Virginia Polytechnic Institute & State University Blacksburg, Virginia

STANDARD OPERATING PROCEDURES
FOR
GOOD HOUSEKEEPING/POLLUTION PREVENTION

A Programmatic Overview of the Virginia Tech Standard Operating Procedures

June 2016

Note: Refer to any site specific SWPPPs before referencing this manual.

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APPENDICES

ACRONYMS

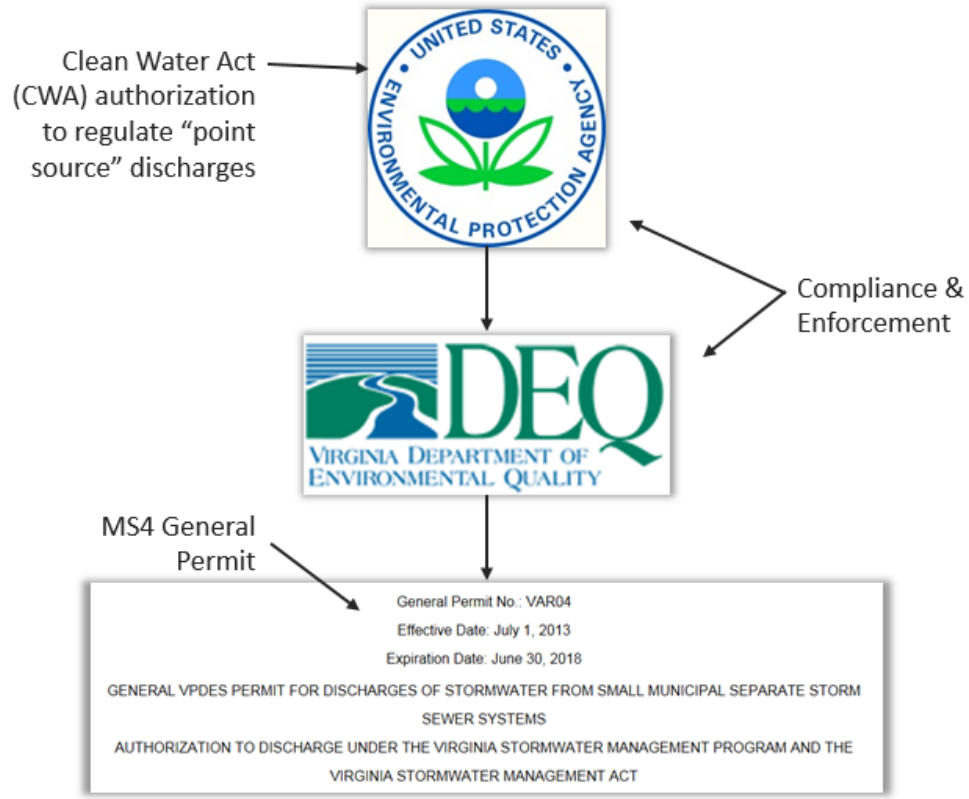
BMP	Best Management Practice
CCA	Chromated Copper Arsenate
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
FLB	Fluorescent Light Ballasts
HID	High Intensity Discharge
VT	Virginia Tech
MCM	Minimum Control Measure
MS4	Municipal Separate Stormwater Sewer System
SDS	Safety Data Sheets
MVAC	Motor Vehicle Air-Conditioning
NMP	Nutrient Management Plan
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated Biphenyls
PCP	Pentachlorophenol
RCRA	Resource Conservation and Recovery Act
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
TCLP	Toxicity Characteristic Leachate Procedure
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION AND PURPOSE

Virginia Tech (VT) staff engage in a variety of activities that have the potential to influence water quality. This manual presents the standard operating procedures which VT will utilize to implement its Good Housekeeping/Pollution Prevention Program. The manual provides a set of written procedures and Best Management Practices (BMPs), which are meant to ensure that VT operations are managed in ways that will minimize pollutants from entering VT's small municipal separate storm sewer system (MS4). The written procedures are required to be developed, implemented, and updated by VT as a condition of VT's MS4 General Permit (MS4 Permit), the permitting mechanism designed to prevent pollutants from entering water bodies through stormwater runoff. The MS4 Permit authorizes stormwater discharges from MS4s to surface waters in urbanized areas of the Commonwealth of Virginia.

The MS4 program is part of the National Pollutant Discharge Elimination System (NPDES), which is authorized through the Clean Water Act (See Figure 1). With delegation from the Environmental Protection Agency (EPA), MS4 permits in Virginia are issued through the Virginia Pollutant Discharge Elimination System (VPDES) and administered by the Virginia Department of Environmental Quality (DEQ).

Figure 1. Generalized depiction of the regulatory framework for the MS4 permit.



VT's Good Housekeeping/Pollution Prevention Manual includes three main components:

- **Documentation and Reporting** – Procedures to document all efforts related to the Good Housekeeping/Pollution Prevention process are outlined in Section 4.0 of this manual.
- **General Maintenance & Operational Procedures** – Standard Operating Procedures for daily maintenance and operational activities observed in VT are outlined in Section 5.0 of this manual.
- **Waste Management & Disposal Procedures** – Procedures for waste management and disposal of pollutants are outlined in Section 6.0 of this manual.

These components work within an overarching MS4 Program Plan that seeks to address the General Permit toward the goal of "closing the compliance loop." They combine and function as a toolset to improve compliance on a site-specific level and create "standards of reducing pollutants to the maximum extent practicable (MEP)." Such an approach is intended to also help create a culture of awareness among VT employees, where actions are taken to prevent pollution, in addition to skillfully and promptly responding to it.

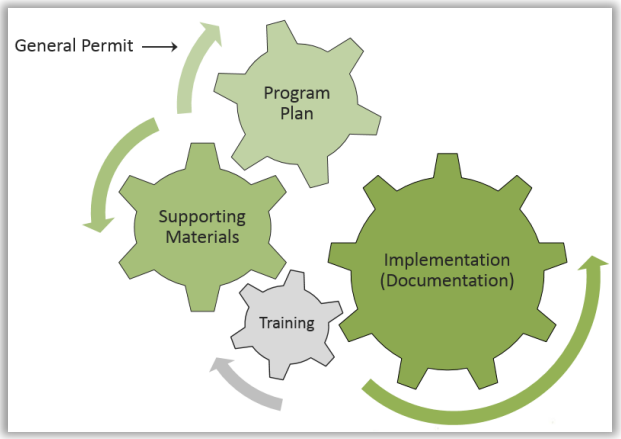


Figure 2. Graphical depiction of MS4 General Permit compliance components.

2.0 GOOD HOUSEKEEPING/POLLUTION PREVENTION TRAINING PROGRAM

VT's MS4 Program Plan requires VT to conduct, or have provided, annual training to applicable field personnel, identified by the Stormwater Compliance Manager, who play a role in the recognition and reporting of Good Housekeeping/Pollution Prevention. As part of VT's Program, this manual serves as training material for annual training to meet the permit requirement.

The written procedures herein serve as the foundation of a successful Good Housekeeping/Pollution Prevention Program that helps VT achieve MS4 Permit compliance. Implementation and documentation of the procedures are critical for achieving the Good Housekeeping/Pollution Prevention Program **goal to eliminate non-stormwater discharges** to VT's storm sewer system and, ultimately, receiving waters. These written procedures are to serve as guidance to all VT-owned properties.

As referenced throughout this manual, the Good Housekeeping/Pollution Prevention Program relies on supplemental materials to assist with implementation and documentation. Applicable field personnel identified for Good Housekeeping/Pollution Prevention training should be familiar with each Section of this Manual and the supplemental materials provided in the Appendices of this Manual.

3.0 DEFINING AND ILLICIT DISCHARGE

The conveyance systems of an MS4 are vulnerable to contamination and can carry pollutants in stormwater runoff to receiving waters or wetlands. Substances other than stormwater that enter receiving waters are considered an illicit discharge. An illicit discharge can be: 1) a measurable flow from a storm drain during dry weather that contains pollutants or pathogens; 2) a unique frequency, composition, or mode of entry in the storm drain system; 3) caused when the sewage disposal system interacts with the storm drain system; and 4) discharges from pollutants from specific source areas and operations known as "generating sites."

For the purposes of VT's Good Housekeeping/Pollution Prevention Program, the VSMP regulation definition for an illicit discharge is generalized as:

> *Illicit Discharge - Any discharge to an MS4 that is not composed entirely of stormwater, except discharges specifically identified in the Virginia Administrative Code and determined not to be a significant contributor of pollutants to the MS4.*

Most sources of an illicit discharge at VT are likely to originate from a generating site or activity, such as a vehicle washing area or maintenance area. These could result from daily practices or from a specific spill incident. Table 1 provides source pollutants that could be generated from areas of VT. Some may originate from the activities of a citizen instead of a municipal activity and should be reported to VT staff.

Table 1. Examples of source pollutants of an illicit discharge.

• Automotive fluids (oil, fuel, antifreeze)	• Landscape waste (grass clippings, etc.)
• Cooking oil and grease	• Improperly applied fertilizer
• Solvents	• Sediment
• Paints	• Vehicle wash water
• Chemical cleansers (detergents, soaps)	• Sanitary sewer wastewaters
• Improperly applied pesticides/herbicides	• Dumpster leachate
• Improperly managed salts	• Trash

The regulations do have exemptions for some non-stormwater discharges. These discharges are not considered illicit discharges if they are not significant contributors of pollutants to VT's MS4. Table 2 includes discharges relevant to VT that are not significant contributors of pollutants and <u>are not considered illicit discharges</u>. If there is uncertainty regarding the source or constituents within an observed discharge, the Stormwater Compliance Manager should be contacted immediately so a determination can be made.

Table 2. Examples of sources that are not considered illicit discharges.

• Fire-fighting activities	• Air conditioning condensate
• Water line flushing	• Footing or foundation drains
• Landscape/lawn irrigation	• Springs
• Diverted stream flows	• Water from crawl space pumps
• Rising groundwater	• Dechlorinated swimming pool wastewater
• Uncontaminated groundwater infiltration	• Discharges from potable water sources
• Uncontaminated pumped groundwater	• Flows from riparian habitats and wetlands

3.1 AWARENESS DURING DAILY ACTIVITIES AND OPERATIONS

Potential illicit discharges can be identified and removed prior to entering the storm sewer through inspection and appropriate follow-up of sources of pollutants that are exposed to precipitation, and subsequently to stormwater runoff. VT maintenance and operations employees are in the best position to identify these pollutants, such as those identified in Table 1. Figure 4 provides several examples of the observations and actions that could prevent an illicit discharge. If the observer is not qualified or appropriately trained to take the appropriate action, or if illegal dumping is observed, notify the Stormwater Compliance Manager or designee.

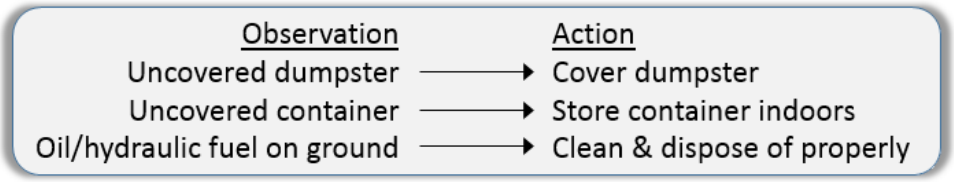


Figure 4. Example daily observations and subsequent actions can prevent an illicit discharge.

4.0 REPORTING PROCEDURES

VT maintenance and operations employees are the first line of defense for preventing sources that could contribute to an illicit discharge. General guidance and steps to clean and contain a spill, release or discharge are provided in Appendix A. Actions that are taken to remove potential sources of an illicit discharge do not need to be reported unless it is suspected an illicit discharge has occurred or is occurring. In this case, the employee needs to report the concern to the Environmental, Health and Safety Services (EHSS) immediately at (540) 231-3600 or online at www.ehss.vt.edu/report_issue. To report a known toxic discharge or dumping activity call the Virginia Tech Police Department at (540) 231-6411.

An illicit discharge or potential source for an illicit discharge may also be reported by other individuals who are not trained or authorized to perform necessary actions, such as residents or contractors. These individuals may recognize a potential illicit discharge after learning about pollution in stormwater runoff through VT's public education and outreach efforts, or by other means. VT stormwater webpage (http://www.ehss.vt.edu/detail_pages/faq_details.php?categories_document_categ1Page=6&faq_id=355) provides reporting information so that the appropriate staff member will be contacted who will subsequently perform the appropriate follow-up action and provided documentation. If an employee is otherwise notified, the appropriate action should be taken. Figure 5 summarizes this procedure. Illicit discharge and reporting information should be kept on file for three years. A spill that is large and potentially hazardous should be reported to the Blacksburg Fire Department by the VT Police Department. The Blacksburg Fire Department can assist in spill response and cleanup.

Contacts:

Emergency: 9-1-1
Virginia Tech Police (Non-Emergency): (540) 231-6411
Blacksburg Fire Department: (540) 961-1175
Environmental, Health and Safety Services: (540) 231-3600
Fire & Life Safety Program Manager: (540) 231-4207
Facilities Services Customer Service: (540) 231-4300
Stormwater Compliance Manager: (540) 231-1788
Hazardous Materials Manager: (540) 231-2982

VDOT and Town of Blacksburg have interconnected MS4's with VT, meaning there is stormwater being conveyed to and from VT property. Any report from either interconnected MS4 of a potential illicit discharge originating from VT should be immediately directed to the Stormwater Compliance Manager or designee for investigation and documentation.

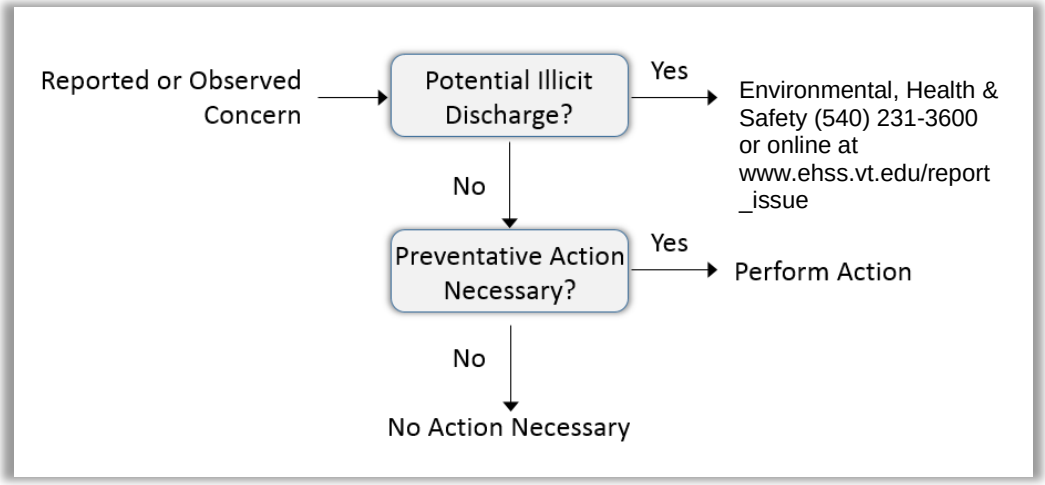


Figure 5. Reporting procedures for VT field staff.

5.0 GENERAL MAINTENANCE & OPERATIONAL PROCEDURES

The following sections review common procedures and operations that take place at specific locations in VT. These operations may generate potential sources of pollutants that can enter and contaminate the stormwater system and the receiving downstream waters. An overview of risk factors associated with each operation is provided, in addition to suggested Best Management Practices to help reduce the potential for contamination. Common types of wastes associated with municipal operations, as well as methods to address them, are described in more detail in Section 6. General guidance and steps to clean and contain a spill, release or discharge are provided in Appendix A.

Note: All staff is responsible for basic visual inspections of any pollutant-causing areas or activities during day-to-day operations.

5.1 VEHICLE WASHING

Improper vehicle washing can introduce a number of compounds into the MS4, including solvents, grease, sediment, and petroleum products as point source pollution (illicit discharge). Washing vehicles near any part of the MS4, including ditches or other conveyances that lead to the storm sewer, may cause these compounds to pollute a nearby water body. **Regular vehicle washing should take place at the Fleet Services Building at the Sterrett Facility for all VT fleet vehicles.**

Best Management Practices

- ✓ Wash in designated wash bays that drain directly to the sanitary sewer.
- ✓ Vehicle washing should take place at Facilities Services designated areas.
- ✓ Wash vehicles on flat and pervious surfaces, such as grass or gravel (only with water- no soap, detergents, waxing, etc.).
- ✓ Use nozzles that automatically turn off water when not in use.
- ✓ If detergents or cleaners must be used, collect wash water and dispose of in the sanitary sewer using berms or pumps. Alternatively, use biodegradable detergents/cleaners and ensure that wash water is directed onto a pervious surface (i.e. grass).
- ✓ If washing is done outdoors on a flat pervious surface, the washing area should be visually inspected after each washing event to ensure that no unexpected pollutant sources are visually apparent in the waste water.
- ✓ Regular inspections should be conducted on wash bays to ensure that applicable components such as sand filters and drainage systems are functioning properly. Report any issues to the site supervisor.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Maintenance should be conducted on applicable wash bay components per the manufactured directions (i.e. sand filters) or on an as-needed basis. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Photo 1: *Fleet Services Wash Bay.*

Commonly Generated Potential Pollutants

- ❖ Vehicle soap
- ❖ Oil and hydraulic residue
- ❖ Sediment

5.2 VEHICLE MAINTENANCE

Vehicle maintenance practices involve a number of solvents, petroleum products, and other toxic compounds that must be stored and handled in accordance with procedures that prevent potential contamination of the MS4 or associated water bodies. **Small or minimal repairs can be performed on-site only if done indoors and proper disposal methods are followed. Large or extensive repairs should be done at the Grounds Facility at the Sterrett Facility Complex.**

Best Management Practices

- ✓ Vehicles should be maintained inside and under cover.
- ✓ Vehicles that are leaking any fluids should be put inside and under cover unless a drip pan can be utilized and emptied into the designated hazardous waste containers.
- ✓ Water used for tire leak detection should be disposed of in the sanitary sewer only.
- ✓ Remove leaking vehicles from service until repaired.
- ✓ Store leaking batteries in a secondary plastic container and store undercover in a designated hazardous waste location until third party contractor picks up. Schedule needed pickup with site supervisor.
- ✓ Apply absorbent on large spill areas and scrub immediately with a broom to encourage absorption. Once absorbed pick up with a flat shovel and dispose of the waste in a plastic bag and secure the bag for disposal in a covered dumpster. If material is hazardous, dispose of in labeled barrels or waste bins. Never hose down the affected area. Prevent fluids from entering the storm sewer by diverting any flows.
- ✓ Maintenance areas should be visually inspected at the end of each working day to ensure that issues are not present that could possibly effect water quality. Areas of concern should be addressed immediately.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Oil and hydraulic fluid
- ❖ Antifreeze
- ❖ Batteries
- ❖ Grease
- ❖ Fuel

Photo 2: *Grounds Facility Maintenance Bay.*

5.3 VEHICLE/EQUIPMENT STORAGE

Vehicles are stored in VT due to seasonal operations such as snow removal, infrequent use, or awaiting maintenance. Vehicles are potential sources of pollutants into the MS4 and other bodies of water, and therefore must be stored appropriately. Maintenance should take place in designated locations indoors or under cover, otherwise special care should be taken to ensure spilled or leaked fluids are contained.

Best Management Practices

- ✓ Store vehicles under cover, if possible.
- ✓ If leaking occurs outside, move vehicles away from storm drains and utilize a drip pan or absorbent material.
- ✓ Leaking vehicles should be placed inside or undercover unless a drip pan can be utilized and disposed of into designated waste containers. Store any used fluids in a recycling drum or water-tight container to be disposed of by Environmental, Health and Safety Services (EHSS).
- ✓ Clean up any observed spills or leaks and address the source. Ensure that parking areas are free of sediment and debris. Street sweep or clean as required to reduce mobilization of materials in stormwater.
- ✓ Regularly inspect individual pieces of equipment.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Maintain spill cleanup supplies near any designated maintenance areas. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Coolant (Antifreeze) – Green
- ❖ Oil – Brown or Black
- ❖ Fuel – Odor
- ❖ Brake Fluid – Clear, Oily, Yellow
- ❖ Power Steering Fluid – Yellow/Brown
- ❖ Transmission Fluid – Oily or Reddish
- ❖ Washer Fluid – Blue

***Photo 3**: Vehicle and equipment storage area at Sterrett Facility Complex.*

5.4 FUELING AREAS

VT utilizes a number of vehicles for operations and maintenance, in addition to other gas-powered equipment. Fuel for fleet vehicles and equipment presents a particularly hazardous set of toxic compounds that can seriously impair the water quality of receiving water bodies if spilled or leaked. Extra care must be taken to ensure that staff are adequately trained to avoid spills, address them if they do occur, and prevent them from entering the storm sewer or any receiving water bodies. Fueling areas open for VT use are available at the Fleet Services Building. Any issues with the fueling equipment should be directed to the Fleet Services Shop Supervisor.

Best Management Practices

- ✓ Refuel vehicles and equipment only in designated fueling areas that are graded away from storm sewer inlets.
- ✓ Fuel station covers should be as large as the grade break or fuel dispensing area with stormwater directed to perimeter drains.
- ✓ Provide spill kits in designated fueling areas and other locations where fueling may occur, such as maintenance facilities.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Gasoline and Diesel Fuel
- ❖ Waste Oil

Photo 4: *Fueling area at the Fleet Services.*

5.5 DUMPSTERS/TRASH CANS-SOLID WASTE COLLECTION AND RECYCLING

Dumpsters and trash cans are potential producers of illicit discharges if polluted materials leak and travel to the storm sewer or receiving water bodies. However, as with other waste and chemical storage, proper storage and careful handling will minimize exposure. Dumpsters and trash cans without lids or covers allow rainwater to mix with the waste inside and produce polluted leachate that could then spill during unloading. Dumpsters and trash cans must also remain in good condition where nothing can leak out of the bottom and possibly contaminate the storm sewer and water bodies.

Best Management Practices

- ✓ Provide only covered containers, rather than those with completely open tops, to reduce the amount of rainwater entering the container.
- ✓ Place trash, recycling, and cigarette butt containers in high traffic areas, common areas, entrances to buildings, and sidewalk entries from parking areas. Increase the number or containers or frequency of emptying if overfilling is an issue.
- ✓ Provide adequate containers at service entrances such that all trash can easily be transferred during day to day cleaning.
- ✓ Provide secure areas for dumpster loading or unloading to prevent tampering, unwanted dumping and damage from other vehicles.
- ✓ If leaks are detected, take measure to ensure materials do not reach storm sewer inlets.
- ✓ Routinely inspect dumpster and trash can lids, as well as other surfaces, for deterioration or malfunction that may cause exposure to stormwater or allow leakage.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Leaks
- ❖ Leachate
- ❖ Trash and Debris

Photo 5: *Dumpsters.*

5.6 CHEMICAL STORAGE

VT has a number of chemicals onsite that are related to routine cleaning and maintenance, and contractors possessing chemicals and chemical-dispensing equipment may also be at VT. All chemicals that could potentially contaminate stormwater and local waterways should be clearly marked and stored in secure locations. Contact the individual facilities for specific chemical SDS information stored at those facilities. Site Supervisors or Department Directors should follow VT's Chemical Waste Program managed by Environmental, Health and Safety Services which can assist with providing guidance for proper containers, storage requirements and proper disposal. Contact Frank Imperatore, Hazardous Materials Manager @ (540) 231-2982 or imperato@vt.edu. For more information, visit the Chemical Waste Program Online http://www.ehss.vt.edu/programs/WCM_program_online.php.

Best Management Practices

- ✓ Plainly label containers that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid responses if a spill occurs.
- ✓ Store materials away from high traffic areas and on structures that keep them from coming in contact with the floor such as wooden pallets.
- ✓ Storage, loading, and unloading areas should be covered or enclosed to reduce potential contact with stormwater.
- ✓ Routinely inspect storage areas for leaks or signs of deterioration that may cause exposure to stormwater or allow leakage.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Solvents
- ❖ Automotive lubricants
- ❖ Pesticides
- ❖ Fertilizer

Photo 6: *Grounds Facility chemical storage room.*

5.7 OUTDOOR LOADING

Outdoor loading areas are potential sources of illicit discharge if polluted materials leak during transport to and from containers and vehicles. Spilled materials can mix with stormwater, so proper storage and handling is necessary to help minimize exposure.

Best Management Practices

- ✓ If possible, perform outdoor loading under a covered structure and in dry weather.
- ✓ Avoid positioning loading areas near storm drains.
- ✓ Grade or berm loading areas so that stormwater drains to a dead-end connection or sanitary sewer, rather than a storm sewer inlet or water body.
- ✓ Address material spills in a timely manner to avoid contact with stormwater.
- ✓ Routinely inspect loading areas for leaks or signs of deterioration that may cause exposure to stormwater or allow leakage.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisors should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Varies based on material being loaded

Photo 7: *Sterrett Facility loading area.*

5.8 OUTDOOR MATERIAL STORAGE

VT has material storage areas outside, and houses substances such as grease, paints, detergents, metals in these locations. These materials must be stored and handled in accordance with procedures that prevent potential contamination of the MS4 or associate water bodies.

Best Management Practices

- ✓ Cover materials with a tarp, if applicable. Secure sides of the tarp with sand bags or other heavier material. Appropriately label the area to indicate the stored materials that are present.
- ✓ Elevate bagged materials on pallets or other mechanism to avoid contact with stormwater runoff.
- ✓ Provide inlet protection in cases where migrating materials may enter storm drains.
- ✓ Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Corroded materials
- ❖ Wood preservatives

Photo 8: *Outdoor material storage at the Sterrett Facility.*

5.9 OUTDOOR MATERIAL STOCKPILING

VT has material stockpiling areas for the storage of bulk materials such as sand, mulch and gravel. These materials must be stored and handled in accordance with procedures that prevent potential contamination of the MS4 or associate water bodies. Long-term stockpiling is any material that will remain on site for more than 14 days.

Short-Term Best Management Practices

- ✓ Consider placing material on top of an impermeable membrane for quick clean-up.
- ✓ If possible, store all bulk material under a covered area or consider placing an impermeable membrane on top of the stockpile and secure with cinder blocks/weight.
- ✓ When utilizing a portion of the stockpile, remove only a section of the protective covering so as to prevent moisture absorption and to minimize exposure to precipitation and wind.
- ✓ Store materials sufficiently away from storm drains or water bodies.
- ✓ Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- ✓ Routinely inspect outdoor material stockpiles for migrating materials.

Long-Term Best Management Practices

- ✓ If possible, store all bulk material under a covered area. For soil stockpiles storage over 14 days, cover with a tarp or provide temporary turf stabilization to prevent erosion.
- ✓ Store materials sufficiently away from storm drains or water bodies.
- ✓ Provide three sided jersey barriers to serve as perimeter controls and sediment barriers. Install addition ESC controls as necessary (i.e. erosion eels, etc.).
- ✓ Provide inlet protection or move stockpile in cases where migrating materials may enter storm drains.
- ✓ Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- ✓ Routinely inspect outdoor material stockpiles for migrating materials.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Photo 9: *Outdoor material stockpiling.*

Commonly Generated Pollutants

- ❖ Migrating bulk materials

5.10 SALT AND GRIT STORAGE

Road treatment materials used during inclement weather, such as deicing salt and sand grit, should be carefully stored and handled to prevent migration into storm drains and waterways. **Salt should not be stored outside, only in designated undercover salt storage areas at the Sterrett Facility and Toms Creek Basin Facility.**

Best Management Practices

- ✓ Storage, loading, and unloading areas should be covered or enclosed to reduce potential contact with stormwater. Non-soluble erodibles should be stored in the designed three sided bay/enclosures and solubles, such as salts, should be stored under cover.
- ✓ Another option for seasonal storage of sand/grit is to cover all outdoor material stockpiling areas with a tarp and secure tarp edges with sand bags or other heavier objects.
- ✓ Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- ✓ During material delivery or loading, immediately clean spilled or tracked materials.
- ✓ Routinely inspect storage areas for migrating materials or deterioration of containment structures.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Salts
- ❖ Sand and sediment

Photo 10: *Salt storage at Sterrett Facility.*

5.11 POWER WASHING

Power washing can concentrate organic sediment, precipitates, surface material, and cleaning solutions into wash water, which is characterized as an illicit discharge if it enters the MS4. Power washing water, cleaning agents, and other compounds should not enter the storm sewer system or water bodies. Care should be taken to prohibit the wash water from flowing into the storm sewer, including roof drains, downspouts, and any other conveyances leading to them. For proper collection and disposal of wasterwater, refer to http://www.ehss.vt.edu/detail_pages/document_details.php?document_id=496.

Best Management Practices

- ✓ Identify storm drains and possible conveyances to storm drains prior to commencing with cleaning or washing, and take measures to prevent wash water from entering them.
- ✓ Use dry cleanup methods to remove debris prior to washing surfaces.
- ✓ Determine where wash water may pool and vacuum up or allow it to evaporate. Leftover material should be cleaned and disposed of in an appropriate manner.
- ✓ Water not containing chemicals or cleaning agents may be allowed to infiltrate in grass or gravel areas. Wash water containing chemical pollutants must be captured and disposed of in the sanitary sewer. Suspended solids and oils must be removed from the wash water using booms, absorbent matting, or other devices.
- ✓ Apply minimal water and prioritize dirty areas rather than cleaning or pressure washing an entire building surface. Before removing graffiti with a power washer, consider painting over it or using *World's Best Graffiti Remover* for bare brick, stone and masonry.
- ✓ Inspect work areas after completion to ensure all potential pollutants have been contained and adequately disposed of.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Sediment
- ❖ Detergents

Photo 7: *Power Washing.*

5.12 PESTICIDES AND HERBICIDES

Grounds and building maintenance crews occasionally use pesticides and herbicides in routine operations, and the mixing and loading of applications into equipment is often in the same area where fueling and maintenance occurs. Consequently, these are the areas where an accidental discharge into the MS4 is likely to occur. Care should be taken to properly store, handle, and apply these chemicals in much the same manner as other hazardous materials, and only adequately trained staff should be responsible for their use. See additional information provided on VT's website concerning pesticides and herbicides http://www.ehss.vt.edu/programs/HCM_pesticides.php#BP. See Section 6.12 for proper disposal of unused pesticides.

Best Management Practices

Application:

- ✓ Pesticide and herbicide application needs to be done by a certified applicator.
- ✓ Pesticides and Herbicides should not be applied near or at water edges, except with VT approved chemicals.
- ✓ Apply herbicides and pesticides only after other, non-chemical approaches fail.
- ✓ Determine which products are the most useful and least environmentally harmful for a given situation and use sparingly and always use, store and dispose of pesticides according to manufacturer's specifications.
- ✓ Use chemical products only during weather conditions appropriate for the application and that will not potentially mix with stormwater in a rain event. Never apply before a predicted rainfall event, during periods of high wind speeds, or within close proximity to surface water.
- ✓ Avoid applying chemicals within 5 feet of pavement, 25 feet of storm drain inlets, or 50 feet from a water body.

Spill Prevention:

- ✓ Spray equipment must be emptied of solutions before and storage.
- ✓ Wash water from application equipment must be disposed of in the sanitary sewer and any leftover material resealed in a container or disposed of properly.
- ✓ Ensure all containers are watertight after each individual use. Store materials in a secure location and keep containers clearly labeled.
- ✓ Routinely inspect storage areas for leaks or signs of deterioration that may cause exposure to stormwater or allow leakage.
- ✓ Provide cleanup supplies near areas of use to facilitate immediate cleanup, if necessary.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

5.13 STREET SWEEPING

Streets and parking areas are prone to collect and concentrate significant amounts of materials that contribute to polluted runoff into storm sewer systems and water bodies. Sediment, debris, trash, automotive fluids, road salt, and trace metals can be minimized by such practices as street sweeping. Standard street sweeping equipment can be employed along curbed streets and parking lots, while smaller equipment can be used to access other hardscape areas that may accumulate sediment and debris. In addition to reducing the chance and severity of polluted discharges into downstream waters, the practice also extends the useful life of stormwater basins by reducing the sediment load.

Best Management Practices

- ✓ Materials collected during cleaning activities should be collected into a temporary stockpile away from watercourses and storm drains. If possible, recycle materials for future repairs, etc. Debris can be hauled to a landfill or disposed of in a covered dumpster.
- ✓ Materials collected during cleaning activities should not be temporarily stored onsite. If stored onsite, dewater the material; and then move the material to a location away from water bodies and drainage systems. Provide perimeter controls at the location until such time that the material can be hauled offsite.
- ✓ Equipment washout areas should be kept clean and inlets free of debris and sediment to prevent bypass. Use the minimum amount of water to wash equipment.

Maintenance Schedule

Maintain equipment per the manufacturer's recommendations. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Sediment
- ❖ Heavy Metals
- ❖ Automotive lubricants

***Photo 8**: Street Sweeper at Sterrett Facility.*

5.14 STORM DRAIN MAINTENANCE

Storm drains are often the point of entry into the storm sewer system, and they need to be cleaned and maintained on a regular basis to reduce the amount of pollution, trash, and debris into receiving water bodies. Storm drains are cleaned annually at VT. Clogged drains can overflow, thereby increasing the volume of water flowing into downstream structures and streams, as well as the chances for damage and erosion.

Best Management Practices

- ✓ Establish a routine inspection schedule for observing structural conditions and for screening potential illicit discharges.
- ✓ Utilize a vacuum truck for emptying materials trapped in drainage inlets and junction sumps or otherwise dispose of materials in accordance with state and federal regulations.
- ✓ Keep impervious surfaces clean of trash, debris, and sediment.
- ✓ Mark drainage inlets to maintain public awareness about illegal dumping.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Trash and debris
- ❖ Sediments
- ❖ Oil and Grease
- ❖ Antifreeze
- ❖ Paints
- ❖ Cleaners and solvents
- ❖ Pesticides
- ❖ Fertilizers
- ❖ Animal waste
- ❖ Detergents

Photo 9: *Leaves in storm inlet.*
[1]http://www.pwcgov.org/government/dept/publicworks/environment/PublishingImages/clogged_basin.jpg

5.15 EXTERIOR BUILDING MAINTENANCE

Maintenance of building exteriors may involve a number of different practices, from cleaning to resurfacing. Pressure washing, for example, can concentrate organic sediment, precipitates, surface material, and cleaning solutions into the wash water, which is characterized as an illicit discharge if it enters the MS4. Care should be taken to prohibit fluids from flowing into roof drains, downspouts, and any other conveyances leading to them.

Best Management Practices

Cleaning:

- ✓ Identify storm drains and possible conveyances to storm drains prior to commencing with cleaning or washing, and take measures to prevent wash water from entering them.
- ✓ Use dry cleanup methods to remove debris prior to washing surfaces.
- ✓ Determine where waste water may pool and vacuum up or allow it to evaporate. Leftover material should be cleaned and disposed of in an appropriate manner.
- ✓ Water not containing chemicals or cleaning agents may be allowed to infiltrate in grass or gravel areas. Wash water containing chemical pollutants must be captured and disposed of in the sanitary sewer. Suspended solids and oils must be removed from the wash water using booms, absorbent matting, or other devices.
- ✓ Apply minimal water and prioritize dirty areas rather than cleaning or pressure washing an entire area.

Painting:

- ✓ When painting, use water-based paints and thinners instead of oil-based whenever possible.
- ✓ Mix paint indoors before starting work to minimize the potential for spills entering the MS4.
- ✓ When using spray paint, use smaller paint containers with high pressure sprayers to minimize waste.
- ✓ Use impermeable drop cloths when painting. Immediately clean up all spills if they occur.
- ✓ Dispose of unused paint through the Hazardous Waste Disposal Program. Allow paint containers to completely dry before disposal.
- ✓ Routinely inspect work areas to ensure proper handling of materials and prevent contact with stormwater.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

Commonly Generated Pollutants

- ❖ Paints & Solvents

5.16 LANDSCAPE MANAGEMENT

Typical landscape maintenance practices can produce stormwater contaminants such as pesticides, soil, fertilizers, and debris which can pollute receiving water bodies. Maintaining an attractive VT landscape can require considerable efforts in pruning, dressing, watering, and fertilizing. Steps can be taken to reduce the harmful effects of these practices on the stormwater system and water flowing into water bodies by reducing the number of inputs and waste, and by keeping maintenance crews adequately trained in best management practices. Currently, waste landscape material is transported offsite to the Toms Creek Basin Facility. For information on properly managing landscaping waste, refer to http://www.ehss.vt.edu/detail_pages/document_details.php?document_id=495 .

Important Note: VT should never apply any de-icing agents containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces.

Best Management Practices

- ✓ Compost lawn wastes and re-till into the soil of planting areas or mix into mulch.
- ✓ Minimize turf areas by planting groundcovers, wildflowers, and shrubs, thereby reducing mowing and water requirements.
- ✓ Select drought and heat resistant turf species, and do not cut turf shorter than 3 to 4 inches. Mower clippings should be left on the turf as a natural fertilizer, and ensure clippings are swept away from paved surfaces.
- ✓ Replace exotic plant species when necessary with regional, indigenous plants, which are typically more water efficient and disease resistant.
- ✓ Utilize low-volume irrigation methods and only water areas as needed to enhance plant root growth and avoid excessive runoff.
- ✓ Avoid stockpiling materials leftover from landscape maintenance. Collected leaf litter and excavated plant matter should be taken to the Toms Creek Basin Facility.

Routinely inspect work areas to ensure materials do not migrate to storm sewer inlets.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable. Site supervisor should retain record of any maintenance work and store on-site alongside this document.

***Photo 10**: Landscaped area*

Commonly Generated Pollutants

- ❖ Sediment
- ❖ Landscape Materials
- ❖ Fertilizers & Pesticides

5.17 ABSORBENT MATTING MAINTENANCE

Absorbent matting is designed to catch oils, fuels, and chemicals from leaking vehicles and equipment to ensure materials do not migrate to storm sewer inlets or directly into water bodies. They are most effective when covered and not directly exposed to precipitation. However, absorbent matting can be used as a temporary best management practice without cover as long as they are frequently inspected and routinely replaced.

Best Management Practices

- ✓ Place absorbent matting directly under leaking vehicles and equipment.
- ✓ For Facilities that do not have a SWPPP, establish a routine schedule for inspecting, cleaning and replacing matting.
- ✓ Wash matting in wash pad or wash bay where the waste water will enter sanitary system.
- ✓ Keep surface of matting clean of trash, debris, stone, and sediment.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Immediately place source controls where the identified issue is a potential concern to water quality. Conduct maintenance on the pollutant source as soon as practicable.

Commonly Generated Pollutants

- ❖ Fuel
- ❖ Oil
- ❖ Hydraulic Fluids
- ❖ Grease

***Photo 11**: Absorbent pad*

6.0 WASTE MANAGEMENT & DISPOSAL PROCEDURE

Responsible management of chemical and material wastes can greatly reduce the amount of pollution in stormwater runoff. The Environmental Health and Safety Services (EHSS) manages the Hazardous Waste Disposal Program for chemicals at VT. The Facilities Management Services manages material wastes. The following sections describe the recommended procedures for managing and disposing of waste materials VT typically may encounter. For any of the materials listed below, always see the Safety Data Sheets (SDS), if available. The Good Housekeeping/Pollution Prevention Manual is not meant to supersede or replace any Safety Data Sheet or manufacturer's instructions or VT's Chemical Waste Disposal Program, but rather supplement them and further reduce stormwater pollution. For Chemical Waste Disposal Procedures visit http://www.ehss.vt.edu/programs/WCM_procedures.php and for information on the disposal of chemical waste, contact VT's EHSS Hazardous Materials Manager, Frank Imperatore at (540) 231-2982 or email imperato@vt.edu. To request a chemical waste pickup submit through the online pickup request system at https://login.vt.edu/profile/cas/login?execution=e1s1.

6.1 CONSTRUCTION WASTES

Debris resulting from construction activities or work of contractor services is typically to be removed by the owner or contractor. These may include landscape and building materials, and removal may be subject to individual permit or contract conditions. There are several designated locations for waste material collection from VT operations, if applicable. Contact the Facilities Department for more information at (540) 231-4300 or vtrepair@vt.edu. A third party vendor may also be contacted for certain materials. Many materials may be classified as hazardous waste and should be handled according to the appropriate section below.

6.2 AEROSOL CANS

Aerosol cans should be properly disposed of as hazardous waste. EHSS should be contracted for disposal. Recycling is also an acceptable route, however cans must be punctured and emptied after final use, and the contents must be separately stored and disposed of as hazardous waste. VT is a small quantity generator of aerosol cans, mainly relating to janitorial services, and is not likely to accumulate the necessary volume to make recycling efficient.

Consider providing either a 55-gallon steel drum, fiber drum, or fiber box for collection of aerosol cans, and this container should be placed at a location central to waste collection and storage of other chemicals. The container should remain closed and labeled as "Aerosol Cans." Once the 55-gallon limit is reached, contact EHSS within three days and have them pick up the container. Maintain records about the disposal vendor and the final destination of the container.

6.3 ANIMAL CARCASSES

Roadside and property management of animal carcasses is generally dictated by the location and situation, with priority given to ensuring public safety by immediately removing the carcass from the area. Carcasses should be disposed of at the Montgomery Regional Solid Waste Authority.

6.4 ANTIFREEZE

Place used antifreeze in a drum or tank and clearly label as "Used Antifreeze." The container should remain closed when not in use and must be in good condition, with no other fluids being added. Contract EHSS to transfer the container offsite when it is full, and maintain records about the disposal vendor and the final destination of the container. The Montgomery Regional Solid Waste Authority will accept antifreeze.

6.5 BATTERIES

Traditional alkaline batteries (AA, AAA, C, D, 9-volt) are not regulated by the EPA and can legally be thrown away with other, non-hazardous waste. However, types of batteries that are classified as Universal Waste and must be collected, stored, and disposed of including: Nickel Cadmium, Nickel Metal Hydride, Lithium Ion, Lithium, Mercury, Silver, Lead Acid, Lead Acid Flooded Cell Batteries, Non-Spillable Lead Acid Batteries, Sodium Batteries, and Potassium Hydroxide. EHSS will pick up universal waste batteries. Complete the Battery and Computer Monitor Pick-up Form http://www.ehss.vt.edu/programs/WBM_pickup_form.php to schedule a pick-up. For questions about specific battery types not listed, call (540) 231-2982.

Recycling vendors are available and may provide a storage container and option to mail the materials to their location, or the batteries can be transported to the nearest recycling facility.

- Batteries to be recycled should be clearly marked as "Waste Batteries" or "Used Batteries."
- The battery collection container should have the date that the first battery is collected marked on the outside. Batteries can be stored in the container for up to one year of the marked date.
- Maintain records for the final destination of the batteries once they leave the site to a recycling facility or vendor.
- Large batteries from vehicles and equipment should be marked with dates they are taken out of service and stored in a protected area and within a secondary containment that is resistant to acid. These batteries are picked for disposal by an outside contractor.

6.6 TREATED LUMBER

The priority for treated timber is to first find potential for reuse in another project. If the materials are being discarded, conditions apply based on the chemicals used to treat the wood.

- Timber Treated with Chromated Copper Arsenate (CCA)**:** The Resource Conservation and Recovery Act (RCRA) exempts CCA treated lumber from hazardous waste regulation as long as the wood is in the same form it was for its intended use. Treated mulch can be taken to the Montgomery Regional Solid Waste Authority. It is designated as construction debris.
- Timber Treated with Creosote: Though not required by EPA regulation on weathered wood, a disposal facility may require Toxic Characteristic Leachate Testing (TCLP) prior to disposal. New creosote treated timber must be tested to determine if it is hazardous prior to disposal. Contact the local hazardous waste authority for further guidance on testing.
- Timber Treated with Pentachlorophenol (PCP): All PCP treated timber must be tested prior to disposal. Contact the local hazardous waste authority for guidance.

6.7 EMPTY CONTAINERS

All empty containers should be properly stored to reduce degradation until such time as they are disposed of properly through VT's Chemical Waste Disposal program. Best practices include keeping the containers closed and storing them together in a covered area. Label the containers as "Empty."

Disposal of empty containers previously storing non-hazardous/non-RCRA materials such as *oils and diesel fuel*:

- Empty the containers. Use absorbents such as rags or oil dry (no liquids) to help capture the remaining material. Dispose of the containers.

Disposal of empty containers previously storing hazardous/RCRA non-acute hazardous materials or wastes such as *gasoline, low flashpoint solvents, and some paints*:

- Empty the containers so that the remaining residue at the bottom is one inch or less. Use absorbents such as rags or oil dry (no liquids) to help capture the remaining material. Dispose of the containers.

Containers not yet disposed of can be kept in a central, secure, storage area. Containers must be closed and clearly labeled "Empty Container – Hazardous Waste" and inspected weekly. Containers can be stored for up to 180 days and disposed of by a hazardous waste hauler. Maintain records from the waste hauler for three years. For more information on authorized empty container disposal options, refer to http://www.ehss.vt.edu/uploaded_docs/201411250902000.Empty%20Chemical%20Container%20Disposal%20Options%20Poster%20Final.pdf.

6.8 E-WASTE (MONITORS AND COMPUTERS)

All computers, monitors, and other electronic waste should be properly disposed of and/or recycled through an electronic waste vendor. Complete the Battery and Broken/Nonworking Monitor pickup request form http://www.ehss.vt.edu/programs/WBM_pickup_form.php and EHSS will pick up and properly dispose of monitors. The Montgomery Regional Solid Waste Authority accepts e-waste.

6.9 FILTERS-OIL, GAS, DIESEL, PAINT

Used filters may either be disposed of as solid waste under the following conditions:

Used Oil Filters

- Oil filters can be disposed of as solid waste when punctured and drained. Drain into an enclosed container labeled "Used Oil." Maintain records of the final destination of the filters from the waste hauler for three years.

Used Diesel Fuel Filters

- Diesel fuel filters can be disposed of as solid waste when punctured and drained. Drain into an enclosed container labeled "Used Diesel Fuel." Maintain records of the final destination of the filters from the waste hauler for three years.

Used Gasoline Filters

- Used gasoline filters may also be managed according to hazardous waste requirements, at or near their point of generation with storage limits up to 55 gallons. Place drained filters into a container labeled "Used Gasoline Filters". Once the 55-gallon threshold is met, the container must be shipped off-site by a hazardous waste hauler. Maintain records of the final destination of the filters from the waste hauler for three years.

6.10 FLUORESCENT LAMPS, HID, AND METAL HALIDE LIGHTS

Types of lamps that are considered as Universal Waste under the Resource Conservation and Recovery Act and must be collected, stored, and recycled include: fluorescent bulbs, high intensity discharge, metal halide, neon, mercury vapor, and high pressure sodium lights.

Lamps may be collected in an empty box the new ones came in. The lights must be securely stored and unbroken. Label the containers as "Waste Lamps" or "Used Lamps" and indicate the date the first lamp was placed there. Broken bulbs must be contained in leak proof containers. For more information, refer to http://www.ehss.vt.edu/detail_pages/faq_details.php?faq_id=270. Check with the Montgomery Regional Solid Waste Authority to see if they will take broken bulbs as well as unbroken.

6.11 FREON

EPA requires service shops to use approved refrigerant recovery equipment for repair of air conditioning systems in motor vehicles. VT technicians using refrigerant recovery equipment must be trained and certified by an EPA-approved organization.

To comply with the requirements, service shops must send the Motor Vehicle Air-Conditioning (MVAC) Certification form to EPA along with the facility name and address, name of equipment manufacturer, equipment model and serial number, and a manufacture date. Maintain records for three years of the technician certifications and the name and address of the reclamation facility.

6.12 PESTICIDES

Herbicides, insecticides and fungicides, etc. are all considered pesticides under EPA regulation. Containers should be stored in a covered area on impervious flooring, and containers should be segregated according to type. Ensure all containers are labeled and kept closed, and remove only the amount expected to use until the container is empty.

Never pour leftover pesticides down the sink, into the toilet, or down a sewer or street drain. Pesticides/herbicides may interfere with the operation of wastewater treatment systems or pollute waterways, where they may harm fish, plants, and other living things.

Empty pesticide containers may be managed as a universal waste and disposed of at the the Montgomery Regional Solid Waste Authority.

Partially Full Containers as Universal Waste

- Pesticides that cannot be completely used and the containers are partially full should be marked as "Waste Pesticide" or "Used Pesticide."
- Contact the local hazardous waste authority or the Virginia Department of Agricultural and Consumer Affairs – Office of Pesticide Services for disposal as solid waste. Maintain a record from the waste hauler for used pesticide containers for three years.

Empty Containers for Disposal or Recycling

- Containers should be rinsed three times with potable water and disposed. Save the rinse water in separate container for future applications. If the rinse water is not reused it must be properly managed. Contact the local hazardous waste authority for guidance on proper disposal.

Partially Filled Containers Returned to the Vendor

- Some vendors may accept returned pesticides. Keep all containers clearly marked with original labeling and contact vendor for proper handling and shipment.

6.13 FLUORESCENT LIGHT BALLASTS (PCB AND NON-PCB)

PCBs or polychlorinated biphenyls can be present in the solid potting material and in the capacitors of fluorescent light ballasts (FLB) manufactured before 1979, and these devices may still be in use with fluorescent lights in buildings from that era[1]. Non-leaking light ballasts are restricted to disposal in sanitary or industrial landfills with leachate collection, liners, and appropriate groundwater monitoring. Montgomery Regional Solid Waste Authority accepts fluorescent lights.

A PCB-containing FLB failure, leak, smoking condition, or fire requires the following:

[1] PCB-containing fluorescent light ballasts that are currently in use have exceeded their designed lifespan and pose significant risk. EPA recommends removing PCB-containing FLBs from buildings as soon as possible to prevent potential inhalation or dermal exposure.

- Isolate the affected area from central ventilation and ventilate the air separately.
- Relocate persons from the affected area.
- Hire experienced cleanup personnel to clean up and decontaminate equipment and surfaces.
- Comply with environmental regulations for proper storage and disposal of contaminated equipment and cleanup materials.

Storage of Non-Leaking Equipment

- Non-leaking equipment can be stored for 30 days, after which point storage is subject to more stringent requirements.
- Dispose of the non-leaking ballasts as a solid waste at the Montgomery Regional Solid Waste Authority.

6.14 MERCURY SWITCHES AND EQUIPMENT

A mercury switch or equipment is any device containing mercury integral to its function (e.g. thermostats, appliances). Spilled or exposed mercury poses significant risk as it can evaporate and become and invisible, odorless and toxic vapor. They are classified as Universal Waste and must be collected, stored, and recycled while intact in the device.

- Collect unbroken mercury switches and equipment in an empty container marked "Waste Mercury Switch/Equipment" or "Used Mercury Switches/Equipment." Mark the outside of the container with the date the first item is placed in the container.
- Store for up to a year in the enclosed container and transfer the materials to a local recycling facility or contact the local hazardous waste authority.
- Maintain a record of the final destination of the equipment for three years.
- If mercury is spilled or exposed, isolate the area and hire experienced professionals to clean up and decontaminate equipment and surfaces.

6.15 OIL, GAS, AND DIESEL WASTE

Waste fuels and oils must be stored in separate, enclosed drums or tanks and clearly labeled as "Used Oil," "Used Diesel Fuel," or "Used Gasoline." Each container should remain closed unless in use and should remain in a covered, secured area. Contact a recycling vendor when the container is full and maintain records from the vendor for three years or dispose at the Montgomery Regional Solid Waste Authority.

Used oil can be burned onsite provided that:

1. Only used oil that the facility generates,
2. The space heater is rated more than 0.5 million Btu/hr., and
3. Combustion gases from the space heater are vented to the ambient air.

If the space heater does not meet all of the above requirements, Part 279, Subpart G of the EPA regulations Standards of Used Oil Burners apply.

6.16 PAINT WASTE-LATEX, SOLVENT BASED/OIL-BASED PAINT

Paints and liquid surface coverings such as polyurethane should be stored in containers that are clearly labeled and remain closed. Store containers in secure, covered area off the floor.

Latex Paint

Latex paint is non-hazardous and its containers may be discarded in regular trash once completely empty and does not contain free liquid. Absorbents can be used to remove any remaining free liquid, or spread the paint on cardboard or newspaper and allow the container to dry completely.

Solvent/Oil Based Paints

These paints—including stains, sealers, and associated thinning agent--should be managed as hazardous waste due to the organic solvents they contain. If minor amounts are leftover and cannot be used, use absorbents to remove any remaining free liquid, or spread the paint onto newspaper or cardboard and allow to dry completely. If the quantity is to large, contact a waste hauler and maintain records from the waste hauler of the disposal for three years.

6.17 PARTS CLEANERS

Low-Flashpoint Solvents

Low-flash solvents contained in parts washers become hazardous waste once the solvent becomes too contaminated to clean effectively. Unless the parts washers are under a regularly-scheduled service agreement, a hazardous waste vendor should be contacted when the solvent becomes ineffective at cleaning.

High Flashpoint Solvents

Waste solvents with a high flashpoint are not typically hazardous and can be recycled, unless the solvent is tested for pH and toxicity and is determined to be hazardous waste. Contact the vendor for related information, or contact a hazardous waste vendor for disposal. Maintain records of the final destination from the waste hauler for three years.

Aqueous Solvents

Waste aqueous solvents are typically not hazardous and can be recycled, unless they have become highly contaminated with materials from the washed parts, such as toxic metals and oils. Unless the spent liquid is tested, it should be assumed that it is hazardous and should be treated as other solvents by a waste vendor. Maintain records of the final destination from the waste hauler for three years.

6.18 RAGS, WIPES, ABSORBENTS

Disposal methods vary for rags, wipes, and absorbents, depending on the type of substance absorbed. They will either fall under the Used Oil Regulation, the Hazardous Waste Regulations, or the Solid Waste

Regulations. The following describe disposal of absorbents used to capture used oil, diesel fuel, and hazardous materials.

Absorbents Used to Capture Used Oil

Waste rags, wipes, and absorbents containing oil (such as motor oil, hydraulic oil, etc.) may be discarded in the trash or laundered at an industrial facility if they are not dripping or completely saturated with oil. Materials that are saturated with used oil should be wrung out or otherwise managed to remove as much free flowing oil as possible. The extracted oil should be contained with other used oil and recycled by a vendor, and the absorbent materials can be discarded in the trash. Maintain records of the final destination of materials that are recycled from the waste hauler for three years.

Absorbents Used to Capture Diesel Fuel

Waste rags, wipes, and absorbents containing diesel fuel may be discarded in the trash or laundered at an industrial facility if they are not dripping or completely saturated with diesel fuel. Materials that are saturated with used oil should be kept in a closed container marked as "Used Absorbents." Contact a used oil vendor when the container is full, and keep records of the final destination from the waste hauler for three years.

Absorbents Used to Capture Hazardous Materials

Waste rags, wipes, and absorbents containing hazardous materials such as gasoline, solvent-based paint, and some solvents and cleaners must be managed as hazardous waste. Collect the materials into a barrel or bucket with a tightly fitting lid and marked as "Waste Absorbents." Contact a hazardous waste vendor when full, and keep records of the final destination from the waste hauler for three years.

6.19 SCRAP TIRES

The primary means of scrap tire disposal is recycling through a registered waste tire hauler or at a scrap tire facility. If tires cannot be recycled they can be taken to the Montgomery Regional Solid Waste Authority. Virginia regulation states that no more than 100 scrap tires may be stored on site at any one time without a Solid Waste Permit. When the tires are transported off the site, keep records of the final destination.

6.20 SOLID WASTE-TRASH

All solid items not recycled or managed as hazardous waste may be considered as solid waste and disposed of using a trash collection service or the Montgomery Regional Solid Waste Authority. Liquids cannot be disposed of in regular trash collection service. Recycling vendors may collect additional liquid wastes that are not listed in this document.

Waste should be collected in bags that are securely closed and transferred to a lidded dumpster in good condition. Loose trash from unsecured collection could blow into stormwater drainage areas or come in contact with stormwater and potentially contribute pollutants into receiving waters.

6.21 SURPLUS AND EXCESS PROPERTY

Materials and property that are no longer in use and stored in VT should be managed carefully so that they are expeditiously transferred to their next user or location. Materials should not be stockpiled in locations where they might deteriorate and potentially cause pollutants to enter the stormwater. Contact Surplus Property at (540) 231-5660 for information about temporary storage of surplus property.

APPENDIX A: Spill Guidance

In the Event of a Spill or Discharge

1. **Contact VT Environment, Health and Safety Services.** Report any spill or discharge immediately to the Environmental, Health and Safety Services (EHSS) immediately at (540) 231-3600 or online at www.ehss.vt.edu/report_issue. To report a known toxic discharge or dumping activity call the Virginia Tech Police Department at (540) 231-6411.

2. **Assess the risk**. When a spill occurs, determine the risks that may affect human health, the environment and the property. This may be done easily in cases where the type of contaminant spilled is known. In situations where the contaminant is unknown, determining risks may involve some investigation. In cases where the chemical is unknown, the spilled material may be identifiable from the container label or the Safety Data Sheet.

3. **Select personal protective equipment (PPE)**. It is crucial that the appropriate PPE is chosen to stop, confine, and clean up the contaminant. Appropriate PPE may be a pair of gloves, eye and foot protection or face masks. If the chemical is not known, consult the Safety Data Sheet, or the chemical manufacturer. If the chemical remains unknown and the risk level uncertain, use the highest level of caution and protection. Refer unknown chemical cleanup to BFD and do not attempt to clean up without appropriate guidance.

4. **Stop the source**. Stopping the source of a spill may involve turning a container upright, plugging a leak or moving an operation. In any case, the source leak or spill should be controlled as quickly as possible.

5. **Confine the spill**. It is crucial to confine the spill before it reaches waterbodies or storm drains. In some cases, this step may need to occur before stopping the source. The proper containment measures necessary should be assessed based on the size and type of the spill. A small spill may be confined with the application of absorbent, whereas a larger spill may require absorbent pads/socks. Spill kits should be utilized where applicable to block nearby storm drains and prevent the movement of the spill. If a large spill of fuel, sewage or other hazardous materials occurs, contact BFD to assist in response and cleanup.

6. **Evaluate the incident and implement cleanup**. Once the spill is stopped and confined, the person responsible for cleanup should develop a plan of action to cleanup the spill. The person conducting the cleanup should make sure that they have enough spill response supplies to adequately deal with the spill. Once the chemical is cleaned up or the absorbents are saturated, they may contain hazardous waste and should be disposed of properly. See the Waste Management and Disposal section of SOP manual for disposal guidance.

APPENDIX B: Reportable Discharge Form