

J. Sargeant Reynolds Community College

MS-4 Permit: VAR040107

Pollution Prevention / Good Housekeeping

Standard Operating Procedures



Prepared for

J. Sargeant Reynolds Community College, Parham Road Campus

Facilities Management & Planning

1651 E. Parham Road

Richmond, VA 23228

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Prepared by: Timmons Group

1001 Boulders Parkway, Suite 300

Richmond, VA 23225

(804) 200-6500

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1.0 Background Information

Per the requirements of the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 Permit), J. Sargeant Reynolds Community College (JSRCC) is to develop and implement daily good housekeeping procedures, in accordance with Sec. II(B)(6)(a), for all applicable College operations by June 30, 2015.

College operations such as vehicle/equipment storage and maintenance, grounds maintenance, and parking lot maintenance can be a source of stormwater pollution if good housekeeping practices are not being implemented. The Pollution Prevention/Good Housekeeping components of the MS4 Permit require the College to re-evaluate how its infrastructure is managed and develop written procedures that minimize or prevent pollutant discharge from their daily operations. The daily good housekeeping procedures will not only assist JSRCC in meeting the MS4 Permit requirements, but encourage College employees to use best management practices (BMPs) in their daily operations that will improve water quality.

Per Sec. II(B)(6)(a) of the MS4 Permit, the written procedures are designed to minimize or prevent pollutant discharge from daily operations such as (i) road, street, parking lot maintenance; (ii) equipment maintenance; and (iii) application, storage, transport, and disposal of pesticides, herbicides, and fertilizers. These written procedures, at a minimum, are designed to:

- (1) Prevent illicit discharges;
- (2) Ensure the proper disposal of waste materials, including landscape wastes;
- (3) Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit;
- (4) Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit;
- (5) Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities;
- (6) Minimize the pollutants in stormwater runoff from bulk storage areas (e.g. - salt storage, topsoil stockpiles) through the use of best management practices;
- (7) Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment;
- (8) Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations.

2.0 Existing Standard Operating Procedures

JSRCC currently follows several standard operating procedures that meet the requirements of Sec. II(B)(6)(a) of the MS4 Permit. Below is an overview of JSRCC's existing operational procedures outlined under each MS4 Permit requirement.

(1) Prevent illicit discharges

JSRCC prevents illicit discharges through their Illicit Discharge Detection and Elimination (IDDE) Policy and Procedures found in the 2013-2018 Program Plan. Refer to Appendix A for more information about this policy.

(2) Ensure the proper disposal of waste materials, including landscape wastes;

JSRCC implements disposal procedures based on the College's safety data sheets (SDS) in order to properly dispose of chemical waste materials. Refer to Appendix A for more information about this policy.

Additional standard operating procedures to ensure disposal of landscape waste have been developed for implementation and are located in Appendix B.

(3) Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit;

Vehicle wash water standard operating procedures are not applicable to the JSRCC. The College washes all vehicles off campus at a permitted washing facility. Plaques reading "vehicular washing not permitted" will be installed on all outdoor spigots to prevent vehicular washing.

Standard operating procedures to prevent the discharge of College equipment wash water into the MS4 without authorization under a separate VPDES permit have been developed for implementation and are located in Appendix B.

(4) Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit;

To the best of the College's knowledge, there are no cross connections between the storm sewer system and sanitary sewer system. As the College completes pipe maintenance projects throughout the campus, no overflow locations or cross connections have been located. The extent of inflow and infiltration into the sanitary sewer system is unknown.

Standard operating procedures to prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit have been developed for implementation and are located in Appendix B.

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- (5) Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities;

Utility construction and maintenance activities standard operating procedures are not applicable to the College. All water and sewer within the campus are owned and operated by Henrico County.

- (6) Minimize the pollutants in stormwater runoff from bulk storage areas (e.g. - salt storage, topsoil stockpiles) through the use of best management practices;

Additional Standard operating procedures to minimize pollutants in stormwater runoff from bulk storage areas into the MS4 have been developed for implementation and are located in Appendix B.

- (7) Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment;

Standard operating procedures to prevent pollutant discharge from leaking municipal automobiles and equipment into the MS4 have been developed for implementation and are located in Appendix B.

- (8) Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations.

Several BMPs are in place to protect water quality with respect to pesticides, herbicides, and fertilizers. The Facilities Management grounds staff utilizes a nutrient management plan and requires certified applicators. Refer to Appendix A for more information about this policy.

Additional Standard operating procedures to ensure application of materials is conducted in accordance with the manufacturer's recommendations have been developed for implementation and are located in Appendix B.

3.0 Additional Standard Operating Procedures

Though JSRCC currently has several standard operating procedures in place to minimize and prevent pollutant discharges from the campus daily operations, additional procedures have been developed in order to meet all MS4 permit requirements. Refer to Appendix B for JSRCC's additional standard operating procedures.

It should be noted that each standard operating procedure by itself is not intended to meet every requirement per Sec. II(B)(6)(a)(1-8); but the document as a whole meets all requirements listed.

4.0 APPENDIX A – Existing Standard Operating Procedures

The following documents are incorporated into the standard operating procedures by reference to supplement those already in this plan.

- Illicit Discharge Detection and Elimination (IDDE) Policy and Procedures, (MS4 Program Plan)
- Nutrient Management Plan (MS4 Program Plan)
- Safety Data Sheets (College MSDS/SDS Binder)

5.0 APPENDIX B – Additional Standard Operating Procedures

5.1 General Good Housekeeping Practices

Purpose: To protect stormwater from pollutants by implementing general good housekeeping practices.

Practices:

- Do not dispose of leaves, grass clippings, tree trimmings, trash, oil, fuel, sediment, or any other pollutant into a storm drain or water body.
- Keep open, exposed areas clean and protected from precipitation.
- Keep equipment, stockpiles, chemicals, paints, etc. covered.
- Post signs and labels in problem areas and areas with hazardous materials.
- Consider additional control measures in conjunction with coverings; including curbing, grading, or elevating materials to divert stormwater run-on and to contain stormwater run-off.
- Identify and label any storm drain inlets at or near the facility to notify employees and contractors not to dispose of any materials or wastes.
- Do not wash down or hose down any outdoor work areas or trash/waste container storage areas except where wash water will only enter the sanitary sewer following treatment.
- Do not use cleaning products that contain hazardous substances or harsh chemicals. Use biodegradable soaps or detergents when possible.
- Minimize water use during pressure washing activities and consider avoiding cleaning products all together.
- Do not discharge wastewater from pressure washing into the storm drainage system.
- Recycle wastes, used oil, solvents, grease rags, wash water, and other spent liquids. Store materials awaiting recycling under cover with secondary containment.
- Install secondary containment devices where appropriate. Secondary controls include curbing, drip pans, basins, sumps, oil/water separators, catch basin inserts, oil pads/skimers, and impervious work areas.
- Use oil/water separators, or other commercially-available devices to eliminate or minimize oil and grease pollution of stormwater runoff.
- Stabilize exposed soil areas to prevent soil from eroding during rain events. This can be done by applying mulch or permanent vegetation that will hold the soils in place.
- Install erosion and sediment controls such as silt fence, inlet protection, and dewatering filter bags during construction and utility maintenance activities.

5.2 Spill/Leak Cleanup

Purpose: To protect stormwater from spilled pollutants by implementing proper spill cleanup procedures and preventative measures.

Practices:

- Do not use water to clean up spills/leaks.
- Do not wash spills/leaks into storm drain or water body.
- Do not leave spill/leak without cleaning it up.
- Stop the source of the spill/leak immediately, if safe to do so.
- Contain any spilled/leaked liquids, if safe to do so.
- Cover the spill with absorbent material such as kitty litter, sawdust, or absorbent pads.
- Sweep up granules and dispose of properly.
- Install control measures on nearby storm drains and water bodies if spill could potentially reach the stormwater systems.
- Position mats to contain leaks from vehicles and equipment until they can be repaired.
- Use secondary containment under or around petroleum and chemical storage containers.

5.3 Parking Lot Maintenance

Purpose: To protect stormwater from trash and debris by properly cleaning and maintaining parking lots through general practices.

Practice:

- Do not hose down parking lots or sidewalks within parking lots.
- Do not sweep trash, sediment, or any other pollutants to or down a storm drain or water body.
- Do not place trash cans or dumpsters near a storm drain or water body.
- Do not place hazardous waste in a dumpster or trash can.
- Do not wash out dumpsters. Return to owner for cleaning at owner's facility.
- Locate trash cans or dumpsters on a flat concrete surface that does not drain towards a storm drain or water body.
- Ensure all trash cans and dumpsters within parking lots remain covered and have no leaks.
- Request/use dumpsters with properly plugged drain holes whenever possible.
- Pick up trash and debris and dispose of in covered trash can or dumpster.
- Empty trash cans and dumpsters often. Do not overfill trash cans or dumpsters.
- Provide properly-labeled recycling bins to reduce the amount of garbage disposed.

5.4 Salt/Deicing Application

Purpose: To protect stormwater from salt/deicers and sand by properly storing and applying the materials.

Practice:

- Do not store salt, sand, deicer, or snow near storm drain or water body.
- Do not dispose of salt, sand, deicer, or snow in a storm drain or water body.
- Apply minimal amount of salt, sand, or deicer as needed to be effective.
- When loading salt, sand, or deicer, take care to minimize salt spillage by not exceeding the capacity of equipment (i.e. front end loader, truck bed).
- Operate equipment at low speed for effective spreading.
- Control spread patterns to concentrate material where most effective.
- Consider use of deicing alternatives such as calcium magnesium acetate, potassium acetate, sand, etc. in sensitive areas.
- If using sand, use coarse, clean "washed" sand, which is free of fine particles and dust and easier to clean in the spring.
- Locate salt, sand, or deicer stockpiles on flat, covered, impervious sites that are protected from runoff and divert run-on around stockpile. Store salt, sand, or deicer in accordance with SOP 5.1.
- Provide diversion where runoff leaves salt storage area to direct runoff to holding tank or stormwater treatment device.
- Where possible, remove snow manually without use of salt/deicer.

5.5 Storm Drains

Purpose: To protect stormwater from trash, debris, sediments, oil and grease, solvents, detergents, fertilizers, and other pollutants by routinely inspecting, cleaning, and maintaining storm drain systems.

Practice:

- Do not allow defective storm pipes or structures to go unrepaired.
- Do not discharge contaminated stormwater, storm drain flush water, or surface debris into storm drain or water body.
- Regularly clean storm drain systems, preferably in late winter and early spring. Give priority to areas with relatively flat grades as they rarely achieve high enough flows to flush out debris.
- If flushing out pipes, use vactor truck to vacuum up flush water and debris downstream from flush inlet.
- Discharge flush water and debris properly. Debris should be collected and taken to a permitted disposal site and flush water should be discharged to the sanitary sewer with approval.
- Regularly clean storm drain structures by removing trash, sediment, leaves, grass clippings, etc. from the inlet throats, grate tops, and structure sumps. Properly dispose of debris. Do not allow debris to accumulate.
- Use appropriate erosion and sediment control practices when performing repairs.

5.6 Vehicle/Equipment Storage & Maintenance

Purpose: To protect stormwater from solvents, antifreeze, battery acid, motor oil, fuel, grease, brake fluid, metals, and sediment by properly storing and maintaining the vehicles and equipment.

Practice:

- Do not park vehicles or place equipment over, on, or near a storm drain or water body.
- Do not store vehicles or equipment near storm drains or water bodies.
- Do not dispose of fluids in storm drains or water bodies.
- Whenever possible, store vehicles and equipment inside to minimize the potential for pollutant discharge in stormwater runoff. Where indoor storage is not possible, store on paved areas and under a covered facility.
- If storing vehicles and equipment inside, ensure floor drains have been properly connected and do not outfall into storm drain system. If the drain does outfall to a storm drain system, floor drain should be sealed.
- Store drums, tanks, and containers in low-traffic areas and on pallets.
- Store cracked batteries in leak-proof secondary containers.
- Store drip pans and draining boards in designated and marked holding tubs for reuse.
- Store limited amounts of solvents, antifreeze, motor oil, fuel, grease, etc. to prevent surplus or expiration of fluids. Store in a dry controlled area.
- Store salt, sand, or deicer in limited amounts under cover. If stockpiled outdoors, cover with tarp to minimize stormwater runoff and install fabric barrier around to capture polluted runoff.
- Perform vehicle/equipment maintenance in a single day indoors or under cover to minimize exposure time to stormwater runoff.
- Use drip pans and other containment devices to prevent spills when performing maintenance.
- Move leaking vehicles and equipment indoors or under cover as soon as possible and use a drip pan to contain the leak. If possible, drain the leaking fluid and tag the vehicle/equipment to alert others of the leak.
- Clean equipment prior to placing in storage. Equipment shall be washed in a controlled location in accordance with SOP 5.2.
- Use non-hazardous cleaners when possible.
- Use steam cleaning, pressure washing, or aqueous washers instead of solvents.
- Drain oil filters before disposal or recycling and dispose of properly.
- Pour drip pan fluids in appropriate waste/recycle containers as the first step in clean up after repair work is completed.
- Dispose of or recycle all fluids properly.

5.7 Vehicle/Equipment Fueling

Purpose: To protect stormwater from gasoline and diesel fuel by properly maintaining fueling areas and by properly fueling vehicles and equipment.

Practice:

- Do not fuel vehicle or equipment near storm drain or water body.
- Do not hose down or bury fuel spill.
- Do not “top off” fuel tanks. This will minimize the possibility of spills.
- Use a permitted off-site facility such as a fuel/gas station to refuel vehicles and equipment, whenever possible.
- If refueling onsite, use a designated fueling area. Designated fueling area should contain a spill kit, spill response practices, and a covered garbage can for proper cleanup and disposal of spilled fuel.
- Cover fuel storage tanks whenever possible to prevent polluting stormwater runoff.
- Cover nearby storm drains during loading/transfer of fuel storage tanks.
- Use overflow protection devices on tanks and enclose fuel tanks with secondary containment.
- When fueling small equipment from portable containers, fuel in a designated area away from storm drains and water bodies. Use a funnel to minimize spills.
- Fuel carefully to minimize drips to the ground.
- Use absorbent material under small equipment during fueling to collect any drips, overflow, or leaks.
- For new or remodeled facilities, the fuel-dispensing area should be covered and paved with an impervious surface. The surface should be sloped to prevent ponding and contain a grade break that allows for polluted runoff to drain inward to a contained area and the remaining runoff to be diverted away from the fueling, storage, and disposal area.

5.8 Bulk Fuel Delivery

Purpose: To protect stormwater from gasoline and diesel fuel during bulk deliveries.

Practice:

- Delivery driver shall check in with the facility upon arrival.
- Facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible.
- If any storm drains are immediately downstream of the fuel delivery area, they must be blocked with temporary berms or temporary absorbent booms during the transfer process.
- Facility representative or delivery driver shall check to ensure that the amount of delivery does not exceed the available capacity of the tank.
- Delivery driver and facility representative shall inspect all visible lines, connections, and valves for leaks prior to fuel transfer.
- Delivery driver and facility representative shall both remain with the vehicle during the delivery process.
- The operation of moving equipment in the immediate area of a fuelling operation shall be suspended during delivery.
- Delivery driver shall verify that there is a proper connection between the fuel fill hose and the fill pipe of the tank being filled and shall also verify that the fill valve is open.
- When delivery is complete and the hoses are removed, buckets or absorbent pads should be placed underneath connection points to catch drippings.
- Delivery vehicle shall be inspected prior to departure to ensure that the hose is disconnected from the tank.
- Facility representative shall inspect the fuel tank to verify that no leaks have occurred, or that any leaked or spilled material has been cleaned and disposed of properly.
- Facility representative shall gauge tank levels to ensure that the proper amount of fuel is delivered and then collect a receipt from the delivery driver.

5.9 Equipment Washing Areas

Purpose: To protect stormwater from detergents, oils, grease, and heavy metals by properly washing vehicles and equipment.

Practice:

- Do not release vehicle/equipment wash water into a storm drain or water body without prior authorization under a separate VPDES permit.
- Wash all vehicles and equipment in a controlled area (indoors when possible) designed to recycle, collect, or treat wash water prior to approved discharge to the sanitary sewer system.
- Use a commercial car wash for light duty vehicles.
- If washing vehicles/equipment outdoors, install curbs, berms, or dikes around outdoor wash area to control and contain wastewater. If recycling is not feasible, use wet/dry vacuum or vacuum truck to collect wash water and discharge to the sanitary sewer.
- Use drain guards (filter inserts) on nearby storm drain inlets to catch sediments and other pollutants that might enter the storm drains as a result of vehicle washing.
- Avoid detergents whenever possible. If detergents are necessary, a phosphate-free, non-toxic, biodegradable soap is recommended.
- Minimize water use when washing and rinsing.

5.10 Storage & Disposal of Pesticides & Herbicides

Purpose: To protect stormwater from untreated chemicals by properly storing and disposing of pesticides, herbicides, and fertilizers.

Practice:

- Do not store pesticides, herbicides, and fertilizers near storm drains or water bodies.
- Do not dispose of pesticides, herbicides, and fertilizers near or in storm drains or water bodies.
- Store pesticides, herbicides, and fertilizers in a covered container, off the floor, in a dry location according to the manufacturer's specifications.
- Where possible, store pesticides, herbicides, and fertilizers in an enclosed, controlled area. (i.e. locked storage shed or cabinet)
- Use proper containers for storing chemicals and clearly label.
- Use and clearly label secondary containers.
- Store Safety Data Sheets (SDS) near chemical storage areas.
- Order only the amount needed to prevent surplus or expired chemicals.
- Order chemicals just prior to usage to reduce storage time.
- Use entire order of chemicals to minimize disposal.
- Properly dispose of fertilizers and pesticides according to manufactures specifications and applicable regulations.
- Follow all applicable federal and state regulations for storing pesticides, herbicides, and fertilizers.

5.11 Handling & Application of Pesticides & Herbicides

Purpose: To protect stormwater from untreated chemicals by properly handling and applying pesticides, herbicides, and fertilizers.

Practice:

- Do not apply pesticides, herbicides, and fertilizers before a heavy rainfall.
- Do not dispose of pesticides, herbicides, and fertilizers in storm drains or water bodies.
- Only a Certified Pesticide Applicator may apply pesticides, herbicides, and fertilizers.
- Use proper Personal Protection Equipment (PPE) when handling and applying chemicals.
- All employees handling, mixing, and applying pesticides, herbicides, and fertilizers should be trained on the use of SDS.
- Mix only enough chemical for immediate use.
- Follow manufacturer's recommendations for handling, mixing, and applying chemicals.
- Follow all federal and state regulations when handling, mixing, and applying pesticides, herbicides, and fertilizers.
- Mix pesticides, herbicides, and fertilizers in designated areas and away from storm drains or water bodies.
- Employees applying pesticides, herbicides, and fertilizers should read the SDS for each product they use.
- Calibrate application equipment to ensure proper amount of product is applied.
- Use caution when broadcasting product near a waterway or storm drain structure.
- If fertilizer is broadcast or spilled on a sidewalk, street or driveway, sweep up the excess and dispose of properly.
- Promptly cleanup any spills or leakage. Use dry absorbent for liquids and sweep up solid product. Properly dispose of waste. Do not rinse with water.
- Use fertilizers with no phosphorous content.
- Pesticide application equipment should have an emergency shut-off switch.
- Use the least toxic product or method available to do the job.
- Use biodegradable products when available.
- Spot treat problem areas with pesticides rather than treating larger areas.
- Avoid broadcast spraying of pesticides or herbicides.
- Use the granular form of fertilizers, herbicides, and pesticides to minimize application losses. If using liquids, be aware of wind direction to avoid wind drift of chemicals.
- Wash equipment in accordance with SOP 5.2.
- Apply products when ground is not frozen; fertilizer during the fall or spring in accordance with the Nutrient Management Plan, pesticides and herbicides only as needed.

5.12 Grounds Maintenance

Purpose: To protect stormwater from organic matter, sediments, nutrients, and other pollutants by using proper mowing and irrigation techniques and by properly disposing of landscape waste.

Practice:

- Do not dispose of leaves, clippings, or compost in storm drain or water body.
- Do not pile leaves, clippings, and compost piles near a storm drain or water body.
- Do not dump gas from lawn mowing equipment, waste, or contaminated water in storm drain or water body.
- Do not refuel or change mower oil near storm drains.
- Mow only to the appropriate height.
- Do not use a bag to catch grass clippings and then dispose of clippings. Instead, each mower should be equipped with mulching blades.
- Water at appropriate times (no rain in forecast and cooler time of day) and do not overwater. Overwatering can result in excess runoff.
- If used for composting, use appropriate compost bin away from storm sewer or water body.
- If temporary stockpile is necessary, cover leaves, clippings, and compost piles with tarp or enclose with a barrier so that runoff does not enter storm drain system or water body.
- Do not pile tree trimmings near storm sewer system. Dispose of properly at a yard waste facility, chip material and use as mulch, or burn in controlled area as regulated under County Ordinances.