention equipment associated with tank(s);

h. Date(s) of commissioning;

i. Maintenance and inspection schedule for tank and pipeline integrity;

j. Emergency contact person and telephone numbers; and

k. Proof of compliance with installation, release detection and cathodic protection requirements by one of the methods described at paragraph 5.

5. All tanks, associated piping, release detection, vapour recovery and cathodic protection systems are installed and certified by the following methods:

a. The installer is registered with the appropriate Barbadian authority and certified by the tank and pipe manufacturers, or

b. The installation is inspected and certified by a Registered Engineer in Barbados with requisite educational background in UST and AST installation.

6. Vapour recovery systems are installed and maintained to reduce emissions into the atmosphere during filling storage tanks and dispensing of fuel to vehicles. The following types of vapour recovery systems should be installed at all new service stations and those undergoing major refurbishment:

a. Stage 1 Vapour Recovery (VRl) - which capture the vapour displaced from underground storage tanks as they are filled by tankers;

b. Vent pipes associated with underground tank systems should be fitted with Pressure/Vacuum (PV) Relief Valves;

c. Stage 2 Vapour Recovery (VR2) – which control the emissions from filling of vehicle tanks.

7. Existing service stations should phase in both VRl and VR2 technology within fifteen years after approval of the Guidelines.

8. Under dispenser containment should be installed for all new dispensers.

2.2.2 Underground Storage Tank (UST)

1. Tanks should be properly designed and totally constructed of:

    a. Non-corrodible materials such as fibre glass reinforced plastic;

    b. A steel fibre glass reinforced plastic composite;

    c. Double walled steel with corrosion resistant coating and cathodic protection; or

    d. Designed in a manner approved by the EPD to prevent the release or threatened release of products contained in the tanks.

2. Tanks to be located in environmentally sensitive areas will be required to install secondary containment and more stringent monitoring and control may be required as deemed necessary by the EPD.

3. Tanks should be fitted with spill and overfill prevention equipment to prevent the release or threatened release of products during filling of the UST. This equipment must be inspected at least once every 3 years in accordance with manufacturer specifications to ensure that they are functioning properly.

4. Owners and operators must provide equipment:

    a. To prevent release of product if a transfer hose is detached from the fill pipe;

    b. To automatically shut off or restrict flow to the tank and or trigger an alarm to alert the transfer operator to prevent overfilling; or

    c. Approved by the EPD, which would be no less protective than a. and b.

5. Piping associated with tanks should be properly designed and constructed of:

    a. Fibre glass reinforced plastic;

    b. Cathodically protected steel; or

    c. In a manner approved by the EPD, which would be no less protective than a. and b.

6. Each tank and associated piping should be physically inspected prior to installation and pressure tested according to the manufacturer's specifications. The results of testing should be submitted to EPD for our records and any detected damage and repairs to correct damage should be reported to the EPD for our records.

7. Excavation and installation of tanks should be conducted in accordance with manufacturer's specifications and in keeping with the American Petroleum

Institute (API) Recommended Practice 1615 (or the most recent version) for Installation of Underground Petroleum Storage Systems. Where the API recommendations requires consultation with regulatory authorities, or there are differences between these guidelines and the API recommendations the EPD should be contacted for clarification.

8. The location of buried tanks should be clearly demarcated and no permanent structures should be constructed on top of site. Access to the tank(s) and parking over the tank(s) should be restricted.

2.2.3 Aboveground Storage Tanks (AST)

1. Tanks should be properly designed and constructed:

   a. of steel, new tanks should be comprised of double walled steel, or

   b. in a manner approved by the EPD to prevent the release or threatened release of products contained therein.

2. Each tank and associated piping should be physically inspected prior to installation. Any detected damage and repairs to correct damage should be reported to the EPD for our records.

3. Each tank and associated piping should be pressure tested according to the manufacturer's specifications prior to installation and the certificate of testing should be submitted to EPD for our records. The results of the test should be submitted on request.

4. Each tank should be mounted on an impermeable surface and provided with secondary' containment capable of containing 110% of the volume of the tank. For a collection of tanks within the same secondary containment area, the area should be capable of containing 110% of the volume of the largest tank.

5. The entire tank, pipe connections and valves should be contained within the secondary containment area.

6. Tanks and associated piping in contact with the ground should be protected from corrosion by being:

   a. Totally constructed of non-corrodible materials; or

   b. Made of steel with corrosion resistant coating and cathodic protection;

2.2.4 Service stations

1. The Health Services (Building) Regulations, 1969 Reg. 3 (1) requires persons to apply in writing to the Minister of Health via the Director of the Environmental Protection Department in order to:

   a. **Construct** any building;

   b. **Extend** any building; or

   c. **Effect any material alteration** to any building.

2. Approval must therefore be granted by the Environmental Protection Department prior to commencing construction or renovation of service stations. Applicants should refer to the "Guidelines for Submission of Building Development Applications to the Environmental Protection Department" for details on the application procedure and requirements. (**www.epd.gov.bb**)

3. To minimise the impacts of service stations on the environment these facilities should be designed to:

   a. Provide adequate buffer zones between the operation and the nearest sensitive receptors to reduce the impacts of noise and emissions. The buffer zone should be included in the development application.

   b. Prevent/control the emission of vapours during filling of fuel storage tanks and vehicles or marine vessels;

   c. Ensure that the stack height for all point sources of emissions, whether 'significant' or not, avoids excessive ground level concentrations and allows reasonable diffusion to minimize impacts:

   d. Contain any spills of petroleum products on the site and prevent runoff from transporting contaminants to drains, sanitary sewers or surrounding land; and

   e. Prevent contamination of surrounding land due to handling, storage/disposal of hazardous materials.

4. All tanks at the service station, whether UST or AST, must also meet the design, construction and installation requirements for the respective tank type.

2.3 General Operating Requirements

2.3.1 Tanks

1. Owners and operators of tanks must cooperate with inspections, monitoring and testing conducted by authorities and submit or keep for inspection, all required documentation.

2. Owners and operators must submit the following to the EPD:

    a. Notification for installation of new tanks;

    b. Reports of releases and corrective actions planned in accordance with the National Oil Spill Response Plan (Section XVIII Part B Discovery and Notification) and its Appendices; and

    c. Notification before permanent closure or change in service.

3. Owners and operators must maintain the following information and have it available for inspection by the EPD, Labour Department and Barbados Fire Service at the site of the tanks or at a readily accessible alternative site where they are easily produced upon request by regulatory authorities:

    a. A copy of the annual licence for storage of petroleum products;

    b. Material Data Safety Sheets for all products stored on site;

    c. Copies of Standard Operating Procedures, Emergency Response Plans and Hazardous Materials Management Plans;

    d. Documentation of inspections and testing of corrosion and cathodic protection systems;

    e. Documentation of repairs to tanks and piping;

    f. A spill log showing a list of all spills that occurred at the facility, the date of the spill, the volume spilled and the remediation actions taken; and

    g. Results of site investigations and monitoring conducted at permanent closure.

4. All owners and operators must ensure that releases due to spills or overfilling do not occur. Measures should be implemented to monitor the transfer of product to prevent overfilling and spilling.

5. All owners and operators must report, investigate, and clean up any spills and overfills in accordance with the National Oil Spill Response Plan and its Appendices and to the satisfaction of the EPD.

6. Repairs to tanks must be conducted in accordance with manufacturer's specifications. Repairs must prevent releases due to structural failure or corrosion. Within 30 days of completion of repairs, tanks and piping must be tested in accordance with industry standards. Records of all repairs must be kept for the remaining operating life of the tanks.

7. The American Petroleum Institute (API) Recommended Practice 1621 (or the most recent version) for Bulk Liquid Stock Control at Retail Outlets may be used to meet the Release Detection requirements of this guideline. Where the API recommendations requires consultation with regulatory authorities, or there are differences between these guidelines and the API recommendations the EPD should be contacted for clarification.

8. Where renovations and repairs must be conducted on USTs or ASTs a detailed method statement should be made available to the Chief Labour Officer outlining how the work is to be conducted. The statement should include safe working procedures based on anticipated hazards. A permit to work system should be employed for works including, but not limited to confined space entry and hot work.

2.3.2 UST

1. All corrosion protection systems must be operated and maintained to provide continuous corrosion protection to all metal components of the tank and piping that are in contact with the ground and contain petroleum products.

2. All cathodic protection systems should be tested and inspected in accordance with industry standards within 6 months of installation and every three years thereafter. Records of results of the last two inspections should be kept.

3. Impressed current cathodic systems must be inspected every 60 days to ensure that equipment is functioning properly. Records of results of the last three inspections should be kept.

4. Tanks should be lined with materials that are compatible with the substance stored in the UST.

5. Appropriate hazard symbols should be displayed in the vicinity of the UST.

2.3.3 AST

1. Each tank should be labelled with the appropriate hazard symbols, the name of its contents and the total tank capacity in cubic meters (m^3).

2. Rainwater, which settles in the secondary containment around tanks, should be directed to a properly constructed and maintained oil water separator prior to disposal.

2.3.4 Service stations

1. All hazardous materials/ substances on site should be adequately labelled with the name of the content and the associated hazard; appropriate hazard symbols should be displayed on the container and in the store room.

2. All hazardous materials/substances on site should be stored in a secure location and surrounded with a spill containment structure comprised of material capable of containing the substance.

3. A hazardous materials management plan should be developed and should include at a minimum:

    a. Description of all chemicals used or stored on site and the associated Material Safety Data Sheets (MSDS);

    b. The quantities of chemicals stored on site at any given time;

    c. Quantities of waste generated, the rate of generation and the methods of storage and disposal;

    d. Provision should be made to keep records of dates of disposal of hazardous waste, the quantity and the company used to transport the waste to the approved disposal site;

    e. Details of a training programme for staff in handling, storage and disposal of hazardous materials.

    f. Annual notification should be made to the Barbados Fire Service detailing the types and volumes of all hazardous materials stored on site.

    g. The plan should be kept at the site or at a readily accessible alternative site where they are easily produced upon request by the Environmental Protection Department, Barbados Fire Service and the Royal Barbados Police Force.

4. An emergency response plan should be prepared which covers response procedures, response equipment, personal protective equipment and training for staff in the event of:

    a. Spills of hazardous materials
    b. Fire
    c. Natural or manmade disasters

5. All owners and operators must report, investigate, and clean up any spills and overfills in accordance with the National Oil Spill Response Plan and its Appendices and to the satisfaction of the EPD.

6. All tanks at the service station, whether UST or AST, must also meet the General Operating Requirements for the respective tank type.

2. 4 Release Detection

1. Owners and operators of new and existing USTs must use a method(s) of release protection which can detect releases from any portion of the tank or associated piping with a minimum probability of detection of 95%.

2. Methods for tanks and piping include monthly monitoring using one or combinations of; interstitial monitoring, automatic tank gauging, continuous in tank leak detection, ground water monitoring, vapour monitoring.

3. Pipes must have automatic leak detection and may use annual inline tightness testing instead of one of the monthly monitoring options.

4. Tanks installed prior to these guidelines may combine daily inventory control and tank tightness test every 5 years for a period of 10 years, after which one of the monthly methods must be used.

5. Weekly manual tank gauging may be used for tanks with volumes less than 1,000 gallons.

6. The release detection method used should be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications.

7. Owners and operators of UST may be required by the EPD to conduct groundwater, vapour and/or interstitial monitoring as a means of leak detection.

8. Monitoring wells should be designed and constructed in accordance with EPD approved standards. Monitoring wells should be clearly marked and secured and made accessible to officers of the EPD for inspections and regulatory monitoring. Results of groundwater monitoring conducted should be submitted to the EPD annually.

9. All owners and operators of tanks must keep records of calibration, maintenance and repairs of the leak detection systems and keep these records for at least two (2) years after the work is completed.

10. Release detection systems shall be inspected annually by a Registered Engineer in Barbados with the requisite educational experience in UST release detection systems. The inspection report should be submitted to the Environmental Protection Department as part of the application for a licence.

11. The American Petroleum Institute (API) Recommended Practice 1621 (or the most recent version) for Bulk Liquid Stock Control at Retail Outlets may be used to meet the Release Detection requirements of this guideline. Where the API recommendations requires consultation with regulatory authorities, or there are differences between these guidelines and the API recommendations the EPD should be contacted for clarification.

2. 5 Reporting, Investigation, Response and Corrective Measures

1. All owners and operators of tanks must report to the EPD in accordance with the National Oil Spill Response Plan and its Appendices any of the following:

    a. Discovery by owners and operators or others of a release of product at the site;

    b. Malfunctioning of release detection equipment, unless it is found that there are no leaks but the equipment was defective and immediately repaired; or

    c. Instances where monitoring results indicate the presence of product.

2. Where the EPD or other party observes or has valid reason to suspect offsite contamination, owners and operators of tanks must investigate whether or not tanks on site are the source of contamination of offsite lands and structures. Investigation should be in accordance with the following:

    a. Test of systems on site to identify if a leak exists anywhere in the tank or piping :-

        i. If a leak is found the tank system must be repaired, replaced or upgraded and cleanup should be conducted in accordance with the National Oil Spill Response Plan and its Appendices. A site check and monitoring of groundwater and soil in locations where contamination is most likely to be present must also be conducted. The sample locations should be selected based on the nature of the product, depth to groundwater and other factors which would assist in identifying the presence and source of the release. The assessment plans must receive a no objection from the EPD prior to commencing an assessment. Finger printing analysis should be conducted on the fuel products stored on site and samples taken from the contaminated site. If the offsite contamination is found to come from the facility the owner operator must also bare the cost of remediating the offsite contamination.

        ii. If no leak is found and there is no evidence of environmental contamination no further tests are required by the owner or operator.

        iii. If no leak is found but there is environmental contamination further investigation is required. The owner or operator should conduct finger printing analysis of the fuel products stored on site for comparison with samples taken from the locations where contamination is most likely to be present. The sample locations should be selected based on the nature of the product, depth to groundwater and other factors which would assist in identifying the presence and source of the release. The assessment plans must receive a no objection from the EPD prior to

commencing an assessment. If finger printing results indicate that the product emanated from the storage facility paragraph 2.a.i. above applies, if not, further testing may be required to rule out historical contamination from previous products. If further tests do not provide evidence linking the product to the storage facility no further action is required by the owner or operator. Further investigation would be required by the authorities.

2. 6 Closure and Decommissioning

2.6.1 General

1. A tank must be closed if:

   a. It is not being operated for its approved purpose for more than 3 months but will be returned to service within 12 months (temporary closure); or

   b. The tank cannot meet the requirements of these guidelines or the owner and operator have no further interest in continuing to use the tank for its approved purpose and empty and close the tank in place or remove it for disposal (permanent closure).

2. When old tanks are to be removed and replaced with new tanks, permanent closure procedures must first be conducted to the satisfaction of the EPD and the Design, Construction and Installation requirements must be met for new tanks.

3. Relocation of tanks from previously approved locations on a site to other locations must be approved by the EPD. Permanent closure procedures must be conducted at the initial site of the tanks and the necessary regulatory approvals and Design, Construction and Installation requirements must be met for the new location of the tank.

4. The American Petroleum Institute (API) Recommended Practice1604 (or the most recent version) for Closure of Underground Petroleum Storage Tanks can be used to meet the Closure and Decommissioning requirements of this guideline. Where the API recommendations requires consultation with regulatory authorities, or there are differences between these guidelines and the API recommendations the EPD should be contacted for clarification.

2. 6.2 Temporary Closure

UST

1. At least one month before an UST is to be temporarily closed for 3 months or more, owners and operators must notify the EPD, in writing, of the intended closure.

2. During the period of temporary closure owners and operators must still obtain their annual license, however, this license can be revoked if the requirements below are not met. In such cases the EPD may also require commencement of permanent closure procedures for the tanks.

3. Owners and operators must continue operation and maintenance of corrosion protection and leak detection systems. If the tank was emptied in accordance with EPD specifications, continued operation of the leak detection systems is not required. Owners and operators must also:

    a. Leave vent lines open and functioning; and

    b. Cap and secure all other lines, pumps and equipment. These should be inspected by a Registered Engineer in Barbados with the requisite educational experience in UST. The Registered Engineer should submit a signed confirmation to the EPD indicating that these requirements were met.

4. When an UST is closed for more than 12 months, the owners and operators must permanently close the UST if tanks cannot meet the requirements of Sections 2.2, 2.3 and 2.4.

5. When an UST is closed for more than 12 months and the owners and operators wish to extend the temporary closure period, the following is required:

    a. the tank must meet the requirements of Sections 2.2, 2.3 and 2.4 to the satisfaction of the Director of the EPD,

    b. at the end of 12 months of closure the owners and operators must complete a site assessment and then apply to the EPD for an extension of the temporary closure period.

2.6.3 Permanent Closure

UST

1. At least one month before an UST is to be permanently closed owners and operators must notify the EPD, in writing, of the intended closure and the proposed date to commence pre-closure activities.

2. Prior to closure owners and operators must:

    a. Empty and clean the tank(s) by removing all liquid and sludge. The liquid and sludge must be disposed of at an EPD authorized site;

    b. Notify the Director of the EPD when the tank is empty to facilitate an inspection; and

c. Perform a site check and monitor groundwater and soil in locations where contamination is most likely to be present. The sample locations should be selected based on the nature of the product, depth to groundwater and other factors which would assist in identifying the presence and source of the release. The assessment plans must receive a no objection from the EPD prior to commencing an assessment. If results indicate that contamination has occurred, owners and operators must conduct a cleanup in accordance with the National Oil Spill Response Plan and its Appendices, if not, no further testing is required.

3. To permanently close a tank, remove the tank from the ground and dispose of it at an EPD approved site or fill the tank with an inert solid material and seal it.

4. If tanks removed from the ground will be stored prior to disposal, they should be clearly labelled with the product they previously contained and the date of removal.

5. Once the closure procedure is completed to the satisfaction of the EPD, a certificate of compliance with closure procedures will be issued to the owners and operators of the tanks.

6. Owners and operators must keep records that document the pre-closure process including the emptying and cleaning of the tank, disposal of the tank where applicable, and the site check and results. These records must be kept for at least 4 years by the owners and operators that closed the tank.

AST

1. At least one month before an above ground tank is to be permanently closed owners and operators must notify the EPD in writing, of the intended closure and the proposed date to commence pre-closure activities.

2. Prior to closure, owners and operators must:

   a. Empty and clean the tank(s) by removing all liquid and sludge. The liquid and sludge must be disposed of at an EPD authorized site and in a manner approved by the Department; and

   b. Perform a site check and monitor groundwater and soil in locations where contamination is most likely to be present. The sample locations should be selected based on the nature of the product, depth to groundwater and other factors which would assist in identifying the presence and source of the release. The assessment plans must receive a no objection from the EPD prior to commencing an assessment. If results indicate that contamination has occurred, owners and operators must conduct a cleanup in accordance with the National Oil Spill Response Plan and its Appendices, if not, no further testing is required.

3. To permanently close a tank, owners and operators should dismantle it and

dispose of it at an EPD authorized site.

4. Once the procedure is completed to the satisfaction of the EPD, a certificate of compliance with closure procedures will be issued to the owners and operators of the tanks.

5. Owners and operators must keep records that document the pre-closure process including emptying and cleaning of the tank, disposal of the tank where applicable and the site check and results. These records must be kept for at least 2 years by the owners and operators that closed the tank.

2.6.4 Changes in Service

1. For tanks to be used for storage of another product, owners and operators must first:

   a. Conduct appropriate closure procedures as described above; **or**

   b. If the tank(s) was closed by a previous owner, provide the EPD with copies of reports of pre-closure process and a copy of the certificate of compliance; and

   c. Obtain the necessary permits/ permissions before putting the tank to new use.

2. The intended new use of tanks must be compatible with the previous use.

3.0 Summary Sheet of Requirements

	Requirements
Installation	
All Tanks	• Obtain necessary approvals from regulatory agencies • Meet the requirements concerning correct installation • Install u**nder-dispenser containment for new** dispensers • Install vapour recovery systems
Reporting	
All Facilities	• Notify the EPD 30 days prior to installing new tanks • After you bring an UST system into use, notify the EPD within 30 days • Notify EPD at least 30 days before temporary /permanently closing an UST • **Report releases in accordance with the National Oil Spill Response Plan**
Spill And Overfill	
All Tanks	• Install overfill protection equipment such as automatic shutoff devices *or* overfill alarms *or* ball float valves • Use correct filling practices • **Inspecting overfill prevention equipment every three years**
Corrosion Protection	
Tanks And Piping in touch with the ground	• Coated and cathodically protected steel ***and*** cathodic protection testing; *or* • Non-corrodible material, such as fiberglass reinforced plastic (FRP) or flexible plastic (piping only); *or* • Steel tank clad or jacketed with non-corrodible material (tanks only) • Cathodic protection systems should be tested within 6 months of installation and every 3 years thereafter • Impressed current systems should be inspected every 60 days
Release Detection	
Underground Tanks	• Monthly monitoring*; *or* • Inventory control plus tank tightness testing (only for 10 years after installation) • Manual tank gauging for tanks with capacity 1,000 gal or less • Annual inspection of release detection system by Registered Engineer • Keep records of calibration, maintenance and repairs of the leak detection systems for at least two (2) years after the work is completed
Repairs	
All Facilities	• Conduct testing within 30 days after repairs to your tank, piping, cathodic protection system, **spill or overfill prevention equipment or secondary containment areas**. • Keep records of repairs to tanks and piping for remaining operating life of tanks
Release Response	
All Facilities	• Take corrective action in response to releases in accordance with National Oil Spill Contingency Plan • Liaise with EPD prior to identifying monitoring sites and conducting site assessments
Closure	
All Facilities	• Properly temporarily close your tanks for no more than 12 months: – obtain annual license – continue operation and maintenance of corrosion protection and leak detection systems **or** empty tanks in accordance with EPD specifications • Permanently close your tanks: – empty tanks in accordance with EPD specifications – notify EPD after tank is empty to facilitate inspection – remove the tank from the ground and dispose of it at an EPD approved site or fill the tank with an inert solid material and seal it – perform site assessments

* Monthly monitoring using one or combinations of; interstitial monitoring, automatic tank gauging, continuous in tank leak detection, ground water monitoring, vapour monitoring