



# **STORMWATER POLLUTION PREVENTION PLAN FOR Main Heating Plant**

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## **APPENDICES**

- Appendix A Standard Operating Procedures for this High Priority Facility**
- Appendix B Annual Comprehensive Site Compliance Evaluation Checklist**
- Appendix C Annual Inspection Reports**
- Appendix D Log of Changes and Updates to SWPPP**

**CERTIFICATION**

I certify that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete.

Authorized By: Peter Kowalzik Title: Heat Plant Manager

Signature:  Date: 1/28/22



## 1.0 INTRODUCTION

### 1.1 Purpose

The University of Virginia (UVA) is subject to a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4). This permit requires that UVA identify high-priority locations requiring Stormwater Pollution Prevention Plans (SWPPP). These plans are designed to minimize or prevent pollutant discharge from daily operations such as road, street, and parking lot maintenance, equipment maintenance, and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

UVA has developed this SWPPP to incorporate the requirements of the MS4 Permit. UVA must identify all municipal high-priority facilities which may include:

- a. Composting facilities;
- b. Equipment storage and maintenance facilities;
- c. Materials storage yards;
- d. Pesticide storage facilities;
- e. Public works yards;
- f. Recycling facilities;
- g. Salt storage facilities;
- h. Solid waste handling and transfer facilities; and
- i. Vehicle storage and maintenance yards.

The primary goals of the SWPPP will be to:

- a. Identify potential sources of pollutants that affect stormwater discharges from this facility;
- b. Describe the practices that will be implemented to prevent or control the release of pollutants in stormwater discharges; and
- c. Create an implementation schedule to ensure that the practices described in this SWPPP are in fact implemented and to evaluate the plan's effectiveness in reducing the pollutant levels in stormwater discharges.

### 1.2 SWPPP Content

This SWPPP includes the following:

- a. A site description that includes a site map identifying all outfalls, direction of stormwater flows, existing source controls, and receiving water bodies;
- b. A description and checklist of potential pollutants and pollutant sources;
- c. A description of all potential nonstormwater discharges;
- d. Written procedures designed to reduce and prevent pollutant discharge;



- e. A description of the applicable training as required;
- f. Procedures to conduct an annual comprehensive site compliance evaluation;
- g. An inspection frequency of no less than once per year and maintenance requirements for site specific source controls. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP;
- h. A log of each unauthorized discharge, release, or spill incident reported in accordance with requirements including the date; material discharged, released, or spilled; and estimated quantity discharged, released, or spilled;
- i. The contents of each SWPPP shall be evaluated and modified as necessary to accurately reflect any discharge, release, or spill from the high priority facility which has been reported. Evaluation shall be completed no later than 30 days after the discharge, release, or spill and if necessary the SWPPP shall be updated no later than 90 days after.
- j. A copy of the SWPPP shall be kept at the plant and shall be kept updated and utilized as part of staff training.

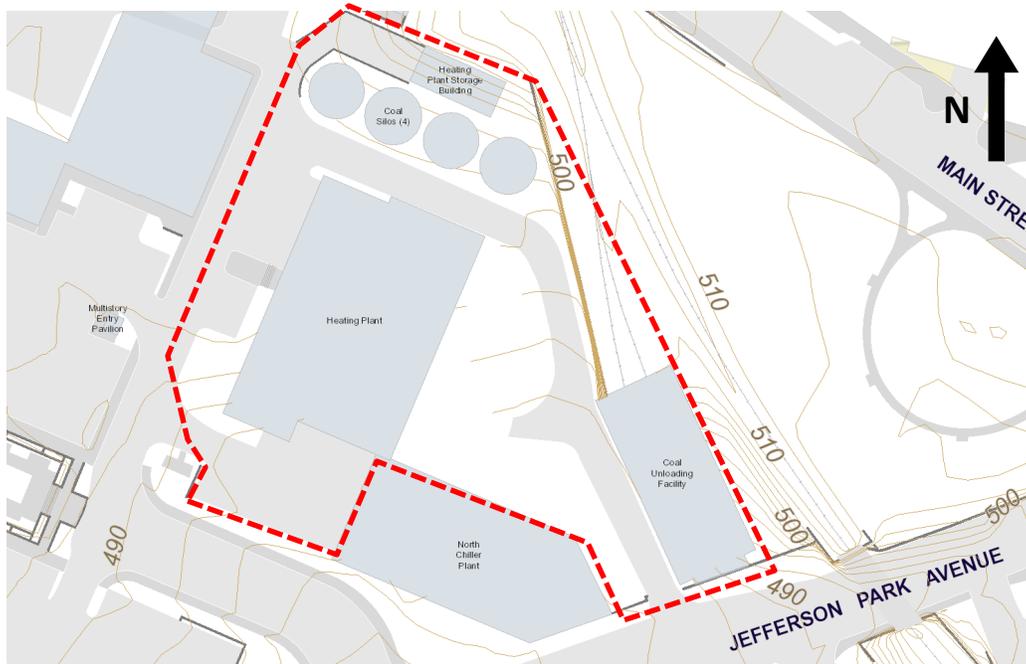
## 2.0 FACILITY INFORMATION

### 2.1 Facility Location

Facility Name:	Main Heating Plant (MHP)
Facility Address:	1321 Lee St, Charlottesville, VA 22903
Facility Acreage:	1.46 acre
University’s Primary SIC Code:	8221
Watershed this facility drains to:	Meadow Creek <input type="checkbox"/>
	Moore’s Creek <input checked="" type="checkbox"/>

### 2.2 Facility Description and Activites

The total area of the site is approximately 1.46 acres. This area is virtually all impervious, consisting of pavement, processing equipment and buildings. The primary building has a footprint of 13,500 square feet. The heat plant boilers are located inside of this building, along with administrative offices, a control room, and other process equipment necessary to produce heat. Directly east of the primary building is an area with a footprint of 6,650 square feet where air pollution control and ash handling activities take place. These structures are open to precipitation and drain to the stormwater system. Further east is a 1,000 SF structure housing an emergency generator and day tank and beyond that is the Coal Unloading Facility, which has a footprint of 5,500 square feet. Four coal silos and a material storage building are located on the north side of the primary building. See Figures 1 and 2.



**Figure 1: Facility Topographic Location Map**



**Figure 2: Aerial Photograph of Site and Vicinity**

UVA operates the MHP to generate steam and hot water. These products are distributed through an underground utility pipe network to supply buildings on grounds for heating purposes. Heat



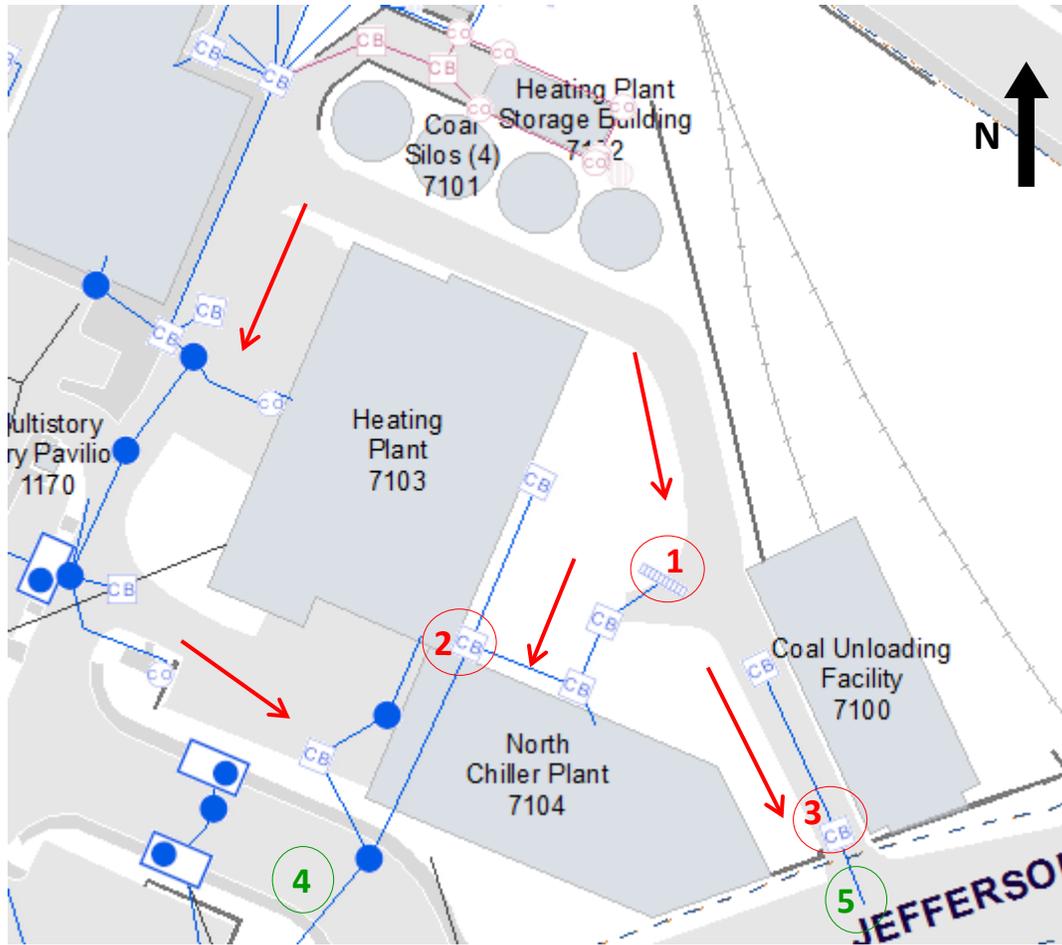
is generated through the combustion of natural gas, ultra-low-sulfur diesel (ULSD) fuel, and coal. Natural gas is directly piped to the plant by the City of Charlottesville. ULSD is delivered by truck and stored in five underground storage tanks (USTs) on-site, one of which serves an emergency generator while the remaining four serve the boilers. Coal is delivered primarily by railcar. Railcar unloading occurs in a closed building with coal conveyed to four storage silos prior to conveyance into the main plant building for burning. Each coal boiler is equipped with a spray dry absorber (SDA) and baghouse for air pollution control. Lime is stored in a silo prior to being mixed into a slurry for injection into the SDAs for acid gas removal. Particulates generated during coal combustion and the salts formed in the SDAs are removed in the fabric filters; this fly ash is conveyed and stored in a silo. Bottom ash (the unburned material in the coal) is conveyed to a silo. Ash is unloaded by truck for off-site disposal or recycling. This facility operates and remains staffed at all times.

The MHP is directly adjacent to the North Chiller Plant. All chiller plant activities take place indoors and are not at risk of impacting stormwater.

### **2.3 Facility Stormwater Drainage System**

Surface runoff from the site generally flows from north to south until intercepted by catch basins and drop inlets as indicated in Figure 3. The University's MS4 connects to the City of Charlottesville's MS4 at points 4 and 5. The City's MS4 discharges stormwater to a tributary of Moores Creek, which is considered impaired by the Virginia Department of Environmental Quality (DEQ).

Most runoff that may potentially carry contaminants flows to the trench drain at point 1 and/or ultimately flows to the catch basin at point 2, where water is intercepted by an inflatable bladder. This water is contained here for observation or testing before allowing the water to pass on to the rest of the storm sewer system.



**Figure 3: Facility Stormwater Drainage System;**  
(General Flow of Stormwater marked with Red Arrows)

## 2.4 Surrounding Land Use

The MHP is located in a highly developed area, located between where Main Street and Lee Street intersect with Jefferson Park Avenue. Directly north of the Heating Plant is a busy commercial strip of restaurants and businesses, known as “the Corner”. To the east of the plant lies a segment of CSX Railroad tracks and beyond this is a small park. Adjacent to the heat plant to the south is the North Chiller Plant. Further south across Jefferson Park Avenue are buildings associated with the UVA Hospital. More hospital buildings and the Medical School building lie to the west of the Heating Plant. This area experiences a lot of vehicle and pedestrian traffic as people access the hospital and commercial facilities nearby.



### 3.0 IDENTIFICATION OF POTENTIAL STORMWATER CONTAMINANTS

This section identifies significant materials located at the high-priority facility that may potentially contaminate stormwater and identifies potential areas for stormwater contamination. Potential non-stormwater sources are also described.

#### 3.1 Potential Pollutants and Pollutant Sources

Materials used by the facility that have the potential to be pollutants are listed in Table 1. This table includes the material description, the source of the potential pollutant, its location, and potential risk.

**Table 1. Checklist of Potential Pollutants and Sources**

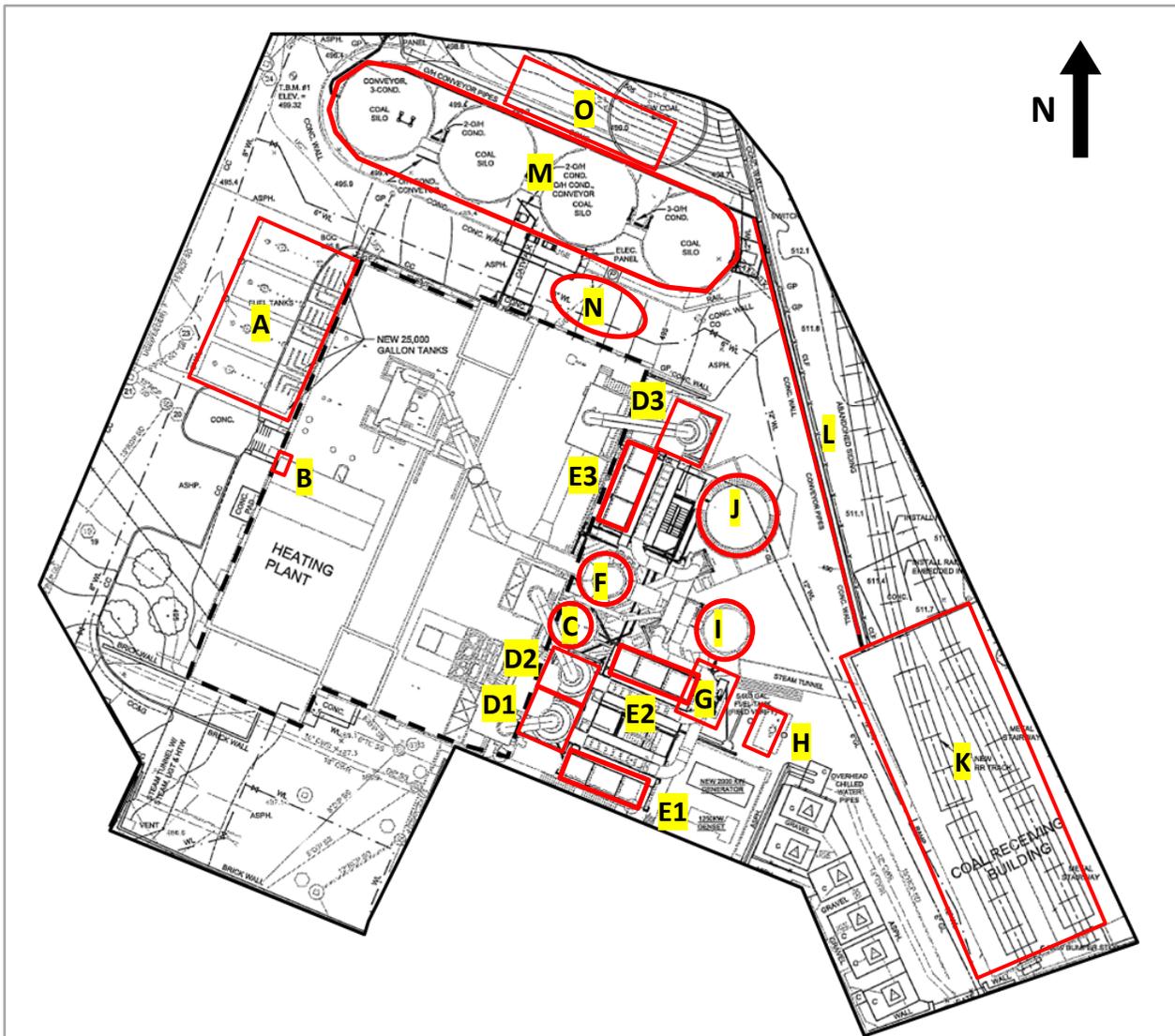
Material/Pollutant	Pollutant Source	Location of Pollutant	Potential Risk and Mitigation
Coal, coal dust	Railroad delivery, screen and crusher, fugitive dust emissions	Coal unloading facility	Low risk – building doors must be closed during operation and crusher vents to filter
Coal, coal dust	Conveyance, Storage I	Conveyors, elevators, storage silos, bunkers	Low risk – conveyance system is fully enclosed or vented thru filters
Bottom ash	Ash loading; fugitive dust emissions	Ash loading area below bottom ash silo	High risk – loaded frequently, outdoors
Fly ash	Ash loading; fugitive dust emissions	Ash loading area below fly ash silo, under SDAs and baghouses	High risk – loaded frequently, outdoors
Pebble Quicklime	Delivery vehicle	Lime Silo	Low risk – outdoor transfer, truck pumps quicklime up to silo via pressure, silo filter is inspected during use
Lime slurry	Spill, leaky equipment	Lime mixing tank, around slurry transfer lines	Medium risk – leaks/spills can reach storm sewer
Lime grit	Spill	Conveyor, storage shed for dumpster	Medium risk – leaks/overflows will reach storm sewer
Process water	Spill	Process water tank	Low risk – covered



<b>Material/Pollutant</b>	<b>Pollutant Source</b>	<b>Location of Pollutant</b>	<b>Potential Risk and Mitigation</b>
contaminated with lime		and associated transfer lines	tank with high level sensor and alarm
Diesel fuel	Delivery vehicles, spill, leaking tank	Underground tanks	Medium risk – infrequent deliveries, fuel stored underground, tanks monitored continuously
Process chemicals, housekeeping supplies, oil/grease for equipment maintenance	Delivery vehicle	Doorways into plant buildings	Low risk – materials stored indoors
Equipment and vehicles	Leak	North and east sides of the main building	Medium risk – Vehicles kept in good repair and receive routine maintenance to minimize risk of leaks.
Designated ash/process waste dumpsters and hoppers	Leak	Throughout the property, near ash and lime silos	Medium risk –hoppers and dumpsters are typically covered or stored under cover, area drains to storm sewers

\*Rather than utilize a traditional checklist to indicate presence or absence of potential risks, this checklist directly identifies pollutants, sources, locations, and the known potential risk.

Spills or fugitive dust from storage and handling of coal and ash can contribute to elevated concentrations in stormwater of total suspended solids (TSS), a pollutant associated with impairments in the Rivanna River and Chesapeake Bay. Runoff that contacts lime products will become basic (high pH), which is harmful to aquatic life in the creeks downstream of the MHP. Figure 4 identifies the location of all activities and materials that are exposed to precipitation or surface runoff and may impact stormwater quality.



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>A. Four 25,000-gallon tanks of ULSD Fuel</li> <li>B. Fuel tank monitor</li> <li>C. Lime storage silo and process water tank</li> <li>D1. Spray Dry Absorber (Boiler 1R)</li> <li>D2. Spray Dry Absorber (Boiler 2R)</li> <li>D3. Spray Dry Absorber (Boiler 5)</li> <li>E1. Baghouse (Boiler 1R)</li> <li>E2. Baghouse (Boiler 2R)</li> <li>E3. Baghouse (Boiler 5)</li> <li>F. Main stack</li> </ul> | <ul style="list-style-type: none"> <li>G. Lime grits storage shed with grit dumpster</li> <li>H. One 5,000-gallon tank of ULSD Fuel</li> <li>I. Bottom ash silo</li> <li>J. Fly ash silo</li> <li>K. Coal Receiving Building</li> <li>L. Coal conveyor</li> <li>M. Four coal silos</li> <li>N. Temporary stockpile location (emergency use only)</li> <li>O. Storage building with spill response kit</li> </ul> |
|--|--|

Figure 4: Locations at MHP that are Relevant to Stormwater Quality



### 3.2 Potential Nonstormwater Discharges

Table 2 below, identifies all nonstormwater discharges as authorized in the general permit that are or will be commingled with stormwater discharges from the high priority facility, including any applicable support activity. Authorized nonstormwater discharges include:

**Table 2. Potential Nonstormwater Discharges**

Nonstormwater Discharges that could be Commingled with Stormwater Discharges at this Facility	Anticipated?	
1. Discharges from firefighting activities	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. Fire hydrant flushing	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
3. Water used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
5. Potable water sources, including uncontaminated waterline flushing	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
6. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
7. Pavement wash water where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled material has been removed prior to washing); where soaps, solvents, or detergents have not been used and where the wash water has been filtered, settled, or similarly treated prior to discharge	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
8. Uncontaminated air conditioning or compressor condensate	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
9. Uncontaminated ground water or spring water	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>



Nonstormwater Discharges that could be Commingled with Stormwater Discharges at this Facility	Anticipated?
12. Landscape irrigation	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

#### 4.0 POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

Each UVA facility that has been identified as a high-priority location must develop and implement written procedures to minimize or prevent pollutant discharge from daily operations, equipment maintenance, and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers. These procedures will be included as part of the employee training.

##### 4.1 Site-Specific Operations

Site-specific Standard Operating Procedures (SOPs) and protocols have been established for daily operations at the MHP that are designed to minimize pollutant discharge to the storm sewer system. A general discussion of the SOPs is found below with copies available on the MHP network. Generic UVA SOPs applicable to the MHP site are addressed in Sections 4.2 and 4.3 and listed in Appendix A.

##### 4.1.1 Diesel Handling

ULSD is delivered by truck and stored on-site in five underground storage tanks (USTs). Four USTs are connected to the boilers via underground piping while one UST serves the emergency generator.

The USTs will be maintained in good working order as required by the State and Federal Regulations governing petroleum underground storage tanks and UVA's Spill Prevention, Control and Countermeasures (SPCC) Plan. Spill and overfill devices will be checked monthly to ensure that they are operational. The spill device will be checked to ensure that it is free of fuel, water, and debris. If it is not, it will be cleaned out. Fuel will be drained into the tank and water or debris will be removed for proper disposal. The Veeder Root leak detection system will be maintained and monitored for proper operation.



### **4.1.2 Coal Handling**

Coal is delivered primarily by railcar but can also be delivered or removed from the site by truck during emergencies. Railcar unloading occurs in a closed building with coal stored in one of four storage silos or bunkers, each equipped with cartridge filters for particulate control. Coal is moved around the plant using completely enclosed conveyance systems. These controls are all required by air permit and are inspected on a weekly basis when in use.

During rare occasions when the plant has a temporary coal stockpile, the pile is kept just moist enough to minimize dust emissions if needed. The pile is removed from the site as quickly as feasible.

### **4.1.3 Pebble Quicklime Handling**

Pebble quicklime is delivered by truck and pumped in a closed pipe to the top of the lime silo. Particulate emissions from filling the silo are controlled by a fabric filter, which is inspected during quicklime unloading operations. A Quicklime Truck Unloading SOP has been developed to establish best management practices for this activity.

### **4.1.4 Lime Slurry Handling**

Pebble quicklime is mixed with water to make a slurry that is used in the SDAs to treat boiler emissions. Slaking and slurry storage operations are housed within the lime silo shell. Slurry is recirculated through pipes and hoses between the storage tank and the SDA penthouses for injection.

At the end of the coal burning season and occasionally during it, the lime slurry system is rinsed. This rinse water and any wash water used to clean the lime silo and SDA penthouses is stored in the process water tank. Due to its high pH, this wastewater cannot be discharged to the sanitary sewer. Instead, it is used for dust control during ash unloading operations, hauled directly to the Moores Creek Advanced Water Resource Recovery Facility or disposed by a private contractor.

On rare occasion, a hose or connection has failed resulting in a lime slurry spill. Some of the steps taken to prevent or minimize the impacts of lime spills include:

- Scheduled replacement of lime slurry suction and penthouse hoses on an annual basis;
- Sealing of SDA penthouse floor openings; and
- Monitoring and alarms within the system, such as level sensors in the lime silo sump and process water tank, to promptly identify and respond to slurry handling problems.



#### **4.1.5 Lime Grits Handling**

During the slaking process, a byproduct of unreacted limestone, referred to as lime grits, is generated. Grits are screened out of the slurry and transferred from the lime silo by covered screw conveyor to a dumpster where they are dewatered. The collected water is pumped back to the grit screen and slurry tank in the lime silo. Grits are disposed with the fly ash, which is hauled away about three to five times a week during coal fire operations. The secondary containment chamber is emptied at the end of the coal burning season.

The lime grits dumpster is housed in a storage shed equipped with secondary containment. The shed door is kept closed to keep out precipitation except when open for unloading operations. Regular inspection of the lime grits handling process is conducted as part of the daily rounds.

#### **4.1.6 Ash Unloading Operations**

Bottom ash is the non-combustible material in the coal that remains after passing through the boiler. Particulates generated during coal combustion and the salts formed in the SDAs are removed in the fabric filters and are referred to as fly ash. Ash is moved in completely enclosed conveyance systems to silos equipped with cartridge filters for particulate control. The cartridge filters are required by air permit and are inspected on a weekly basis. While there is a silo designated separately for fly ash and bottom ash, both silos can accept either type of ash.

MHP staff follow the Flyash Silo Unloading Process and Bottom Ash Silo Unloading Process SOPs. Ash is wetted with liquids from the process water tank and/or City water as it is unloaded into trucks to minimize fugitive dust emissions. Any material on the ground should be swept and vacuumed up and disposed of in the ash truck. Fly ash is currently used as landfill beneficial cover, and bottom ash is used for making cement.

#### **4.1.7 Stormwater Runoff Checks**

An inflatable bladder is inserted into a storm pipe at the MHP that collects runoff from the pavement under and around the MHP air pollution controls systems, lime silos, and ash silos where residual spilled materials or settled fugitive dust could wash off during rain events. This bladder provides containment to evaluate the collected stormwater runoff for contamination prior to discharge and to capture potential dry weather spills. Regular inspection of the inflatable bladder is conducted as part of the daily rounds. If there is a spill or contamination is suspected, the storm manhole contents can be pumped to the process water tank. The MHP Storm Drain SOP provides more detail on this process; a copy is available on the MHP network.

### **4.2 Written Procedures for Operations and Maintenance Activities**



UVA has developed procedures to reduce and prevent pollutant discharge on the site where potential contaminants may be washed into stormwater channels, sewer systems, or ground water. If a procedure is not relevant to the location, a comment has been entered that explains why this procedure is not applicable. In addition to the items noted below, UVA has developed a list of Standard Operating Procedures covering many operations and maintenance activities. The pertinent SOPs are listed in Appendix A and referred to below where applicable. All listed SOPs are available online at:

<https://www.fm.virginia.edu/depts/operations/environmental/procedures.html>.

#### **4.2.1 Prevent illicit discharges:**

An illicit discharge is defined by the EPA as “any discharge to the MS4 that is not composed entirely of storm water, except for discharges allowed under a NPDES permit or waters used for firefighting operations.” MHP staff will maintain clean pavement, keep materials inside or under cover, and contain and report spills that may discharge into the MS4. UVA has an SOP to identify, prevent and report illicit discharges.

#### **4.2.2 Ensure the proper disposal of waste materials, including landscape wastes:**

Process wastes such as lime grits and ash in the storage silos are managed as described in Sections 4.1.5 and 4.1.6. Other small dumpsters and hoppers are located throughout the site for collection of waste products, such as wet ash from the SDAs. These dumpsters/hoppers should be:

- stored inside the building,
- stored in outdoor areas protected from rainfall (e.g., under the air pollution control equipment), or
- covered by a tarp or lid when not in active use.

Receptacles containing ash are emptied into the trucks used to unload the silos.

In addition, there is one municipal waste dumpster that is located off site that is covered with a flip-up top and is regularly emptied by a trash collection truck. Any organic, non-toxic landscaping wastes generated from the site will be sent to the compost area on Observatory Hill. UVA has developed SOPs to ensure the proper disposal of waste materials including an SOP on Waste Management and one on Disposal of Landscape Organic Waste.

#### **4.2.3 Prevent the discharge of wastewater or permittee vehicle wash water or both into the MS4 without authorization under a separate VPDES permit:**

Process wastewater such as excess or spilled lime slurry is managed as described in Section 4.1.4. The pavement under and around the MHP air pollution controls systems, lime silos, and ash silos



is infrequently power washed to remove persistent residual materials. This work is performed in compliance with UVA's SOP on Exterior Surfaces and Building Washing. This washing operation is typically performed in the spring after coal fire operations are done for the winter.

Facilities Management (FM) fleet vehicles (including those assigned to the MHP) are washed at UVA Parking and Transportation, which has its own SWPPP and Industrial Stormwater Discharge Permit, at the FM Yard vehicle wash area which drains to the sanitary sewer, or at a public car wash. UVA has developed an SOP on Vehicle and Equipment Washing which applies to all University-owned vehicles.

#### **4.2.4 Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities:**

No water from utility construction and maintenance activities will be discharged at this site.

#### **4.2.5 Minimize the pollutants in stormwater runoff from bulk storage areas (e.g., salt storage, topsoil stockpiles) using best management practices:**

Bulk storage of distillate oil, coal, ash and lime is done using tanks and silos to minimize the likelihood of these materials coming into contact with stormwater runoff.

#### **4.2.6 Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment:**

The employees of FM who notice any fleet vehicles that are leaking shall report these to the Fleet Manager so that repairs can be made as soon as possible. These vehicles will be taken for maintenance repairs and any spills will be cleaned up following the procedures described in Section 5.0. UVA has developed an SOP on Vehicle and Equipment Maintenance.

#### **4.2.7 Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations.**

UVA has a Nutrient Management Plan which is overseen by the Nutrient Management Plan Program Manager. Certified Applicators of pesticides or fertilizers must be re-certified every two years. For those who are not certified to apply pesticides or fertilizers, they must be trained and supervised by a Certified Applicator.

### **4.3 Written Procedures for Municipal Facility Activities**

Municipal high-priority facilities that have a potential for discharging pollutants are those facilities identified that are not covered under a separate VPDES permit and which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff. These facilities include composting facilities, equipment



storage and maintenance facilities, material storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, and vehicle storage yards.

The nine items below shall be completed to address the methods that will be used at the high-priority location to prevent pollutants from entering the MS4. If an item is not relevant to the location, a comment has been entered that explains why this procedure is not applicable.

#### **4.3.1 Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater:**

Most process chemicals and equipment, including those listed in Table 1, are stored inside the MHP building so they are not exposed to stormwater. No cleaning or washing of machinery or equipment will occur at this location.

#### **4.3.2 Materials or residuals on the ground or in stormwater inlets from spills or leaks:**

Bulk storage of distillate oil, coal, ash and lime is done using tanks and silos to minimize the likelihood of these materials coming into contact with stormwater runoff. All particulate residuals shall be swept up and disposed of into appropriate waste containers. Staff follow the MHP Storm Drain Bag SOP described in Section 4.1.7 to manage stormwater runoff that may have picked up spilled or leaked material. Vehicles and equipment are kept in good repair as described in the Vehicle and Equipment Maintenance SOP. Fluid leaks will be handled according to the specific procedures adapted from UVA's Spill Prevention Control and Countermeasures Plan that are included in this document in Section 5.1.

#### **4.3.3 Material handling equipment (except adequately maintained vehicles):**

Lime, coal and ash conveyance equipment are closed systems with no exposure of materials to stormwater runoff.

Material handling equipment such as forklifts are checked before every use by certified forklift operators. Part of their inspection includes observation for any mechanical problems that may be apparent. If a leak is detected, a temporary drip pan may be used so that liquids can be easily cleaned up until the equipment can be repaired. Material handling equipment is kept in good condition as described in the Vehicle and Equipment Maintenance SOP.

#### **4.3.4 Materials or products that would be expected to be mobilized in stormwater runoff during loading or unloading or transporting activities (e.g., rock, salt, fill dirt):**

Loading, unloading and transporting of distillate oil, lime, coal and ash are conducted as described in Section 4.1 and the corresponding SOPs.

**4.3.5 Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants):**

MHP staff limit materials or products from being stored outside except on a temporary basis until they can be moved to their covered or indoor storage areas.

**4.3.6 Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers:**

Any drums, barrels, and containers with materials or products are in good condition and are stored inside the MHP building so they are not exposed to stormwater.

**4.3.7 Waste material except waste in covered, non-leaking containers (e.g., dumpsters):**

All waste materials will be disposed of into covered dumpsters or containers. As mentioned in section 4.2.2, UVA has developed SOPs to ensure the proper disposal of waste materials including an SOP on Waste Management and one on Disposal of Landscape Organic Waste.

**4.3.8 Application or disposal of process wastewater (unless otherwise permitted):**

Process wastewater is managed in accordance with the procedures and SOPs described in Sections 4.1.4 and 4.1.6.

**4.3.9 Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff:**

No particulate matter from roof stacks or vents is evident in stormwater runoff from this facility.

## 5.0 SPILL PREVENTION AND RESPONSE

Spill response typically involves the remediation of liquids such as hazardous chemicals (e.g., lime) or petroleum fuels; however, the various high-priority facilities at UVA may be responsible for other materials such as salt, fertilizers, or ash.

### 5.1 Spills of Solid Materials

Any ash that spills on the ground during silo unloading operations should be swept and/or vacuumed up and disposed of in the ash truck. If quicklime or fly ash spill underneath the SDAs or baghouses, it should be swept up and stored in the SDA hopper until it can be disposed when



the fly ash silo is unloaded.

## 5.2 Spills of Liquid Materials

Spill response procedures adapted from UVA's SPCC Plan shall be followed in the event of a spill. These procedures are included below.

As soon as a spill is discovered, the initial action should be to protect personal safety and prevent the pollutant from entering nearby drainage ditches or storm water drop inlets. The person observing the spill should take immediate action to prevent further spillage and to confine the spilled material. The general instructions to contain a spill are:

- Observe all applicable safety considerations.
- If possible to do safely, stop the release. This includes shutting appropriate valves, securing pumps, and attempting to plug or cover punctures or gashes in pipes. It may be impossible to stop the spill if the situation creates a high degree of personal danger to the immediate responders.
- Notify a supervisor, Environmental Health and Safety (EHS), and Environmental Resources (See contact information in Section 5.4 below).
- Warn other employees and onsite personnel of the spill by voice or using equipment such as two-way radios or telephones, if available.
- Contain the spill. Use absorbent materials, dirt, sand, or other relatively impervious material to dam up the spill and prevent further flow of the material from the spill area. Spill response materials can be found in the storage building north of the coal silos, shown as structure N in Figure 4.
- Should spillage reach the drainage ditches or storm water drop inlets, use available means to minimize the amount of substance flowing into the ditch or drain and contain the substance at the discharge point.
  - For oil or other floating materials, use hay, straw, or any boom arrangement to confine the spillage.
  - For soluble materials, use chemical absorbent, makeshift dams, or other means of confinement to prevent waterway contamination or the spread of further contamination.
- The person discovering the spill should not undertake burning or chemical treatment of the spill.
- Remain at the scene until EHS or Environmental Resources respond.

## 5.3 Storm Drain Bag

Stormwater runoff may potentially carry contaminants such as ash and lime into the storm sewer. An inflatable bladder or storm drain bag is inserted into the pipe exiting the catch basin shown as point 2 in Figure 3. When properly inflated, the storm drain bag will keep spills or contaminated runoff from leaving the MHP site. An SOP regarding proper use of the storm drain bag is provided



on the MHP network.

## 5.4 Emergency Notification

For any petroleum or hazardous chemical discharge, release, or spill the discoverer must notify his supervisor, EHS, and Environmental Resources as soon as possible after completing initial spill-containment actions. Should the discoverer of the discharge, release, or spill be unable to stop and/or contain the spill, they should immediately notify EHS and Environmental Resources as shown in Table 3. After regular business hours, call Systems Control's 24-hour emergency phone number

**Table 3. Internal Notification**

Title	Normal Business Hours	After Hours
Environmental Health and Safety	(434) 982-4911	(434) 982-4685
FM Service Desk – ask for Environmental Resources	(434) 924-1777	(434) 982-4685

Information to provide includes:

- Location of spill
- Type of material
- Estimated quantity and extent of spill
- A brief description of measures that have been taken to confine the spilled material and prevent further spill

Each discharge, release, or spill will be documented as part of the MS4 Permit and are tracked in the "IDDE and Spill Tracking" spreadsheet for the applicable MS4 Permit cycle. Instead of creating a separate log of these incidents in this SWPPP, the "IDDE and Spill Tracking" spreadsheet is incorporated by reference into this document to serve the purpose to provide the required "log of unauthorized discharge, release, or spill incident." This SWPPP and any applicable SOP will be reviewed after each incident to determine if any updates are needed. If there are no updates noted in either the SWPPP after an incident, it was determined that no update was needed.

## 6.0 EMPLOYEE TRAINING

Training for employees at this high priority facility whose job duties have the potential to impact the environment will be conducted at the frequency described in the employee training plan developed as part of the MS4 Program Plan. Training topics may include the recognition and reporting of illicit discharges, good housekeeping and pollution prevention practices, proper material handling, disposal and control of waste, container filling and transfer, and proper



storage, washing, and inspection procedures, site-specific information contained in the SWPPP, and any associated SOPs that apply to this facility.

Documentation on each training event will include the date, the number of employees attending the training, and the objective, and must be kept for a period of three years after each training event.

## **7.0 FACILITY INSPECTIONS AND PREVENTATIVE MAINTENANCE PLAN**

### **7.1 Annual Inspections**

An Annual Comprehensive Site Compliance Evaluation, using the Checklist found in Appendix B, will be completed approximately one year following the implementation of this SWPPP and annually thereafter. A member of the Environmental Resources team, or a designee, will perform this inspection. The evaluation shall include areas where pollutants could have come into contact with stormwater, areas where leaks or spills occurred from equipment in the past three years, off site tracking of pollutants where vehicles enter and exit the site, the tracking or blowing of materials, evidence of or the potential for pollutants entering the drainage system, evidence of pollutants discharging to surface waters at facility outfalls, and a review of training, routine inspections completed, maintenance performed, and effective operation of stormwater best management practices (BMPs). The inspector will determine if the BMPs are being properly maintained and are effective in reducing stormwater contamination. During the evaluation, the outfalls will also be evaluated for the presence of unauthorized stormwater discharges. Any noncompliance issues observed will be documented in the report and appropriate staff will be notified to resolve the issues. If the facility is found to be compliant, the signed report will state that no issues were found. Findings are included in Appendix C.

### **7.2 Preventative Maintenance**

Site specific source controls are required to be inspected and maintained on a routine basis. In most cases, these processes are managed through FM's computerized maintenance management system, AiM. An inspection and maintenance schedule for these controls is listed below.

- The sedimentation chamber below the train drench (Point 1 in Figure 3) will be cleaned by a vacuum truck every two months during coal operations which typically translates to once each December, February and April. The sediment will be disposed of properly.
- The facility performs other preventive maintenance activities that are tracked through AiM, such as the annual replacement of lime slurry hoses and the weekly cleaning of ash pug mills.



### **7.3 Changes to Site Operations**

During the annual comprehensive site compliance evaluation, the inspectors will also determine if site operations have changed since development of this SWPPP. If operational changes have been made, the SWPPP Team will determine if those changes will impact stormwater quality and if there is a need to develop new BMPs, SOPs, or update the SWPPP to address the change. All operational changes and new BMPs will be recorded in this SWPPP in Appendix D. SOP updates that were completed as a result of site operational changes will be recorded in Appendix D and referenced in the SWPPP where applicable. Additionally, the inspection date, the inspection personnel, the scope of the inspection, major observations, and any needed revisions will be recorded. Revisions to the plan will occur within thirty days after the inspection that identifies the need for revisions.

### **8.0 NOTICE OF PLANNED CHANGES**

If the facility expands, experiences any significant production increases or process modifications, or changes any significant material handling or storage practices which could impact stormwater, the SWPPP will be amended appropriately. The amended SWPPP will have a description of the new activities that contribute to the increased pollutant loading and planned source control activities. The SWPPP will also be amended if the state or federal compliance inspection officer determines that it is ineffective in controlling stormwater pollutants discharged to waters.

Notice of the planned changes to the Department of Environmental Quality is only required when any alteration or addition to a building, structure, facility or installation meets the criteria of a new source, significantly changes the nature or increases the quantity of pollutants discharged, or the changes may result in noncompliance with state permit requirements.

### **9.0 RECORD RETENTION REQUIREMENTS**

Records described in the SWPPP must be retained on site for 3 years beyond the date of the report or monitoring record and shall be made available to the state or federal compliance inspection officer upon request. Additionally, employee training records, monitoring reports, and compliance evaluations shall also be maintained.

## **Appendix A**

### **Standard Operating Procedures for the Main Heating Plant**

## **Main Heating Plant Standard Operating Procedures**

### **Site-Specific SOPs:**

1. Bottom Ash Silo Unloading Process
2. Fly Ash Silo Unloading Process
3. Weekly Fugitive Dust inspection
4. Lime Unloading Process
5. MHP Storm Drain Procedure

The most recent versions of these SOPs are available on the FM network at:

<G:\Heat Plant Admin\Operating Procedures\>

### **Generic UVA SOPs Applicable to the MHP:**

- 1.Exterior Surfaces and Building Washing
- 2.Used Oil Disposal
- 3.Vehicle and Equipment Maintenance
- 4.Waste Management

The most recent versions of these SOPs can be found at the Environmental Resources Website:

<https://www.fm.virginia.edu/depts/operations/environmental/procedures.html>

## **Appendix B**

### **Annual Comprehensive Site Compliance Evaluation Checklist**

## Annual Comprehensive Site Compliance Evaluation Checklist

Date		
Area Inspected	<b>Main Heating Plant</b>	
Inspector's Name and Title		
Have any discharges occurred since the last inspection?		
Activity		Description and Location of Deficiency, Recommended Corrective Actions, and Other Comments/Notes
1. Parking and other paved areas free of signs of spills or leakage from vehicles or equipment.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
2. Site is free of trash or debris.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
3. Areas surrounding the silos, SDAs and baghouses are tidy and free of spills.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
4. Lime grits dumpster is properly positioned on the secondary containment system	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
5. Dumpsters and hoppers are properly covered, if not in active use, or placed under cover to protect from rainwater.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
6. Dumpsters and hoppers are free of visible leaks.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
7. Areas surrounding the five UST fill ports are free of any signs of a diesel spill.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
9. Inflatable bladder is operational and free of tears or damage.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
10. Non-stormwater discharges (e.g. wash water) properly controlled.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
11. Materials that are potential stormwater contaminants are stored inside or under cover.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	

## Annual Comprehensive Site Compliance Evaluation Checklist

Activity		Description and Location of Deficiency, Recommended Corrective Actions, and Other Comments/Notes
12. Materials are contained properly to prevent tracking and blowing.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
13. No evidence of, or potential for, pollutants entering the drainage system. A complete pollutant list is provided in Table 2.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
14. No obvious reoccurrence likely in areas where leaks or spills have occurred within the past 3 years.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
15. Any changes in drainage area conditions or site operations since the last inspection?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
16. Do BMPs appear effective and adequate?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>Describe any incidents of non-compliance not described above and corrective actions taken:</b>		

Signature of Inspector \_\_\_\_\_ Date: \_\_\_\_\_

## **Appendix C**

### **Annual Inspection Reports**

## **Appendix D**

### **Log of Changes and Updates to SWPPP**

## Log of Changes and Updates to SWPPP for the Main Heating Plant

Date	Section and Description	Changes Reviewed By:
11/2018	Updated SWPPP team members in Section 2.0, and phone numbers for spill response reporting in Section 6.5.	Kristin Carter
11/2018	Revised training and inspection schedules in Sections 7.0 and 8.1 to be consistent with the MS4 Permit effective 11/01/18.	Kristin Carter
01/2022	Consolidation of sections 2.0 and 3.4 into other sections, with subsequent renumbering. Updated sections 1.2, 4.1, and 4.2 for consistency with regulatory language. Included direct references to SOPs in sections 4.1 and 4.2 where applicable. Updated section 6.0 to refer to MS4 Program Plan for training frequency. Updated Appendix formatting. Re-ordered Appendices for consistency with order of appearance in document. Removed training sign in sheet from Appendix due to virtual training. Other updates language edits for clarity, consistency with other SWPPP language, and typo corrections.	Kristin Carter

