



Environmental Safety, Sustainability & Risk

General Stormwater Permit 20-SW for UMD 20-SW-3281 (MDR003281)



UNIVERSITY OF
MARYLAND

Overview-The Regulatory Background

In 1972, Congress amended the Federal Water Pollution Control Act (i.e., the Clean Water Act) to prohibit the discharge of ***any pollutant*** to waters of the U.S from point sources.

- The exception to this discharge prohibition is if the pollutant is authorized by a NPDES (National Pollutant Discharge Elimination System) permit.

The intent of the NPDES program, prior to storm water requirements, was to target reductions in pollutants from industrial process waste water and municipal sewage.

- However, as control measures for these operations improved, the focus became disperse, non-point sources. ***Of prime importance with such widespread and scattered sources was stormwater runoff.***

Overview-The Regulatory Background

- Stormwater Pollution Prevent Plans (SWPPPs)
 - Mandated by the Water Quality Act of 1987
 - Includes classes of industries and operations to be covered by general and/or individual NPDES permits to develop SWPPPs
- Phase I Coverage (11/16/1990)
 - Permits required for Municipal Separate Storm Sewer Systems (MS4s) located in areas with more than 100,000 people.
 - Also covers 11 categories of Industrial Activity- including recycling facilities, treatment works, electric plants, and manufacturing facilities.
 - Construction activities disturbing 5 or more acres are also subject.
- Phase II Coverage (12/08/1999)
 - Permits required for certain regulated Municipal Separate Storm Sewer Systems (MS4s) located in areas with less than 100,000 people.
 - Construction activities disturbing between 1 and 5 acres are also subject.
 - Also allows for a NO EXPOSURE EXCLUSION, when a lack of water quality impact can be demonstrated.

12-SW vs. 20-SW

12-SW

- Includes the creation and implementation of a SWPPP
- Has benchmark and visual sampling
 - UMD only had visual
- Quarterly and Annual Inspections
- Corrective Actions
- Chesapeake Bay Restoration (UMD not required)

20-SW (February 2023)

- More sectors with benchmark monitoring requirements
 - UMD has 1 Sector with benchmark monitoring
- Impaired water monitoring
- AIMS & corrective actions
- Climate adaption
- Identify sources of PCBs and PFAS

Enforcement of the 20-SW

MDE is the enforcing agent of the 20-SW

- EPA allows MDE to enforce their more stringent permit regulations

MDE Audits SWPPP binder(s) for updates, inspections, visual monitoring, corrective actions, spill reports, etc.

- Failure to have items can result in monetary fines

Chesapeake Bay Restoration

- A 20% reduction of the untreated impervious surface area at your facility
 - Not a 20% reduction of surface, but of treatment!
 - Stormwater ponds, stream restoration, etc.
- Due to our MS4 permit, the CBR will be completed under that instead of the 20-SW



What IS a SWPPP and What is in it?

A SWPPP is a site-specific plan tailored to specific site conditions. It is also a self implementing plan.

- A SWPPP must contain:
 1. Pollution Prevention Team
 2. Accurate Site Description including a detailed map
 3. Description of “exposed” industrial activities and previous spills/leaks over last three years
 4. Identification of non-storm water discharges, illicit connections. Create procedures for eliminating non-authorized discharges.
 5. Description of Structural and Non-Structural stormwater management controls (BMPs)
 6. Record Keeping of all corrective actions, spills, and inspections

1. Pollution Prevention Team (P2 Team)

Staff Names	Individual Responsibilities	Contact Info
Jason Baer, Assistant Director of Environmental Affairs, UMD	Verify that the SWPPP is up to date; Signatory for NeDMR submissions	301-405-3163; jbaer123@umd.edu
Kaitlyn Peterson, Environmental Regulatory Compliance Manager, UMD	Verify that the SWPPP is up to date; modify the SWPPP to reflect any facility changes; Data management for benchmark sampling	301-405-8604; Kpeter13@umd.edu
Charles Curtis, Program Manager, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the Environmental Services Building and all of DA-1.	301-405-3162; ccurtis@umd.edu
Karen Petroff, Assistant Director of B&LM, Arboretum, and Landscaping Services	Ensure that all permit requirements and BMPs are being correctly implemented within DA-2 and DA-7	301-405-8952; kpetroff@umd.edu
Michael Carmichael, Stormwater Management & Maintenance Inspector, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the UMD Landscaping Vehicle and Equipment Storage, Salt Dome, Vehicle and Equipment Maintenance in DA-2.	301-314-1824; mmcarmic@umd.edu
Peter Agustin, Manager, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the University Bus Facility Parking, Fueling, and Maintenance area in DA-3.	301-314-7267; pedawg@umd.edu
Jay Carter Smith, Solid Waste Manager, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the source separated recycling area in DA-4.	301-405-5253; jsmith76@umd.edu
William Monan, Associate Director - Landscape Services, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the landscape material storage area in DA-4.	301-405-2290; wmonan@umd.edu
Larry Brookman, Facilities Manager, UMD	Ensure that all permit requirements and BMPs are being correctly implemented at the Severn Building in DA-5 apart from vehicle fueling & maintenance.	301-226-8613; lbrookma@umd.edu
Leigh Remz, Manager, UMD	Ensure that all permit requirements and BMPs are being correctly implemented in regard to vehicle fueling & maintenance in DA-5.	301-405-5483; lremz@umd.edu
Mark Alexander, Operations Manager, College Park Energy LLC	Ensure that all permit requirements and BMPs are being correctly implemented at the Steam Electric Plant and Oil Storage in DA-6.	301-405-8025; mark.alexander@engie.com
Kristofer Bird, Environmental Specialist, UMD	Verify that the SWPPP is up to date; Quarterly visual and benchmark monitoring; Site inspections; SWPPP updates; and Annual pollution prevention (P2) team training.	301-405-7016; kbird@umd.edu

The staff is responsible for developing, implementing, maintaining, and revising the facility SWPPP.

UMD P2 team can be located within the SWPPP.

- Description of the industrial activities performed
- Site map includes property size, potential pollutant sources, liquid storage tanks, impervious surfaces, historical spills and Stormwater outfalls
- Identify both activities and materials which may potentially be a “significant” pollution source into storm water discharges.



3. Description of “exposed” industrial activities and previous spills

- Standard Industrial Classification (SIC) is a system for classifying industries by a four-digit code and is used by government agencies to classify industry areas.
 - UMD’s SIC is School Bus Maintenance Facilities.
 - Sector AD.b in the 20-SW Permit
 - There are an additional 5 sectors covered around campus
 - Sector K: Hazardous Waste Treatment, Storage, or Disposal Facilities; Sector N: : Scrap Recycling and Waste Recycling Facilities; Sector O: Steam Electric Generating Facilities; Sector P: Land Transportation and Warehousing; and Sector AD.a: Department of Public Works and Highway Maintenance Facilities.

4. Identification of non-storm water discharges, illicit connections.

The 20-SW only permits stormwater discharges.

- Any discharge that is not stormwater and is not permitted by an additional permit is unauthorized and must be documented and eliminated



5. Best Management Practices (BMPs)

Structural

- Protective covers over curb inlets, trench drains.
- Vegetative swales/Slope diversions.
- Secondary containment devices.
- Protective booms.

Non- Structural

- Good Housekeeping
- Proper Material Storage
- Proper Spill Response—refer to SPCC plan
- Proper Equipment Fueling and Repair
- Proper Disposal of Waste
- Preventive Maintenance
- Regular Schedule of Inspections

Examples of Structural vs. Non-Structural BMPs

Structural



Non-Structural



6. Record Keeping

The SWPPP is a “living document” which is constantly being updated and/or modified as changes occur on campus.

- Spill documents must be maintained for at least 3 years
- Annual training documentation
- All inspections and sampling forms
- Analytical lab results
- AIMS and Corrective actions



Benchmark Sampling and Visual Monitoring

Benchmark Sampling

- Quarterly samples must be taken for four consecutive quarters by a member of the P2 team;
- Can stop monitoring if ALL four quarters are below benchmark;
- Each industry has different sector specific benchmarks;
- Samples are sent to the lab;
- Results are sent to MDE on a quarterly basis

Visual Monitoring

- Done Quarterly by a member of the P2 team;
- Sample must be taken from each outfall;
- Forms are stored within the SWPPP binder;
- Should be completed within 30 minutes of a measurable storm event.

Visual Monitoring Form

Quarterly Visual Monitoring Form
Fill out a separate form for each outfall sampled.

Sample Location	Outfall 001 SW		
Quarter / Year:	03-2017	Date / Time Collected:	12:00 PM 8/15/2017
Qualifying Storm Event?	(Yes)	No	Date / Time Examined: 8/15 @ 12:45 pm
Collector's Name & Title	Alex Galbreath, Environmental Specialist		
Examiner's Name & Title	"		

Parameter	Parameter Description	Parameter Characteristics
1. Color	Does the stormwater appear to have any color? Yes <input type="radio"/> No (Clear) <input checked="" type="radio"/>	If Yes, describe: Yellow Brown Red Gray Other:
2. Clarity	Is the stormwater clear? Yes <input checked="" type="radio"/> No <input type="radio"/>	If not clear, which of the following best describes the clarity of the stormwater? Suspended Solids Milky/Cloudy Opaque Other:
3. Oil Sheen	Can you see a rainbow effect or sheen on the water surface? Yes <input type="radio"/> No <input checked="" type="radio"/>	Which best describes the sheen? Rainbow sheen Floating oil globules Other:
4. Odor	Does the sample have an odor? Yes <input type="radio"/> No <input checked="" type="radio"/>	If Yes, describe: Chemical Musty Rotten Eggs Sewage Sour Milk Oil/Petroleum Other:
5. Floating Solids	Is there anything on the surface of the sample? Yes <input type="radio"/> No <input checked="" type="radio"/>	If Yes, describe: Suds Oily Film Sewage Water Fowl Excrement Other:
6. Suspended Solids	Is there anything suspended in the sample? Yes <input type="radio"/> No <input checked="" type="radio"/>	Describe:
Leave sample undisturbed for 30 minutes.		
7. Settled Solids	Is there anything settled on the bottom of the sample? Yes <input type="radio"/> No <input checked="" type="radio"/>	Describe: (note type, size and material after sample is not disturbed for 30 minutes)
8. Foam	Does foam or material form on the top of the sample surface if you shake it? Yes <input type="radio"/> No <input checked="" type="radio"/>	Describe:
9. If there are any visible indicators of pollution identify (1) where the pollution may come from and (2) any corrective actions taken. N/A		

Stormwater Collector's Signature and Date: Alex Galbreath 8/15/2017
Stormwater Examiner's Signature and Date: Alex Galbreath 8/15/2017
Note - Sample should be collected and analyzed in a colorless glass or plastic bottle.

Visual Monitoring consists of 8 parameters:

1. Color
2. Clarity
3. Oil Sheen
4. Odor
5. Floating Solids
6. Suspended Solids
7. Settled Solids
8. Foam

Identification of where the possible contaminants should be noted within section

Corrective Actions may be triggered.

Quarterly and Annual Inspections

Inspections are completed by the ESSR team at least 1x per quarter.

- Structural and non-structural BMPs
- Spills and spill reports
- Outfall conditions
- Any visual signs of contamination

Any non-compliance marks results in a Corrective Action

University of Maryland
Quarterly Stormwater Compliance Inspection Report

The Quarterly Compliance Inspection shall be sufficiently detailed to verify that the Storm Water Pollution Prevention Plan (SWPPP) accurately reflects current site conditions, all potential pollution sources at the facility are identified, the facility site map and drainage map remain accurate, and Best Management Practices listed in the facility's SWPPP are properly operated and maintained. A visual inspection of the stormwater outfall(s) should be made to check for any sheens, turbidity, or other visual signs of contamination.

SAMANTHA BRANSKY 9/18/18
Name of Person(s) Conducting Inspection: Inspection Date:

ENVIRONMENTAL SERVICE FACILITY DA-1 (STR. 3)
Facility Name: (BLDG. 344) Drainage Area:

Is a copy of the SWPPP maintained on campus? Yes ☒ No ☐

Does the SWPPP include a Site map indicating Drainage Areas and Outfalls? Yes ☒ No ☐

Does the SWPPP contain a topographic map? Yes ☒ No ☐

Are the site map, drainage conditions, and all other portion of the facility unchanged? Yes ☒ No ☐

If no, explain any construction or changes that have occurred and make revisions to the SWPPP:

Are the facility personnel, pollution prevention team members, and emergency contacts unchanged? Yes ☐ No ☒

If no, then update on an attached sheet and in SWPPP plan. Alex Galbreath no longer on P-2 team

Does the description of the drainage areas in the SWPPP accurately reflect Site Conditions? Yes ☒ No ☐

If no, please explain and make revisions.

Does the list of potential pollutant sources in the SWPPP reflect Site conditions and sources? Yes ☒ No ☐

If no, please explain and make revisions to the SWPPP.

Corrective Action Report

A corrective action can be triggered by:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit) occurs at your facility;
- A discharge violates a numeric effluent limit (Benchmark);
- You become aware, or MDE determines, that your control measures are not stringent enough for the discharge to meet applicable water quality standards;
- An inspection or evaluation of your facility by an MDE official, determines that modifications to the control measures are necessary to meet the non-numeric effluent limits in this permit; or
- You find in your routine facility inspection (Part V.A.1), quarterly visual assessment (Part V.A.3), or comprehensive site inspection (Part V.A.2) that your control measures are not being properly operated and maintained.

Corrective Action Report

Strict Timeline

Within 24 hrs

- Identification of the condition triggering the need for a corrective action review on the form;
- Description of the problem identified; and
- Date the problem was identified

Within 14 days

- Summary of the corrective action taken or to be taken
- Notice of whether SWPPP modifications are required as a result
- Date of corrective action initiated
- Date of corrective action completed

Section A – Initial Report (12-SW Part IV.D)			
(Complete this section within 24 hours of discovering the condition that triggered corrective action)			
Name of Site:	University of Maryland	12-SW Tracking No. (on NOI)	12SW3281
Date Problem First Discovered	8/15/2017	Time Problem First Discovered	13:00
Name and Contact Information of Individual Completing this Form	Alexander Galbreath, Environmental Specialist 301-405-7016; agalbre@umd.edu		
What site conditions triggered the requirement to conduct corrective action (check the box that applies):			
<input type="checkbox"/> Unauthorized release or discharge (Part I.E)			
<input type="checkbox"/> A discharge violates a numeric effluent limit (Part III.B)			
<input type="checkbox"/> Stormwater control measures not stringent enough for discharge to meet applicable water quality standards (Part III.B)			
<input type="checkbox"/> MDE requires corrective action as a result of permit violations found during an MDE inspection (Part IV.A)			
<input checked="" type="checkbox"/> During Routine Facility Inspection, Comprehensive Site Evaluation, or Quarterly Visual Assessment you find that your stormwater control measures are not being properly operated or maintained (Part V.A)			
<input type="checkbox"/> Construction or a change in design, operation or maintenance at your facility significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases quantity of pollutants discharged (Part V.B)			
<input type="checkbox"/> The average of 4 quarterly sampling results exceeds an applicable benchmark. (Part V.B).			
Provide a description of the problem (Elaborate on back in space provided if necessary):			
During the quarterly visual monitoring, EA observed an oil sheen on the stormwater discharge from the Shuttle Bus Facility.			
Section B – Corrective Action Progress (12-SW Part IV.D)			
(Complete this section no later than 14 calendar days after discovering the condition that triggered corrective action)			
Section B.1 – Why the Problem Occurred			
Cause(s) of Problem (Elaborate on next page if necessary)		How This Was Determined and the Date You Determined the Cause	
1. Oil leaks/spills from vehicles that were not cleaned up properly; leaking nozzle at the 20,000-gal. diesel tank; oil-water separator not functioning		1. Quarterly visual monitoring on 8/15 and routine site inspection on 8/21	
Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem			
List of Stormwater Control Modification(s) Needed to Correct Problem (Elaborate on next page if needed)	Date of Completion	SWPPP Update Necessary?	Notes
1. Notify employees to implement better leak/spill cleanup procedures 2. Install oil booms at Outfall 006SW to contain any oil runoff 3. Fix the leaking diesel fuel nozzle 4. Maintain oil-water separator	9/15/2017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPPP modified: 8/24/2017	

Corrective Action Report

Effect of Corrective Action

- Correcting a permit violating action does **NOT** remove the original violation
- Failing to report or take corrective action is an **ADDITIONAL** violation
- MDE will determine the enforcement response to a permit violation.



Additional Implementation Measures (AIM)

Implemented with the
20-SW

AIM Level 1

- If during your first year any of the following occurring you are subject to Level 1 responses.
- One annual average over the benchmark threshold or;
- One single sampling event over 4x the benchmark threshold

AIM Level 2

- If during your second year any of the following occurring you are subject to Level 2 responses.
- The second annual average over the benchmark threshold or;
- One single sampling event over 4x the benchmark threshold

AIM Level 3

- If during your third or subsequent year any of the following occurring you are subject to Level 3 responses.
- The third annual average over the benchmark threshold or;
- One single sampling event over 4x the benchmark threshold

AIM are mandatory
increasingly robust
responses to a
benchmark
exceedance

Additional Implementation Measures (AIM)

As each AIM level is triggered, an increased response level is required

Response Level 1	Response Level 2	Response Level 3
<ul style="list-style-type: none">i. Review stormwater control measuresii. Implement additional measures.iii. Continue Quarterly Benchmark Monitoring	<ul style="list-style-type: none">i. Install Permanent Controlsii. Or you may increase impervious surface restoration for your industrial stormwater above the baseline required by this permit.iii. Continue Quarterly Benchmark Monitoring	<ul style="list-style-type: none">i. Consult a professional engineer, stormwater professional or geologist to prepare an action plan.ii. If the benchmark threshold for the same benchmark is repeatedly exceeded the Department will revoke the general permit and you must obtain an individual permit.iii. Continue Quarterly Benchmark Monitoring

Impaired Water Monitoring

Additional pollutant monitoring required due to discharging into impaired waters

- Must monitor pollutants of concern once per year
- UMD's pollutant of concern is **chloride**
- Can discontinue monitoring if pollutant is within the acceptable range for **three** consecutive years



Climate Adaption

- Consider contours and elevations when siting new structures, placing them strategically based on anticipated climate change effects.
- Provide prompt written notice to the Department's Water Permits Program for planned physical alterations or additions to the permitted facility.
- Notification is required for alterations or additions that meet criteria for determining new sources, significantly change discharged pollutants, affect sludge practices, or may result in noncompliance with permit requirements.
- Advance notice must be given to the Department for planned facility or activity changes that may lead to noncompliance with permit requirements.



UNIVERSITY OF MARYLAND

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