MEMORANDUM

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SUBJECT: GUIDANCE DOCUMENT LPR-SRR-2016-01, Fifth Edition
Storage Tank Program Technical Manual, Volume 1

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Summary:

The Storage Tank Program Technical Manual was first issued on May 9, 1997. This Fifth Edition of the Storage Tank Program Technical Manual describes current DEQ procedures and guidelines for addressing releases of petroleum and regulated substances from storage tanks. The primary focus of this manual is to provide guidance related to the closure, release response and corrective action requirements for Underground and Aboveground Storage Tanks containing petroleum or oil. The procedures are also applicable to regulated Underground Storage Tanks (USTs) containing non-petroleum regulated substances.

Volume 1 of the Fifth Edition replaces Chapter 1 of the Storage Tank Program Technical Manual, Fourth Edition issued in 2011.

Electronic Copy:
An electronic copy of this guidance in PDF format is available for staff internally on DEQNET, and for the general public on DEQ's website at:
http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/PetroleumProgram/GuidanceRegulations.aspx

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STORAGE TANK PROGRAM TECHNICAL MANUAL

VOLUME 1: REGULATORY AND STATUTORY FRAMEWORK FOR STORAGE TANK CLEANUPS

DEQ Guidance Document #LPR-SRR-2016-01

Fifth Edition, March 23, 2016

Commonwealth of Virginia
Department of Environmental Quality

TABLE OF CONTENTS

Fifth Edition Revision: Summary of New Guidance and Changes To Existing Procedures ..... Revision Summary - 1

1.0 Regulatory/Statutory Framework for Storage Tank Cleanups 1

2.0 Definitions 3

3.0 DEQ Regions 6

APPENDICES

Appendix A. Regulated Substance List (Title III List of Lists)

Appendix B. Map of DEQ Regions

Fifth Edition Revision Summary
Summary of New Guidance and Changes to Existing Procedures

The principal change to the manual involves re-formatting from an entire manual to a manual comprised of individual volumes, each of which corresponds with a chapter within the previous edition. Volume 1 of the Fifth Edition of the Storage Tank Program Technical Manual corresponds with Chapter 1 of the Fourth Edition. Minor clarifications were made to definitions for "deferred UST," "partially deferred UST," "heating oil UST" and to the DEQ regional map provided in Appendix B.

INTRODUCTION

This document is the Fifth Edition of the Storage Tank Program Technical Manual which was first issued on May 9, 1997. This edition describes current DEQ procedures and guidelines for addressing releases of petroleum and regulated substances from storage tanks. Procedures contained herein also may be used by staff when addressing oil discharged from sources other than storage tanks. Volume 1: Regulatory and Statutory Framework for Storage Tank Cleanups replaces Chapter 1 of the Fourth Edition of the Storage Tank Program Technical Manual issued May 10, 2011. Earlier revisions and manuals should be used for historical information only.

The procedures and guidelines contained within the Storage Tank Program Technical Manual are intended to: (1) protect human health and the environment within the Commonwealth through efficient and effective response to storage tank releases; (2) promote statewide consistency in the implementation of release response and corrective action; and (3) reduce time and expenses needed to complete release response and corrective action by determining necessary actions (to the extent possible) and by defining the scope of work prior to initiation of that work. The Department is committed to protecting human health and the environment and serving the citizens of the Commonwealth in a timely and efficient manner.

The primary focus of the Storage Tank Program Technical Manual is to provide guidance on closure, release response and corrective action requirements for Underground and Aboveground Storage Tanks containing petroleum or oil. The procedures also are applicable to regulated Underground Storage Tanks (USTs) containing nonpetroleum regulated substances. Since less than one percent of the regulated USTs registered with DEQ contain regulated substances other than petroleum, the manual does not discuss in great detail the specific requirements for non-petroleum regulated USTs. Unless specifically noted otherwise, the regulated UST procedures in this manual apply to both petroleum and non-petroleum regulated substances. Guidelines contained within the Storage Tank Program Technical Manual were also developed to conform with reimbursement guidance to responsible parties. The Virginia Petroleum Storage Tank Fund Reimbursement Guidance Manual is available on DEQ's website at http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/PetroleumProgram/GuidanceRegulations.aspx.

This manual was developed jointly by Central and Regional Office staff members and is intended as a guidance document for DEQ personnel. Consultants and persons in the regulated community also may find this manual a useful resource and is available on DEQ's website at the link above.

1.0 Regulatory/Statutory Framework for Storage Tank Cleanups

During the release response and corrective action process, tank owners, operators, and other responsible persons may have to meet the requirements of many statutes and regulations. DEQ staff members overseeing release response and corrective action need to be cognizant of these requirements. Listed below are short descriptions of some of the statutes and regulations that staff may deal with on a regular basis.

Article 9 of State Water Control Law (Code of Virginia, Section 62.1-44.34:8 through 9) - Article 9 provides DEQ with the authority to: (1) establish technical standards for USTs containing petroleum and regulated substances; (2) require the owner or operator of an UST to take corrective actions for a release of petroleum or regulated substance; and (3) seek recovery of costs incurred for undertaking corrective action or enforcement actions. This statute requires DEQ to promulgate regulations needed to carry out its duties with regard to USTs.

Article 11 of State Water Control Law (Code of Virginia, Section 62.1-44.34:14 through 23) - Article 11 prohibits the discharge of oil into state waters (and upon state lands and into storm drains) and provides DEQ with the authority to require the cleanup of oil discharges from most sources other than USTs covered under Article 9. Under Article 11, operators of certain types of facilities and vessels are required to develop oil discharge contingency plans and demonstrate financial responsibility. Article 11 also requires the Board to develop regulations for aboveground storage tanks. Persons discharging oil into state waters are required to report the discharge and contain and clean up that discharge.

9 VAC 25-580-10, et seq. Underground Storage Tanks; Technical Standards and Corrective Action Requirements - The UST technical regulations address technical standards for UST system design, installation, operation, release detection, and closure. The technical regulations also contain requirements for release reporting, investigating suspected releases, and corrective action. The regulations also require owners or operators of USTs to notify DEQ of the presence of these tanks.

9 VAC 25-120-10 et seq. General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Ground Water Remediation and Hydrostatic Tests - This general permit regulation governs the discharge of wastewater from sites contaminated by petroleum products and some common chlorinated solvents. A previous iteration of the VPDES General Permit Regulation replaced the CAP General Permit Regulation on February 24, 1998.

9 VAC 20-81-10, et seq. Virginia Solid Waste Management Regulations - The solid waste management regulations establish standards for the handling of solid wastes, the disposal of solid waste, and the siting of solid waste management facilities. Staff may interface with the requirement of these regulations when dealing with the management or disposal of petroleum contaminated soil or debris.

9 VAC 20-60-11, et seq. Virginia Hazardous Waste Management Regulations - The Virginia Hazardous Waste Management Regulations provide for the control of all hazardous wastes generated, treated, stored, disposed, or transported within the Commonwealth. Staff may need to consult these regulations or interface with the hazardous waste inspection staff to evaluate if a particular waste (e.g. petroleum contaminated water, used oil) may be a hazardous waste.

9 VAC 25-91-10, et seq. Facility and Aboveground Storage Tank (AST) Regulation - The Facility and AST Regulation establishes requirements for registration, notification, and closure of individual ASTs and facilities within Virginia. This regulation also contains pollution prevention requirements, oil discharge contingency plan requirements, and groundwater characterization study requirements for ASTs and facilities. This regulation consolidates the following repealed regulations: the Oil Discharge Contingency Plan regulation (9 VAC 25-990-10, et seq.), the Facility and AST Registration Requirements Regulation (9 VAC 25-130-10, et seq.), and the AST Pollution Prevention Requirements regulation (9 VAC-25-140-10, et seq.). The authority for most investigative activities and/or remediation involving storage tanks is provided by Article 9, 9 VAC 25-580-10, et seq., and Article 11. Although there are no regulations describing steps to be taken in the assessment and remediation of petroleum releases from

ASTs, exempt USTs, or excluded USTs, there is a statutory requirement for these releases to be addressed (Article 11 for ASTs and exempt USTs; Article 9 for excluded USTs). Since corrective action for the assessment and remediation of petroleum releases is similar regardless of source, the manual uses corrective action guidelines which meet the requirement of the UST Technical Regulation. Regional staff members have the flexibility and authority to evaluate what constitutes reasonable and necessary site-specific corrective action requirements for all regulated substance releases. DEQ Division of Enforcement may enforce reasonable requirements specified by regional staff for Article 9 and 11 releases that have clearly been communicated to the responsible person.

Code of Virginia, § 10.1-1231. Brownfields restoration and land renewal policy and programs. The Commonwealth of Virginia has developed statues and regulations to encourage the remediation of brownfields properties across the state. "It shall be the policy of the Commonwealth to encourage remediation and restoration of brownfields by removing barriers and providing incentives and assistance whenever possible. The Department of Environmental Quality and the Economic Development Partnership and other appropriate agencies shall establish policies and programs to implement these policies, including a Voluntary Remediation Program, the Brownfields Restoration and Redevelopment Fund, and other measures as may be appropriate."

9 VAC 20-160-10 et seq. The Voluntary Remediation Regulation. The Voluntary Remediation Regulation allow owners, operators, or others with interests in a contaminated property to remediate releases of contaminants. DEQ staff will work together collaboratively with persons having sites contaminated by releases from regulated USTs or discharges of oil that are covered by Article 11 of Virginia Water Control Law and/or comingled plumes to complete cleanup in an expeditious manner. Staff will encourage remediation by removing barriers and providing assistance which may include assisting with remedial actions to reach case closure and/or facilitating enrollment into the Voluntary Remediation Program to complete cleanup.

2.0 Definitions

Throughout this manual, the following terms will be used repeatedly. These definitions are provided to allow a greater consistency in their use and interpretation.

Aboveground Storage Tank (AST) - Any one or combination of tanks, including pipes, used to contain an accumulation of oil at atmospheric pressure, and the volume of which, including the volume of the pipes, is more than 90% above the surface of the ground.

Deferred USTs - USTs which are subject to Part VI (Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances), but are deferred from Part II (UST Systems: Design, Construction, Installation, and Notification), Part III (General Operating Requirements), Part IV (Release Detection), Part V (Release Reporting, Investigation, and Confirmation), and Part VII (Out of Service UST Systems and Closure) of 9 VAC 25-580-10 et seq.:

1. Wastewater treatment tank systems (these tanks are not part of a treatment system having or needing a VPDES Permit nor are the contents of these systems discharged to a Publicly Owned Treatment Facility that has a VPDES Permit);
2. UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 USC 2011 et seq.);

3. USTs that are part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50, Appendix A;
4. Airport hydrant fuel distribution systems; and
5. UST systems with field constructed tanks.

Excluded USTs - The types of USTs which meet the definition of UST under Article 9, but are excluded from the requirements of 9 VAC 25-580-10 et seq.

1. Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;
2. Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under §402 and §307 (b) of the Clean Water Act;
3. Equipment or machinery that contains a regulated substance for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
4. UST systems with a capacity of 110 gallons or less;
5. UST systems that contain a de minimis concentration of regulated substance; and
6. Emergency spill or overflow containment USTs that are expeditiously emptied after use.

Exempt USTs - The types of USTs which are exempt from Article 9 of State Water Control Law and the requirements of 9 VAC 25-580-10 et seq.

1. Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. Tank used for storing heating oil for consumption on the premises where stored;
3. Septic tank;
4. Pipeline facility (including gathering lines):
   a. Regulated under the Natural Gas Pipeline Safety Act of 1968 (49 USC § 1671 et seq.);
   b. Regulated under the Hazardous Liquid Pipeline Safety Act of 1979 (49 USC § 2001 et seq.); or
   c. Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in subdivisions a and b above.
5. Surface impoundment, pit, pond, and lagoon;
6. Storm-water or wastewater collection system;
7. Flow-through process tank;
8. Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; and
9. Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

Facility - Any development or installation within the Commonwealth that deals in, stores or handles oil.

Heating Oil - means petroleum that is No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5--light, No. 5--heavy, and No. 6 technical grades of fuel oil including Navy Special Fuel Oil and Bunker C; other residual fuel oils; and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

Heating Oil AST - An AST with a storage capacity of 5,000 gallons or less which contains heating oil that is used to heat the premises where the tank is located.

Motor Fuel - means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine. This definition applies to blended petroleum motor fuels as biodiesel and ethanol blends that contain more than a de minimis amount of petroleum or petroleum-based substance.

Oil - Means oil of any kind and in any form including, but not limited to, petroleum and petroleum by-products, fuel oil, lubricating oils, sludge, oil refuse, oil mixed with other wastes, crude oils and all other liquid hydrocarbons regardless of specific gravity.

Partially Deferred USTs - UST systems that store fuel for emergency power generator use. These USTs are deferred from Part IV (Release Detection) of 9 VAC 25-580-10.

Regulated Substance - an element, compound, mixture, solution, or substance that, when released into the environment, may present substantial danger to the public health or welfare, or the environment (see Appendix A for a list of regulated substances). The term "regulated substance" includes:

1. Any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 USC § 9601 et seq.), but not any substance regulated as a hazardous waste under subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC § 6901 et seq.); and
2. Petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). The term "regulated substance" includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Regulated UST - An UST regulated by and subject to all of the requirements of 9 VAC 25-580-10 (Underground Storage Tanks; Technical Standards and Corrective Action Requirements).

Release - Any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an AST or UST into ground water, surface water or subsurface soils.

Tank - a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g. concrete, steel, plastic) that provide structural support.

Underground Storage Tank (UST) - any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any of the exempt USTs as defined above.

3.0 DEQ Regions

DEQ staff periodically receive calls from responsible persons or consultants requesting phone numbers or addresses of other DEQ Regional Offices. A map of DEQ regions is contained in Appendix B. This map also indicates the address, phone, and fax number for each of the Regional Offices.

Persons submitting documents to DEQ need to be aware that the agency files most documents in an electronic system and thus requests that documents be submitted in an electronic format. DEQ also is in the process of phasing out the use of fax machines. Several DEQ regional offices have general email boxes for the Storage Tank Program and persons submitting electronic files to DEQ are encouraged to utilize these email addresses listed below. Other regions do not, as of this writing, have dedicated general email boxes for the Storage Tank Program. Tank owners/operators and their consultants are encouraged to contact the regional case manager to receive instruction regarding electronic files.

Northern Regional Office – NRORemediation@deq.virginia.gov
Tidewater Regional Office - TRO.Tanks@deq.virginia.gov
Valley Regional Office - VROTanks@deq.virginia.gov

Appendix A

Regulated Substance List (Title III List of Lists)

The Title III List of Lists is an EPA file created in Adobe Acrobat. The List of Lists is included with the technical manual as a separate file in PDF format and may be obtained at EPA's website below.

http://www2.epa.gov/sites/production/files/2015-03/documents/list_of_lists.pdf

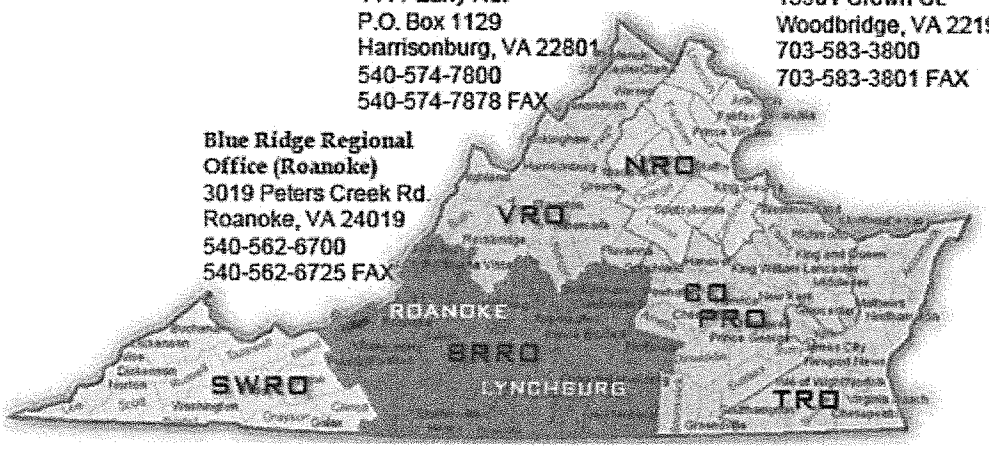
Appendix B

Map of DEQ Regions

Valley Regional Office
4411 Early Rd.
P.O. Box 1129
Harrisonburg, VA 22801
540-574-7800
540-574-7878 FAX

Northern Regional Office
13901 Crown Ct.
Woodbridge, VA 22193
703-583-3800
703-583-3801 FAX

Blue Ridge Regional Office (Roanoke)
3019 Peters Creek Rd.
Roanoke, VA 24019
540-562-6700
540-562-6725 FAX



Southwest Regional Office
355-A Deadmore Street
P.O. Box 1688
Abingdon, VA 24210
276-676-4800
276-676-4899 FAX

Blue Ridge Regional Office (Lynchburg)
7705 Timberlake Rd.
Lynchburg, VA 24502
434-582-5120
434-582-2125 FAX

Piedmont Regional Office
4949-A Cox Rd.
Glen Allen, VA 23060
804-527-5020
804-527-5106 FAX

Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach, VA 23462
757-518-2000
757-518-2103 FAX

Regional Offices		Counties and Cities
Northern Regional Office	**Counties**	Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford, Louisa
	Cities	Alexandria, Falls Church, Fairfax, Fredericksburg, Manassas, Manassas Park
Piedmont Regional Office	**Counties**	Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greensville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland
	Cities	Colonial Heights, Emporia, Hopewell, Petersburg, Richmond.
Blue Ridge Regional Office	**Counties**	Alleghany, Amherst, Appomattox, Bedford, Botetourt, Buckingham, Campbell, Charlotte, Craig, Cumberland, Floyd, Franklin, Giles, Halifax, Henry, Lunenburg, Mecklenburg, Montgomery, Nottoway, Patrick, Prince Edward, Pittsylvania, Pulaski, Roanoke
	Cities	Bedford, Clifton Forge, Covington, Danville, Lynchburg, Martinsville, Radford, Roanoke, Salem
Valley Regional Office	**Counties**	Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren
	Cities	Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester
Southwest Regional Office	**Counties**	Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe
	Cities	Bristol, Galax, Norton
Tidewater Regional Office	**Counties**	Accomack, Isle of Wight, James City, Northampton, Southampton, York
	Cities	Chesapeake, Franklin, Hampton, Newport News, Norfolk, Portsmouth, Poquoson, Suffolk, Virginia Beach, Williamsburg