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west virginia department of environmental protection

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## MEMORANDUM

**TO:** **Regulated** Aboveground Storage Tank (AST) Owners & Operators

**FROM:** West Virginia Department of Environmental Protection  
Division of Water & Waste Management/EE  
Tanks Prevention & Corrective Action Units

**SUBJECT:** AST/LAST Closure Guidance Memo for Level 1 and Level 2 ASTs

**DATE:** **July 2018**

**PLEASE READ ALL DIRECTIONS CAREFULLY. FAILURE TO COMPLY WITH THE LAWS AND/OR REGULATIONS MAY RESULT IN ENFORCEMENT ACTION.**

Closure activities must be performed by a professional engineer, a person certified by API, or a person certified by STI. This guidance applies to Level 1 and Level 2 ASTs. DO NOT add GPS coordinates to the Closure Plan or Closure Report.

### **I) REPORTING CONTAMINATION**

If evidence (visual, olfactory, field screening, analytical data, etc.) of a release is found in the form of contaminated soils, contaminated groundwater, or free product as a liquid or vapor, it is the responsibility of the tank owner/operator to report the release immediately. **ALL RELEASES** must be reported, even if it will be immediately remediated as part of the closure.

Release shall be immediately reported to the WVDEP spill line at **1-800-642-3074**. Additionally, if the release is from a regulated AST, tank owners/operators must report the release to the county or municipal emergency management agencies where the AST is located. Ultimately, the tank owner/operator is responsible for reporting releases; however, the release can be called in by the professional engineer, a person certified by API or STI, or another designee of the owner/operator.

Failure to report a release to the WVDEP is a violation of state regulations and may result in enforcement action. Furthermore, the release may be required to be reported to the National Response Center at (800) 424-8802 due to federal regulatory programs such as Spill Prevention, Control, and Countermeasures (SPCC) and Emergency Planning and Community Right-to-Know Act (EPCRA).

## **II) CLOSURE NOTIFICATION**

Intent to close an AST shall be made at least thirty (30) days prior to the intended closure date by submitting a closure plan to [DEP.AST@wv.gov](mailto:DEP.AST@wv.gov) for review and approval.

Owners/operators shall use the AST Closure Plan Template (refer to Appendix D of the CAGD). A waiver of the thirty (30) day notification period may be granted for good cause shown. Closure sampling shall be performed as soon as possible after the tank closure activities have begun. Sampling must be commenced within 48 hours of starting closure activities. Closure reports are due within sixty (60) days of the closure sampling.

The certified closure person or company representative must contact the WVDEP AST Inspector and Corrective Action Project Manager for the county in which the closure is taking place a minimum of 72-hours prior to commencing closure activities.

It is a violation of 47-63-11 to begin closure activities prior to the approval of the closure plan. Failure to obtain closure approval prior to performing a tank closure may result in enforcement action.

## **III) HANDLING OF TANK CONTENTS, LIQUID CONTENTS/TANK BOTTOMS**

The Division of Water & Waste Management strongly advocates the reuse or recycling of the tank contents. Examples of legitimate recycling is reuse of the material for the purpose it was intended and/or returning the material to a product tank. Prior to disposal, appropriate identification and testing must be performed on all waste material to determine if the material is a hazardous waste (the material may be declared a hazardous waste without testing at the owner's discretion):

- Hazardous Waste
  - Wastes determined to be hazardous wastes must be managed as such in accordance with 40 CFR 262 (i.e. proper containers, labeled as hazardous waste, dated, limited storage times, etc.).
  - Hazardous Waste EPA Identification Number: Each site in West Virginia where hazardous wastes are generated must have an EPA identification number. If the site does not already have a number, a temporary number can be obtained by calling the Division of Water & Waste Management, Office of Waste Management at (304) 926-0495. This number is required to properly ship hazardous waste off-site. Please have the following information before you call:
    - A. Tank owner's name
    - B. Location of the tank(s)
    - C. Amount of waste
    - D. Waste type (benzene, lead, ignitable, etc.)
    - E. Contractor name and phone number
    - F. Transporter's EPA Identification Number
    - G. Name of disposal facility
    - H. Disposal facility's EPA Identification Number

- Industrial Waste (non-hazardous waste):
  - This waste must be disposed of at a facility permitted to accept non-hazardous industrial wastes.
  - A hazardous waste determination documenting the non-hazardous nature of the waste must be documented and available for review.

#### **IV) TANK SYSTEM EMPTIED**

The tank and piping up to the first point of contact must be emptied. The AST system is empty when all materials have been removed using commonly accepted practices. The liquids and tank bottom residues must be removed from the tank by using explosion-proof or air driven pumps for ASTs containing flammable or combustible liquids. Piping should be drained into the tank. It may be necessary to remove the last few inches of liquid from the bottom of the tank with a hand pump or vacuum truck. Safety precautions must be followed (See API 2015, API 2016, and/or NFPA 326).

All regulated ASTs permanently taken out of service should be made incapable of holding liquids for the duration of their permanent closure status. The final disposition/destination of closed tanks (disposal, recycle, inventory, etc.) should be provided in the closure plan. If tanks are left on-site (i.e. closed in place), the tanks should be flanged off or otherwise rendered incapable of holding liquid. The closure plan should describe the methods used to render the tanks unusable for storage of any substance and the methods used to secure the tanks against unauthorized entry. ASTs left on-site are to be legibly marked with information on the last substance stored in the AST, the date of closure, and the words “Permanently Closed”. Alternatively, the emptied and clean AST may be removed from the site for storage for future use or may be sent for disposal or recycling.

#### **V) PURGING OF VAPORS**

The tank must be purged of flammable vapors or inerted, as applicable. This should be done by following procedures removal of vapors outlined in the above reference API and/or NFPA documents. It is important to recognize that the tank may continue to be a source of flammable vapors even after following the vapor freeing procedures. For this reason, caution must be used when working around the tank. Continued vapor monitoring and safe handling and storage procedures must be applied to the tank to protect human health and the environment.

#### **VI) CLEANING**

Closure activities must be performed in accordance with industry standards. Guidance from the American Petroleum Institute (API) and the National Fire Protection Associate (NFPA) may be used to comply with the closure requirements related to tank entry and cleaning.

- API 2015, *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*
- API 2016, *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks*

- NFPA 326, *Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, and Repair*

The tank system must be cleaned by removing all liquids and accumulated tank bottom sludge. Personnel cleaning the tank system shall be adequately trained, outfitted, and familiar with the safety precautions necessary when performing this work. All relevant and applicable OSHA & NIOSH Safety Standards shall be followed while performing closure activities.

## VII) AST RETURNED TO SERVICE

ASTs that have undergone permanent closure may be brought back into service; however, when these tanks are brought back into service it will be considered a “new install”. All requirements for new installs will apply to permanently out of service (POS) tanks being brought back into service.

## VIII) SITE ASSESSMENT AT CLOSURE

The AST closure plan must describe the following:

- List of analytical parameters, based on the substance stored and per WVDEP guidance;
- Personnel conducting the assessment and their qualifications;
- Photos of ASTs, secondary containment, piping, pumps, containment drains, etc., as necessary to clarify closure plan sampling locations and activities.
- Field screening/assessment techniques to be used (visual inspection, field instrumentation, photographs, etc.);
- Sample collection techniques for each analysis type and media;
- Number, depth, type and locations of all samples.
- Proposed sample location map with locations labeled and numbered;
- Examples of any field data collection sheets; and,
- WVDEP Certified Laboratory to be used to analyze samples.  
(<http://www.dep.wv.gov/WWE/Programs/lab/Pages/default.aspx>)

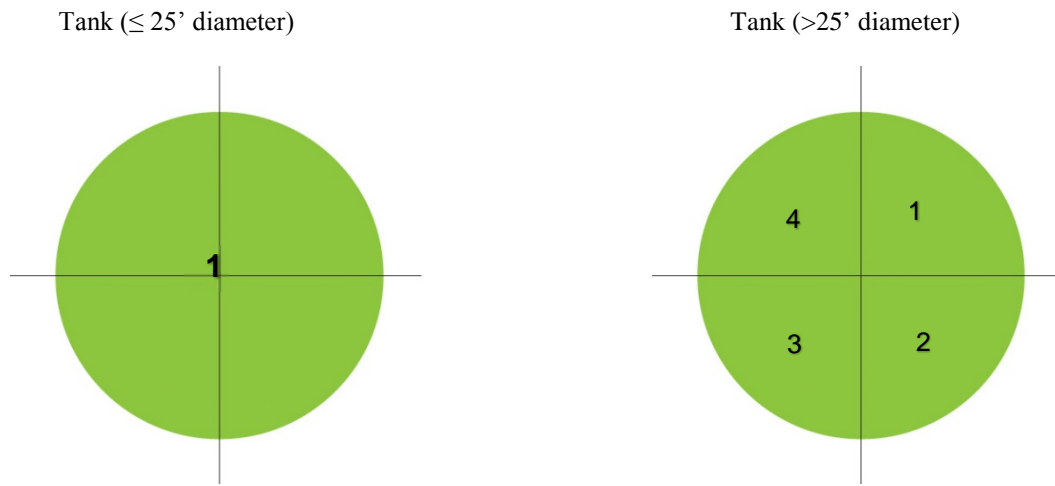
Sampling must be performed to measure for the presence of a release where contamination is most likely to be present. If there is obvious contamination from a release (e.g. stained soils) a sample must be collected from this area. All samples shall be collected from native soil, sampling of non-soil like backfill material is not acceptable. **Sample depths and soil types must be documented** and included in the closure report. If sampling depths are not documented, all data will be compared against the more conservative Tier 1 action level. Closure sampling data must be reflective of the soils remaining at the site (i.e. you can't remove contamination, sample and then put contaminated soil back). At a minimum, samples shall be collected as follows:

**ASTs with a diameter less than or equal to twenty-five (25) feet:**

- Soil samples shall be collected at twelve (12) inches below grade in native soil at the following locations:
  - One (1) sample shall be collected from the native soil below the center of the tank;
  - One (1) sample shall be collected from the lowest elevation inside the secondary containment;
  - One (1) sample shall be taken from below the outfall/valve of the secondary containment drain; and,
  - When necessary, one (1) sample from all areas where obvious contamination is present from a release (e.g. stained soils, dead vegetation).

**ASTs with a diameter greater than twenty-five (25) feet:**

- Soil samples shall be collected at twelve (12) inches below grade in native soil at the following locations:
  - Four (4) samples shall be collected from the native soil below the tank;
  - One (1) sample shall be collected from the lowest elevation inside the secondary containment;
  - One (1) sample shall be taken from below the outfall/valve of the secondary containment drain; and,
  - When necessary, one (1) sample from all areas (inside or outside containment) where obvious contamination is present from a release (e.g. stained soils, dead vegetation).



An owner/operator may propose alternative sampling locations or even propose no sampling based upon site specific conditions. In order to do this, the owner/operator must provide documentation including photos of the ASTs' secondary containment, piping, pumps, containment drains, etc., as necessary to clarify sampling locations or to justify a reason for not sampling (i.e. monolithic concrete secondary containment in good condition).

For the regulated community's convenience due to the prevalence of petroleum related ASTs in WV, the analytical parameters and methods required for various petroleum and other common products

are listed below. Be advised that these are typical analytical parameters; however, the WVDEP may require additional analytical parameters based upon specific site situations as is necessary to properly protect human health and the environment.

**GASOLINE** (leaded gasoline, unleaded gasoline, aviation gasoline, jet fuel, racing fuel, etc.)

- BTEX using SW846 8260
- Tertiary butyl alcohol (TBA) using SW846 8260
- Methyl tertiary butyl ether (MTBE) using SW846 8260
- Lead (as applicable) using SW846 6010

**DIESEL** (diesel, kerosene, fuel/heating oil, lubricating oils, and used oils)

- BTEX using SW846 8260
- Polyaromatic hydrocarbons (PAHs) using SW846 8270
- RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) using SW846 6010, as applicable

*Note: For used oil, metals must be analyzed in addition to the other parameters listed above. Ethylene glycol or a chlorinated solvent scan may be required if the possibility that these compounds have been added to a use oil tank.*

**CRUDE OIL, BRINE, PRODUCED FLUIDS** (crude oil, brine, condensates, etc.)

- BTEX using SW846 8260
- Polyaromatic hydrocarbons (PAHs) using SW846 8270
- Chlorides using SW846 9056

**Caustic Soda (Sodium Hydroxide), Calcium Carbonate**

- pH using SW846 9045

**Hydrochloric Acid**

- pH using SW846 9045

**Glycols (ethylene glycol, propylene glycol, diethylene glycol)**

- Glycols using SW846 8321

**Soil sampling protocol for volatile organics (such as BTEX, MTBE, and TBA) must follow the requirements of SW846 Method 5035 utilizing vials with preservatives for collection of VOCs.**

If you are dealing with chemicals other than the substances listed above, you may contact a TCAU PM if you need to discuss the appropriate parameters and methods for your closure sampling and/or if you have questions concerning sampling locations.

For all samples, the method's detection levels must be less than or equal to the groundwater standards and soil action levels, as appropriate. The samples must constantly be kept cool at 42 degrees F (6 degrees C) and shall be analyzed within 14 days. A properly completed chain of custody form must accompany the sample to the laboratory. The laboratory performing the analysis must be currently certified by the WVDEP Division of Water & Waste Management. When an analytical method is referenced, the most recently promulgated method must be followed.

## IX) REPORTS

The WVDEP AST Closure Report form shall be used for submitting all tank closure reports. All sections of the report are to be completed in their entirety and all applicable attachments submitted with the report. The Closure Report should be sent electronically to [DEP.AST@wv.gov](mailto:DEP.AST@wv.gov) where it will be distributed to the appropriate staff. AST closure sampling shall be performed as soon as possible after the tank closure activities have begun. Sampling must commence within 48 hours of starting closure activities. Closure reports are due within sixty (60) days of the closure sampling. Use the file name format: closure number.tankowner.yyyy.mm.dd (i.e. 2018-CL-001-000999.Acme.2018.07.13).

**ANALYTICAL DATA must be put into** the Table template (if applicable) and show at a minimum the following: sample description, sample depth, analytical parameter, units, sample concentration, and the action level. USE the appropriate DEP Analytical Table for reporting closure sample data. If a table has not yet been developed for your chemicals of concern, the owner/operator may create an appropriate data table and submit it. WVDEP will be adding tables and other forms to the website as they are developed.

The WVDEP AST Closure Report shall be used when filing your AST Closure Report. Below is a list of some items that will need to be addressed in the report:

- Detailed description of tank emptying and cleaning procedures and processes, including methods used, PPE, etc.;
- Describe disposal of the residual material from the tanks;
- Describe disposal of substances used to clean tanks;
- Manifest, bill-of-sale, weigh tickets, destruction certificates, sales receipts, etc., for all material that is disposed of, sold, or repurposed;
- Documentation that all waste deemed hazardous waste (40 CFR Part 261) was managed in accordance with all applicable State and Federal regulations.
- Description of methods used to render tanks unusable for storage of any substance; ,
- Description of methods used to secure tanks against unauthorized entry;

- Final disposition/destination of the tank (disposal, recycle, inventory, etc.), including physical location;
- The type/nature of secondary containment (natural soil, fill, concrete);
- Depth to groundwater, if known;
- Analytical data from the samples compared to WVDEP action levels (utilize WVDEP analytical tables), and;
- Any other factors deemed appropriate for identifying the presence of a release.

## **X) MAINTAINING RECORDS**

Tank owners/operators must maintain the closure record that can demonstrate compliance with these closure requirements.

## **XI) MANAGING CONTAMINATION**

In accordance with requirement of 47CSR63-7.5.b, owners and operators may, in the interest of minimizing environmental contamination and promoting more effective cleanup, begin cleanup before a corrective action plan is requested or approved provided they:

- 1) Notify the implementing agency of their intention to begin cleanup;
- 2) Comply with any conditions imposed by the implementing agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and
- 3) Incorporate these self-initiated cleanup measures in the Closure Report that is submitted to the implementing agency for approval.
- 4) If the owner/operator has received pre-approval at an appropriate landfill for contaminated soil, they may proceed with over excavation and proper disposal of contaminated soils at a WVDEP approved landfill.

The Tanks Corrective Action Unit encourages the tank owner/operator to begin remediation immediately upon the discovery of a release. As such, low impact sites may utilize FastTrack to facilitate efficient remediation by limiting the amount of paperwork necessary to go from a release occurred to the issuance of a No Further Action (NFA) letter. Refer to the Corrective Action Guidance Document for more information on FastTrack. All release **MUST** be reported whether FastTrack is being utilized.

When minor soil contamination is found, it may be appropriate to over-excavate and treat the soil on site in an aboveground bio-pile treatment cell (though off-site disposal is preferred). However, you must receive approval prior to creating a bio-pile for treatment of contaminated soil associated with an AST. The on-site storage and/or treatment of some contaminated soils associated with an AST release would be prohibited by the hazardous waste rules.

*Note: There is no “petroleum exclusion” in the hazardous waste rules associated with ASTs for refined products such as diesel, gasoline, etc., unlike the exclusion afforded to underground storage tanks.*



## **XII. CORRECTIVE ACTION PLANS**

The Tank owner/operator must prepare and submit a Corrective Action Plan (CAP) within ninety (90) days of the approval of the Site Investigation Report when requested by WVDEP. Not all confirmed releases will require submittal of a CAP. In some cases, the contamination at a site may be minor and would not require the submittal of a CAP (i.e. FastTrack) and in other cases the tank owner/operator may choose to use a presumptive remedy instead of submitting a CAP, if appropriate. A “presumptive remedy” refers to a technology or technique where experience has shown the remedy to be a proven solution for specific types of sites and/or contaminant classes. Refer to the Corrective Action Guidance Document for more information on presumptive remedies.

The Agency encourages the use of presumptive remedies. The use of these remedies streamlines the selection of clean up technologies and shifts the time and resources to the actual corrective action process, it improves consistency, reduces costs, and increases the speed at which sites are remediated.